# November 16<sup>th</sup>, 2018 RFP 18- HHFDEMO-4-Dec Request for Qualifications and Cost Proposal Deconstruction and Demolition Services Muskegon County Land Bank / City of Muskegon Heights

Bidder's Name:	
Address:	
Telephone Number:	
E-Mail:	

The Muskegon County Land Bank / City of Muskegon Heights invite all interested companies and individuals to submit qualifications and a cost proposal for the Hardest Hit Program. A set of conditions, specifications, and requirements are enclosed.

Sealed proposals clearly marked with "**RFP 18- HHFDEMO4-Dec**" will be accepted at the **Muskegon County Land Bank,** 173 East Apple Avenue, Suite 104. Muskegon, Michigan 49442 until 3:00 p.m. November 28, 2018.

Voluntary Pre- Bid meeting on November 29, 2018 @ 3:00PM, at the Muskegon Heights City Hall, 2724 Peck Street, Muskegon Heights, MI 49444 Bids will be opened and tabulated on November 28, 2018, at 3:15 p.m., the bid will be awarded on December 4, 2018.

# No Late Bids will be accepted

Document published by Christopher J. Dean Fire Chief City of Muskegon Heights

Page **1** of **17** 

# This project is funded through the Michigan Hardest Hit Fund.

# Project Purpose

The Muskegon County Land Bank / City of Muskegon Heights is accepting qualifications and cost proposal for the site demolition and removal of thirty one (31) residential structures located

in Muskegon Heights, MI 49444

# **Bid Packet**

Bid packets will be available starting November 16, 2018. The completed bid packet must be returned to the **Muskegon County Land Bank**, 173 East Apple Avenue, Suite 104. Muskegon, Michigan 49442 until 3:00 p.m. November 28, 2018.

Bid documents may be obtained at <u>www.cityofmuskegoheights.org</u> or the Builders Exchange of Michigan. A pre-bid voluntary conference will be held on November 23, 2018 at 11:30 AM at Muskegon Heights, City Hall, Council Chambers (2724 Peck, Muskegon Heights, MI). Inquiries can be made by the following means: Phone 231-724-6170 Timothy Burgess or via email at <u>BurgessTi@co.muskegon.mi.us</u>

No late bids will be accepted. The Muskegon County Land Bank / the City of Muskegon Heights reserves the right to accept or reject any or all bids and reserves the right to waive formalities and to take such actions as it deems necessary in the best interest of Muskegon County Land Bank / the City of Muskegon Heights. Both the Muskegon County Land Bank / City of Muskegon Heights operates on an equal opportunity / affirmative action basis in its bidding policy (Title VII of the Civil Rights Act of 1964, Equal Opportunity Clause, Executive Order 11246, Chapter 60, Subpart A. 60-1.4, Revised Order No. 4)

Christopher J. Dean Fire Chief

Publish: September 12<sup>th</sup>, 2018

# Section I. Bid Certification (Page 1 of Bid Document)

I certify that this bid is made without prior understanding, agreement or connection with any corporation, firm or person submitting a bid for the same materials, supplies, equipment or service, that it meets or exceeds all specifications contained herein, and is in all respects fair and without collusion or fraud. I understand collusive bidding is a violation of state and federal law and can result in fines, prison sentence, and civil damage awards. I agree to abide by all conditions of this bid, all specifications as stated and certify that I am authorized to sign for the bidder.

Bidder:		
Street Address:		
City/State/Zip Code		
Phone Number:		
FAX:		
E- Mail:		
Signature:		
Title:		
Date Certified:		
Bid Breakdown Asbestos Aba	atement Total:	
Demolition T	otal:	
Disposal Tota	al:	
Fill:		
Landscaping	Total:	

**Total Bid Amount:** 

# CONFLICT OF INTEREST DISCLOSURE FORM

(Page 2 of Bid Document)

For purposes of determining any possible conflict of interest, all bidders/proposers, must disclose if any City of Muskegon Heights or County of Muskegon employee(s), elected officials(s), of if any of its agencies is also an owner, corporate officer, agency, employee, etc., of their business.

Indicate either "yes" (a city employee or county, elected official, or employee also associated with your business), or "no." If yes, give person(s) name(s) and position(s) with your business.

	YES		
	NO		
	NAME(S)	POSITION(S)	
FIRM NAME: BY (PRINTED):			
BY (SIGNATURE): TITLE:			
ADDRESS: PHONE NO.			

# CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

(Page 3 of Bid Document)

This certification is required by the regulations implementing Executive Order 12549, Debarment and Suspension, 13 CFR Part 145. The regulations were published as Part VII of the May 26, 1988, *Federal Register* (pages 19160-19211).

Bidder certifies to the best of its knowledge and belief, that it and its principals:

(a) [] Are [] are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

(b) [] Have [] have not within a three-year period preceding award of this bid been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or Local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(c) [] Are [] are not presently indicted for or otherwise criminally charged by a governmental entity (Federal, State or Local) with commission of any of the offenses enumerated in paragraph (b) above; and

(d) [] Have [] have not within a three-year period preceding bid had one or more public transactions (Federal, State or Local) terminated for cause or default.

Bidder Signature

Date

Typed or Printed

Company Name

# A. General Bid Conditions/Instruction to Bid

These conditions are an integral part of this bid, and as such, the bidder must comply with them.

- 1. The prospective bidder must use Local Governmental Unitsbid documents.
- 2. Alternatives must be placed on a separate sheet of paper.

# B. Federal and State Regulation Compliance

- In accordance with the Housing and Urban Development Act of 1968, as amended (12USC1701 u) and stated in the City of Muskegon Heights, Section 3 Employment Plan 10% of the grant dollars/ contract will be used to directly employ Muskegon Heights residents or businesses in the deconstruction or demolition of buildings funded under this program.
- 2. At the time of the solicitation, the Prime Demolition Contractor must identify and enter into a partnership with a deconstruction company for the purpose of providing services for this contract. The Prime Demolition Contractor will be responsible for the deconstruction activities on the site. The deconstruction company will be employed and the responsibility of the Prime Demolition Contractor.

#### C. Project Submission Schedule

The payment time or closing dates, as stated in the bid form, shall be required to deliver and complete items after the receipt of the award. Where multiple items appear on a bid request, the bidder shall, unless otherwise stated by the City, show the closing time in each item separately. The payment schedule must be included in and restated in each bid and adhered to as the following:

1.	Request for Qualifications and Cost Proposal Available to the Public	November 16, 2018
2.	Pre-bid Meeting	November 23, 2018
3.	Submission of Request for Qualifications and Cost Proposal Due	November 28, 2018
4.	Bid Awarded by the Muskegon County LandBank	December 4, 2018
5.	Work commence by	January 4, 2018
6.	Work completed by	March 29 <i>,</i> 2018

If there are any questions concerning the specifications contained in this bid request, please contact Timothy Burgess phone 231-724-6170 or via email at BurgessTi@co.muskegon.mi.us

The Muskegon County Land Bank / the City of Muskegon Heights reserves the right to accept or reject any and all bid requests, all rights granted to it by law, the right to waive formalities and take such action as it deems necessary in the best interest of the Muskegon County Land Bank / City of Muskegon Heights.

# D. Bidder/Offeror Representation

- **1.** Each bidder/offer must sign the bid with his or her signature and shall give his or her full business address on the form provided in this bid.
- 2. The County of Muskegon and the City of Muskegon Heights operates on an equal opportunity / affirmative action basis in its bidding policy (Title VII of the Civil Rights Act of 1964. Equal Opportunity Clause, Executive Order 11246, Chapter 60, Subpart A, 60-1.4, Revised Order No 4.) Bidding is open to all interested parties, in compliance with national, state and local laws.
- **3.** This award will be made to that responsible bidder whose bid conforms to this solicitation and will be most advantageous to the County and City in price and number of items purchased.

# E. Bid / Offer Qualifications

# ~Proof of qualification must be submitted with bid~

- 1. Debit to City or County: No bid shall be accepted, and no contract will be awarded to any person, firm or corporation that is in arrears to the City or County, upon debt or contract that is a defaulter as surety or otherwise, upon any obligation to the City or County, or that is deemed irresponsible or unreliable by the City or County. If requested, bidder/offer shall be required to submit satisfactory evidence that they have a practical knowledge of the particular sale/supply/service bid and that they have the necessary financial resources to provide the proposed supply/service as described in the specifications.
- **2.** Experience: All contractors have a minimum of five (5) years of proven experience providing professional licensed demolition services or similar scope/scale. Failure to provide documented experience may result in disqualification from the bid process.

# F. Vendor /Bidder Complaints or Protests

The Muskegon County Land Bank / City of Muskegon Heights have established administrative procedures for handling bidder complaints in a fair and timely manner.

Step 1: Bidders should inform the Muskegon County Treasure's Office in writing within five days of the incident that he or she has a complaint. The County Treasure will investigate the complaint and make a decision concerning the matter.

Step 2: If the bidder is dissatisfied with the Muskegon County Treasure's reply, an appeal must be made in writing within seven days to the Muskegon County Board of Commissioners

# G. Errors / Omissions / Discrepancies

Any errors, omissions or discrepancies in the specifications discovered by a prospective bidder shall be brought to the attention of the Muskegon County Land Bank as soon after discovery. Further, the bidder shall not be allowed to take advantage of errors, omissions or discrepancies in the specifications.

#### H. Bid Submission

Prospective bidders will be expected to allow adequate time for the delivery of their bid by mail. Faxed bids will **not** be accepted.

#### I. Bid Awards

- **1.** No bid award will be made at the time of the bid opening.
- 2. Individuals submitting bids, who wish to know the results before the award is made, may contact the Muskegon County Land Bank 5 business days following the bid opening.

#### J. Termination for Convenience

The Muskegon County Land Bank / the City of Muskegon Heights may terminate a contract, in whole or in part, whenever the City / County Land Bank determines that such termination is in the best interest of the City / County Land Bank, without showing cause, upon given notice to the contractor.

#### K. Termination for Default

When the bidder/contractor has not performed, or has unsatisfactorily performed the contract, the Muskegon County Land Bank may terminate the contract for default.

Bid conditions/instructions to the bidder, specifications/requirements may become part of the service contract.

#### Section II

#### **Terms and Conditions**

#### **1.** Scope of Services.

The Contractor shall perform and carry out in a satisfactory and proper manner, as determined by the Local Governmental Units, the following:

- **A.** Act as Prime Contract on this demolition project.
- B. Perform, partner with or subcontract all deconstruction activities if required
- **C.** Remove and dispose of asbestos materials in accordance with Environmental Protection Agency, Michigan Occupational Safety and Health Administration and Michigan Department of Environmental Quality regulations.
- **D.** Demolition and removal of all structures located on property
- E. Break up and removal of all concrete, i.e., basements, driveways, walkways, slabs, etc

#### 2. Time and Performance.

The services of the Contractor shall commence by October 9<sup>st</sup>, 2018, and shall be completed by **November 26<sup>th</sup>, 2018**. All requests for payment along with approved completion inspection reports shall be submitted to the Muskegon County Land Bank no later than **December 3<sup>rd</sup>, 2018**. A 10% retainage will be held by the Muskegon County Land Bank until all waivers and inspections are submitted.

#### 3. Relationship Between Parties.

The Contractor is engaged by the Local Governmental Units only for the purposes and to the extent set forth in this Contract, and his relationship the Local Governmental Units during the term of this contract shall be that of an independent contractor. The Contractor shall be free to dispose of such portion of his entire time, energy, and skill during regular business hours as he is not obligated to devote hereunder to the Local Governmental Units in such manner as he sees fit and to such persons, firms, or corporations as he deems advisable. The Contractor shall not be considered as having employee status or as being entitled to participate in any plans, arrangements, or distributions by the Local Governmental Units pertaining to or in connection with any vacation, sick leave, insurance, retirement, longevity, or similar benefits for the Local Governmental Units' regular employees.

#### 4. Insurance

All Prime and Subcontractors, working under this contract, must include the Local Governmental Units as co-insured and furnish evidence of comprehensive public I general liability insurance coverage in the amount of **\$2,000,000**. The contractor must also comply with local laws governing the workplace including Workers Compensation Insurance. Unemployment insurance is also required to participate in this project.

The Contractor shall indemnify and hold harmless the Local Governmental Units, its officers and employees from and against all claims, damages, losses and expenses, including attorney fees, arising out of or resulting from the performance of services under this Contract, provided any such claim, damage, loss or expense that is (a) attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property including the loss of use resulting therefrom, and (b) is caused in whole or in part by a negligent act or omission of the Contractor, any subcontractor, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable regardless of whether or not it is caused in part by a party indemnified hereunder.

#### 5. Permits and Codes

The Prime and Subcontractor shall obtain and pay for all permits and license necessary for the completion and execution of the work and labor performed. All work performed must conform to applicable local codes and requirements.

#### 6. Assignment of Contract

The Prime and Subcontractor shall not assign this contract without the prior written consent of the Local Governmental Units.

#### 7. Work Force

# A. Project Management

The demolition contractor will act as the prime contractor for the project. He / She, herein called the prime demolition contractor, will be responsible for all activities on the demolition site.

# 8. Penalty for Unexcused Delays

If the work is not completed within the time stipulated in this contract, including any time for excusable delays as provided below, the Contractor and or his sureties shall be liable for and shall pay to the Local Governmental Units the sum of \$200 for each calendar day of the delay as a fixed surcharge to cover the costs of additional administration and re-inspection, commencing from the time stipulated for the completion until such work is satisfactorily completed and accepted. Any such surcharge levied shall be certified by Muskegon County Land Bank and deducted from the final payment.

The rights of the Contractor to proceed shall not be terminated nor shall the Contractor be charged with surcharge for any delays in the completion of work due to:

- a. Any acts of government, including controls or restrictions upon or requisitioning of materials, equipment, tools or labor by reason of war, national defense or other national emergency.
- b. Causes not responsible or foreseeable by the parties to this contract at the time of execution of this contract, which are beyond the control and without fault or negligence of the Contractor, such as extreme weather conditions, fires, epidemic, quarantine strikes, freight embargo, and acts of another contractor in the performance of some other contract. Note: Seasonal load and speed restrictions are not considered an unforeseeable item or covered as a weather limitation.

# 9. Default

In the event of default by the Contractor in the observance or performance of any covenant, condition, or agreement on his part to be observed or performed under this Contract, and the continuance of such default for seven (7) days after written notice thereof by the City to the Contractor. Any notice given hereunder shall be sufficiently given if delivered to the Contractor personally or mailed to him by United States Postal Service with certified mail/ return receipt requested at the address set forth in the heading of this contract.

#### 10. Compensation

- **A.** The Local Governmental Units shall pay compensation to the Contractor for his services under this contract as follows:
  - 1. Compensation for completion of the work shall be payable monthly upon a billing from the Contractor describing in detail the services performed by the Contractor during the preceding month.
  - 2. Local Governmental Units will only be billed monthly for each completed demolition that has passed city inspections.

3. It is expressly understood and agreed that in no event will the total compensation to be paid hereunder exceed the maximum sum for all services under this Contract.

#### 11. Michigan Law

The laws of the State of Michigan shall govern this Agreement. Any litigation regarding this Agreement or its contents shall be filed in the County of Muskegon, if in State court, or in the Federal District Court nearest to Muskegon County, if in Federal Court.

#### 12. Terms and Conditions

The terms and conditions used in this Agreement shall be given their common and ordinary definition and will not be construed against either party.

#### 13. Severability

If anyone or more of the provisions contained herein shall for any reason be held to be invalid, illegal or unenforceable in any respect, then such provision or provisions shall be deemed severable from the remaining provisions hereof, and such invalidity, illegality or unenforceability shall not affect any other provisions hereof, and this Agreement shall be construed as if such invalid, illegal or unenforceable provision has never been contained herein.

#### 14. Surety: Bid and Performance Bond

# Bidders are required to submit proof of a bid bond for 100% of the project cost at the time the bid is submitted

Within five business days of being awarded the project, contractors must secure a performance bond in an amount equal to one hundred percent (100%) of the total contract amounts. Bonds must be issued by a bona fide company authorized to do business in the State of Michigan and to comply with state regulations. The contractor the performance bond is to ensure abatement of potential impacts to public health and safety resulting from demolition as well as ensure general cleanup of the demolition site.

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#### Section IV

#### **Work Elements**

#### A. Work Site / Structure Addresses

2332 Leahy St 2345 Maffett 2032 Ray 501 E Apple 2037 Hoyt 367 E Holbrook 2611 Hoyt 2420 Manz 2809 8th 2124 Sanford 3213 6th 2908 7th 2425 Manz 1874 Manz 2736 8th 2531 James Ave 1679 Park 2245 Sanford 2344 6th 2545 Baker 2501 Wood 1932 Reynolds 1967 Reynolds 2041 Riordan 2201 Reynolds 2412 Wood 2312 Hoyt 2929 5th 3237 Leahy 3031 Merriam 3109 Highland 2336 8th St

#### See attached asbestos surveys for more detailed information

#### B. General Statement of Work

#### **Requirements The principal items of work**

#### consist of:

- 1. Remove asbestos removal and disposal as required by law.
- 2. Deconstruction of the structure when appropriated.
- 3. Demolition of all structures located on the property.
- 4. Break up and remove all concrete, i.e., driveways, walkways, slabs, etc.
- 5. Remove the basement and footings.
- 6. Removal of lead-based paint-containing materials according to the appropriate regulations.
- 7. Fill basement with clean backfill with 3 inches of clean topsoil and seed with clover.
  - a. Clover shall be evenly applied at a rate of 8 lbs of seed per 50x100 citylot
  - b. Approved types of clover include (common name): New Zealand White Clover, Ladino Clover or Dutch White or Sweet Clover. (A 50% -50% blend of any two approved clover types is preferred)
- 8. Top soil requirements:
  - a. Topsoil shall contain not less than 3% or more that 20% organic matter, by weight as determined by loss-on-ignition of oven-dried samples in accordance with ATM T-6.
  - b. Organic material shall be decomposed and free of wood.
- 9. Protect all trees not being removed as part of the project.
- 10. Remove **all** trash and debris on the work site.

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#### C. Technical Specifications

#### Before commencing demolition work:

- 1. Execute rodent extermination procedures as specified by and to the satisfaction of the Muskegon County Health Authority.
- 2. Disconnect, or arrange for the disconnection of, utility service connections, such as water, sewers, steam, and telephone, to building to be demolished in accordance
  - a. **Note:** Natural gas and electrical disconnects have be done before the prebid conference and cost should **not** be included in the bid. However, the contractor is responsible for confirming service disconnections before commencing work.
- Seal storm and sanitary sewers leading from structures to be demolished. (Note: Sanitary Sewer lateral to be plugged within five (5) feet of property line.) Also, all water services to be cut at curb box and plugged. These services cut and caps must inspected in accordance with local ordinances.
- 4. Preserve in operating condition active utilities traversing the project site; protect property, including but not limited to mains, manholes, catch basins, valve boxes, poles, gigs, and other appurtenances.
- 5. Provide adequate time for deconstruction contractors to evaluate and remove salvageable materials and equipment from the structure. (if applicable)
- 6. Assist when necessary the deconstruction contractor in removal of salvageable materials.

#### **During demolition:**

- 1. Provide adequate protection to persons and property.
- 2. Execute the work in such a manner as to avoid interference with the use of or passage to and from adjoining buildings and facilities.
- 3. Except as otherwise shown or specified, demolish structures and foundations, and remove complete steps, posts, porches, and similar construction.
- 4. Demolish masonry walls in small sections.

- 5. Remove, regardless of elevation, all floor construction over basements and cellars.
- 6. Remove structural steel, cast iron, and heavy timbers by individual pieces and lower carefully (if applicable).
- 7. Remove partitions, stairways, furnaces, piping, apparatus, and debris from within existing basements.
- 8. Wet down masonry thoroughly during demolition; prevent the spread of dust; provide water and necessary connections, therefore.
- 9. Do no blasting on the project site.
- 10. Provide substantial barricades around all basements and cellars, as soon as such openings are uncovered, adequate to block access, and to afford protection to workers and the public.
- 11. Leave no demolished material of any sort in any basement.
- 12. Remove from the site rubbish and debris found thereon and or resulting from the work of demolition. At completion, leave the site in a safe and clean condition, free or materials or equipment.
- 13. It shall be the Contractor's responsibility to properly dispose of **all** demolition materials. This includes regulated materials (i.e. asbestos, mercury, lead base paint, etc).
- 14. Properly grade soil to match existing surrounding neighborhood topography.

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# Section V Bid Submission

The following information must be included in the bid package. Any omission of the requested information may cause you to forfeit the bid.

Page 1:	Bid certification
Page 2:	Conflict of interest disclosure form
Page 3:	Certification regarding debarment and suspension
Page 4:	Copy of deconstruction and or residential demolition license
Page 5:	Proof of comprehensive liability insurance
Page 6:	Total cost proposal for deconstruction and demolition of 4 units.
Page 8:	Per location itemization of the bid
Page 7:	Copy of bid bond
Page 7: Page 8:	Copy of bid bond Copies of asbestos abatement contractor license(s).
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P.O. Box 13216 Lansing, MI 48901 Phone: 888.449.4566 Fax: 888.448.8739 www.redcedarconsulting.net

October 29, 2018

Mr. Tim Burgess Muskegon County Land Bank Land Bank Coordinator 173 E. Apple Avenue, Suite 104 Muskegon, MI 49442

#### RE: Asbestos Containing Material and Hazardous Materials Inspection 367 E Holbrook Ave., Muskegon MI 49442 Parcel ID: 61-24-763-001-0026-10

Dear Mr. Burgess:

Red Cedar Consulting has completed an asbestos-containing material (ACM) and hazardous materials inspection at 367 E Holbrook Ave., Muskegon Michigan (Subject Property). This inspection was completed at the request of the Muskegon County Land Bank to comply with the United States Environmental Protection Agency (USEPA) requirements for demolition and renovation set forth under the National Emissions Standards for Hazardous Air Pollutants (NESHAP, 40 CFR Part 61). This inspection was also completed to comply with the Occupational Safety and Health Administration (OSHA) Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

#### **SUBJECT PROPERTY**

The Subject Property is comprised of a .11 acre residential parcel which contains a 360 sq. ft. detached garage and approximate 978 square foot residential building (the Building) with an unknown construction date. The Building was constructed on a concrete block basement with one aboveground floor. The exterior walls of the Building were finished with aluminum over fiberboard over wood lap and a vapor barrier while the roof was sealed with asphalt shingles. The Building can be further divided into a front entry, living room, dining room, kitchen, bathroom and two bedrooms.

#### VISUAL INSPECTION AND SAMPLING

#### **Asbestos Containing Materials Inspection**

Mr. Aaron Paquet of Red Cedar Consulting (Red Cedar), an accredited State of Michigan/EPA Asbestos Building Inspector (Accreditation Number A30955) whom completed training per the Michigan Asbestos Workers Accreditation Act 440 completed an inspection of the Subject Property on October 11, 2018 for suspected asbestos containing building materials.

This inspection, and subsequent sample collection was completed in accordance with the USEPA Asbestos Hazard Emergency Response Act (AHERA) (40 CFR Part 763) assessment and sampling protocol.

During the completion of the inspection, each area of the Subject Property was visually inspected for asbestos containing building materials (ACBM). Following the completion of the visual inspection, Red Cedar staff identified each suspect area of friable and non-friable ACBM and sorted them into one of three homogenous categories for sampling purposes. AHERA defines friable as a material that when dry, may be crumbled, pulverized, or reduced to powder by hand pressure. A homogenous area is defined by OSHA as an area of surfacing, thermal system insulation (TSI) or miscellaneous material that is uniform in color and texture. Surfacing materials are most commonly found in sprayed-on, troweled-on or otherwise applied to surfaces, such as acoustical plaster on ceilings and fireproofing materials on structural members. TSI refers to materials applied to pipes, fittings, boilers, ductwork, or other components to prevent heat loss or gain, or condensation. Any material that does not fall under the surfacing or TSI category, such as floor tile, drywall, and acoustical ceiling tile are placed into the miscellaneous materials category.

Following the completion of the visual inspection, Red Cedar staff identified the following materials as suspect ACBM:

- Asphalt Shingle
- Fiberboard
- Vapor Barrier
- Window Glazing
- Linoleum
- 12"x12" Vinyl Floor Tile
- 1'x1' Ceiling Tile
- Flashing
- Drywall and Joint Compound
- 12"x24" Ceiling Tile
- 9"x9" Vinyl Floor Tile
- Plaster
- Texture

Red Cedar staff collected thirty four samples of suspect ACBM separated into fourteen distinct homogenous groups for laboratory analysis. Samples were collected and submitted to APEX Research Inc. Laboratories (APEX) (Accreditation Number 102118-0) for laboratory analysis. Analysis was completed utilizing polarized light microscopy (PLM) which is the Environmental Protection Agency (EPA) approved method for analysis of bulk materials for asbestos. PLM analysis completed pursuant to method (EPA 600/M4-82-020) identifies asbestos fiber bundles by the visual properties displayed when the sample is treated with various dispersion staining liquids. The laboratory report completed following the sample analysis indicates if asbestos is present, and at what percentage along with a description and percentage of other fibrous and non-fibrous materials and sample color. Chain-of-custody documentation was followed from sample collection through shipping and receiving of the samples at the designated laboratory. The documentation assures that samples will meet the quality assurance/quality control measures defined by AHERA. The laboratory analytical report prepared by APEX for the thirty four samples is included as Attachment A.

#### **Hazardous Materials Inspection**

On October 11, 2018 the Subject Property was also inspected for the presence of hazardous materials which include but are not limited to polychlorinated biphenyls (PCBs) and potential mercury containing equipment and any items or containers that may contain or be classified as a hazardous or regulated material. Each material, if identified, was documented along with the approximate location. Any materials identified as hazardous are included in Table 1.

# **INSPECTION RESULTS AND RECOMMENDATIONS**

During the completion of the asbestos inspection, thirty four samples of suspect ACM were collected and are documented in Table 2 along with the Red Cedar sample number, description, friability, material type, ACM classification, sample location, material quantity and laboratory analytical results.

ACM, as defined by the USEPA NESHAP is "any material containing more than 1 percent asbestos as determined using the method specified in appendix E, subpart E, 40 CFR part 763 Section 1, Polarized Light Microscopy".

Friable ACM is defined by NESHAP as any material containing more than 1 percent asbestos that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. Friable ACM is a concern due the ease of unintentionally disturbing the ACM which may result in "visible emissions" which is known as a Fiber Release Episode.

Non-friable asbestos-containing material is defined as "material containing more than 1 percent asbestos that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. Non-friable ACM's are separated into Category I and Category II ACM. Category I ACM is any asbestos containing packing's, gaskets, resilient floor coverings (vinyl floor tile and linoleum are examples of these) and asphalt roofing products. Category II ACM is stated by NESHAP as any material excluding Category I non-friable ACM such as drywall, plaster or fiberboard insulation.

#### **Presumed Asbestos Containing Material**

Presumed Asbestos Containing Materials (PACM) are suspect surfacing, TSI and miscellaneous materials found in buildings constructed prior to 1980 which are classified as and due to the age of the structure, are assumed to be ACM and do not require sample collection and analysis. OSHA dictates that PACM may be "rebutted" following a complete inspection pursuant to AHERA protocol.

The HVAC Duct Wrap located in the Building was classified as PACM due to the age of the structure and samples were not collected.

Table 3 lists the location, material description, friability, condition, material type (surfacing, thermal or miscellaneous) and approximate quantity of all PACM documented at the Subject Property.

Table 4 provides a summary all ACM documented at the Subject Property which includes the material location, description, and approximate quantity.

#### Friable ACM's

Window glazing samples collected from windows in the Building and Garage were found to contain up to 5% asbestos following analysis. The assessment to quantify the extent of this material identified thirty six windows at the following locations that would fall into the same homogenous group. The locations of the windows are listed below:

- Garage (3 windows 28" wide x 46" tall)
- Interior (12 windows 26" wide x 54" tall)
- Interior (9 windows 28" wide x 54" tall)
- Interior (1 window 44" wide x 44" tall)
- Interior (3 windows 26" wide x 28" tall)
- Interior (1 window 24" wide x 36" tall)
- Interior (1 window 32" wide x 48" tall)
- Basement (6 windows 23" wide x 20" tall)

Duct Wrap identified in the building in conjunction with the forced air heating system is classified as friable ACM. The visual assessment to quantify the extent of this material identified HVAC Duct Wrap at the following locations within the basement and first floor:

- Living (2 registers, 20 sq. ft.)
- Dining (1 register, 10 sq. ft.)
- S Bedroom (1 register, 10 sq. ft.)
- Basement (16 pieces of 3" HVAC Tape on 6" dia. Ductwork)(8 sq. ft.)
- Basement (HVAC Tape on Cold Air Return Ductwork and Wood Framing, 10 sq. ft.)

#### **Category I ACM**

One type of resilient floor covering (White and Brown 9"x9" Vinyl Tile) located within the basement was found to contain up to 5% Chrysotile asbestos. The assessment to quantify the extent of this material identified approximately 851 sq. ft. of this material within the Building.

#### **Category II ACM**

No Category II non-friable ACM was identified during the completion of this inspection.

#### **RECOMMENDATIONS**

#### **Asbestos Containing Materials**

HVAC material identified in the Building system and listed below is classified as friable ACM and should be removed prior to any renovation/demolition activities.

- Living (2 registers, 20 sq. ft.)
- Dining (1 register, 10 sq. ft.)
- S Bedroom (1 register, 10 sq. ft.)
- Basement (16 pieces of 3" HVAC Tape on 6" dia. Ductwork)(8 sq. ft.)
- Basement (HVAC Tape on Cold Air Return Ductwork and Wood Framing, 10 sq. ft.)

Friable asbestos containing window glazing was identified on thirty six windows throughout the Building. The locations of these windows that should be abated prior to demolition/renovation activities are listed below:

- Garage (3 windows 28" wide x 46" tall)
- Interior (12 windows 26" wide x 54" tall)
- Interior (9 windows 28" wide x 54" tall)
- Interior (1 window 44" wide x 44" tall)
- Interior (3 windows 26" wide x 28" tall)
- Interior (1 window 24" wide x 36" tall)
- Interior (1 window 32" wide x 48" tall)
- Basement (6 windows 23" wide x 20" tall)

Please note: Other different sized windows are located throughout the Building but these windows were assessed and found to be constructed either without window glazing or were sampled and found to not contain asbestos and therefore are not required to be removed.

The Category I resilient floor covering (White and Brown 9"x9" Vinyl Tile) is a non-friable ACM that may be left in place as long as the demolition/renovation activities are completed following the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

Please note: The location of samples obtained during this inspection were in a random fashion and areas that were not identified during this inspection may be damaged or have become damaged since the inspection was completed. If Category I or Category II friable materials are discovered prior to or during the demolition/renovation process, these materials must be abated prior to commencement of any demolition/renovation activities at the Subject Property.

#### **Hazardous Materials**

Hazardous Materials identified at the Subject Property and documented in Table 1 which require proper removal and disposal consist of the following items:

- 5-Gallon Container Tar (4)
- Gallon Container Misc. Paint (7)
- 5-Gallon Container Misc. Paint (2)

#### **REGULATORY REQUIREMENTS**

A Notification of Intent to Renovate/Demolish form must be filed with the Michigan Department of Environmental Quality- Air Quality Division at least 10 working days prior to any renovation or demolition activities at a site.

The Notification of Intent to Renovate/Demolish form must also be completed and submitted to the MIOSHA-Asbestos Program whenever demolition, encapsulation and/or renovation activities at a site involving greater than ten lineal feet and/or fifteen square feet of ACM will be completed.

Regulated asbestos containing materials per NESHAP (40 CFR Part 61) which falls into any of the following categories are ACM's that must be removed prior to any renovation/demolition activities at the Subject Property.

- Friable asbestos material.
- Category I non-friable ACM that has become friable.
- Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading.
- Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of renovation or demolition operations.

Asbestos abatement should only be performed by a certified asbestos abatement contractor licensed to complete abatement work. The contractor must also follow the standards and requirements set forth per the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) and the USEPA NESHAP (40 CFR Part 61).

Additional information regarding the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) and the USEPA NESHAP (40 CFR Part 61) can be obtained by contacting the associated agency below.

NESHAP Asbestos Program Department of Environmental Quality Phone: 517-284-6777 MIOSHA-CSHD-Asbestos Program State of Michigan Phone: 517-284-7680 Email: asbestos@michigan.gov

#### **DISCLAIMER**

Red Cedar Consulting performed destructive testing methods in an attempt to access and inspect all areas of the Building. Unfortunately, due to the age of construction along with multiple additions/renovations that may have been completed on the Building, additional inspections may be required if suspect ACM material not documented within this report is encountered during renovation/demolition activities.

This report was prepared at the request and for exclusive use by the Muskegon County Land Bank and may not be reproduced or sold without written permission from Red Cedar Consulting.

We appreciate the opportunity to provide the requested services. Please contact us at (888) 449-4566 with any questions or concerns.

Sincerely, Red Cedar Consulting

Raion Poquet

Aaron Paquet Michigan/EPA Certified Asbestos Building Inspector (A30955)

Red Cedar Consulting

# Attachment 1

APEX Research Laboratory Analytical Results

Project : 367 E. Holbrook Ave.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80293         Date Collected:       10/11/18         Date Received:       10/12/18         Date Analyzed:       10/16/18         Date Reported:       10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80293 - 01 Cust. #: HA-HM-01A Material: Asphalt Shingle Location: Appearance: black,fibrous,homogenous Layer: 1 of 5	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 20% Other - 80%
Lab ID #: 80293 - 01a Cust. #: HA-HM-01A Material: Shingle Location: Appearance: black,fibrous,homogenous Layer: 2 of 5	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 20% Other - 80%
Lab ID #: 80293 - 01b Cust. #: HA-HM-01A Material: Shingle Location: Appearance: black,fibrous,homogenous Layer: 3 of 5	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director



Project : 367 E. Holbrook Ave.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80293         Date Collected:       10/11/18         Date Received:       10/12/18         Date Analyzed:       10/16/18         Date Reported:       10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80293 - 01c Cust. #: HA-HM-01A Material: Tar Paper Location: Appearance: black,fibrous,homogenous Layer: 4 of 5	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 50% Other - 50%
Lab ID #: 80293 - 01d Cust. #: HA-HM-01A Material: Membrane Location: Appearance: black,fibrous,homogenous Layer: 5 of 5	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 20% Other - 80%
Lab ID #: 80293 - 02 Cust. #: HA-HM-01B Material: Asphalt Shingle Location: Appearance: black,fibrous,homogenous Layer: 1 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 30% Other - 70%

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Robert T. Letarte Jr., Laboratory Director



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Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80293 - 02a Cust. #: HA-HM-01B Material: Shingle Location: Appearance: black,fibrous,homogenous Layer: 2 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 30% Other - 70%
Lab ID #: 80293 - 02b Cust. #: HA-HM-01B Material: Shingle Location: Appearance: black,fibrous,homogenous Layer: 3 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 30% Other - 70%
Lab ID #: 80293 - 02c Cust. #: HA-HM-01B Material: Tar Paper Location: Appearance: black,fibrous,homogenous Layer: 4 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 65% Other - 35%

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Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.



APEX Research Inc., 11054 Hi Tech Drive, Whitmore Lake, MI 48189 (734) 449-9990, Fax (734) 449-9991

Project : 367 E. Holbrook Ave.



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Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80293 - 03 Cust. #: HA-HM-02A Material: Fiberboard Location: Appearance: black,fibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%
Lab ID #: 80293 - 03a Cust. #: HA-HM-02A Material: Vapor Barrier Location: Appearance: brown,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 90% Other - 10%
Lab ID #: 80293 - 04 Cust. #: HA-HM-02B Material: Fiberboard Location: Appearance: brown,fibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%

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Sent

Robert T. Letarte Jr., Laboratory Director

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Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80293 - 04a Cust. #: HA-HM-02B Material: Vapor Barrier Location: Appearance: brown,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 90% Other - 10%
Lab ID #: 80293 - 05 Cust. #: HA-HM-03A Material: Asphalt Shingle Location: Appearance: black,fibrous,homogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 20% Other - 80%
Lab ID #: 80293 - 05a Cust. #: HA-HM-03A Material: Asphalt Shingle Location: Appearance: black,fibrous,homogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%

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Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80293         Date Collected:       10/11/18         Date Received:       10/12/18         Date Analyzed:       10/16/18         Date Reported:       10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80293 - 05b Cust. #: HA-HM-03A Material: Tar Paper Location: Appearance: black,fibrous,homogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 60% Other - 40%
Lab ID #: 80293 - 06 Cust. #: HA-HM-03B Material: Asphalt Shingle Location: Appearance: black,fibrous,homogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 30% Other - 70%
Lab ID #: 80293 - 06a Cust. #: HA-HM-03B Material: Asphalt Shingle Location: Appearance: black,fibrous,homogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%

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	ARI Report #18-80293Date Collected:10/11/18Date Received:10/12/18Date Analyzed:10/16/18Date Reported:10/19/18
Asbestos Type/Percent	Non-Asbestos Material
Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 60% Other - 40%
Asbestos Present: <b>YES</b> Chrysotile - 1.25% POINT COUNT RESULT	Other - 98.75%
Asbestos Present: NOT ANALYZED	
	Asbestos Present: <b>NO</b> No Asbestos Observed Asbestos Present: <b>YES</b> Chrysotile - 1.25% POINT COUNT RESULT Asbestos Present:

Robert T. Letarte Jr., Laboratory Director



Project : 367 E. Holbrook Ave.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80293         Date Collected:       10/11/18         Date Received:       10/12/18         Date Analyzed:       10/16/18         Date Reported:       10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80293 - 09 Cust. #: HA-HM-05A Material: Grey Linoleum Location: Appearance: yellow,fibrous,nonhomogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%
Lab ID #: 80293 - 09a Cust. #: HA-HM-05A Material: Linoleum Location: Appearance: beige,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%
Lab ID #: 80293 - 10 Cust. #: HA-HM-05B Material: Grey Linoleum Location: Appearance: green,fibrous,nonhomogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%

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Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80293 - 10a Cust. #: HA-HM-05B Material: Linoleum Location: Appearance: beige,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%
Lab ID #: 80293 - 11 Cust. #: HA-HM-06A Material: White 12x12 VFT Location: Appearance: black,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80293 - 11a Cust. #: HA-HM-06A Material: Tar Paper Location: Appearance: black,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%

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Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80293 - 12 Cust. #: HA-HM-06B Material: White 12x12 VFT Location: Appearance: black,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80293 - 12a Cust. #: HA-HM-06B Material: Tar Paper Location: Appearance: black,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 35% Other - 65%
Lab ID #: 80293 - 13 Cust. #: HA-HM-07A Material: Brown 12x12 VFT Location: Appearance: beige,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

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Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80293 - 13a Cust. #: HA-HM-07A Material: Linoleum Location: Appearance: beige,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%
Lab ID #: 80293 - 14 Cust. #: HA-HM-07B Material: Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 20% Other - 80%
Lab ID #: 80293 - 14a Cust. #: HA-HM-07B Material: Brown 12x12 VFT Location: Appearance: beige,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

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Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80293 - 15 Cust. #: HA-HM-08A Material: 1x1 White Pitted Ceiling Tile Location: Appearance: grey,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Fiberglass - 20% Other - 50%
Lab ID #: 80293 - 16 Cust. #: HA-HM-08B Material: 1x1 White Pitted Ceiling Tile Location: Appearance: grey,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Fiberglass - 20% Other - 50%
Lab ID #: 80293 - 17 Cust. #: HA-HM-09A Material: Glazing Location: Appearance: beige,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
For Layered Samples, each component will be analyzed and repor		Rout Sett

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Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80293 - 18 Cust. #: HA-HM-09B Material: Glazing Location: Appearance: grey,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>YES</b> Chrysotile - 5%	Other - 95%
Lab ID #: 80293 - 19 Cust. #: HA-HM-10A Material: Flashing Location: Appearance: black,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 5% Other - 95%
Lab ID #: 80293 - 20 Cust. #: HA-HM-10B Material: Flashing Location: Appearance: black,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Other - 90%
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Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80293 - 21 Cust. #: HA-HM-11A Material: Joint Compound Location: Appearance: white,fibrous,nonhomogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 30% Other - 70%
Lab ID #: 80293 - 21a Cust. #: HA-HM-11A Material: Drywall Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80293 - 22 Cust. #: HA-HM-11B Material: Joint Compound Location: Appearance: beige,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

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Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80293 - 22a Cust. #: HA-HM-11B Material: Drywall Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80293 - 23 Cust. #: HA-HM-13A Material: White 12x24 Ceiling Tile Location: Appearance: grey,nonfibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 75% Other - 25%
Lab ID #: 80293 - 24 Cust. #: HA-HM-13B Material: White 12x24 Ceiling Tile Location: Appearance: brown,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 80% Other - 20%

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Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80293 - 25 Cust. #: HA-HM-12A Material: White/Brown 9x9 VFT Location: Appearance: beige,fibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>YES</b> Chrysotile - 5%	Other - 95%
Lab ID #: 80293 - 25a Cust. #: HA-HM-12A Material: Mastic Location: Appearance: black,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> Chrysotile - Trace POINT COUNT RESULT	Other - 100%
Lab ID #: 80293 - 26 Cust. #: HA-HM-12B Material: White/Brown 9x9 VFT/Mastic Location: Appearance: Layer: of	Asbestos Present: NOT ANALYZED	

For Layered Samples, each component will be analyzed and reported separately.

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Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80293 - 27 Cust. #: HA-HS-01A Material: Plaster Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80293 - 27a Cust. #: HA-HS-01A Material: Mortar Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Other - 98%
Lab ID #: 80293 - 28 Cust. #: HA-HS-01B Material: Plaster Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

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Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80293 - 28a Cust. #: HA-HS-01B Material: Mortar Location: Appearance: grey,fibrous,nonhomogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Other - 98%
Lab ID #: 80293 - 29 Cust. #: HA-HS-01C Material: Plaster Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80293 - 29a Cust. #: HA-HS-01C Material: Mortar Location: Appearance: grey,fibrous,nonhomogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Other - 98%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director



Project : 367 E. Holbrook Ave.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80293Date Collected:10/11/18Date Received:10/12/18Date Analyzed:10/16/18Date Reported:10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80293 - 30 Cust. #: HA-HS-01D Material: Plaster Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80293 - 30a Cust. #: HA-HS-01D Material: Mortar Location: Appearance: grey,fibrous,nonhomogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Other - 98%
Lab ID #: 80293 - 31 Cust. #: HA-HS-01E Material: Plaster Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director



Project : 367 E. Holbrook Ave.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80293Date Collected:10/11/18Date Received:10/12/18Date Analyzed:10/16/18Date Reported:10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80293 - 31a Cust. #: HA-HS-01E Material: Mortar Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Other - 98%
Lab ID #: 80293 - 32 Cust. #: HA-HS-02A Material: Texture Location: Appearance: beige,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80293 - 33 Cust. #: HA-HS-02B Material: Texture Location: Appearance: beige,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Sent

Robert T. Letarte Jr., Laboratory Director



Project : 367 E. Holbrook Ave.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80293Date Collected:10/11/18Date Received:10/12/18Date Analyzed:10/16/18Date Reported:10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80293 - 34 Cust. #: HA-HS-02C Material: Texture Location: Appearance: beige,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: Cust. #: Material: Location: Appearance: Layer: of	Asbestos Present:	
Lab ID #: Cust. #: Material: Location: Appearance: Layer: of	Asbestos Present:	

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



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APEX Research, Inc. 11054 HF Tech Drive, Whitmore Lake, MI 48189 Phone: 734-449-9990	MI 48189 Phone: 734-449-9990	2 of 4 APEX Reserved
E-mail: apexrescarcn@cnartermi.net	11.net Fax: /34-449-9991	
		Lab Use Only
Ulient Name: Kea Leaar Consulting	1	Log-In
Address: PO BOX 13216 Project :	3671 E. Hallerode Hoe.	Report
City, St., Zip: Lansing, MI 48901 Project # :		
149-4566 Fax: (888) 448-8739	Person: Aaron Paguet	
Around Times: (Circle One) PLM EPA	apaquet@redcedarconsulting.net 600, PC all samples with a detection of <5% ACM.	sulting.net 5% ACM.
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APEX Research, Inc.	LnC. 11054 Hi Tech Drive, Whitmore Lake, MI 48189 Phone: 734-449-9990 E-mail: apexresearch@chartermi.net Fax: 734-449-9991	MI 48189 Phone: 734-449-9990 ni.net Fax: 734-449-9991	APEX APEX RESEARCH
Client Name: Red Cedar Consulting		Date of Survey: しのールー いる	Lab Use Only Log-In
Address: PO Box 13216		NV.	<u>v</u> .
., Zip: Lansing, MI 4E		-+	
Turn Around Times: (Circle One)	448-8739 PLM EPA	Contact Person: Aaron Paquet apaquet@redcedarconsulting.net 600, PC all samples with a detection of <5% ACM.	sulting.net 5% ACM.
Duch 24 hour	Asbestos: Bulk <u>x</u> Wipe	Point Count PCM	
	Lead: Bulk Wipe	Air Paint Soil	
72 hour	Mold: Bulk Tape	BioSIS Other Vi	Viable
Other: DUM (TTP) All Samples	TEM: AHERA 7400 Bulk/NOB	B EPA Level II	
Lab ID # Client ID #	Material/Location	Volume Area	Results
33 HM-14m-134	while 12424 CT		
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esearch.	Red Cedar Consult: PO Box 13216 Lansing, MI 48901 19-4566 Far ind Times:	(TTP) All Samples	Client ID # HA-HS-OC Received
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Red Cedar Consulting

Tables

#### Table 1 - Summary of Hazardous Materials, 367 E Holbrook Ave., Muskegon Michigan

Hazardous Materials Description and Location				
Location	Location Material Description			
Exterior	5-Gallon Container Tar			
Living	Gallon Container Misc. Paint			
Basement	Basement 5-Gallon Container Misc. Paint			
Basement Gallon Container Misc. Paint		6		

Table 2 - Summary of Sample Descriptions and Asbestos Laboratory Results, 367 E Holbrook Ave., Muskegon Michigan

Sample Number	Sample Description	Friable	Material Type	Material Classificatio n	% Asbestos Laboratory Result	Sample Location	Approx. Material Quantity
HA-HM-01A	Asphalt Shingle	No	М	Category I	ND/ND/ND/ ND/ND	Exterior	NA
HA-HM-01B	Asphalt Shingle	No	М	Category I	ND/ND/ND/ND	Exterior	NA
HA-HM-02A	Fiberboard and Vapor Barrier	Yes	М	Category II	ND/ND	Exterior	NA
HA-HM-02B	Fiberboard and Vapor Barrier	Yes	М	Category II	ND/ND	Exterior	NA
НА-НМ-03А	Asphalt Shingle	No	М	Category I	ND/ND/ND	Garage Exterior	NA
HA-HM-03B	Asphalt Shingle	No	М	Category I	ND/ND/ND	Garage Exterior	NA
HA-HM-04A	Window Glazing	Yes	М	Category II	1.25%CH-PC	Garage	3 Windows
HA-HM-04B	Window Glazing	Yes	М	Category II	NA	Garage	NA
HA-HM-05A	Gray Linoleum	No	М	Category I	ND/ND	Front Entry	NA
HA-HM-05B	Gray Linoleum	No	М	Category I	ND/ND	Front Entry	NA
HA-HM-06A	White 12"x12" Vinyl Tile	No	М	Category I	ND/ND	Kitchen	NA
HA-HM-06B	White 12"x12" Vinyl Tile	No	М	Category I	ND/ND	Kitchen	NA
HA-HM-07A	Brown 12"x12" Vinyl Tile	No	М	Category I	ND/ND	Bathroom	NA
HA-HM-07B	Brown 12"x12" Vinyl Tile	No	М	Category I	ND/ND	Bathroom	NA
HA-HM-08A	1'x1' White Pitted Ceiling Tile	Yes	М	Category II	ND	Dining	NA
HA-HM-08B	1'x1' White Pitted Ceiling Tile	Yes	М	Category II	ND	N Bedroom	NA
НА-НМ-09А	Glazing	Yes	М	Category II	ND	Front Porch	NA
HA-HM-09B	Glazing	Yes	М	Category II	5%CH	Dining	33 Windows
HA-HM-10A	Flashing	No	М	Category II	ND	Exterior	NA
HA-HM-10B	Flashing	No	М	Category II	ND	Exterior	NA
HA-HM-11A	Drywall and Compound	No	М	Category II	ND/ND	Rear Entry	NA
HA-HM-11B	Drywall and Compound	No	М	Category II	ND/ND	Kitchen	NA
HA-HM-12A	White and Brown 9"x9" Vinyl Tile	No	М	Category I	5%CH/ Trace CH-PC	Basement	851 sq. ft.
HA-HM-12B	White and Brown 9"x9" Vinyl Tile	No	М	Category I	NA	Basement	NA
НА-НМ-13А	White 12"x24" Ceiling Tile	Yes	М	Category II	ND	Basement	NA
HA-HM-13B	White 12"x24" Ceiling Tile	Yes	М	Category II	ND	Basement	NA
HA-HS-01A	Plaster	No	S	Category II	ND/ND	S Bedroom Ceiling	NA

Table 2 - Summary of Sample Descriptions and Asbestos Laboratory Results, 367 E Holbrook Ave., Muskegon Michigan

Sample Number	Sample Description	Friable	Material Type	Material Classificatio n	% Asbestos Laboratory Result	Sample Location	Approx. Material Quantity
HA-HS-01B	Plaster	No	S	Category II	ND/ND	Dining Ceiling	NA
HA-HS-01C	Plaster	No	S	Category II	ND/ND	Dining Wall	NA
HA-HS-01D	Plaster	No	S	Category II	ND/ND	Living Wall	NA
HA-HS-01E	Plaster	No	S	Category II	ND/ND	S Bedroom Wall	NA
HA-HS-02A	Texture	No	S	Category II	ND	Dining Ceiling	NA
HA-HS-02B	Texture	No	S	Category II	ND	Living Ceiling	NA
HA-HS-02C	Texture	No	S	Category II	ND	N Bedroom Ceiling	NA

#### Notes:

#### Material Types

- M = Miscellaneous building material
- TSI = Thermal System Insulation
- S = Surfacing Material
- PC = Point Count Analysis
- CH = Chrysotile Asbestos

#### Abbreviations

- NQ = Not quantified
- NA = Not applicable
- ND = Not detected. Laboratory result is less than 1 % asbestos
- lin. ft. = linear feet
- sq. ft. = square feet

Asbestos Containing Material (ACM) is defined as any material containing more than 1 percent asbestos as determined utilizing Polarized Light Microscopy.

Table 3 - Summary of Presumed Asbestos	<b>Containing Materials</b> ,	, 367 E Holbrook Ave	Muskegon Michigan

Asbestos Containing Material Description and Location						
Location	Material Description	Friable	Condition	Material Type	Approx. Quantity	
Living (2 registers, 20 sq. ft.) Dining (1 register, 10 sq. ft.) S Bedroom (1 register, 10 sq. ft.)	HVAC Duct Wrap	Yes	Fair	TSI	50 sq. ft.	
Basement (16 pieces of 3" HVAC Tape on 6" dia. Ductwork)(8 sq. ft.)	3" HVAC Tape	Yes	Fair	TSI	8 sq. ft.	
Basement (HVAC Tape on Cold Air Return Ductwork and Wood Framing, 10 sq. ft.)	HVAC Tape	Yes	Fair	TSI	10 sq. ft.	

#### Notes:

Material Types

#### Abbreviations

M= Miscellaneous building materialTSI= Thermal System InsulationS= Surfacing Material

lin. ft. = linear feet sq. ft. = square feet

Location	Material Description		Friable	Approx. Quantity
Basement	White and Brown 9"x9" Vinyl Tile		No	851 sq. ft.
	-	Total		851 sq. ft.
Interior - Asbestos Containing Materials				-
Location	Material Description		Friable	Approx. Quantity
Living (2 registers, 20 sq. ft.) Dining (1 register, 10 sq. ft.) S Bedroom (1 register, 10 sq. ft.)	HVAC Duct Wrap		Yes	40 sq. ft.
		Total		40 sq. ft.
Interior - Asbestos Containing Materials				
Location	<b>Material Description</b>		Friable	Approx. Quantity
Basement (16 pieces of 3" HVAC Tape on 6" dia. Ductwork)(8 sq. ft.)	3" HVAC Tape		Yes	8 sq. ft.
		Total		8 sq. ft.
Interior - Asbestos Containing Materials				
Location	<b>Material Description</b>		Friable	Approx. Quantity
Basement (HVAC Tape on Cold Air Return Ductwork and Wood Framing, 10 sq. ft.)	HVAC Tape		Yes	10 sq. ft.
		Total		10 sq. ft.
Interior - Asbestos Containing Materials				
Location	<b>Material Description</b>		Friable	Approx. Quantity
Garage (3 windows 28" wide x 46" tall)	Glazing		Yes	3 Windows
Interior (12 windows 26" wide x 54" tall)	Glazing		Yes	12 Windows
Interior (9 windows 28" wide x 54" tall)	Glazing		Yes	9 Windows
Interior (1 window 44" wide x 44" tall)	Glazing		Yes	1 Window
Interior (3 windows 26" wide x 28" tall)	Glazing (Storm and Regular)		Yes	3 Windows
Interior (1 window 24" wide x 36" tall)	Glazing		Yes	1 Window
Interior (1 window 32" wide x 48" tall)	Glazing (Storm and Regular)		Yes	1 Window
Basement (6 windows 23" wide x 20" tall)	Glazing		Yes	6 Windows
		Total		<b>36 Windows</b>

### Table 4 - Summary of All Asbestos Containing Materials, 367 E Holbrook Ave., Muskegon Michigan

#### Table 4 - Summary of All Asbestos Containing Materials, 367 E Holbrook Ave., Muskegon Michigan

Notes: Abbreviations

lin. ft. = linear feet sq. ft. = square feet

**Shaded/Bolded** = Friable ACM and any Category I and Category II non-friable ACM that has a high probability of becoming crumbled, pulverized, or reduced to powder by the demolition or renovation activities that must be properly abated prior to commencement of any demolition/renovation activities.

Demolition/renovation activities completed with intact Category I non-friable ACM are regulated by OSHA and must be completed following the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

Please note that a Negative Pressure Enclosure must be utilized during abatement when Site Conditions Warrant. Examples of these conditions include the abatement of Plaster and Vermiculite insulation, HVAC Duct Wrap in Poor Condition, and Air-O-Cell/Mag Pipe Wrap. Conditions outside of these should be assessed on a case by case basis during the Asbestos Abatement Contractors site walk and Work Plan Preparation.



P.O. Box 13216 Lansing, MI 48901 Phone: 888.449.4566 Fax: 888.448.8739 www.redcedarconsulting.net

October 29, 2018

Mr. Tim Burgess Muskegon County Land Bank Land Bank Coordinator 173 E. Apple Avenue, Suite 104 Muskegon, MI 49442

#### RE: Asbestos Containing Material and Hazardous Materials Inspection 501 E Apple Ave., Muskegon, MI 49442 Parcel ID: 61-24-205-066-0004-00

Dear Mr. Burgess:

Red Cedar Consulting has completed an asbestos-containing material (ACM) and hazardous materials inspection at 501 E Apple Ave., Muskegon, Michigan (Subject Property). This inspection was completed at the request of the Muskegon County Land Bank to comply with the United States Environmental Protection Agency (USEPA) requirements for demolition and renovation set forth under the National Emissions Standards for Hazardous Air Pollutants (NESHAP, 40 CFR Part 61). This inspection was also completed to comply with the Occupational Safety and Health Administration (OSHA) Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

#### **SUBJECT PROPERTY**

The Subject Property is comprised of a .20 acre residential parcel which contains an approximate 2,600 square foot residential building (the Building) with an unknown construction date. The Building was constructed on a concrete block basement with two aboveground floors. The exterior walls of the Building were finished with vinyl over foamboard over wood lap and felt while the roof was sealed with asphalt shingles. The Building can be further divided into three apartments for inspection purposes.

#### VISUAL INSPECTION AND SAMPLING

#### **Asbestos Containing Materials Inspection**

Mr. Aaron Paquet of Red Cedar Consulting (Red Cedar), an accredited State of Michigan/EPA Asbestos Building Inspector (Accreditation Number A30955) whom completed training per the Michigan Asbestos Workers Accreditation Act 440 completed an inspection of the Subject Property on October 11, 2018 for suspected asbestos containing building materials.

This inspection, and subsequent sample collection was completed in accordance with the USEPA Asbestos Hazard Emergency Response Act (AHERA) (40 CFR Part 763) assessment and sampling protocol.

During the completion of the inspection, each area of the Subject Property was visually inspected for asbestos containing building materials (ACBM). Following the completion of the visual inspection, Red Cedar staff identified each suspect area of friable and non-friable ACBM and sorted them into one of three homogenous categories for sampling purposes. AHERA defines friable as a material that when dry, may be crumbled, pulverized, or reduced to powder by hand pressure. A homogenous area is defined by OSHA as an area of surfacing, thermal system insulation (TSI) or miscellaneous material that is uniform in color and texture. Surfacing materials are most commonly found in sprayed-on, troweled-on or otherwise applied to surfaces, such as acoustical plaster on ceilings and fireproofing materials on structural members. TSI refers to materials applied to pipes, fittings, boilers, ductwork, or other components to prevent heat loss or gain, or condensation. Any material that does not fall under the surfacing or TSI category, such as floor tile, drywall, and acoustical ceiling tile are placed into the miscellaneous materials category.

Following the completion of the visual inspection, Red Cedar staff identified the following materials as suspect ACBM:

- Asphalt Shingle
- Rolled Roofing
- Chimney Flashing
- Linoleum
- Glazing
- Felt Paper
- Plaster

Red Cedar staff collected twenty seven samples of suspect ACBM separated into eleven distinct homogenous groups for laboratory analysis. Samples were collected and submitted to APEX Research Inc. Laboratories (APEX) (Accreditation Number 102118-0) for laboratory analysis. Analysis was completed utilizing polarized light microscopy (PLM) which is the Environmental Protection Agency (EPA) approved method for analysis of bulk materials for asbestos. PLM analysis completed pursuant to method (EPA 600/M4-82-020) identifies asbestos fiber bundles by the visual properties displayed when the sample is treated with various dispersion staining liquids. The laboratory report completed following the sample analysis indicates if asbestos is present, and at what percentage along with a description and percentage of other fibrous and non-fibrous materials and sample color. Chain-of-custody documentation was followed from sample collection through shipping and receiving of the samples at the designated laboratory. The documentation assures that samples will meet the quality assurance/quality control measures defined by AHERA. The laboratory analytical report prepared by APEX for the twenty seven samples is included as Attachment A.

#### **Hazardous Materials Inspection**

On October 11, 2018 the Subject Property was also inspected for the presence of hazardous materials which include but are not limited to polychlorinated biphenyls (PCBs) and potential mercury containing equipment and any items or containers that may contain or be classified as a hazardous or regulated material. Each material, if identified, was documented along with the approximate location. Any materials identified as hazardous are included in Table 1.

#### **INSPECTION RESULTS AND RECOMMENDATIONS**

During the completion of the asbestos inspection, twenty seven samples of suspect ACM were collected and are documented in Table 2 along with the Red Cedar sample number, description, friability, material type, ACM classification, sample location, material quantity and laboratory analytical results.

ACM, as defined by the USEPA NESHAP is "any material containing more than 1 percent asbestos as determined using the method specified in appendix E, subpart E, 40 CFR part 763 Section 1, Polarized Light Microscopy".

Friable ACM is defined by NESHAP as any material containing more than 1 percent asbestos that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. Friable ACM is a concern due the ease of unintentionally disturbing the ACM which may result in "visible emissions" which is known as a Fiber Release Episode.

Non-friable asbestos-containing material is defined as "material containing more than 1 percent asbestos that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. Non-friable ACM's are separated into Category I and Category II ACM. Category I ACM is any asbestos containing packing's, gaskets, resilient floor coverings (vinyl floor tile and linoleum are examples of these) and asphalt roofing products. Category II ACM is stated by NESHAP as any material excluding Category I non-friable ACM such as drywall, plaster or fiberboard insulation.

#### **Presumed Asbestos Containing Material**

Presumed Asbestos Containing Materials (PACM) are suspect surfacing, TSI and miscellaneous materials found in buildings constructed prior to 1980 which are classified as and due to the age of the structure, are assumed to be ACM and do not require sample collection and analysis. OSHA dictates that PACM may be "rebutted" following a complete inspection pursuant to AHERA protocol.

The HVAC Duct Wrap located in the Building was classified as PACM due to the age of the structure and samples were not collected.

Table 3 lists the location, material description, friability, condition, material type (surfacing, thermal or miscellaneous) and approximate quantity of all PACM documented at the Subject Property.

Table 4 provides a summary all ACM documented at the Subject Property which includes the material location, description, and approximate quantity.

#### Friable ACM's

A window glazing sample collected from a window in the Basement was found to contain up to 1.25% asbestos following analysis. The assessment to quantify the extent of this material identified two windows at the following locations that would fall into the same homogenous group. The locations of the windows are listed below:

• Basement (2 windows 32" wide x 14" tall)

Duct Wrap identified in the building in conjunction with the forced air heating system is classified as friable ACM. The visual assessment to quantify the extent of this material identified HVAC Duct Wrap at the following locations within the basement, first and second floors:

- N Apt. Living (1 register, 15 sq. ft.)
- N Apt. Kitchen (1 register, 15 sq. ft.)
- N Apt. Bathroom (1 register, 15 sq. ft.)
- N Apt. Bedroom (1 register, 15 sq. ft.)
- S Apt. Living (1 register, 15 sq. ft.)
- 2nd Fl. Living (1 register, 10 sq. ft. and vertical chase to basement, 25 sq. ft.)
- 2nd Fl. Kitchen (1 register, 10 sq. ft. and vertical chase to basement, 25 sq. ft.)
- 2nd Fl. Bedroom (1 register, 10 sq. ft. and vertical chase to basement, 25 sq. ft.)
- 2nd Fl. Bathroom (1 register, 10 sq. ft. and vertical chase to basement, 25 sq. ft.)

#### Category I ACM

No Category I ACM was identified during the completion of this inspection.

#### Category II ACM

No Category II non-friable ACM was identified during the completion of this inspection.

#### **RECOMMENDATIONS**

#### **Asbestos Containing Materials**

HVAC material identified in the Building system and listed below is classified as friable ACM and should be removed prior to any renovation/demolition activities.

- N Apt. Living (1 register, 15 sq. ft.)
- N Apt. Kitchen (1 register, 15 sq. ft.)
- N Apt. Bathroom (1 register, 15 sq. ft.)
- N Apt. Bedroom (1 register, 15 sq. ft.)
- S Apt. Living (1 register, 15 sq. ft.)
- 2nd Fl. Living (1 register, 10 sq. ft. and vertical chase to basement, 25 sq. ft.)
- 2nd Fl. Kitchen (1 register, 10 sq. ft. and vertical chase to basement, 25 sq. ft.)
- 2nd Fl. Bedroom (1 register, 10 sq. ft. and vertical chase to basement, 25 sq. ft.)
- 2nd Fl. Bathroom (1 register, 10 sq. ft. and vertical chase to basement, 25 sq. ft.)

Friable asbestos containing window glazing was identified on two windows throughout the Building. The locations of these windows that should be abated prior to demolition/renovation activities are listed below:

• Basement (2 windows 32" wide x 14" tall)

Please note: Other different sized windows are located throughout the Building but these windows were assessed and found to be constructed either without window glazing or were sampled and found to not contain asbestos and therefore are not required to be removed.

Please note: The location of samples obtained during this inspection were in a random fashion and areas that were not identified during this inspection may be damaged or have become damaged since the inspection was completed. If Category I or Category II friable materials are discovered prior to or during the demolition/renovation process, these materials must be abated prior to commencement of any demolition/renovation activities at the Subject Property.

#### **Hazardous Materials**

Hazardous Materials identified at the Subject Property and documented in Table 1 which require proper removal and disposal consist of the following items:

- Spray Can Misc. Paint (4)
- Smoke Detector (2)
- Gallon Container Misc. Paint (7)
- 2' Fluorescent Light (Fixture and Ballast Only) (1)
- 2' Fluorescent Bulb (2)
- 5 Gallon Container Misc. Paint (1)

#### **REGULATORY REQUIREMENTS**

A Notification of Intent to Renovate/Demolish form must be filed with the Michigan Department of Environmental Quality- Air Quality Division at least 10 working days prior to any renovation or demolition activities at a site.

The Notification of Intent to Renovate/Demolish form must also be completed and submitted to the MIOSHA-Asbestos Program whenever demolition, encapsulation and/or renovation activities at a site involving greater than ten lineal feet and/or fifteen square feet of ACM will be completed.

Regulated asbestos containing materials per NESHAP (40 CFR Part 61) which falls into any of the following categories are ACM's that must be removed prior to any renovation/demolition activities at the Subject Property.

- Friable asbestos material.
- Category I non-friable ACM that has become friable.
- Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading.

• Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of renovation or demolition operations.

Asbestos abatement should only be performed by a certified asbestos abatement contractor licensed to complete abatement work. The contractor must also follow the standards and requirements set forth per the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) and the USEPA NESHAP (40 CFR Part 61).

Additional information regarding the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) and the USEPA NESHAP (40 CFR Part 61) can be obtained by contacting the associated agency below.

NESHAP Asbestos Program Department of Environmental Quality Phone: 517-284-6777 MIOSHA-CSHD-Asbestos Program State of Michigan Phone: 517-284-7680 Email: asbestos@michigan.gov

#### **DISCLAIMER**

Red Cedar Consulting performed destructive testing methods in an attempt to access and inspect all areas of the Building. Unfortunately, due to the age of construction along with multiple additions/renovations that may have been completed on the Building, additional inspections may be required if suspect ACM material not documented within this report is encountered during renovation/demolition activities.

This report was prepared at the request and for exclusive use by the Muskegon County Land Bank and may not be reproduced or sold without written permission from Red Cedar Consulting.

We appreciate the opportunity to provide the requested services. Please contact us at (888) 449-4566 with any questions or concerns.

Sincerely, Red Cedar Consulting

Raion loquet

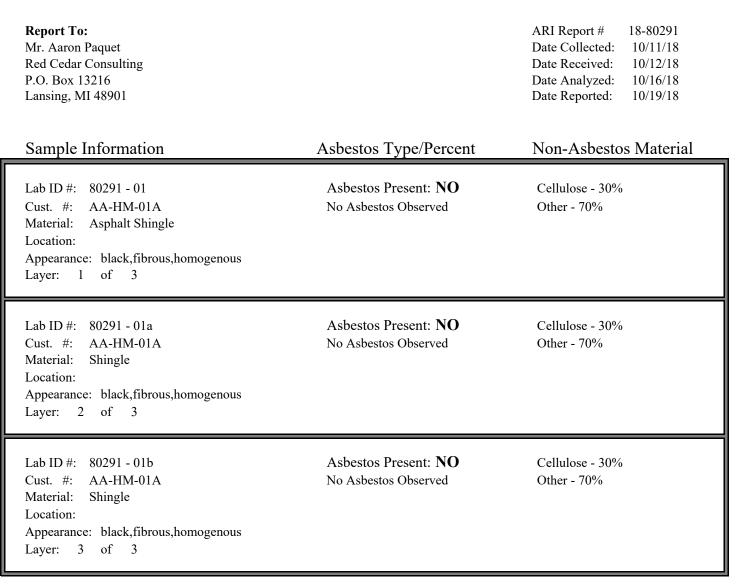
Aaron Paquet Michigan/EPA Certified Asbestos Building Inspector (A30955)

Red Cedar Consulting

# Attachment 1

APEX Research Laboratory Analytical Results

Project : 501 E. Apple Ave.



For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director





Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project : 501 E. Apple Ave.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80291Date Collected:10/11/18Date Received:10/12/18Date Analyzed:10/16/18Date Reported:10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80291 - 02 Cust. #: AA-HM-01B Material: Asphalt Shingle Location: Appearance: black,fibrous,homogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%
Lab ID #: 80291 - 02a Cust. #: AA-HM-01B Material: Shingle Location: Appearance: black,fibrous,homogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 40% Other - 60%
Lab ID #: 80291 - 02b Cust. #: AA-HM-01B Material: Shingle Location: Appearance: black,fibrous,homogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%

For Layered Samples, each component will be analyzed and reported separately.

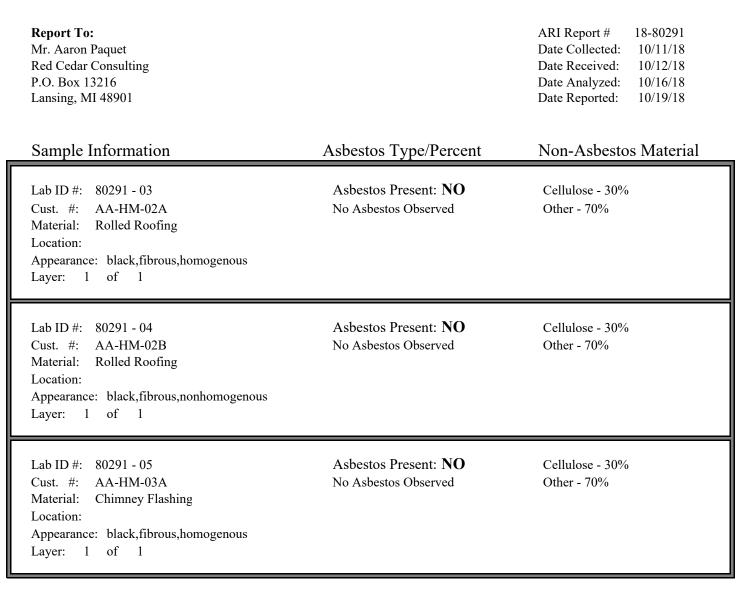
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Robert T. Letarte Jr., Laboratory Director

<b>Certificate of Laboratory Analysis</b>	
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Test Method, Polarized Light Microscopy (PLM)

Project : 501 E. Apple Ave.



For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

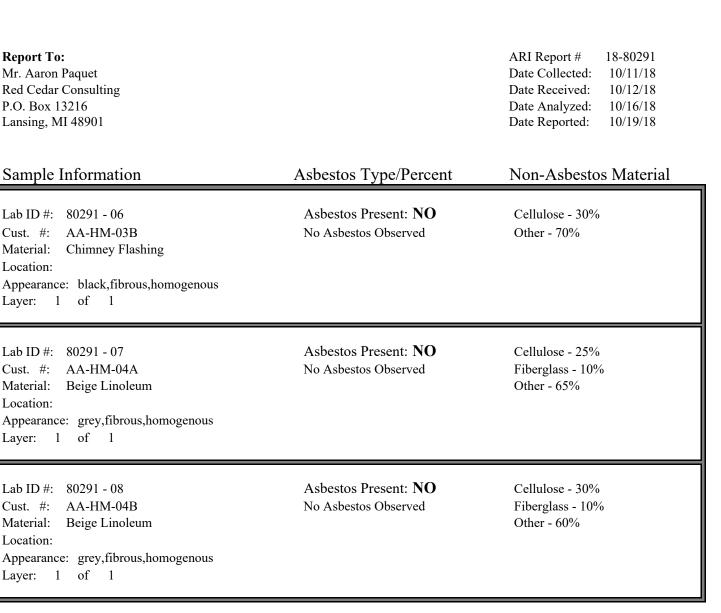




Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project : 501 E. Apple Ave.



For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



APEX Research Inc., 11054 Hi Tech Drive, Whitmore Lake, MI 48189 (734) 449-9990, Fax (734) 449-9991

# **Certificate of Laboratory Analysis**

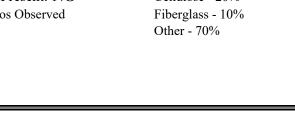
Test Method, Polarized Light Microscopy (PLM)

Project : 501 E. Apple Ave.

#### **Report To:** ARI Report # 18-80291 Date Collected: Mr. Aaron Paquet 10/11/18 Red Cedar Consulting Date Received: 10/12/18 P.O. Box 13216 Date Analyzed: 10/16/18 Lansing, MI 48901 Date Reported: 10/19/18 Sample Information Asbestos Type/Percent Non-Asbestos Material Lab ID #: 80291 - 09 Asbestos Present: NO Cellulose - 25% Cust. #: AA-HM-05A No Asbestos Observed Fiberglass - 10% Material: Tan Linoleum Other - 65% Location: Appearance: beige,fibrous,homogenous Layer: of 2 1 Asbestos Present: NO 80291 - 09a Cellulose - 30% Lab ID #: Cust. #: AA-HM-05A No Asbestos Observed Other - 70% Material: Linoleum Location: Appearance: beige,fibrous,homogenous of Layer: 2 2 Lab ID #: 80291 - 10 Asbestos Present: NO Cellulose - 20% AA-HM-05B No Asbestos Observed Cust. #: Fiberglass - 10% Other - 70% Material: Tan Linoleum Location: Appearance: beige,fibrous,homogenous Layer: 1 of 2

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director





Project : 501 E. Apple Ave.



Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80291Date Collected:10/11/18Date Received:10/12/18Date Analyzed:10/16/18Date Reported:10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80291 - 10a Cust. #: AA-HM-05B Material: Linoleum Location: Appearance: black,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%
Lab ID #: 80291 - 11 Cust. #: AA-HM-06A Material: Green Linoleum Location: Appearance: green,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 35% Other - 65%
Lab ID #: 80291 - 12 Cust. #: AA-HM-06B Material: Green Linoleum Location: Appearance: green,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%

For Layered Samples, each component will be analyzed and reported separately.

Kut

Robert T. Letarte Jr., Laboratory Director



APEX Research Inc., 11054 Hi Tech Drive, Whitmore Lake, MI 48189

(734) 449-9990, Fax (734) 449-9991

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. APEX Research Inc. is not

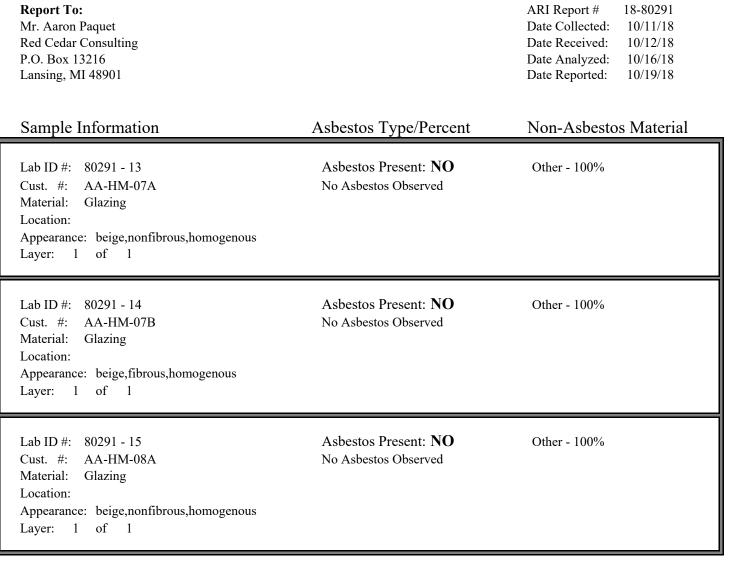
responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.

NVLAP Lab Code 102118-0

# **Certificate of Laboratory Analysis**

Test Method, Polarized Light Microscopy (PLM)

Project : 501 E. Apple Ave.



For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director





## Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project : 501 E. Apple Ave.

**Report To:** ARI Report # 18-80291 Date Collected: Mr. Aaron Paquet 10/11/18 Red Cedar Consulting Date Received: 10/12/18 P.O. Box 13216 Date Analyzed: 10/16/18 Lansing, MI 48901 Date Reported: 10/19/18 Sample Information Asbestos Type/Percent Non-Asbestos Material Lab ID #: 80291 - 16 Asbestos Present: NO Other - 100% Cust. #: AA-HM-08B No Asbestos Observed Material: Glazing Location: Appearance: beige, nonfibrous, homogenous Layer: of 1 1 Asbestos Present: YES 80291 - 17 Other - 98.75% Lab ID #: Cust. #: AA-HM-09A Chrysotile - 1.25% Material: Glazing Location: Appearance: grey,fibrous,homogenous POINT COUNT RESULT of Layer: 1 1 Lab ID #: 80291 - 18 Asbestos Present: AA-HM-09B Cust. #: Material: Glazing Location: NOT ANALYZED Appearance: Layer: of

For Layered Samples, each component will be analyzed and reported separately.

Kant To

Robert T. Letarte Jr., Laboratory Director





Location: Appearance: black,fibrous,homogenous Layer: of 1 1 80291 - 20 Lab ID #: Cust. #: AA-HM-10B Material: Felt Paper Location: Appearance: black,fibrous,homogenous of Layer: 1 1

Cust. #: AA-HS-01A Material: Plaster Location: Appearance: brown,fibrous,homogenous Layer: 1 of 2

NVLAP Lab Code 102118-0

**Report To:** 

Mr. Aaron Paquet

For Layered Samples, each component will be analyzed and reported separately.

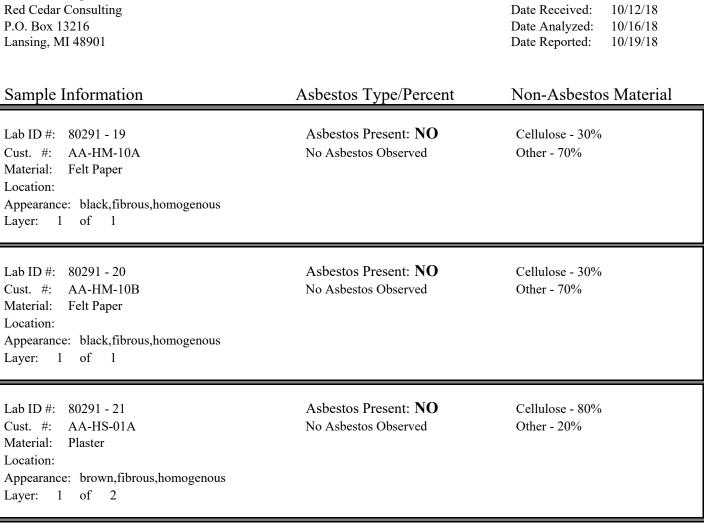
Robert T. Letarte Jr., Laboratory Director

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### **Certificate of Laboratory Analysis**

Test Method, Polarized Light Microscopy (PLM)

Project : 501 E. Apple Ave.





18-80291

10/11/18

ARI Report #

Date Collected:

Test Method, Polarized Light Microscopy (PLM)

Project : 501 E. Apple Ave.



Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		Date Collected:10/11/18Date Received:10/12/18Date Analyzed:10/16/18Date Reported:10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80291 - 21a Cust. #: AA-HS-01A Material: Mortar Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Other - 98%
Lab ID #: 80291 - 22 Cust. #: AA-HS-01B Material: Plaster Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80291 - 22a Cust. #: AA-HS-01B Material: Mortar Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Other - 98%

For Layered Samples, each component will be analyzed and reported separately.

Kut Jet

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the US Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.



**Report To:** 

ICarry

Appearance: white, nonfibrous, homogenous Layer: of 2 1 Asbestos Present: NO 80291 - 23a Cellulose - 2% Lab ID #: Cust. #: AA-HS-01C No Asbestos Observed Other - 98% Material: Mortar Location: Appearance: grey,fibrous,homogenous of Layer: 2 2 Lab ID #: 80291 - 24 Asbestos Present: NO Other - 100% Cust. #: AA-HS-01D No Asbestos Observed Material: Plaster Location: Appearance: white, nonfibrous, homogenous

ARI Report #AtDate Collected:altingDate Received:Date Analyzed:Date Reported:D1Date Reported:

**Certificate of Laboratory Analysis** Test Method, Polarized Light Microscopy (PLM)

Project : 501 E. Apple Ave.

Asbestos Type/Percent

Asbestos Present: NO

No Asbestos Observed

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the US Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.

For Layered Samples, each component will be analyzed and reported separately.



18-80291

10/11/18

10/12/18

10/16/18

10/19/18

Non-Asbestos Material

Other - 100%

Robert T. Letarte Jr., Laboratory Director

Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901

Sample Information

80291 - 23

Plaster

AA-HS-01C

Lab ID #:

Cust. #:

Material:

Location:

Layer:

1

of 2

APEX Research Inc., 11054 Hi Tech Drive, Whitmore Lake, MI 48189

(734) 449-9990, Fax (734) 449-9991

NVLAP Lab Code 102118-0

**Report To:** 

### **Certificate of Laboratory Analysis**

Test Method, Polarized Light Microscopy (PLM)

Project : 501 E. Apple Ave.

Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		Date Collected:10/11/18Date Received:10/12/18Date Analyzed:10/16/18Date Reported:10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80291 - 24a Cust. #: AA-HS-01D Material: Mortar Location: Appearance: grey,fibrous,nonhomogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Other - 98%
Lab ID #: 80291 - 25 Cust. #: AA-HS-01E Material: Plaster Location: Appearance: grey,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Hair - 5% Other - 95%
Lab ID #: 80291 - 26 Cust. #: AA-HS-01F Material: Plaster Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

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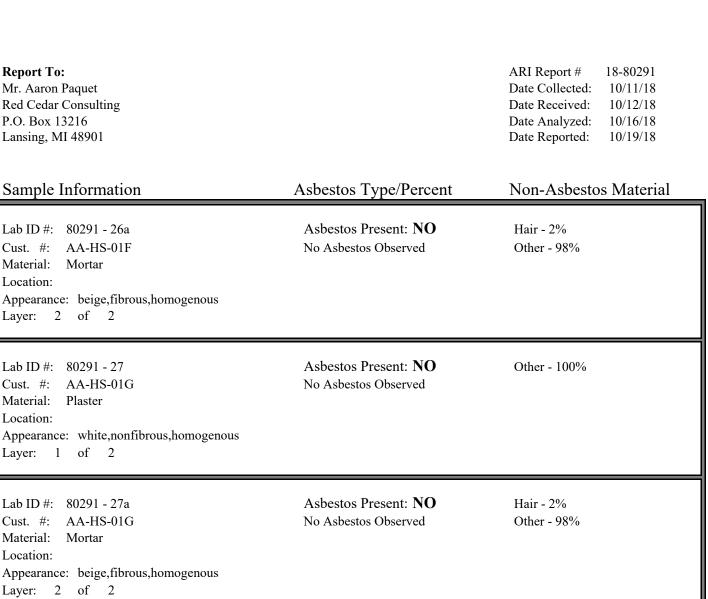


18-80291

ARI Report #

Test Method, Polarized Light Microscopy (PLM)

Project : 501 E. Apple Ave.



For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the US Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.



Lab ID #:

Cust. #:

Material:

Location:

Lab ID #: Cust. #:

Material:

Location:

Lab ID #:

Cust. #:

Material:

Location:

Layer:

Layer:



Appendix 1 and 1 a	Del el	
ti di	APEX	
Client Name: Red Cedar Consulting Address: PO Box 13216 City St 7in: Lansing MT 48901 City St 7in: Lansing MT 48901 Project : 50 E. Hople Mue	Lab Use Only Log-In Report	
Fax : (888) 448-8739 imes: (Circle One) PLM EPA 600, Asbestos: Bulk <sup>x</sup> Wi	consulting.net f <5% ACM.	
	Viable	
Lab ID # Client ID # Material/Location Bulk/NOB EPA Level II Area	Results	
1 put time 1.4 Ashert Shiple.		
5 HA-HM-33A Chimmen steeling 6 HA-HM-33K 12 11		
7 AM-HM-OHA BeigeLadium		
G AA-HM-OSA Tan Libeleun		
HA-HM-GA C	RECEIVED	<u>C</u>
Relinquished by:1	Received by: <u>J. J. M. O</u> CT 1 2 2018 Date: ////////////DEX AFSFARCH	C
Date:	and a property of the property of the second s	5

Work Forms: COC

APEX APEX REGEARCH	Lab Use Only Log-In Report	- nsulting.net <5% ACM.	Viable	Results Received	n in annual a
	10-11-18 Apple Ave .	Aaron Paquet apaquet@redcedarco th a detection of th PCM	sr Soil	Arca Arca	
MI 48189 Phone: 73 ni.net Fax: 734	7 vey : 5 2 1 5		Air Paint BioSIS Othe B EPA Level II	Volume	
11054 Hi Tech Drive, Whitmore Lake, MI 48189 Phone: 734-449-9990 E-mail: apexresearch@chartermi.net Fax: 734-449-9991	Date of Sur Project : Project # ·	B8) 448-8739       Contact Person:         0ne)       PLM EPA 600, PC all samples w         Asbestos: Bulk       X	Bulk     Wipe       Bulk     Tape       AHERA 7400     Bulk/NOB	Material/Location Green Liveleur Gleering i relt Peper i Plaston i Relinquished by: Date:	
1 1	ting.	Fax : (888) 4 S. (Circle One) Asbest	Lead: Mold: TEM:	Wi UU	
APEX Research, Inc.	Red Cedar Consulti PO Box 13216	ind Times:	TTP All Samples	Client 24-44- 44-44- 44-44- 44-44- 44-44- 44-45- 44-45- 44-45-	
APEX R		Phone: (888) 449-4566 Fax: (888) 4 <b>Turn Around Times:</b> (Circle One) Asbesi	<i>u</i>	Lab ID # Lab ID # 17 17 17 17 17 17 17 17 17 17	Rev <sup>.</sup> 12/03

Work Forms: COC

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A A A A A A A A A A A A A A A A A A A	Lab Use Only Log-In	Viable	DCT 1 2 2018
Phone: 734-449-9990 Fax: 734-449-9991	C - 11-18 E. Aple M.C., Aaron Paquet apaquet@redcedarcc th a detection of	Area	Received by: Date :
	Aan Aan L	Air Paint Paint BioSIS Othe Volume Vo	
Inc. 11054 Hi Tech Drive, Whitmore Lake, MI 48189 E-mail: apexresearch@chartermi.net	Date of Project Project Project Contaci rcle One) PLM EPA 600, PC all	Lead: Bulk Wipe Mold: Bulk Tape TEM: AHERA 7400 Bulk/NOB Material/Location Plasher 1 1	by: $\frac{WPS}{UO - U - UP}$ Relinquished by: Date :
APEX Research, In	Client Name: Red Cedar Consulting Address: PO Box 13216 City, St., Zip: Lansing, MI 48901 Phone: (888)449-4566 Fax: (888) 4 <b>Turn Around Times:</b> (Circle One)	Rush 24 hour 48 hour 72 hour Other: 5 Day TP All Samples Lab ID # Client ID # 24 AA-45-ele 35 AA-45-ele 34 AA-5-ele 35 AA-45-ele	Relinquished by: Control Received by: WPS Date : 10-11-18 Date : 10-11-1

Red Cedar Consulting

Tables

	Hazardous Materials Description and Location				
Location	Material Description	Quantity			
Exterior	Spray Can Misc. Paint	4			
N Apt. N Bedroom	Smoke Detector	1			
N Apt. S Bedroom	Smoke Detector	1			
N Apt. Living	Gallon Container Misc. Paint	1			
S Apt. Bathroom	2' Fluorescent Light (Fixture and Ballast Only)	1			
S Apt. Bathroom	2' Fluorescent Bulb	2			
2 <sup>nd</sup> Fl. Apt. Rear Entry	Gallon Container Misc. Paint	5			
Basement	5 Gallon Container Misc. Paint	1			
Basement	Gallon Container Misc. Paint	1			

Sample Number	Sample Description	Friable	Material Type	Material Classification	% Asbestos Laboratory Result	Sample Location	Approx. Material Quantity
AA-HM-01A	Asphalt Shingle	No	М	Category I	ND/ND/ND	Exterior	NA
AA-HM-01B	Asphalt Shingle	No	М	Category I	ND/ND/ND	Exterior	NA
AA-HM-02A	Rolled Roofing	No	М	Category I	ND	Exterior	NA
AA-HM-02B	Rolled Roofing	No	М	Category I	ND	Exterior	NA
AA-HM-03A	Chimney Flashing	No	М	Category II	ND	Exterior	NA
AA-HM-03B	Chimney Flashing	No	М	Category II	ND	Exterior	NA
AA-HM-04A	Beige Linoleum	No	М	Category I	ND	N Apt. Bathroom	NA
AA-HM-04B	Beige Linoleum	No	М	Category I	ND	S Apt. Kitchen	NA
AA-HM-05A	Tan Linoleum	Yes	М	Category II	ND/ND	S Apt. Side Entry	NA
AA-HM-05B	Tan Linoleum	Yes	М	Category II	ND/ND	2 <sup>nd</sup> Fl. Apt. Bathroom	NA
AA-HM-06A	Green Linoleum	Yes	М	Category II	ND	2 <sup>nd</sup> Fl. Apt. S Bedroom	NA
AA-HM-06B	Green Linoleum	Yes	М	Category II	ND	2 <sup>nd</sup> Fl. Apt. S Bedroom	NA
AA-HM-07A	Glazing	Yes	М	Category II	ND	2 <sup>nd</sup> Fl. Apt. SW Bedroom	NA
AA-HM-07B	Glazing	Yes	М	Category II	ND	N Apt. S Bedroom	NA
AA-HM-08A	Glazing	Yes	М	Category II	ND	Sunroom	NA
AA-HM-08B	Glazing	Yes	М	Category II	ND	Sunroom	NA
AA-HM-09A	Glazing	Yes	М	Category II	1.25%CH-PC	Basement	2 Windows
AA-HM-09B	Glazing	Yes	М	Category II	NA	Basement	NA
AA-HM-10A	Felt Paper	Yes	М	Category II	ND	Exterior	NA
AA-HM-10B	Felt Paper	Yes	М	Category II	ND	Exterior	NA
AA-HS-01A	Plaster	No	S	Category II	ND/ND	N Apt. S Bedroom Ceiling	NA
AA-HS-01B	Plaster	No	S	Category II	ND/ND	N Apt. Kitchen Ceiling	NA
AA-HS-01C	Plaster	No	S	Category II	ND/ND	N Apt. S Bedroom Wall	NA
AA-HS-01D	Plaster	No	S	Category II	ND/ND	N Apt. Kitchen Wall	NA
AA-HS-01E	Plaster	No	S	Category II	ND	S Apt. Ceiling	NA
AA-HS-01F	Plaster	No	S	Category II	ND/ND	S Apt. Living Wall	NA
AA-HS-01G	Plaster	No	S	Category II	ND/ND	2 <sup>nd</sup> Fl. Apt. Wall	NA

#### Table 2 - Summary of Sample Descriptions and Asbestos Laboratory Results, 501 E Apple Ave., Muskegon, Michigan

#### Notes:

Material Types	Abbreviations
M = Miscellaneous building material	NQ = Not quantified
TSI = Thermal System Insulation	NA = Not applicable
S = Surfacing Material	ND = Not detected. Laboratory result is less than 1 % asbestos
PC = Point Count Analysis	lin. ft. = linear feet
CH = Chrysotile Asbestos	sq. ft. $=$ square feet

Asbestos Containing Material (ACM) is defined as any material containing more than 1 percent asbestos as determined utilizing Polarized Light Microscopy.

Location	Material Description	Friable	Condition	Material Type	Approx. Quantity
N Apt. Living (1 register, 15 sq. ft.) N Apt. Kitchen (1 register, 15 sq. ft.) N Apt. Bathroom (1 register, 15 sq. ft.) N Apt. Bedroom (1 register, 15 sq. ft.) S Apt. Living (1 register, 15 sq. ft.) 2 <sup>nd</sup> Fl. Living (1 register, 10 sq. ft. and vertical chase to basement, 25 sq. ft.) 2 <sup>nd</sup> Fl. Kitchen (1 register, 10 sq. ft. and vertical chase to basement, 25 sq. ft.) 2 <sup>nd</sup> Fl. Bedroom (1 register, 10 sq. ft. and vertical chase to basement, 25 sq. ft.) 2 <sup>nd</sup> Fl. Bedroom (1 register, 10 sq. ft. and vertical chase to basement, 25 sq. ft.)	HVAC Duct Wrap	Yes	Fair	TSI	215 sq. ft.

#### Table 3 - Summary of Presumed Asbestos Containing Materials, 501 E Apple Ave., Muskegon, Michigan

Notes:

Material Types

#### Abbreviations

- M = Miscellaneous building material TSI = Thermal System Insulation
- S = Surfacing Material

lin. ft. = linear feet sq. ft. = square feet

Interior - Asbestos Containing Materials				
Location	<b>Material Description</b>		Friable	Approx. Quantity
N Apt. Living (1 register, 15 sq. ft.) N Apt. Kitchen (1 register, 15 sq. ft.) N Apt. Bathroom (1 register, 15 sq. ft.) N Apt. Bedroom (1 register, 15 sq. ft.) S Apt. Living (1 register, 15 sq. ft.) 2 <sup>nd</sup> Fl. Living (1 register, 10 sq. ft. and vertical chase to basement, 25 sq. ft.) 2 <sup>nd</sup> Fl. Kitchen (1 register, 10 sq. ft. and vertical chase to basement, 25 sq. ft.) 2 <sup>nd</sup> Fl. Bedroom (1 register, 10 sq. ft. and vertical chase to basement, 25 sq. ft.) 2 <sup>nd</sup> Fl. Bathroom (1 register, 10 sq. ft. and vertical chase to basement, 25 sq. ft.)	HVAC Duct Wrap		Yes	215 sq. ft.
		Total		215 sq. ft.
Interior - Asbestos Containing Materials				
Location	Material Description		Friable	Approx. Quantity
Basement (2 windows 32" wide x 14" tall)	Glazing		Yes	2 Windows
		Total		2 Windows

#### Table 4 - Summary of All Asbestos Containing Materials, 501 E Apple Ave., Muskegon, Michigan

### Notes:

Abbreviations

lin. ft. = linear feet sq. ft. = square feet

**Shaded/Bolded** = Friable ACM and any Category I and Category II non-friable ACM that has a high probability of becoming crumbled, pulverized, or reduced to powder by the demolition or renovation activities that must be properly abated prior to commencement of any demolition/renovation activities.

Demolition/renovation activities completed with intact Category I non-friable ACM are regulated by OSHA and must be completed following the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

Please note that a Negative Pressure Enclosure must be utilized during abatement when Site Conditions Warrant. Examples of these conditions include the abatement of Plaster and Vermiculite insulation, HVAC Duct Wrap in Poor Condition, and Air-O-Cell/Mag Pipe Wrap. Conditions outside of these should be assessed on a case by case basis during the Asbestos Abatement Contractors site walk and Work Plan Preparation.



P.O. Box 13216 Lansing, MI 48901 Phone: 888.449.4566 Fax: 888.448.8739 www.redcedarconsulting.net

October 29, 2018

Mr. Tim Burgess Muskegon County Land Bank Land Bank Coordinator 173 E. Apple Avenue, Suite 104 Muskegon, MI 49442

#### RE: Asbestos Containing Material and Hazardous Materials Inspection 1679 Park St., Muskegon, MI 49441 Parcel ID: 61-24-205-438-0008-00

Dear Mr. Burgess:

Red Cedar Consulting has completed an asbestos-containing material (ACM) and hazardous materials inspection at 1679 Park St., Muskegon, Michigan (Subject Property). This inspection was completed at the request of the Muskegon County Land Bank to comply with the United States Environmental Protection Agency (USEPA) requirements for demolition and renovation set forth under the National Emissions Standards for Hazardous Air Pollutants (NESHAP, 40 CFR Part 61). This inspection was also completed to comply with the Occupational Safety and Health Administration (OSHA) Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

#### **SUBJECT PROPERTY**

The Subject Property is comprised of a .14 acre residential parcel which contains an approximate 1,274 square foot residential building (the Building) with an unknown construction date. The Building was constructed on a concrete block basement with two aboveground floors. The exterior walls of the Building were finished with vinyl over asphalt siding and a vapor barrier while the roof was sealed with asphalt shingles. The Building can be further divided into a front entry, living room, dining room, kitchen, bath, two bedrooms, a pantry and rear entry on the first floor while the second floor contains three bedrooms.

#### VISUAL INSPECTION AND SAMPLING

#### **Asbestos Containing Materials Inspection**

Mr. Aaron Paquet of Red Cedar Consulting (Red Cedar), an accredited State of Michigan/EPA Asbestos Building Inspector (Accreditation Number A30955) whom completed training per the Michigan Asbestos Workers Accreditation Act 440 completed an inspection of the Subject Property on October 10, 2018 for suspected asbestos containing building materials.

This inspection, and subsequent sample collection was completed in accordance with the USEPA Asbestos Hazard Emergency Response Act (AHERA) (40 CFR Part 763) assessment and sampling protocol.

During the completion of the inspection, each area of the Subject Property was visually inspected for asbestos containing building materials (ACBM). Following the completion of the visual inspection, Red Cedar staff identified each suspect area of friable and non-friable ACBM and sorted them into one of three homogenous categories for sampling purposes. AHERA defines friable as a material that when dry, may be crumbled, pulverized, or reduced to powder by hand pressure. A homogenous area is defined by OSHA as an area of surfacing, thermal system insulation (TSI) or miscellaneous material that is uniform in color and texture. Surfacing materials are most commonly found in sprayed-on, troweled-on or otherwise applied to surfaces, such as acoustical plaster on ceilings and fireproofing materials on structural members. TSI refers to materials applied to pipes, fittings, boilers, ductwork, or other components to prevent heat loss or gain, or condensation. Any material that does not fall under the surfacing or TSI category, such as floor tile, drywall, and acoustical ceiling tile are placed into the miscellaneous materials category.

Following the completion of the visual inspection, Red Cedar staff identified the following materials as suspect ACBM:

- Asphalt Shingle
- Asphalt Siding
- Vapor Barrier
- Flashing
- Sheet Vinyl
- Linoleum
- 12"x12" Vinyl Floor Tile
- Glazing
- Drywall and Joint Compound
- Mastic
- Plaster
- Texture

Red Cedar staff collected thirty six samples of suspect ACBM separated into fifteen distinct homogenous groups for laboratory analysis. Samples were collected and submitted to APEX Research Inc. Laboratories (APEX) (Accreditation Number 102118-0) for laboratory analysis. Analysis was completed utilizing polarized light microscopy (PLM) which is the Environmental Protection Agency (EPA) approved method for analysis of bulk materials for asbestos. PLM analysis completed pursuant to method (EPA 600/M4-82-020) identifies asbestos fiber bundles by the visual properties displayed when the sample is treated with various dispersion staining liquids. The laboratory report completed following the sample analysis indicates if asbestos is present, and at what percentage along with a description and percentage of other fibrous and non-fibrous materials and sample color. Chain-of-custody documentation was followed from sample collection through shipping and receiving of the samples at the designated laboratory. The documentation assures that samples will meet the quality assurance/quality control measures defined by AHERA. The laboratory analytical report prepared by APEX for the thirty six samples is included as Attachment A.

#### **Hazardous Materials Inspection**

On October 10, 2018 the Subject Property was also inspected for the presence of hazardous materials which include but are not limited to polychlorinated biphenyls (PCBs) and potential mercury containing equipment and any items or containers that may contain or be classified as a hazardous or regulated material. Each material, if identified, was documented along with the approximate location. Any materials identified as hazardous are included in Table 1.

### **INSPECTION RESULTS AND RECOMMENDATIONS**

During the completion of the asbestos inspection, thirty six samples of suspect ACM were collected and are documented in Table 2 along with the Red Cedar sample number, description, friability, material type, ACM classification, sample location, material quantity and laboratory analytical results.

ACM, as defined by the USEPA NESHAP is "any material containing more than 1 percent asbestos as determined using the method specified in appendix E, subpart E, 40 CFR part 763 Section 1, Polarized Light Microscopy".

Friable ACM is defined by NESHAP as any material containing more than 1 percent asbestos that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. Friable ACM is a concern due the ease of unintentionally disturbing the ACM which may result in "visible emissions" which is known as a Fiber Release Episode.

Non-friable asbestos-containing material is defined as "material containing more than 1 percent asbestos that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. Non-friable ACM's are separated into Category I and Category II ACM. Category I ACM is any asbestos containing packing's, gaskets, resilient floor coverings (vinyl floor tile and linoleum are examples of these) and asphalt roofing products. Category II ACM is stated by NESHAP as any material excluding Category I non-friable ACM such as drywall, plaster or fiberboard insulation.

#### **Presumed Asbestos Containing Material**

Presumed Asbestos Containing Materials (PACM) are suspect surfacing, TSI and miscellaneous materials found in buildings constructed prior to 1980 which are classified as and due to the age of the structure, are assumed to be ACM and do not require sample collection and analysis. OSHA dictates that PACM may be "rebutted" following a complete inspection pursuant to AHERA protocol.

The HVAC Duct Wrap located in the Building was classified as PACM due to the age of the structure and samples were not collected.

Table 3 lists the location, material description, friability, condition, material type (surfacing, thermal or miscellaneous) and approximate quantity of all PACM documented at the Subject Property.

Table 4 provides a summary all ACM documented at the Subject Property which includes the material location, description, and approximate quantity.

#### Friable ACM's

Duct Wrap identified in the building in conjunction with the forced air heating system is classified as friable ACM. The visual assessment to quantify the extent of this material identified HVAC Duct Wrap at the following locations within the basement, first and second floors:

- Kitchen (1 register, 15 sq. ft.)
- Living (1 register, 15 sq. ft.)
- Dining (1 register, 15 sq. ft.)
- 2nd Fl. Hallway (1 register, 10 sq. ft. and vertical chase to basement, 25 sq. ft.)
- Basement (misc. HVAC Wrap on Framing, 6 sq. ft.)

### Category I ACM

One type of resilient floor covering (Tan Sheet Vinyl) located within the kitchen was found to contain up to 30% Chrysotile asbestos. The assessment to quantify the extent of this material identified approximately 228 sq. ft. of this material within the Building.

#### **Category II ACM**

No Category II non-friable ACM was identified during the completion of this inspection.

#### **RECOMMENDATIONS**

#### **Asbestos Containing Materials**

HVAC material identified in the Building system and listed below is classified as friable ACM and should be removed prior to any renovation/demolition activities.

- Kitchen (1 register, 15 sq. ft.)
- Living (1 register, 15 sq. ft.)
- Dining (1 register, 15 sq. ft.)
- 2nd Fl. Hallway (1 register, 10 sq. ft. and vertical chase to basement, 25 sq. ft.)
- Basement (misc. HVAC Wrap on Framing, 6 sq. ft.)

The Category I resilient floor covering (Tan Sheet Vinyl) is a non-friable ACM that may be left in place as long as the demolition/renovation activities are completed following the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

Please note: The location of samples obtained during this inspection were in a random fashion and areas that were not identified during this inspection may be damaged or have become damaged since the inspection was completed. If Category I or Category II friable materials are discovered prior to or during the demolition/renovation process, these materials must be abated prior to commencement of any demolition/renovation activities at the Subject Property.

#### **Hazardous Materials**

Hazardous Materials identified at the Subject Property and documented in Table 1 which require proper removal and disposal consist of the following items:

- Thermostat (1)
- Smoke Detector (6)
- Quart Container Misc. Paint (24)
- Spray Can Misc. Paint (13)
- Gallon Container Misc. Paint (28)
- 5 Gallon Container Mis. Paint (1)
- Automobile Tire (1)

### **REGULATORY REQUIREMENTS**

A Notification of Intent to Renovate/Demolish form must be filed with the Michigan Department of Environmental Quality- Air Quality Division at least 10 working days prior to any renovation or demolition activities at a site.

The Notification of Intent to Renovate/Demolish form must also be completed and submitted to the MIOSHA-Asbestos Program whenever demolition, encapsulation and/or renovation activities at a site involving greater than ten lineal feet and/or fifteen square feet of ACM will be completed.

Regulated asbestos containing materials per NESHAP (40 CFR Part 61) which falls into any of the following categories are ACM's that must be removed prior to any renovation/demolition activities at the Subject Property.

- Friable asbestos material.
- Category I non-friable ACM that has become friable.
- Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading.
- Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of renovation or demolition operations.

Asbestos abatement should only be performed by a certified asbestos abatement contractor licensed to complete abatement work. The contractor must also follow the standards and requirements set forth per the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) and the USEPA NESHAP (40 CFR Part 61).

Additional information regarding the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) and the USEPA NESHAP (40 CFR Part 61) can be obtained by contacting the associated agency below.

NESHAP Asbestos Program Department of Environmental Quality Phone: 517-284-6777 MIOSHA-CSHD-Asbestos Program State of Michigan Phone: 517-284-7680 Email: asbestos@michigan.gov

#### **DISCLAIMER**

Red Cedar Consulting performed destructive testing methods in an attempt to access and inspect all areas of the Building. Unfortunately, due to the age of construction along with multiple additions/renovations that may have been completed on the Building, additional inspections may be required if suspect ACM material not documented within this report is encountered during renovation/demolition activities.

This report was prepared at the request and for exclusive use by the Muskegon County Land Bank and may not be reproduced or sold without written permission from Red Cedar Consulting.

We appreciate the opportunity to provide the requested services. Please contact us at (888) 449-4566 with any questions or concerns.

Sincerely, Red Cedar Consulting

Raion Poquet

Aaron Paquet Michigan/EPA Certified Asbestos Building Inspector (A30955)

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Red Cedar Consulting

### Attachment 1

APEX Research Laboratory Analytical Results

Test Method, Polarized Light Microscopy (PLM)

Project : 1679 Park St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80290         Date Collected:       10/10/18         Date Received:       10/12/18         Date Analyzed:       10/18/18         Date Reported:       10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80290 - 01 Cust. #: PS-HM-01A Material: Asphalt Shingle Location: Appearance: black,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 20% Other - 80%
Lab ID #: 80290 - 02 Cust. #: PS-HM-01B Material: Asphalt Shingle Location: Appearance: black,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 20% Other - 80%
Lab ID #: 80290 - 03 Cust. #: PS-HM-02A Material: Asphalt Siding Location: Appearance: black,fibrous,homogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%

For Layered Samples, each component will be analyzed and reported separately.

Kut Joh

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 1679 Park St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80290         Date Collected:       10/10/18         Date Received:       10/12/18         Date Analyzed:       10/18/18         Date Reported:       10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80290 - 03a Cust. #: PS-HM-02A Material: Backing Location: Appearance: brown,fibrous,homogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 65% Other - 35%
Lab ID #: 80290 - 03b Cust. #: PS-HM-02A Material: Paper Location: Appearance: brown,fibrous,homogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 75% Other - 25%
Lab ID #: 80290 - 04 Cust. #: PS-HM-02B Material: Asphalt Siding Location: Appearance: black,fibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 1679 Park St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80290         Date Collected:       10/10/18         Date Received:       10/12/18         Date Analyzed:       10/18/18         Date Reported:       10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80290 - 04a Cust. #: PS-HM-02B Material: Asphalt Shingle Location: Appearance: beige,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 65% Other - 35%
Lab ID #: 80290 - 05 Cust. #: PS-HM-03A Material: Chimney/Vent Flashing Location: Appearance: black,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80290 - 06 Cust. #: PS-HM-03B Material: Chimney/Vent Flashing Location: Appearance: black,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

Kant Joh

Robert T. Letarte Jr., Laboratory Director



For Layered Samples, each component will be analyzed and reported separately.

# Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.

NVLAP Lab Code 102118-0

Page 4 of 18

Test Method, Polarized Light Microscopy (PLM)

**Certificate of Laboratory Analysis** 

Project : 1679 Park St.

Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		Date Collected:10/10/18Date Received:10/12/18Date Analyzed:10/18/18Date Reported:10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80290 - 07 Cust. #: PS-HM-04A Material: Tan Sheet Vinyl Location: Appearance: yellow,fibrous,homogenous Layer: 1 of 3	Asbestos Present: <b>YES</b> Chrysotile - 30%	Other - 70%
Lab ID #: 80290 - 07a Cust. #: PS-HM-04A Material: Floor Tile Location: Appearance: beige,nonfibrous,homogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80290 - 07b Cust. #: PS-HM-04A Material: Linoleum Location: Appearance: beige,nonfibrous,homogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

**Report To:** 

ARI Report # 18-80290



Test Method, Polarized Light Microscopy (PLM)

Project : 1679 Park St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80290         Date Collected:       10/10/18         Date Received:       10/12/18         Date Analyzed:       10/18/18         Date Reported:       10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80290 - 08 Cust. #: PS-HM-04B Material: Tan Sheet Vinyl	Asbestos Present:	
Location: Appearance: Layer: of	NOT ANALYZED	
Lab ID #: 80290 - 09 Cust. #: PS-HM-05A Material: Tan Linoleum Location: Appearance: grey,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80290 - 09a Cust. #: PS-HM-05A Material: Tan Linoleum Location: Appearance: brown,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 60% Other - 40%

For Layered Samples, each component will be analyzed and reported separately.

Sout

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 1679 Park St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80290         Date Collected:       10/10/18         Date Received:       10/12/18         Date Analyzed:       10/18/18         Date Reported:       10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80290 - 10 Cust. #: PS-HM-05B Material: Tan Linoleum Location: Appearance: grey,fibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%
Lab ID #: 80290 - 10a Cust. #: PS-HM-05B Material: Tan Linoleum Location: Appearance: brown,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 65% Other - 35%
Lab ID #: 80290 - 11 Cust. #: PS-HM-06A Material: Beige 12x12 VFT Location: Appearance: grey,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%

For Layered Samples, each component will be analyzed and reported separately.

Sout

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 1679 Park St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80290Date Collected:10/10/18Date Received:10/12/18Date Analyzed:10/18/18Date Reported:10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80290 - 12 Cust. #: PS-HM-06B Material: Beige 12x12 VFT Location: Appearance: grey,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%
Lab ID #: 80290 - 13 Cust. #: PS-HM-07A Material: 8" Square Linoleum Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80290 - 14 Cust. #: PS-HM-07B Material: 8" Square Linoleum Location: Appearance: beige,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Fiberglass - 10% Other - 70%

For Layered Samples, each component will be analyzed and reported separately.

Kut Joh

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 1679 Park St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80290         Date Collected:       10/10/18         Date Received:       10/12/18         Date Analyzed:       10/18/18         Date Reported:       10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80290 - 15 Cust. #: PS-HM-08A Material: Old Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%
Lab ID #: 80290 - 16 Cust. #: PS-HM-08B Material: Old Linoleum Location: Appearance: beige,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%
Lab ID #: 80290 - 17 Cust. #: PS-HM-09A Material: Block Linoleum Location: Appearance: black,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%

For Layered Samples, each component will be analyzed and reported separately.

Kut Joh

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 1679 Park St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80290Date Collected:10/10/18Date Received:10/12/18Date Analyzed:10/18/18Date Reported:10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80290 - 18 Cust. #: PS-HM-09B Material: Block Linoleum Location: Appearance: black,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%
Lab ID #: 80290 - 19 Cust. #: PS-HM-10A Material: Floral Linoleum Location: Appearance: brown,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%
Lab ID #: 80290 - 20 Cust. #: PS-HM-10B Material: Floral Linoleum Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%

For Layered Samples, each component will be analyzed and reported separately.

Sout

Robert T. Letarte Jr., Laboratory Director



### Project : 1679 Park St.

**Certificate of Laboratory Analysis** Test Method, Polarized Light Microscopy (PLM)



Report 10: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80290Date Collected:10/10/18Date Received:10/12/18Date Analyzed:10/18/18Date Reported:10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80290 - 21 Cust. #: PS-HM-11A Material: Glazing Location: Appearance: beige,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80290 - 22 Cust. #: PS-HM-11B Material: Glazing Location: Appearance: beige,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80290 - 23 Cust. #: PS-HM-12A Material: Joint Compound Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 1679 Park St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80290         Date Collected:       10/10/18         Date Received:       10/12/18         Date Analyzed:       10/18/18         Date Reported:       10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80290 - 23a Cust. #: PS-HM-12A Material: Drywall Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80290 - 24 Cust. #: PS-HM-12B Material: Joint Compound Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80290 - 24a Cust. #: PS-HM-12B Material: Drywall Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director



Cust. #.	P	S-HN	M-13B
Material	P	arov	e Floor Mastic
Location	:		
Appeara	nce:	brow	wn,nonfibrous,homogenous
Layer:	1	of	1
-			

**Report To:** 

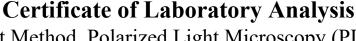
Mr. Aaron Paquet

For Layered Samples, each component will be analyzed and reported separately.

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the US Government. APEX Research Inc. is not

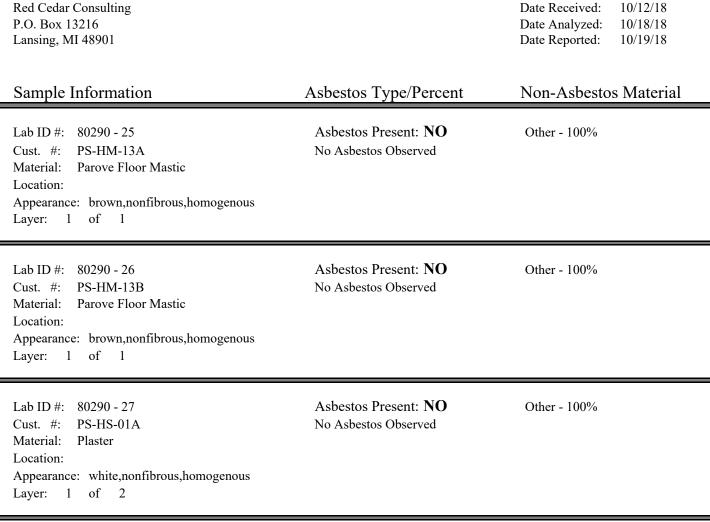
responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.

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# Test Method, Polarized Light Microscopy (PLM)

Project : 1679 Park St.





18-80290

10/10/18

ARI Report #

Date Collected:

Robert T. Letarte Jr., Laboratory Director

Test Method, Polarized Light Microscopy (PLM)

Project : 1679 Park St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80290         Date Collected:       10/10/18         Date Received:       10/12/18         Date Analyzed:       10/18/18         Date Reported:       10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80290 - 27a Cust. #: PS-HS-01A Material: Mortar Location: Appearance: grey,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 5% Other - 95%
Lab ID #: 80290 - 28 Cust. #: PS-HS-01B Material: Plaster Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80290 - 28a Cust. #: PS-HS-01B Material: Mortar Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Other - 98%

For Layered Samples, each component will be analyzed and reported separately.

Kant Joh

Robert T. Letarte Jr., Laboratory Director



Asbestos Present: NO

Asbestos Type/Percent

Asbestos Present: NO

No Asbestos Observed

Cust. #: PS-HS-01C Material: Mortar	No Asbestos Observed	Other - 98%
Location:		
Appearance: grey,fibrous,homogenous		
Layer: 2 of 2		
		0/1 1000/
Lab ID #: 80290 - 30	Asbestos Present: <b>NO</b>	Other - 100%
Cust. #: PS-HS-01D	No Asbestos Observed	
Material: Plaster		
Location:		
Appearance: white, nonfibrous, homogenous		
repearance. winte, nonnorous, nonnogenous		
Layer: 1 of 2		

For Layered Samples, each component will be analyzed and reported separately.

**Report To:** 

Lab ID #:

Cust. #:

Material:

Location:

Layer:

Mr. Aaron Paquet

P.O. Box 13216

Lansing, MI 48901

Red Cedar Consulting

Sample Information

80290 - 29

PS-HS-01C

Appearance: white, nonfibrous, homogenous

2

Plaster

of

1

Lab ID #: 80290 - 29a

Sent

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the US Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.

#### Page 14 of 18

Non-Asbestos Material

ARI Report #

Date Collected:

Date Received:

Date Analyzed:

Date Reported:

Other - 100%

Cellulose - 2%

**Certificate of Laboratory Analysis** 

Test Method, Polarized Light Microscopy (PLM)

Project : 1679 Park St.



18-80290

10/10/18

10/12/18

10/18/18

10/19/18

Test Method, Polarized Light Microscopy (PLM)

Project : 1679 Park St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80290Date Collected:10/10/18Date Received:10/12/18Date Analyzed:10/18/18Date Reported:10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80290 - 30a Cust. #: PS-HS-01D Material: Mortar Location: Appearance: grey,fibrous,nonhomogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Other - 98%
Lab ID #: 80290 - 31 Cust. #: PS-HS-01E Material: Plaster Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80290 - 31a Cust. #: PS-HS-01E Material: Mortar Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Other - 98%

For Layered Samples, each component will be analyzed and reported separately.

Kent Jot

Robert T. Letarte Jr., Laboratory Director



### Asbestos Type/Percent

Sample Information Non-Asbestos Material Lab ID #: 80290 - 32 Asbestos Present: NO Other - 100% Cust. #: PS-HS-01F No Asbestos Observed Material: Plaster Location: Appearance: white, nonfibrous, homogenous Layer: of 2 1 Asbestos Present: NO Other - 100% Lab ID #: 80290 - 32a Cust. #: PS-HS-01F No Asbestos Observed Material: Mortar Location: Appearance: white, nonfibrous, homogenous of Layer: 2 2 Lab ID #: 80290 - 33 Asbestos Present: NO Other - 100% PS-HS-01G No Asbestos Observed Cust. #: Material: Plaster Location: Appearance: white, nonfibrous, homogenous Layer: 1 of 2

For Layered Samples, each component will be analyzed and reported separately.

NVLAP Lab Code 102118-0

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the US Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.



Test Method, Polarized Light Microscopy (PLM)

Project : 1679 Park St.

**Certificate of Laboratory Analysis** 

**Report To:** Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901

ARI Report # 18-80290 Date Collected: 10/10/18 Date Received: 10/12/18 Date Analyzed: 10/18/18 Date Reported: 10/19/18

#### Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the US Government. APEX Research Inc. is not

APEX Research Inc., 11054 Hi Tech Drive, Whitmore Lake, MI 48189 (734) 449-9990, Fax (734) 449-9991

Robert T. Letarte Jr., Laboratory Director

Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80290         Date Collected:       10/10/18         Date Received:       10/12/18         Date Analyzed:       10/18/18         Date Reported:       10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80290 - 33a Cust. #: PS-HS-01G Material: Mortar Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Other - 98%
Lab ID #: 80290 - 34 Cust. #: PS-HS-02A Material: Texture Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80290 - 35 Cust. #: PS-HS-02B Material: Texture	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

**Certificate of Laboratory Analysis** 

Test Method, Polarized Light Microscopy (PLM)

Project : 1679 Park St.



Location:

1

of 1

Layer:

Appearance: white, nonfibrous, homogenous

For Layered Samples, each component will be analyzed and reported separately.

responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.

Test Method, Polarized Light Microscopy (PLM)

Project : 1679 Park St.

Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		Date Collected:10/10/18Date Received:10/12/18Date Analyzed:10/18/18Date Reported:10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80290 - 36 Cust. #: PS-HS-02C Material: Texture Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: Cust. #: Material: Location: Appearance: Layer: of	Asbestos Present:	
Lab ID #: Cust. #: Material: Location: Appearance: Layer: of	Asbestos Present:	

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the US Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.



**Report To:** 



18-80290

ARI Report #

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ि	Phone: 734-449-9990 Fax: 734-449-9991	10-10-18	Paquet et@redcedarcons letection of <5 PCM	t Soil Other Viable vel II	Area							Received by: 3.7	Date : 10/12/1	•.
		6	<pre>#: t Person: Aaron Paquet apaquet@redcedarconsulting.net samples with a detection of &lt;5% ACM. Point PCM</pre>		Volume									
Арех # Арех #	$APEX \ Research, Inc. {}^{11054  \mathrm{Hi}  \mathrm{Tech  Drive, Whitmore  Lake, MI  48189}}_{\mathrm{E-mail: apexresearch@chartermi.net}}$		Project Project Contact PLM EPA 600, PC all		Material/Location	Asphart Shibyle	Asphalt Siddy ) vegar Barrie	Chimmed Vont Flashing	1 a. 2 Sheet Unry 1	Ten Lindleum	Beige 12×12-0 FT.	₽ Å	11-13	
	APEX Research,	Client Name: Red Cedar Consulting Address: PO Box 13216	City, St., Zip: Lansing, MI 48901 Phone: (888) 449-4566 Fax : (888) 4 <b>Turn Around Times:</b> (Circle One)	Rush 24 hour 48 hour 72 hour Other: 50 of TTA All Samples	Lab ID # Client ID #		3 PSymology	4 Bym-22B	8 Bytom Stanous	a Bitmash	Harmy 20 11	Relinquished by:	11-13	Rev. 12/03 Work Forms: COC

2 a F 4 APEX RESEARCH	Lab Use Only Log-in	PECENTE 0CT 1 2 2018
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APEX Research, Inc. 11054 Hi Tech Drive, Whitmore Lake, MI 48189 Phone: 734-449-9990 E-mail: apexresearch@chartermi.net Fax: 734-449-9991	Client Name:Red Cedar ConsultingAddress:PO Box 13216Address:PO Box 13216Address:Po Box 13216City, St., Zip:Lansing, MI 48901Phone:(888) 449-4566Fax:(888) 4Phone:(888) 449-4566Fax:(888) 4Phone:(888) 449-4566Fax:(888) 4Phone:(888) 449-4566Fax:(888) 4Phone:(888) 449-4566Fand:(1000)Address:(1000)About <t< td=""><td></td></t<>	

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APEX Research, Inc.	Red Cedar Co PO Box 13216	City, St., Zip: Lansing, MI 48901 Phone: (888) 449-4566 Fax: (888) 4 <b>Turn Around TimeS:</b> (Circle One) Asbest Rush 24 hour 48 hour 72 hour Other: DD TTP All Samples TEM:	Client ID # Client	$33$ $B-HS-01$ $B$ Relinquished by:       Received by:         Date : $\sqrt{D-UI-US}$ Date :         Rev. 12/03       Work Forms: COC

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APEX RESEARCH	Lab Use Only Log-In Report 5% ACM.	Results	AFEX RESEARCH
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<b>nc.</b> 11054 Hi Tech Drive, Whitmore Lake, MI 4 E-mail: apexresearch@chartermi.net	Date of         Date of         Project         Project         Project         Project         Project         Plm EPA 600, PC all         os: Bulk       Wipe         Bulk       Wipe         Bulk       Tape	TEM: AHERA 7400 Bulk/NOB Material/Location reverve	WB Relinquished by: Date :
APEX Research, Inc. 11054 Hi Tech Drive, Whitmore Lake, MI 48189 E-mail: apexresearch@chartermi.net	Client Name: Red Cedar Consulting Address: PO Box 13216 City, St., Zip: Lansing, MI 48901 Phone: (888) 449-4566 Fax: (888) 4 Turn Around Times: (Circle One) Rush 24 hour $T_2$ hour $Raberst Circle One$ Rush 24 hour $T_2$ hour $Raberst Circle One$ Asbest other: So $\mathcal{A}$ (TTP) All Samples Mold:	b ID # Client ID # 34 PS-145-02.4 35 PS-145-02.4 36 PS-145-02.5	Relinquished by: Competend by: Received by: Date : 12/03 Work Forms: COC

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Red Cedar Consulting

Tables

Hazardous Materials Description and Location					
Location	Material Description	Quantity			
Living	Thermostat	1			
SE Bedroom	Smoke Detector	1			
Basement Entry	Smoke Detector	2			
Kitchen	Quart Container Misc. Paint	1			
Kitchen	Spray Can Misc. Paint	3			
Rear Entry	Gallon Container Misc. Paint	1			
Rear Entry	Quart Container Misc. Paint	4			
2 <sup>nd</sup> Fl. S Bedroom	Smoke Detector	1			
2 <sup>nd</sup> Fl. E Bedroom	Smoke Detector	1			
2 <sup>nd</sup> Fl. N Bedroom	Smoke Detector	1			
Basement	Automobile Tire	1			
Basement	5 Gallon Container Misc. Paint	1			
Basement	Gallon Container Misc. Paint	27			
Basement	Quart Container Misc. Paint	19			
Basement	Spray Can Misc. Paint	10			

Sample Number	Sample Description	Friable	Material Type	Material Classification	% Asbestos Laboratory Result	Sample Location	Approx. Material Quantity
PS-HM-01A	Asphalt Shingle	No	М	Category I	ND	Exterior	NA
PS-HM-01B	Asphalt Shingle	No	М	Category I	ND	Exterior	NA
PS-HM-02A	Asphalt Siding/Vapor Barrier	No	М	Category I	ND/ND/ND	Exterior	NA
PS-HM-02B	Asphalt Siding/Vapor Barrier	No	М	Category I	ND/ND/ND	Exterior	NA
PS-HM-03A	Chimney/Vent Flashing	No	М	Category II	ND	Exterior	NA
PS-HM-03B	Chimney/Vent Flashing	No	М	Category II	ND	Exterior	NA
PS-HM-04A	Tan Sheet Vinyl	No	М	Category I	30%CH/ND/ND	Kitchen	228 sq. ft.
PS-HM-04B	Tan Sheet Vinyl	No	М	Category I	NA	Kitchen	NA
PS-HM-05A	Tan Linoleum	No	М	Category I	ND/ND	SW Bedroom	NA
PS-HM-05B	Tan Linoleum	No	М	Category I	ND/ND	SE Bedroom Closet	NA
PS-HM-06A	Beige 12"x12" Vinyl Tile	No	М	Category I	ND	Rear Entry	NA
PS-HM-06B	Beige 12"x12" Vinyl Tile	No	М	Category I	ND	Rear Entry	NA
PS-HM-07A	8" Square Linoleum	No	М	Category I	ND	Bathroom	NA
PS-HM-07B	8" Square Linoleum	No	М	Category I	ND	Bathroom	NA
PS-HM-08A	Old Linoleum	No	М	Category I	ND	Pantry	NA
PS-HM-08B	Old Linoleum	No	М	Category I	ND	Pantry	NA
PS-HM-09A	Block Linoleum	No	М	Category I	ND	2 <sup>nd</sup> Fl. N Bedroom Closet	NA
PS-HM-09B	Block Linoleum	No	М	Category I	ND	2 <sup>nd</sup> Fl. S Bedroom Closet	NA
PS-HM-10A	Floral Linoleum	No	М	Category I	ND	2 <sup>nd</sup> Fl. E Bedroom	NA
PS-HM-10B	Floral Linoleum	No	М	Category I	ND	2 <sup>nd</sup> Fl. E Bedroom	NA
PS-HM-11A	Glazing	Yes	М	Category II	ND	Kitchen	NA
PS-HM-11B	Glazing	Yes	М	Category II	ND	2 <sup>nd</sup> Fl. E Bedroom	NA
PS-HM-12A	Drywall and Joint Compound	No	М	Category II	ND/ND	Basement Ceiling	NA
PS-HM-12B	Drywall and Joint Compound	No	М	Category II	ND/ND	Basement Wall	NA
PS-HM-13A	Parove Floor Mastic	No	М	Category I	ND	Basement	NA
PS-HM-13B	Parove Floor Mastic	No	М	Category I	ND	Basement	NA

#### Table 2 - Summary of Sample Descriptions and Asbestos Laboratory Results, 1679 Park St., Muskegon, Michigan

Sample Number	Sample Description	Friable	Material Type	Material Classification	% Asbestos Laboratory Result	Sample Location	Approx. Material Quantity
PS-HS-01A	Plaster	No	S	Category II	ND/ND	Kitchen Ceiling	NA
PS-HS-01B	Plaster	No	S	Category II	ND/ND	Living Ceiling	NA
PS-HS-01C	Plaster	No	S	Category II	ND/ND	Kitchen Wall	NA
PS-HS-01D	Plaster	No	S	Category II	ND/ND	Living Wall	NA
PS-HS-01E	Plaster	No	S	Category II	ND/ND	2 <sup>nd</sup> Fl. S Bedroom Ceiling	NA
PS-HS-01F	Plaster	No	S	Category II	ND/ND	2 <sup>nd</sup> Fl. E Bedroom Wall	NA
PS-HS-01G	Plaster	No	S	Category II	ND/ND	2 <sup>nd</sup> Fl. N Bedroom Wall	NA
PS-HS-02A	Texture	No	S	Category II	ND	SE Bedroom Ceiling	NA
PS-HS-02B	Texture	No	S	Category II	ND	Living Ceiling	NA
PS-HS-02C	Texture	No	S	Category II	ND	SE Bedroom Ceiling	NA

#### Notes:

Material Types

M = Miscellaneous building material

TSI = Thermal System Insulation

S = Surfacing Material

PC = Point Count Analysis

CH = Chrysotile Asbestos

#### Abbreviations

NQ	= Not quantified
----	------------------

NA = Not applicable

ND = Not detected. Laboratory result is less than 1 % asbestos

lin. ft. = linear feet

sq. ft. = square feet

Asbestos Containing Material (ACM) is defined as any material containing more than 1 percent asbestos as determined utilizing Polarized Light Microscopy.

### Table 3 - Summary of Presumed Asbestos Containing Materials, 1679 Park St., Muskegon, Michigan

Asbestos Containing Material Description and Location									
Location	Material Description	Friable	Condition	Material Type	Approx. Quantity				
Kitchen (1 register, 15 sq. ft.) Living (1 register, 15 sq. ft.) Dining (1 register, 15 sq. ft.) 2 <sup>nd</sup> Fl. Hallway (1 register, 10 sq. ft. and vertical chase to basement, 25 sq. ft.) Basement (misc. HVAC Wrap on Framing, 6 sq. ft.)	HVAC Duct Wrap	Yes	Fair	TSI	86 sq. ft.				

#### Notes:

### Material Types

- M= Miscellaneous building materialTSI= Thermal System InsulationS= Surfacing Material

Abbreviations

lin. ft. = linear feet sq. ft. = square feet

Interior - Asbestos Containing Materials				
Location	Material Description		Friable	Approx. Quantity
Kitchen	Tan Sheet Vinyl		No	228 sq. ft.
		Total		228 sq. ft.
Interior - Asbestos Containing Materials				
Location	<b>Material Description</b>		Friable	Approx. Quantity
Kitchen (1 register, 15 sq. ft.) Living (1 register, 15 sq. ft.) Dining (1 register, 15 sq. ft.) 2 <sup>nd</sup> Fl. Hallway (1 register, 10 sq. ft. and vertical chase to basement, 25 sq. ft.) Basement (misc. HVAC Wrap on Framing, 6 sq. ft.)	HVAC Duct Wrap		Yes	86 sq. ft.
· · · · · · · · · · · · · · · · · · ·		Total		86 sq. ft.

### Table 4 - Summary of All Asbestos Containing Materials, 1679 Park St., Muskegon, Michigan

Notes: Abbreviations

lin. ft. = linear feet sq. ft. = square feet

**Shaded/Bolded** = Friable ACM and any Category I and Category II non-friable ACM that has a high probability of becoming crumbled, pulverized, or reduced to powder by the demolition or renovation activities that must be properly abated prior to commencement of any demolition/renovation activities.

Demolition/renovation activities completed with intact Category I non-friable ACM are regulated by OSHA and must be completed following the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

Please note that a Negative Pressure Enclosure must be utilized during abatement when Site Conditions Warrant. Examples of these conditions include the abatement of Plaster and Vermiculite insulation, HVAC Duct Wrap in Poor Condition, and Air-O-Cell/Mag Pipe Wrap. Conditions outside of these should be assessed on a case by case basis during the Asbestos Abatement Contractors site walk and Work Plan Preparation.



P.O. Box 13216 Lansing, MI 48901 Phone: 888.449.4566 Fax: 888.448.8739 www.redcedarconsulting.net

October 29, 2018

Mr. Tim Burgess Muskegon County Land Bank Land Bank Coordinator 173 E. Apple Avenue, Suite 104 Muskegon, MI 49442

### RE: Asbestos Containing Material and Hazardous Materials Inspection 1874 Manz St., Muskegon, MI 49442 Parcel ID: 61-24-890-000-0020-00

Dear Mr. Burgess:

Red Cedar Consulting has completed an asbestos-containing material (ACM) and hazardous materials inspection at 1874 Manz St., Muskegon, Michigan (Subject Property). This inspection was completed at the request of the Muskegon County Land Bank to comply with the United States Environmental Protection Agency (USEPA) requirements for demolition and renovation set forth under the National Emissions Standards for Hazardous Air Pollutants (NESHAP, 40 CFR Part 61). This inspection was also completed to comply with the Occupational Safety and Health Administration (OSHA) Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

#### **SUBJECT PROPERTY**

The Subject Property is comprised of a .11 acre residential parcel which contains an approximate 1,100 square foot residential building (the Building) constructed in 1946. The Building was constructed on a concrete block foundation with one aboveground floor. The exterior walls of the Building were finished with vinyl over fiberboard and a vapor barrier while the roof was sealed with asphalt shingles. The Building can be further divided into a front entry, living room, dining room, kitchen, bathroom, three bedrooms and a rear entry.

### VISUAL INSPECTION AND SAMPLING

#### **Asbestos Containing Materials Inspection**

Mr. Aaron Paquet of Red Cedar Consulting (Red Cedar), an accredited State of Michigan/EPA Asbestos Building Inspector (Accreditation Number A30955) whom completed training per the Michigan Asbestos Workers Accreditation Act 440 completed an inspection of the Subject Property on October 10, 2018 for suspected asbestos containing building materials.

This inspection, and subsequent sample collection was completed in accordance with the USEPA Asbestos Hazard Emergency Response Act (AHERA) (40 CFR Part 763) assessment and sampling protocol.

During the completion of the inspection, each area of the Subject Property was visually inspected for asbestos containing building materials (ACBM). Following the completion of the visual inspection, Red Cedar staff identified each suspect area of friable and non-friable ACBM and sorted them into one of three homogenous categories for sampling purposes. AHERA defines friable as a material that when dry, may be crumbled, pulverized, or reduced to powder by hand pressure. A homogenous area is defined by OSHA as an area of surfacing, thermal system insulation (TSI) or miscellaneous material that is uniform in color and texture. Surfacing materials are most commonly found in sprayed-on, troweled-on or otherwise applied to surfaces, such as acoustical plaster on ceilings and fireproofing materials on structural members. TSI refers to materials applied to pipes, fittings, boilers, ductwork, or other components to prevent heat loss or gain, or condensation. Any material that does not fall under the surfacing or TSI category, such as floor tile, drywall, and acoustical ceiling tile are placed into the miscellaneous materials category.

Following the completion of the visual inspection, Red Cedar staff identified the following materials as suspect ACBM:

- Asphalt Shingle
- Fiberboard
- Vapor Barrier
- Rolled Roofing
- Linoleum
- 9"x9" Vinyl Floor Tile
- Drywall and Joint Compound
- Flashing
- Glazing
- Caulk
- Texture
- Plaster

Red Cedar staff collected twenty eight samples of suspect ACBM separated into thirteen distinct homogenous groups for laboratory analysis. Samples were collected and submitted to APEX Research Inc. Laboratories (APEX) (Accreditation Number 102118-0) for laboratory analysis. Analysis was completed utilizing polarized light microscopy (PLM) which is the Environmental Protection Agency (EPA) approved method for analysis of bulk materials for asbestos. PLM analysis completed pursuant to method (EPA 600/M4-82-020) identifies asbestos fiber bundles by the visual properties displayed when the sample is treated with various dispersion staining liquids. The laboratory report completed following the sample analysis indicates if asbestos is present, and at what percentage along with a description and percentage of other fibrous and non-fibrous materials and sample color. Chain-of-custody documentation was followed from sample collection through shipping and receiving of the samples at the designated laboratory. The documentation assures that samples will meet the quality assurance/quality control measures defined by AHERA. The laboratory analytical report prepared by APEX for the twenty eight samples is included as Attachment A.

#### **Hazardous Materials Inspection**

On October 10, 2018 the Subject Property was also inspected for the presence of hazardous materials which include but are not limited to polychlorinated biphenyls (PCBs) and potential mercury containing equipment and any items or containers that may contain or be classified as a hazardous or regulated material. Each material, if identified, was documented along with the approximate location. Any materials identified as hazardous are included in Table 1.

### **INSPECTION RESULTS AND RECOMMENDATIONS**

During the completion of the asbestos inspection, twenty eight samples of suspect ACM were collected and are documented in Table 2 along with the Red Cedar sample number, description, friability, material type, ACM classification, sample location, material quantity and laboratory analytical results.

ACM, as defined by the USEPA NESHAP is "any material containing more than 1 percent asbestos as determined using the method specified in appendix E, subpart E, 40 CFR part 763 Section 1, Polarized Light Microscopy".

Friable ACM is defined by NESHAP as any material containing more than 1 percent asbestos that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. Friable ACM is a concern due the ease of unintentionally disturbing the ACM which may result in "visible emissions" which is known as a Fiber Release Episode.

Non-friable asbestos-containing material is defined as "material containing more than 1 percent asbestos that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. Non-friable ACM's are separated into Category I and Category II ACM. Category I ACM is any asbestos containing packing's, gaskets, resilient floor coverings (vinyl floor tile and linoleum are examples of these) and asphalt roofing products. Category II ACM is stated by NESHAP as any material excluding Category I non-friable ACM such as drywall, plaster or fiberboard insulation.

### **Presumed Asbestos Containing Material**

Presumed Asbestos Containing Materials (PACM) are suspect surfacing, TSI and miscellaneous materials found in buildings constructed prior to 1980 which are classified as and due to the age of the structure, are assumed to be ACM and do not require sample collection and analysis. OSHA dictates that PACM may be "rebutted" following a complete inspection pursuant to AHERA protocol.

No PACM was identified during the completion of this inspection. All suspect materials identified were sampled and analyzed for ACM.

Table 3 lists the location, material description, friability, condition, material type (surfacing, thermal or miscellaneous) and approximate quantity of all PACM documented at the Subject Property.

Table 4 provides a summary all ACM documented at the Subject Property which includes the material location, description, and approximate quantity.

### Friable ACM's

No friable ACM's were identified during the completion of this inspection.

### **Category I ACM**

One type of resilient floor covering (Red 9"x9" Vinyl Tile) located within the rear entry was found to contain up to 5% Chrysotile asbestos. The assessment to quantify the extent of this material identified approximately 99 sq. ft. of this material within the Building.

### **Category II ACM**

No Category II non-friable ACM was identified during the completion of this inspection.

### **RECOMMENDATIONS**

#### **Asbestos Containing Materials**

The Category I resilient floor covering (Red 9"x9" Vinyl Tile) is a non-friable ACM that may be left in place as long as the demolition/renovation activities are completed following the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

Please note: The location of samples obtained during this inspection were in a random fashion and areas that were not identified during this inspection may be damaged or have become damaged since the inspection was completed. If Category I or Category II friable materials are discovered prior to or during the demolition/renovation process, these materials must be abated prior to commencement of any demolition/renovation activities at the Subject Property.

#### **Hazardous Materials**

Hazardous Materials identified at the Subject Property and documented in Table 1 which require proper removal and disposal consist of the following items:

- Thermostat (1)
- Television (2)
- Air Conditioner (1)
- Gallon Container Misc. Paint (9)
- Quart Container Contents Unknown (5)
- Gas Container <sup>3</sup>/<sub>4</sub> Full (1)
- Pint Container Misc. Paint (5)

### **REGULATORY REQUIREMENTS**

A Notification of Intent to Renovate/Demolish form must be filed with the Michigan Department of Environmental Quality- Air Quality Division at least 10 working days prior to any renovation or demolition activities at a site.

The Notification of Intent to Renovate/Demolish form must also be completed and submitted to the MIOSHA-Asbestos Program whenever demolition, encapsulation and/or renovation activities at a site involving greater than ten lineal feet and/or fifteen square feet of ACM will be completed.

Regulated asbestos containing materials per NESHAP (40 CFR Part 61) which falls into any of the following categories are ACM's that must be removed prior to any renovation/demolition activities at the Subject Property.

- Friable asbestos material.
- Category I non-friable ACM that has become friable.
- Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading.
- Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of renovation or demolition operations.

Asbestos abatement should only be performed by a certified asbestos abatement contractor licensed to complete abatement work. The contractor must also follow the standards and requirements set forth per the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) and the USEPA NESHAP (40 CFR Part 61).

Additional information regarding the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) and the USEPA NESHAP (40 CFR Part 61) can be obtained by contacting the associated agency below.

NESHAP Asbestos Program Department of Environmental Quality Phone: 517-284-6777 MIOSHA-CSHD-Asbestos Program State of Michigan Phone: 517-284-7680 Email: asbestos@michigan.gov

### **DISCLAIMER**

Red Cedar Consulting performed destructive testing methods in an attempt to access and inspect all areas of the Building. Unfortunately, due to the age of construction along with multiple additions/renovations that may have been completed on the Building, additional inspections may be required if suspect ACM material not documented within this report is encountered during renovation/demolition activities.

This report was prepared at the request and for exclusive use by the Muskegon County Land Bank and may not be reproduced or sold without written permission from Red Cedar Consulting.

We appreciate the opportunity to provide the requested services. Please contact us at (888) 449-4566 with any questions or concerns.

Sincerely, Red Cedar Consulting

Raion Poquet

Aaron Paquet Michigan/EPA Certified Asbestos Building Inspector (A30955)

Red Cedar Consulting

# Attachment 1

APEX Research Laboratory Analytical Results

Test Method, Polarized Light Microscopy (PLM)

Project : 1874 Manz St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80292         Date Collected:       10/10/18         Date Received:       10/12/18         Date Analyzed:       10/19/18         Date Reported:       10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80292 - 01 Cust. #: MS-HM-01A Material: Asphalt Shingle Location: Appearance: black,fibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 30% Other - 70%
Lab ID #: 80292 - 01a Cust. #: MS-HM-01A Material: Tar Paper Location: Appearance: black,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 60% Other - 40%
Lab ID #: 80292 - 02 Cust. #: MS-HM-01B Material: Asphalt Shingle Location: Appearance: black,fibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 30% Other - 70%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 1874 Manz St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80292         Date Collected:       10/10/18         Date Received:       10/12/18         Date Analyzed:       10/19/18         Date Reported:       10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80292 - 02a Cust. #: MS-HM-01B Material: Tar Paper Location: Appearance: black,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 60% Other - 40%
Lab ID #: 80292 - 03 Cust. #: MS-HM-02A Material: Fiberboard/Vapor Paper Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 75% Other - 25%
Lab ID #: 80292 - 04 Cust. #: MS-HM-02B Material: Wrap Location: Appearance: brown,fibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 40% Fiberglass - 20% Other - 40%
For Layered Samples, each component will be analyzed and repor	ted separately.	Rent Sett

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 1874 Manz St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80292         Date Collected:       10/10/18         Date Received:       10/12/18         Date Analyzed:       10/19/18         Date Reported:       10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80292 - 04a Cust. #: MS-HM-02B Material: Fiberboard/Vapor Paper Location: Appearance: brown,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 80% Other - 20%
Lab ID #: 80292 - 05 Cust. #: MS-HM-03A Material: Porch Shingle Location: Appearance: black,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 30% Other - 70%
Lab ID #: 80292 - 06 Cust. #: MS-HM-03B Material: Porch Shingle Location: Appearance: black,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 30% Other - 70%

For Layered Samples, each component will be analyzed and reported separately.

Kut Joh

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 1874 Manz St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80292         Date Collected:       10/10/18         Date Received:       10/12/18         Date Analyzed:       10/19/18         Date Reported:       10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80292 - 07 Cust. #: MS-HM-04A Material: Rolled Roofing Location: Appearance: black,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80292 - 08 Cust. #: MS-HM-04B Material: Rolled Roofing Location: Appearance: black,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80292 - 09 Cust. #: MS-HM-05A Material: Floor Tile Location: Appearance: grey,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 1874 Manz St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80292Date Collected:10/10/18Date Received:10/12/18Date Analyzed:10/19/18Date Reported:10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80292 - 09a Cust. #: MS-HM-05A Material: Brown Linoleum Location: Appearance: brown,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Fiberglass - 10% Other - 80%
Lab ID #: 80292 - 10 Cust. #: MS-HM-05B Material: Floor Tile Location: Appearance: grey,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80292 - 10a Cust. #: MS-HM-05B Material: Brown Linoleum Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Fiberglass - 10% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 1874 Manz St.



Report 10: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80292Date Collected:10/10/18Date Received:10/12/18Date Analyzed:10/19/18Date Reported:10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80292 - 11 Cust. #: MS-HM-06A Material: Red 9x9 VFT Location: Appearance: red,fibrous,homogenous Layer: 1 of 3	Asbestos Present: <b>YES</b> Chrysotile - 5%	Other - 95%
Lab ID #: 80292 - 11a Cust. #: MS-HM-06A Material: Floor Tile Location: Appearance: white,fibrous,homogenous Layer: 2 of 3	Asbestos Present: <b>YES</b> Chrysotile - 5%	Other - 95%
Lab ID #: 80292 - 11b Cust. #: MS-HM-06A Material: Mastic Location: Appearance: black,fibrous,homogenous Layer: 3 of 3	Asbestos Present: <b>YES</b> Chrysotile - 5%	Other - 95%
For Layered Samples, each component will be analyzed and repo	rted separately.	

or Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 1874 Manz St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80292         Date Collected:       10/10/18         Date Received:       10/12/18         Date Analyzed:       10/19/18         Date Reported:       10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80292 - 12 Cust. #: MS-HM-06B Material: Red 9x9 VFT	Asbestos Present:	
Location: Appearance: Layer: of	NOT ANALYZED	
Lab ID #: 80292 - 13 Cust. #: MS-HM-07A Material: Joint Compound Location: Appearance: grey,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80292 - 13a Cust. #: MS-HM-07A Material: Drywall Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 1874 Manz St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80292Date Collected:10/10/18Date Received:10/12/18Date Analyzed:10/19/18Date Reported:10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80292 - 14 Cust. #: MS-HM-07B Material: Joint Compound Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80292 - 14a Cust. #: MS-HM-07B Material: Drywall Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80292 - 15 Cust. #: MS-HM-08A Material: Flashing Vent Location: Appearance: black,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%

For Layered Samples, each component will be analyzed and reported separately.

Sout

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 1874 Manz St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80292Date Collected:10/10/18Date Received:10/12/18Date Analyzed:10/19/18Date Reported:10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80292 - 16 Cust. #: MS-HM-08B Material: Flashing Vent Location: Appearance: black,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80292 - 17 Cust. #: MS-HM-09A Material: Glazing Location: Appearance: beige,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> Chrysotile - Trace POINT COUNT RESULT	Other - 100%
Lab ID #: 80292 - 18 Cust. #: MS-HM-09B Material: Glazing Location: Appearance: grey,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> Chrysotile - Trace POINT COUNT RESULT	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 1874 Manz St.



Report 10: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80292Date Collected:10/10/18Date Received:10/12/18Date Analyzed:10/19/18Date Reported:10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80292 - 19 Cust. #: MS-HM-10A Material: Glazing Location: Appearance: grey,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80292 - 20 Cust. #: MS-HM-10B Material: Glazing Location: Appearance: grey,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80292 - 21 Cust. #: MS-HM-11A Material: Caulk Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 1874 Manz St.



Report 10: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80292Date Collected:10/10/18Date Received:10/12/18Date Analyzed:10/19/18Date Reported:10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80292 - 22 Cust. #: MS-HM-11B Material: Caulk Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80292 - 23 Cust. #: MS-HS-01A Material: Texture Location: Appearance: beige,nonfibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80292 - 24 Cust. #: MS-HS-01B Material: Texture Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 1874 Manz St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80292Date Collected:10/10/18Date Received:10/12/18Date Analyzed:10/19/18Date Reported:10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80292 - 25 Cust. #: MS-HS-01C Material: Texture Location: Appearance: beige,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80292 - 26 Cust. #: MS-HS-02A Material: Plaster Location: Appearance: white,nonfibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80292 - 27 Cust. #: MS-HS-02B Material: Plaster Location: Appearance: beige,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 1874 Manz St.

Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		Date Collected:10/10/18Date Received:10/12/18Date Analyzed:10/19/18Date Reported:10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80292 - 28 Cust. #: MS-HS-02C Material: Plaster Location: Appearance: grey,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: Cust. #: Material: Location: Appearance: Layer: of	Asbestos Present:	
Lab ID #: Cust. #: Material: Location: Appearance: Layer: of	Asbestos Present:	

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the US Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.





**Report To:** 

ARI Report # 18-80292

29 OF 3 APEX RESEARCH	Lab Use Only Log-in Report f <5% ACM. Viable	Area     Results       Area     Results       Received by:     Image: Color State       Date : Color State     Image: State       APEX RESEARCH
80292	minet       Fax: 734-449-9991         Survey :       Lab Use         'Survey :       Lo - 1 O - 1 O         'Survey :       Lo - 1 O - 1 O         'Survey :       Lo - 1 O         'Survey :       Lab Use         'Survey :       Lab Use         'Boint Count       PCM         Point Count       PCM         'Air       Paint         'BioSIS       Other         'OB       EPA Level II	Volume         Area           Received by:
APEX Research, Inc. 11054 Hi Tech Drive, Whitmore Lake, MI 48189 Phone: 734-449-9990	E-mail: apexresearch@chartermi.net         E-mail: apexresearch@chartermi.net         Date of Survey :         Project :       L&74         PLM EPA 600, PC all samples with       Point Cou         Bulk       Wipe       Point Cou         Bulk       Tape       BioSIS         AHERA 7400       Bulk/NOB       BioSIS	Material/Location nett Shungle r i r hand & Vare Sconicr r hand & Vare Sconicr r hand & Vare Sconicr r i. r i.
h, Inc. 11054 H	E-mai E-mai E-mai E-mai E-mai A8901 E-mai (888) 448-8739 PLM A888() 448-8739 PLM A888() 448-8739 PLM Bulk Mold: Bulk Mold: Bulk TEM: AHER	Aspl Hapilting Have Relling
EX Researc	Client Name: Red Cedar Consulting Address: PO Box 13216 City, St., Zip: Lansing, MI 48901 City, St., Zip: Lansing, MI 48901 Phone: (888) 449-4566 Fax: (888) 4 Phone: (888) 449-4566 Fax: (888) 4 Asbest Rush 24 hour TimeS: (Circle One) Asbest Rush 24 hour TimeS: (Circle One) Asbest Other: Sow TP All Samples Mold	# Client 1 ms-Hm 2 ms-Hm 2 ms-Hm 4 ms-Hm 4 ms-Hm 6 ms-Hm 7 ms-Hm 1 ms-Hm 1 ms-Hm 1 ms-Hm
API	Client Name: Address: City, St., Zip: Phone: (888)4 <b>Turn Aro</b> Rush 24 hour 48 hour 72 hour Other: 52ey	Lab ID : Lab ID : Relinquished by: Cor Date :

e Lake, MI 48189 Phone: 734-449-9990 hartermi.net Fax: 734-449-9991	Date of Survey :       L@ -(0 -(3       Lab Use Only Log-in         Project :       18714 Manz St.       Report         Project # :       Report       Report         Contact Person:       Aaron Paquet       Report         PC all samples with a detection of <5% ACM.       ACM.	Point Count     PCM       Air     Paint     Soil       BioSIS     Other     Viable       Bulk/NOB     EPA Level II	Volume Area Results			Received by:	
<b>InC.</b> 11054 Hi Tech Drive, Whitmore Lake, MI 4 E-mail: apexresearch@chartermi.net	(888) 448-8739 rcle One) PLM EPA 600,	os: Bulk <u>X</u> Wipe Bulk Wipe Wipe Alter Wipe Alter Atoo	Material/Location	the city	Glevering 6 levering 1	Coultr 1. Relinquished by:	81-11-0
APEX Research, Inc. 11054 Hi Tech Drive, Whitmore Lake, MI 48189 E-mail: apexresearch@chartermi.net	Client Name: Red Cedar Consulting Address: PO Box 13216 City, St., Zip: Lansing, MI 48901 Phone: (888)449-4566 Fax: (888) 4 Turn Around Times: (Circle One)	Rush 24 hour 48 hour 72 hour Other: 5 Day (TTP) All Samples	Client ID #	An-ochine Composition of the second statement of the s		A T T T T	$Date : \sqrt{O - U - U} = Date : Date :$

APEX RESEARCH	Lab Use Only Log-In	Results				PECEIVEL 0CT 1 2 2018 APEX RESEARCH
MI 48189 Phone: 734-449-9990 i.net Fax: 734-449-9991	Date of Survey :       Low Construction         Project :       1874 Junz St.         Project # :       Report         Contact Person:       Aaron Paquet         Pc all samples with a detection of <5% ACM.	Volun				Received by:
Inc. 11054 Hi Tech Drive, Whitmore Lake, MI 4 E-mail: apexresearch@chartermi.net	Date of       Date of         Project       Project         (888) 448-8739       Project         (888) 448-8739       Contact         (888) 448-8739       Contact         (188) 448-87400       Bulk/N	al/Location	resture 11	r. Plagher e1	<i>x</i> 1	Received by: WPS Relinquished by: Date : Date : Date :
APEX Research, Inc. 11054 Hi Tech Drive, Whitmore Lake, MI 48189 E-mail: apexresearch@chartermi.net	Client Name: Red Cedar Consulting Address: PO Box 13216 City, St., Zip: Lansing, MI 48901 Phone: (888) 449-4566 Fax: (888) 4 Phone: (888) 449-4566 Fax: (888) 4 Rush 24 hour TimeS: (Circle One) Asbest Rush 24 hour Lansing, MI 48 hour 72 hour Asbest Asbert Other: Sour Mold: TTP All Samples TEM:		23 ms-45-01A 24 ms-45-01B	25 M3-24-24C 26 m3-15-02A 27 m3-15-02B	25 ms- 15-02C	Relinquished by: Received by: Date : Vo-M-US Date : Nork Forms: COC

Red Cedar Consulting

Tables

Hazardous Materials Description and Location			
Location	Material Description	Quantity	
Living	Thermostat	1	
Living	Television	1	
W Bedroom	Television	1	
W Bedroom	Air Conditioner	1	
E Bedroom	Gallon Container Misc. Paint	1	
W Bedroom	Gallon Container Misc. Paint	3	
W Bedroom	Quart Container Contents Unknown	5	
W Bedroom	Gas Container <sup>3</sup> / <sub>4</sub> Full	1	
Closet	Pint Container Misc. Paint	5	
Rear Entry	Gallon Container Misc. Paint	5	

Sample Number	Sample Description	Friable	Material Type	Material Classification	% Asbestos Laboratory Result	Sample Location	Approx. Material Quantity
MS-HM-01A	Asphalt Shingle	No	М	Category I	ND/ND	Exterior	NA
MS-HM-01B	Asphalt Shingle	No	М	Category I	ND/ND	Exterior	NA
MS-HM-02A	Fiberboard/Vapor Paper	Yes	М	Category II	ND	Exterior	NA
MS-HM-02B	Fiberboard/Vapor Paper	Yes	М	Category II	ND/ND	Exterior	NA
MS-HM-03A	Porch Shingle	No	М	Category I	ND	Exterior	NA
MS-HM-03B	Porch Shingle	No	М	Category I	ND	Exterior	NA
MS-HM-04A	Rolled Roofing	No	М	Category I	ND	Exterior	NA
MS-HM-04B	Rolled Roofing	No	М	Category I	ND	Exterior	NA
MS-HM-05A	Brown Linoleum	No	М	Category I	ND/ND	Kitchen	NA
MS-HM-05B	Brown Linoleum	No	М	Category I	ND/ND	Kitchen	NA
MS-HM-06A	Red 9"x9" Vinyl Tile	No	М	Category I	5%CH/5%CH/ 5%CH	Rear Entry	99 sq. ft.
MS-HM-06B	Red 9"x9" Vinyl Tile	No	М	Category I	NA	Rear Entry	NA
MS-HM-07A	Drywall and Joint Compound	No	М	Category II	ND/ND	Kitchen Ceiling	NA
MS-HM-07B	Drywall and Joint Compound	No	М	Category II	ND/ND	Front Entry Wall	NA
MS-HM-08A	Flashing Vent	No	М	Category II	Trace CH-PC	Exterior	NA
MS-HM-08B	Flashing Vent	No	М	Category II	Trace CH-PC	Exterior	NA
MS-HM-09A	Glazing	Yes	М	Category II	ND	Living	NA
MS-HM-09B	Glazing	Yes	М	Category II	ND	Living	NA
MS-HM-10A	Glazing	Yes	М	Category II	ND	Center Bedroom	NA
MS-HM-10B	Glazing	Yes	М	Category II	ND	W Bedroom	NA
MS-HM-11A	Caulk	No	М	Category I	ND	N Wall	NA
MS-HM-11B	Caulk	No	М	Category I	ND	N Wall	NA
MS-HS-01A	Texture	No	S	Category II	ND	Center Bedroom Ceiling	NA
MS-HS-01B	Texture	No	S	Category II	ND	Center Bedroom Wall	NA
MS-HS-01C	Texture	No	S	Category II	ND	Center Bedroom Wall	NA
MS-HS-02A	Plaster	No	S	Category II	ND	Front Entry Ceiling	NA
MS-HS-02B	Plaster	No	S	Category II	ND	Living Ceiling	NA

	Sample Number	Sample Description	Friable	Material Type	Material Classification	% Asbestos Laboratory Result	Sample Location	Approx. Material Quantity
[	MS-HS-02C	Plaster	No	S	Category II	ND	Living Ceiling	NA
N	Notes:							
M	<u>Material Types</u> <u>Abbreviations</u>							
M TS S PC C	SI = Thermal S = Surfacing C = Point Cou	nt Analysis			<ul> <li>NQ = Not quantified</li> <li>NA = Not applicable</li> <li>ND = Not detected. Laboratory result is less than 1 % asbestos</li> <li>lin. ft. = linear feet</li> <li>sq. ft. = square feet</li> </ul>			

Asbestos Containing Material (ACM) is defined as any material containing more than 1 percent asbestos as determined utilizing Polarized Light Microscopy.

## Table 3 - Summary of Presumed Asbestos Containing Materials, 1874 Manz St., Muskegon, Michigan

Asbestos Containing Material Description and Location					
Location Material Description Fria			Condition	Material Type	Approx. Quantity
No Presumed Asbestos Containing Materials Identified					

Notes:

Mate	rial Types	Abbrev	iations
M TSI S	<ul> <li>Miscellaneous building material</li> <li>Thermal System Insulation</li> <li>Surfacing Material</li> </ul>		= linear feet = square feet

#### Table 4 - Summary of All Asbestos Containing Materials, 1874 Manz St., Muskegon, Michigan

Interior - Asbestos Containing Ma	iterials			
Location	<b>Material Description</b>		Friable	Approx. Quantity
Rear Entry	Red 9"x9" Vinyl Tile		No	99 sq. ft.
		Total		99 sq. ft.

Notes: Abbreviations

lin. ft. = linear feet sq. ft. = square feet

**Shaded/Bolded** = Friable ACM and any Category I and Category II non-friable ACM that has a high probability of becoming crumbled, pulverized, or reduced to powder by the demolition or renovation activities that must be properly abated prior to commencement of any demolition/renovation activities.

Demolition/renovation activities completed with intact Category I non-friable ACM are regulated by OSHA and must be completed following the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

Please note that a Negative Pressure Enclosure must be utilized during abatement when Site Conditions Warrant. Examples of these conditions include the abatement of Plaster and Vermiculite insulation, HVAC Duct Wrap in Poor Condition, and Air-O-Cell/Mag Pipe Wrap. Conditions outside of these should be assessed on a case by case basis during the Asbestos Abatement Contractors site walk and Work Plan Preparation.



P.O. Box 13216 Lansing, MI 48901 Phone: 888.449.4566 Fax: 888.448.8739 www.redcedarconsulting.net

October 31, 2018

Mr. Tim Burgess Muskegon County Land Bank Land Bank Coordinator 173 E. Apple Avenue, Suite 104 Muskegon, MI 49442

### RE: Asbestos Containing Material and Hazardous Materials Inspection 1932 Reynolds St., Muskegon, MI 49442 Parcel ID: 61-24-796-002-0019-00

Dear Mr. Burgess:

Red Cedar Consulting has completed an asbestos-containing material (ACM) and hazardous materials inspection at 1932 Reynolds St., Muskegon, Michigan (Subject Property). This inspection was completed at the request of the Muskegon County Land Bank to comply with the United States Environmental Protection Agency (USEPA) requirements for demolition and renovation set forth under the National Emissions Standards for Hazardous Air Pollutants (NESHAP, 40 CFR Part 61). This inspection was also completed to comply with the Occupational Safety and Health Administration (OSHA) Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

## SUBJECT PROPERTY

The Subject Property is comprised of a .09 acre residential parcel which contains a 412 sq. ft. detached garage and approximate 684 square foot residential building (the Building) with an unknown construction date. The Building was constructed on a concrete block basement with one aboveground floor. The exterior walls of the Building were finished with a vapor barrier while the roof was sealed with asphalt shingles. The Building can be further divided into a front entry, living room, kitchen, bath, two bedrooms and a rear entry.

## VISUAL INSPECTION AND SAMPLING

### **Asbestos Containing Materials Inspection**

Mr. Aaron Paquet of Red Cedar Consulting (Red Cedar), an accredited State of Michigan/EPA Asbestos Building Inspector (Accreditation Number A30955) whom completed training per the Michigan Asbestos Workers Accreditation Act 440 completed an inspection of the Subject Property on October 16, 2018 for suspected asbestos containing building materials.

This inspection, and subsequent sample collection was completed in accordance with the USEPA Asbestos Hazard Emergency Response Act (AHERA) (40 CFR Part 763) assessment and sampling protocol.

During the completion of the inspection, each area of the Subject Property was visually inspected for asbestos containing building materials (ACBM). Following the completion of the visual inspection, Red Cedar staff identified each suspect area of friable and non-friable ACBM and sorted them into one of three homogenous categories for sampling purposes. AHERA defines friable as a material that when dry, may be crumbled, pulverized, or reduced to powder by hand pressure. A homogenous area is defined by OSHA as an area of surfacing, thermal system insulation (TSI) or miscellaneous material that is uniform in color and texture. Surfacing materials are most commonly found in sprayed-on, troweled-on or otherwise applied to surfaces, such as acoustical plaster on ceilings and fireproofing materials on structural members. TSI refers to materials applied to pipes, fittings, boilers, ductwork, or other components to prevent heat loss or gain, or condensation. Any material that does not fall under the surfacing or TSI category, such as floor tile, drywall, and acoustical ceiling tile are placed into the miscellaneous materials category.

Following the completion of the visual inspection, Red Cedar staff identified the following materials as suspect ACBM:

- Asphalt Shingle
- Rolled Roofing
- Linoleum
- 9"x9" Vinyl Floor Tile
- 1'x1' Ceiling Tile
- Window Glazing
- Caulk
- Vapor Barrier
- Roofing Materials
- Glue
- Tar Coating
- Plaster

Red Cedar staff collected forty samples of suspect ACBM separated into twenty one distinct homogenous groups for laboratory analysis. Samples were collected and submitted to APEX Research Inc. Laboratories (APEX) (Accreditation Number 102118-0) for laboratory analysis. Analysis was completed utilizing polarized light microscopy (PLM) which is the Environmental Protection Agency (EPA) approved method for analysis of bulk materials for asbestos. PLM analysis completed pursuant to method (EPA 600/M4-82-020) identifies asbestos fiber bundles by the visual properties displayed when the sample is treated with various dispersion staining liquids. The laboratory report completed following the sample analysis indicates if asbestos is present, and at what percentage along with a description and percentage of other fibrous and non-fibrous materials and sample color. Chain-of-custody documentation was followed from sample collection through shipping and receiving of the samples at the designated laboratory. The documentation assures that samples will meet the quality assurance/quality control measures defined by AHERA. The laboratory analytical report prepared by APEX for the forty samples is included as Attachment A.

### **Hazardous Materials Inspection**

On October 16, 2018 the Subject Property was also inspected for the presence of hazardous materials which include but are not limited to polychlorinated biphenyls (PCBs) and potential mercury containing equipment and any items or containers that may contain or be classified as a hazardous or regulated material. Each material, if identified, was documented along with the approximate location. Any materials identified as hazardous are included in Table 1.

## **INSPECTION RESULTS AND RECOMMENDATIONS**

During the completion of the asbestos inspection, forty samples of suspect ACM were collected and are documented in Table 2 along with the Red Cedar sample number, description, friability, material type, ACM classification, sample location, material quantity and laboratory analytical results.

ACM, as defined by the USEPA NESHAP is "any material containing more than 1 percent asbestos as determined using the method specified in appendix E, subpart E, 40 CFR part 763 Section 1, Polarized Light Microscopy".

Friable ACM is defined by NESHAP as any material containing more than 1 percent asbestos that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. Friable ACM is a concern due the ease of unintentionally disturbing the ACM which may result in "visible emissions" which is known as a Fiber Release Episode.

Non-friable asbestos-containing material is defined as "material containing more than 1 percent asbestos that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. Non-friable ACM's are separated into Category I and Category II ACM. Category I ACM is any asbestos containing packing's, gaskets, resilient floor coverings (vinyl floor tile and linoleum are examples of these) and asphalt roofing products. Category II ACM is stated by NESHAP as any material excluding Category I non-friable ACM such as drywall, plaster or fiberboard insulation.

## **Presumed Asbestos Containing Material**

Presumed Asbestos Containing Materials (PACM) are suspect surfacing, TSI and miscellaneous materials found in buildings constructed prior to 1980 which are classified as and due to the age of the structure, are assumed to be ACM and do not require sample collection and analysis. OSHA dictates that PACM may be "rebutted" following a complete inspection pursuant to AHERA protocol.

No PACM was identified during the completion of this inspection. All suspect materials identified were sampled and analyzed for ACM.

Table 3 lists the location, material description, friability, condition, material type (surfacing, thermal or miscellaneous) and approximate quantity of all PACM documented at the Subject Property.

Table 4 provides a summary all ACM documented at the Subject Property which includes the material location, description, and approximate quantity.

### Friable ACM's

A window glazing sample collected from a window in the Kitchen was found to contain up to 5% asbestos following analysis. The assessment to quantify the extent of this material identified fourteen windows within the Building that would fall into the same homogenous group. The quantity and dimensions of the windows are listed below:

- 1 window 27" wide x 62" tall
- 2 windows 24" wide x 40" tall
- 3 windows 24" wide x 53" tall
- 4 windows 22" wide x 53" tall
- 1 window 27" wide x 53" tall
- 1 window 24" wide x 33" tall
- 1 window 27" wide x 33" tall
- 1 window 27" wide x 28" tall

### Category I ACM

Two types of resilient floor covering (Gray Linoleum and 9"x9" Tan Speck Vinyl Floor Tile) located within the bathroom and NW bedroom were found to contain up to 10% Chrysotile asbestos. The assessment to quantify the extent of this material identified approximately 190 sq. ft. of this material within the Building.

### **Category II ACM**

Caulk samples collected from the roof vent and soffit were found to contain up to 10% asbestos following analysis. The assessment to quantify the extent of this material identified approximately 121 lin. ft. of caulk within the Building.

Flashing samples collected from the Building were found to contain up to 10% asbestos following analysis. The assessment to quantify the extent of this material identified approximately 10 sq. ft. of flashing within the Building.

Tar Coating samples collected from the exterior heat vent were found to contain up to 10% asbestos following analysis. The assessment to quantify the extent of this material identified approximately 30 sq. ft. of Tar Coating within the Building.

### **RECOMMENDATIONS**

#### **Asbestos Containing Materials**

Friable asbestos containing window glazing was identified on fourteen windows throughout the Building. The quantity and dimensions of these windows that should be abated prior to demolition/renovation activities are listed below:

- 1 window 27" wide x 62" tall
- 2 windows 24" wide x 40" tall
- 3 windows 24" wide x 53" tall
- 4 windows 22" wide x 53" tall
- 1 window 27" wide x 53" tall
- 1 window 24" wide x 33" tall
- 1 window 27" wide x 33" tall
- 1 window 27" wide x 28" tall

Please note: Other different sized windows are located throughout the Building but these windows were assessed and found to be constructed either without window glazing or were sampled and found to not contain asbestos and therefore are not required to be removed.

Caulk identified on the exterior of the Building must be abated prior to completion of any renovation/demolition activities at the Subject Property. Any Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of renovation or demolition operations must be properly abated.

Flashing identified on the exterior of the Building must be abated prior to completion of any renovation/demolition activities at the Subject Property. Any Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of renovation or demolition operations must be properly abated.

Tar Coating identified on the exterior of the Building must be abated prior to completion of any renovation/demolition activities at the Subject Property. Any Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of renovation or demolition operations must be properly abated.

The Category I resilient floor coverings (Gray Linoleum and 9"x9" Tan Speck Vinyl Floor Tile) are nonfriable ACM's that may be left in place as long as the demolition/renovation activities are completed following the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

Please note: The location of samples obtained during this inspection were in a random fashion and areas that were not identified during this inspection may be damaged or have become damaged since the inspection was completed. If Category I or Category II friable materials are discovered prior to or during

the demolition/renovation process, these materials must be abated prior to commencement of any demolition/renovation activities at the Subject Property.

### **Hazardous Materials**

Hazardous Materials identified at the Subject Property and documented in Table 1 which require proper removal and disposal consist of the following items:

- Smoke Detector (1)
- Round Fluorescent Light (1)
- Round Fluorescent Bulb (2)

### **REGULATORY REQUIREMENTS**

A Notification of Intent to Renovate/Demolish form must be filed with the Michigan Department of Environmental Quality- Air Quality Division at least 10 working days prior to any renovation or demolition activities at a site.

The Notification of Intent to Renovate/Demolish form must also be completed and submitted to the MIOSHA-Asbestos Program whenever demolition, encapsulation and/or renovation activities at a site involving greater than ten lineal feet and/or fifteen square feet of ACM will be completed.

Regulated asbestos containing materials per NESHAP (40 CFR Part 61) which falls into any of the following categories are ACM's that must be removed prior to any renovation/demolition activities at the Subject Property.

- Friable asbestos material.
- Category I non-friable ACM that has become friable.
- Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading.
- Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of renovation or demolition operations.

Asbestos abatement should only be performed by a certified asbestos abatement contractor licensed to complete abatement work. The contractor must also follow the standards and requirements set forth per the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) and the USEPA NESHAP (40 CFR Part 61).

Additional information regarding the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) and the USEPA NESHAP (40 CFR Part 61) can be obtained by contacting the associated agency below.

NESHAP Asbestos Program Department of Environmental Quality Phone: 517-284-6777 MIOSHA-CSHD-Asbestos Program State of Michigan Phone: 517-284-7680 Email: asbestos@michigan.gov

## **DISCLAIMER**

Red Cedar Consulting performed destructive testing methods in an attempt to access and inspect all areas of the Building. Unfortunately, due to the age of construction along with multiple additions/renovations that may have been completed on the Building, additional inspections may be required if suspect ACM material not documented within this report is encountered during renovation/demolition activities.

This report was prepared at the request and for exclusive use by the Muskegon County Land Bank and may not be reproduced or sold without written permission from Red Cedar Consulting.

We appreciate the opportunity to provide the requested services. Please contact us at (888) 449-4566 with any questions or concerns.

Sincerely, Red Cedar Consulting

Raion Poquet

Aaron Paquet Michigan/EPA Certified Asbestos Building Inspector (A30955)

Red Cedar Consulting

## Attachment 1

APEX Research Laboratory Analytical Results

Test Method, Polarized Light Microscopy (PLM)

Project : 1932 Reynolds St.

#### **Report To:** ARI Report # 18-80442 Date Collected: Mr. Aaron Paquet 10/16/18 Red Cedar Consulting Date Received: 10/18/18 P.O. Box 13216 Date Analyzed: 10/23/18 Date Reported: Lansing, MI 48901 10/25/18 Sample Information Asbestos Type/Percent Non-Asbestos Material Lab ID #: 80442 - 01 Asbestos Present: NO Fiberglass - 20% Other - 80% Cust. #: RE-HM-01A No Asbestos Observed Material: House Shingle Location: Appearance: black,fibrous,homogenous Layer: of 2 1 Asbestos Present: NO Cellulose - 35% Lab ID #: 80442 - 01a Cust. #: RE-HM-01A No Asbestos Observed Other - 65% Material: Tar Paper Location: Appearance: black,fibrous,homogenous Layer: 2 of 2 Lab ID #: 80442 - 02 Asbestos Present: NO Fiberglass - 20% No Asbestos Observed Other - 80% Cust. #: RE-HM-01B Material: House Shingle Location: Appearance: black,fibrous,homogenous Layer: 1 of 2

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.

Page 1 of 21



**Certificate of Laboratory Analysis** Test Method, Polarized Light Microscopy (PLM)



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80442Date Collected:10/16/18Date Received:10/18/18Date Analyzed:10/23/18Date Reported:10/25/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80442 - 02a Cust. #: RE-HM-01B Material: Tar Paper Location: Appearance: black,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 35% Other - 65%
Lab ID #: 80442 - 03 Cust. #: RE-HM-02A Material: Garage Rolled Roofing Location:	Asbestos Present: <b>NO</b> Chrysotile - 0.25%	Cellulose - 30% Other - 69.75%
Appearance: black,fibrous,nonhomogenous Layer: 1 of 1	POINT COUNT RESULT	
Lab ID #: 80442 - 04 Cust. #: RE-HM-02B Material: Garage Rolled Roofing Location:	Asbestos Present: <b>NO</b> Chrysotile - 0.25%	Cellulose - 30% Other - 69.75%
Appearance: black,fibrous,nonhomogenous Layer: 1 of 2	POINT COUNT RESULT	

For Layered Samples, each component will be analyzed and reported separately.

Kut Jor

Robert T. Letarte Jr., Laboratory Director

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Test Method, Polarized Light Microscopy (PLM)

Project : 1932 Reynolds St.

#### Date Collected: Mr. Aaron Paquet 10/16/18 Red Cedar Consulting Date Received: 10/18/18 P.O. Box 13216 Date Analyzed: 10/23/18 Lansing, MI 48901 Date Reported: 10/25/18 Sample Information Asbestos Type/Percent Non-Asbestos Material Lab ID #: 80442 - 04a Asbestos Present: NO Fiberglass - 20% Cust. #: RE-HM-02B No Asbestos Observed Other - 80% Material: Shingle Location: Appearance: black,fibrous,homogenous Layer: of 2 2 Asbestos Present: NO 80442 - 05 Lab ID #: Cellulose - 20% Cust. #: RE-HM-03A No Asbestos Observed Fiberglass - 10% Material: White Diamond Linoleum Other - 70% Location: Appearance: beige,fibrous,nonhomogenous of Layer: 1 1 Lab ID #: 80442 - 06 Asbestos Present: NO Cellulose - 20% RE-HM-03B No Asbestos Observed Cust. #: Fiberglass - 10% White Diamond Linoleum Other - 70% Material: Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 1

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

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**Report To:** 

ARI Report # 18-80442

Test Method, Polarized Light Microscopy (PLM)

Project : 1932 Reynolds St.

Date Collected: Mr. Aaron Paquet 10/16/18 Red Cedar Consulting Date Received: 10/18/18 P.O. Box 13216 Date Analyzed: 10/23/18 Date Reported: Lansing, MI 48901 10/25/18 Sample Information Asbestos Type/Percent Non-Asbestos Material Lab ID #: 80442 - 07 Asbestos Present: NO Cellulose - 20% Cust. #: RE-HM-04A No Asbestos Observed Fiberglass - 10% Material: Grey Linoleum, Layered Other - 70% Location: Appearance: beige, fibrous, nonhomogenous Layer: of 3 1 Asbestos Present: YES 80442 - 07a Other - 95% Lab ID #: Cust. #: RE-HM-04A Chrysotile - 5% Material: Floor Tile Location: Appearance: beige,fibrous,homogenous of Layer: 2 3 Lab ID #: 80442 - 07b Asbestos Present: NO Other - 100% RE-HM-04A No Asbestos Observed Cust. #: Material: Mastic Location: Appearance: yellow,nonfibrous,homogenous of Layer: 3 3

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.



**Report To:** 

ARI Report # 18-80442

NVLAP Lab Code 102118-0

Test Method, Polarized Light Microscopy (PLM)

Project : 1932 Reynolds St.

#### Mr. Aaron Paquet 10/16/18 Red Cedar Consulting Date Received: 10/18/18 P.O. Box 13216 Date Analyzed: 10/23/18 Lansing, MI 48901 Date Reported: 10/25/18 Sample Information Asbestos Type/Percent Non-Asbestos Material Lab ID #: 80442 - 08 Asbestos Present: NO Cellulose - 20% Cust. #: RE-HM-04B No Asbestos Observed Fiberglass - 10% Material: Grey Linoleum, Layered Other - 70% Location: Appearance: beige, fibrous, nonhomogenous Layer: of 3 1 Asbestos Present: Lab ID #: 80442 - 08a Cust. #: RE-HM-04B Material: Floor Tile NOT ANALYZED Location: Appearance: Layer: 2 of 3 Other - 100% Lab ID #: 80442 - 08b Asbestos Present: NO RE-HM-04B No Asbestos Observed Cust. #: Material: Mastic Location: Appearance: yellow,nonfibrous,homogenous of Layer: 3 3

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.



NVLAP Lab Code 102118-0

**Report To:** 

ARI Report # 18-80442 Date Collected:

Certificate of Laboratory Analysis	
Method, Polarized Light Microscopy (PLM)	
Project : 1932 Reynolds St.	

Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		Date Collected:10/16/18Date Received:10/18/18Date Analyzed:10/23/18Date Reported:10/25/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80442 - 09 Cust. #: RE-HM-05A Material: 9x9 Tan Speck VFT Location: Appearance: yellow,fibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>YES</b> Chrysotile - 10%	Other - 90%
Lab ID #: 80442 - 09a Cust. #: RE-HM-05A Material: Mastic Location: Appearance: yellow,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80442 - 10 Cust. #: RE-HM-05B Material: 9x9 Tan Speck VFT Location: Appearance: Layer: 1 of 2	Asbestos Present: NOT ANALYZED	

For Layered Samples, each component will be analyzed and reported separately.

Test

**Report To:** 

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.





18-80442

ARI Report #

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. APEX Research Inc. is not

responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.

**Report To:** 

## Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project : 1932 Reynolds St.

Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		Date Collected:10/16/18Date Received:10/18/18Date Analyzed:10/23/18Date Reported:10/25/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80442 - 10a Cust. #: RE-HM-05B Material: Mastic Location: Appearance: yellow,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80442 - 11 Cust. #: RE-HM-06A Material: Flower Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 35% Other - 65%
Lab ID #: 80442 - 12 Cust. #: RE-HM-06B Material: Flower Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 35% Other - 65%

For Layered Samples, each component will be analyzed and reported separately.

ARI Report #

Robert T. Letarte Jr., Laboratory Director



18-80442

NVLAP Lab Code 102118-0

**Report To:** 

## **Certificate of Laboratory Analysis**

Test Method, Polarized Light Microscopy (PLM)

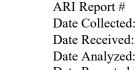
Project : 1932 Reynolds St.

Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901			Date Collected: 10/16/18 Date Received: 10/18/18 Date Analyzed: 10/23/18 Date Reported: 10/25/18
Sample Information	on	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80442 - 13 Cust. #: RE-HM-07 Material: 1x1 White Location: Appearance: brown,fit Layer: 1 of 1	Smooth Ceiling Tile	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 95% Other - 5%
Lab ID #: 80442 - 14 Cust. #: RE-HM-07 Material: 1x1 White Location: Appearance: brown,fit Layer: 1 of 1	Smooth Ceiling Tile	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 95% Other - 5%
Lab ID #: 80442 - 15 Cust. #: RE-HM-08 Material: 1x1 Texture Location: Appearance: brown,fit Layer: 1 of 1	ed Ceiling Tile	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 95% Other - 5%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.





18-80442

For Layered Samples, each component will be analyzed and reported separately.

## **Certificate of Laboratory Analysis**

Test Method, Polarized Light Microscopy (PLM)

Project : 1932 Reynolds St.

Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		Date Concerced:10/10/18Date Received:10/18/18Date Analyzed:10/23/18Date Reported:10/25/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80442 - 16 Cust. #: RE-HM-08B Material: 1x1 Textured Ceiling Tile Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 95% Other - 5%
Lab ID #: 80442 - 17 Cust. #: RE-HM-09A Material: Drywall Location: Appearance: white,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80442 - 18 Cust. #: RE-HM-09B Material: Drywall Location: Appearance: white,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%

**Report To:** Mr Aaron Paquet ARI Report # 18-80442 Date Collected 10/16/18



Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.

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For Layered Samples, each component will be analyzed and reported separately.

## **Certificate of Laboratory Analysis**

Test Method, Polarized Light Microscopy (PLM)

Project : 1932 Reynolds St.

Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		Date Collected:10/16/18Date Received:10/18/18Date Analyzed:10/23/18Date Reported:10/25/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80442 - 19 Cust. #: RE-HM-10A Material: 1x1 Lite Texture Ceiling Tile Location: Appearance: brown,fibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 95% Other - 5%
Lab ID #: 80442 - 19a Cust. #: RE-HM-10A Material: Glue Location: Appearance: yellow,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80442 - 20 Cust. #: RE-HM-10B Material: 1x1 Lite Texture Ceiling Tile Location: Appearance: brown,fibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 95% Other - 5%

**Report To:** 

ARI Report # 18-80442



Robert T. Letarte Jr., Laboratory Director

Test Method, Polarized Light Microscopy (PLM)

Project : 1932 Reynolds St.

Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		Date Collected:10/16/18Date Received:10/18/18Date Analyzed:10/23/18Date Reported:10/25/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80442 - 20a Cust. #: RE-HM-10B Material: Glue Location: Appearance: yellow,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80442 - 21 Cust. #: RE-HM-11A Material: Window Glazing Location: Appearance: white,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>YES</b> Chrysotile - 5%	Other - 95%
Lab ID #: 80442 - 22 Cust. #: RE-HM-11B Material: Window Glazing	Asbestos Present:	
Location: Appearance: Layer: of	NOT ANALYZED	
or Layered Samples, each component will be analyzed and reported	separately.	

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the US Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.



18-80442

ARI Report #

NVLAP Lab Code 102118-0

**Report To:** 

Test Method, Polarized Light Microscopy (PLM)

Project : 1932 Reynolds St.

#### Mr. Aaron Paquet Red Cedar Consulting Date Received: 10/18/18 P.O. Box 13216 Date Analyzed: 10/23/18 Date Reported: Lansing, MI 48901 10/25/18 Sample Information Asbestos Type/Percent Non-Asbestos Material Lab ID #: 80442 - 23 Asbestos Present: NO Other - 100% Cust. #: RE-HM-12A No Asbestos Observed Material: Window Caulk Location: Appearance: clear, nonfibrous, homogenous Layer: of 1 1 Asbestos Present: NO Other - 100% Lab ID #: 80442 - 24 Cust. #: RE-HM-12B No Asbestos Observed Window Caulk Material: Location: Appearance: clear, nonfibrous, homogenous of Layer: 1 1 Lab ID #: 80442 - 25 Asbestos Present: NO Other - 100% RE-HM-13A No Asbestos Observed Cust. #: Material: Door Caulk Location: Appearance: yellow,nonfibrous,homogenous Layer: 1 of 1

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the US Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.



**Report To:** 



ARI Report # 18-80442 Date Collected: 10/16/18

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the US Government. APEX Research Inc. is not

NVLAP Lab Code 102118-0

For Layered Samples, each component will be analyzed and reported separately.

## **Certificate of Laboratory Analysis**

Test Method, Polarized Light Microscopy (PLM)

Project : 1932 Reynolds St.

Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80442         Date Collected:       10/16/18         Date Received:       10/18/18         Date Analyzed:       10/23/18         Date Reported:       10/25/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80442 - 26 Cust. #: RE-HM-13B Material: Door Caulk Location: Appearance: yellow,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80442 - 27 Cust. #: RE-HM-14A Material: House Vapor Barrier Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 95% Other - 5%
Lab ID #: 80442 - 28 Cust. #: RE-HM-14B Material: House Vapor Barrier Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 95% Other - 5%

ARI Report # 18-80442



Robert T. Letarte Jr., Laboratory Director

Test Method, Polarized Light Microscopy (PLM)

Project : 1932 Reynolds St.

#### Date Collected: Mr. Aaron Paquet 10/16/18 Red Cedar Consulting Date Received: 10/18/18 P.O. Box 13216 Date Analyzed: 10/23/18 Lansing, MI 48901 Date Reported: 10/25/18 Sample Information Asbestos Type/Percent Non-Asbestos Material Lab ID #: 80442 - 29 Asbestos Present: YES Other - 90% Cust. #: RE-HM-15A Chrysotile - 10% Material: Flashing Location: Appearance: black,fibrous,homogenous Layer: of 1 1 Asbestos Present: 80442 - 30 Lab ID #: Cust. #: RE-HM-15B Material: Flashing NOT ANALYZED Location: Appearance: Layer: of Lab ID #: 80442 - 31 Asbestos Present: YES Other - 90% RE-HM-16A Chrysotile - 10% Cust. #: Roof Vent Caulk Material: Location: Appearance: beige,fibrous,homogenous Layer: 1 of 1

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

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**Report To:** 

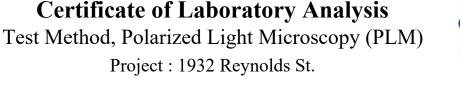
ARI Report # 18-80442

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For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director



#### Sample Information Asbestos Type/Percent Non-Asbestos Material Lab ID #: 80442 - 32 Asbestos Present: Cust. #: RE-HM-16B Material: Roof Vent Caulk NOT ANALYZED Location: Appearance: Layer: of Asbestos Present: YES 80442 - 33 Other - 95% Lab ID #: Cust. #: RE-HM-17A Chrysotile - 5% Material: Soffit Caulk Location: Appearance: beige,fibrous,homogenous of Layer: 1 1 Lab ID #: 80442 - 34 Asbestos Present: RE-HM-17B Cust. #: Soffit Caulk Material: Location: NOT ANALYZED Appearance: Layer: of

Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901 
 ARI Report #
 18-80442

 Date Collected:
 10/16/18

 Date Received:
 10/18/18

 Date Analyzed:
 10/23/18

 Date Reported:
 10/25/18



NVLAP Lab Code 102118-0

# Page 16 of 21

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the US Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.

Test Method, Polarized Light Microscopy (PLM) Project : 1932 Reynolds St.

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80442 - 35 Cust. #: RE-HM-18A Material: Rear Porch Roofing Location: Appearance: black,fibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 20% Other - 80%
Lab ID #: 80442 - 35a Cust. #: RE-HM-18A Material: Tar Paper Location: Appearance: black,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 35% Other - 65%
Lab ID #: 80442 - 36 Cust. #: RE-HM-18B Material: Rear Porch Roofing Location: Appearance: black,fibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 20% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

NVLAP Lab Code 102118-0

Lansing, MI 48901

**Report To:** Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216

ARI Report # 18-80442 Date Collected: 10/16/18 Date Received: 10/18/18 Date Analyzed: 10/23/18 Date Reported: 10/25/18

**Certificate of Laboratory Analysis** 

Test Method, Polarized Light Microscopy (PLM)

Project : 1932 Reynolds St.

#### Red Cedar Consulting Date Received: 10/18/18 P.O. Box 13216 Date Analyzed: 10/23/18 Lansing, MI 48901 Date Reported: 10/25/18 Sample Information Asbestos Type/Percent Non-Asbestos Material Lab ID #: 80442 - 36a Asbestos Present: NO Cellulose - 35% Cust. #: RE-HM-18B No Asbestos Observed Other - 65% Material: Tar Paper Location: Appearance: black,fibrous,homogenous Layer: 2 of 2 Asbestos Present: NO Other - 100% 80442 - 37 Lab ID #: Cust. #: RE-HS-01A No Asbestos Observed Material: Tan Glue Location: Appearance: yellow,nonfibrous,homogenous of Layer: 1 1 Lab ID #: 80442 - 38 Asbestos Present: NO Other - 100% Cust. #: RE-HS-01B No Asbestos Observed Material: Tan Glue Location: Appearance: yellow,nonfibrous,homogenous of Layer: 1 1

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

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**Report To:** Mr. Aaron Paquet ARI Report # 18-80442 Date Collected: 10/16/18

Test Method, Polarized Light Microscopy (PLM)

Project : 1932 Reynolds St.

#### Date Collected: Mr. Aaron Paquet 10/16/18 Red Cedar Consulting Date Received: 10/18/18 P.O. Box 13216 Date Analyzed: 10/23/18 Lansing, MI 48901 Date Reported: 10/25/18 Sample Information Asbestos Type/Percent Non-Asbestos Material Lab ID #: 80442 - 39 Asbestos Present: NO Other - 100% Cust. #: RE-HS-01C No Asbestos Observed Material: Tan Glue Location: Appearance: yellow,nonfibrous,homogenous Layer: of 1 1 Asbestos Present: NO 80442 - 40 Other - 100% Lab ID #: Cust. #: RE-HS-02A No Asbestos Observed Material: Brown Glue Location: Appearance: brown, nonfibrous, homogenous of Layer: 1 1 80442 - 41 Lab ID #: Asbestos Present: NO Other - 100% RE-HS-02B No Asbestos Observed Cust. #: Material: Brown Glue Location: Appearance: brown,nonfibrous,homogenous Layer: 1 of 1

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

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**Report To:** 



18-80442

ARI Report #

Test Method, Polarized Light Microscopy (PLM)

Project : 1932 Reynolds St.

#### Date Collected: Mr. Aaron Paquet 10/16/18 Red Cedar Consulting Date Received: 10/18/18 P.O. Box 13216 Date Analyzed: 10/23/18 Lansing, MI 48901 Date Reported: 10/25/18 Sample Information Asbestos Type/Percent Non-Asbestos Material Lab ID #: 80442 - 42 Asbestos Present: NO Other - 100% Cust. #: RE-HS-02C No Asbestos Observed Material: Brown Glue Location: Appearance: brown,nonfibrous,homogenous Layer: of 1 1 Asbestos Present: YES 80442 - 43 Other - 90% Lab ID #: Cust. #: RE-HS-03A Chrysotile - 10% Material: Tar Coat Location: Appearance: black,fibrous,homogenous of Layer: 1 1 Lab ID #: 80442 - 44 Asbestos Present: RE-HS-03B Cust. #: Material: Tar Coat Location: NOT ANALYZED Appearance: Layer: of For Layered Samples, each component will be analyzed and reported separately.

Kant Jo

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the US Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.



**Report To:** 



18-80442

ARI Report #

Test Method, Polarized Light Microscopy (PLM)

**Certificate of Laboratory Analysis** 

Project : 1932 Reynolds St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80442         Date Collected:       10/16/18         Date Received:       10/18/18         Date Analyzed:       10/23/18         Date Reported:       10/25/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80442 - 45 Cust. #: RE-HS-03C Material: Tar Coat	Asbestos Present:	
Location: Appearance: Layer: of	NOT ANALYZED	
Lab ID #: 80442 - 46 Cust. #: RE-HS-04A Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Other - 98%
Lab ID #: 80442 - 47 Cust. #: RE-HS-04B Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Other - 98%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the US Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.



Test Method, Polarized Light Microscopy (PLM)

Project : 1932 Reynolds St.

#### Mr. Aaron Paquet Red Cedar Consulting Date Received: 10/18/18 P.O. Box 13216 Date Analyzed: 10/23/18 Lansing, MI 48901 Date Reported: 10/25/18 Sample Information Asbestos Type/Percent Non-Asbestos Material Lab ID #: 80442 - 48 Asbestos Present: NO Cellulose - 2% Other - 98% Cust. #: RE-HS-04C No Asbestos Observed Material: Plaster Base Coat Location: Appearance: grey, fibrous, homogenous Layer: of 1 1 Asbestos Present: Lab ID #: Cust. #: Material: Location: Appearance: Layer: of Lab ID #: Asbestos Present: Cust. #: Material: Location: Appearance: Layer: of

For Layered Samples, each component will be analyzed and reported separately.

Kant Jo Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the US Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.



**Report To:** 





ARI Report # 18-80442 Date Collected: 10/16/18

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APEX Research, Inc. 11054Hi Tech Drive, Whitmore Lake, MI 48189       Phone: 734449-9991         E-mail:       apexressearch@chartermi.net       Fax: 734449-9991         Client Name:       Red Cedar Consulting       Date of Survey:       Ac. 1/2         Client Name:       Red Cedar Consulting       Date of Survey:       Ac. 1/2         Address:       Po Bac visit       Project:       Ac. 1/2       Ac. 1/2         City, St, Zip:       Intersing, MI 48801       Date of Survey:       Ac. 1/2       Ac. 1/2         Phone:       Resonant and the second account and the second account and the second account ac	Project : /3.2 Report       Report         Project # :       Project # :       Report         Project # :       Project # :       Report         Project # :       Contact Person: Aaron Paquet       Report         ircle One)       PLM EPA 600, PC all samples with a detection of <5% ACM.       Report         Asbestos: Bulk       Wipe       Point Count       PCM         Asbestos: Bulk       Wipe       Air       Paint       Soil         Lead:       Bulk       Wipe       Air       Paint       Soil         Mold:       Bulk       Tape       BioSIS       Other       Viable         TEM:       AHERA 7400       Bulk/NOB       EPA Level II
Ime:       Red Cec         PO BOX       PO BOX         Zip:       Lansin         (888) 449-4566       24 hour         72 hour       72 hour         1/4       TP         1/4       TP         1/4       1/4	13216 g, MI 48901 Fax : (88 Pax : (88 A A A A A A A A A A A A A

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	48189 Phone: 734-449-9990 et Fax: 734-449-9991	11Vey : <u>2 - 16 - 18</u> 1932 Zunalda	Project # : Contact Person: Aaron Paquet apaquet@redcedarconsulting.net	pples with a detec Point Count	Air Paint BioSIS Other	EPA Level II	Volume											Re	Q	
	Hi Tech Drive, Whitmore Lake, MI 4 E-mail: apexresearch@chartermi.net	Date of Survey : Project : 1932	Project # : Contact Person:		Wipe A	0 Bulk/NOB	cation	ke				etuer			the second			Relinquished by:	Date :	
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	EX Rese	Client Name: Red Cedar Consulting Address: PO Box 13216	., Zip: Lansing, MI (888)449-4566	Around 24 hour	72 hour	day	#	23 RE-	55	35	36	Ęð	96	30	36	68	V Er	Relinquished by: Do De W	10-16-18	·
	API	Client Na Address:	City, St., Zip: Phone: (888)	Turn		Other :	Lab ID											Relinquishe	Date :	Rev: 12/03 Work Forms: COC

Kar 5	Phone: 734-449-9990 Fax: 734-449-9991	15 -16 -13 Lab Use Only Log-In	<pre>#: // // Aaron Paquet t Person: Aaron Paquet apaquet@redcedarconsulting.net samples with a detection of &lt;5% ACM. Point Count PCM</pre>	nt Soil Other Viable	evel II	Area Results								Received by:	Date : 0CT 1 8 2018	
	54 Hi Tech Drive, Whitmore Lake, MI 48189 E-mail: apexresearch@chartermi.net	rvey : 732 A	Project 48-8739 Contact PLM EPA 600, PC all os: Bulk <sup>x</sup> Wipe	Bulk	AHERA 7400	Material/Location Volume	Hit Cault	en Parch Roofing		en Alue	Durn Hu		er cat	1 PS Relinquished hv:		
	APEX Research, Inc. 110	Client Name: Red Cedar Consulting Address: PO Box 13216	City, St., Zip: Lansing, MI 48901 Phone: (888) 449-4566 Fax : (888) 4 <b>Turn Around Times:</b> (Circle One) Asbest	Rush 24 hour 48 hour 72 hour	Other: Saley TTP All Samples	Lab ID # Client ID #	34 RF-HM-178 L	35 18A K	× × × ×	37 RE- #5-01 A I	40 01 024 2	8	113 03A V	a hall store		

S & S APEX RESEARCH	Lab Use Only Log-In	· · ·	Results	OCT 1 8 2018
4 Hi Tech Drive, Whitmore Lake, MI 48189 Phone: 734-449-9990 E-mail: apexresearch@chartermi.net Fax: 734-449-9991	<i>Portboll</i> <i>Repuedent</i> Aaron Paquet apaquet@redcedar ith a detection of mtPCM	a	Volume     Area	Received by: Date :
Inc. 11054 Hi Tech Drive, Whitmore Lake, MI 4 E-mail: apexresearch@chartermi.net	Date of Project Project Project Project Project Project Project Project Project PLM EPA 600, PC all os: Bulk Wipe	Mold: Bulk Tape TEM: AHERA 7400 Bulk/NOB	Material/Location	レアろ Relinquished by:
APEX Research, Inc. 1105	Client Name: Red Cedar Consulting Address: PO Box 13216 City, St., Zip: PO Box 13216 City, St., Zip: Lansing, MI 48901 Phone: (888) 449-4566 Fax: (888) 4 Turn Around Times: (Circle One) Rush 24 hour 72 hour 48 hour 72 hour		Lab ID #Client ID # $\mathcal{U}$ $\mathcal{R} \in \mathcal{H}^{5} \circ \mathcal{Z} \subset \mathcal{H}^{2}$ $\mathcal{U}$ $\mathcal{R} \in \mathcal{H}^{5} \circ \mathcal{H}^{2}$ $\mathcal{U}$ $\mathcal{R} \in \mathcal{H}^{5} \circ \mathcal{H}^{2} \circ \mathcal{H}^{2}$ $\mathcal{U}$ $\mathcal{R} \in \mathcal{H}^{5} \circ \mathcal{H}^{2} \circ \mathcal{H}^{2}$	Relinquished by: <u>All All Alex</u> Received by: Date : <u>/ C - / C - / S</u> Date : <u>/ D</u> Rev. 12/03 Work Forms: COC

Red Cedar Consulting

Tables

#### Table 1 - Summary of Hazardous Materials, 1932 Reynolds St., Muskegon, Michigan

	Hazardous Materials Description and Location		
Location Material Description Quantity			
Kitchen	Smoke Detector		
Kitchen	Round Fluorescent Light		
Kitchen	Kitchen         Round Fluorescent Light Bulb         2		

Sample Number	Sample Description	Friable	Material Type	Material Classification	% Asbestos Laboratory Result	Sample Location	Approx. Material Quantity
RE-HM-01A	House Shingle	No	М	Category I	ND/ND	House Roof	NA
RE-HM-01B	House Shingle	No	М	Category I	ND/ND	House Roof	NA
RE-HM-02A	Garage Rolled Roofing	No	М	Category I	0.25%CH-PC	Garage Roof	NA
RE-HM-02B	Garage Rolled Roofing	No	М	Category I	0.25%CH-PC/ND	Garage Roof	NA
RE-HM-03A	White Diamond Linoleum	No	М	Category I	ND	Kitchen	NA
RE-HM-03B	White Diamond Linoleum	No	М	Category I	ND	Kitchen	NA
RE-HM-04A	Grey Linoleum Layered	No	М	Category I	ND/5%CH/ND	Bathroom	40 sq. ft.
RE-HM-04B	Grey Linoleum Layered	No	М	Category I	ND/NA/ND	Bathroom	NA
RE-HM-05A	9x9 Tan Speck VFT	No	М	Category I	10%CH/ND	NW Bedroom	150 sq. ft.
RE-HM-05B	9x9 Tan Speck VFT	No	М	Category I	NA/ND	NW Bedroom	NA
RE-HM-06A	Flower Linoleum	No	М	Category I	ND	Rear Entry	NA
RE-HM-06B	Flower Linoleum	No	М	Category I	ND	Rear Entry	NA
RE-HM-07A	1x1 White Smooth Ceiling Tile	Yes	М	Category II	ND	Living Room	NA
RE-HM-07B	1x1 White Smooth Ceiling Tile	Yes	М	Category II	ND	Living Room	NA
RE-HM-08A	1x1 Textured Ceiling Tile	Yes	М	Category II	ND	Front Entry	NA
RE-HM-08B	1x1 Textured Ceiling Tile	Yes	М	Category II	ND	Front Entry	NA
RE-HM-09A	Drywall	No	М	Category II	ND	Living Room	NA
RE-HM-09B	Drywall	No	М	Category II	ND	Kitchen	NA
RE-HM-10A	1x1 Lite Texture Ceiling Tile	Yes	М	Category II	ND/ND	Kitchen	NA
RE-HM-10B	1x1 Lite Texture Ceiling Tile	Yes	М	Category II	ND/ND	Kitchen	NA
RE-HM-11A	Window Glazing	Yes	М	Category II	5%CH	Kitchen Window	14 Windows
RE-HM-11B	Window Glazing	Yes	М	Category II	NA	NE Bedroom Window	NA
RE-HM-12A	Window Caulk	No	М	Category II	ND	Kitchen Window	NA
RE-HM-12B	Window Caulk	No	М	Category II	ND	NE Bedroom Window	NA
RE-HM-13A	Door Caulk	No	М	Category II	ND	Rear Entry Door	NA
RE-HM-13B	Door Caulk	No	М	Category II	ND	Rear Entry Door	NA
RE-HM-14A	House Vapor Barrier	Yes	М	Category II	ND	House Exterior	NA

Table 2 - Summary of Sample Descriptions and Asbestos Laboratory Results, 1932 Reynolds St., Muskegon, Michigan

Sample Number	Sample Description	Friable	Material Type	Material Classification	% Asbestos Laboratory Result	Sample Location	Approx. Material Quantity
RE-HM-14B	House Vapor Barrier	Yes	М	Category II	ND	House Exterior	NA
RE-HM-15A	Flashing	No	М	Category II	10%CH	House Roof	10 sq. ft.
RE-HM-15B	Flashing	No	М	Category II	NA	House Roof	NA
RE-HM-16A	Roof Vent Caulk	No	М	Category II	10%CH	Roof Vent	5 lin. ft.
RE-HM-16B	Roof Vent Caulk	No	М	Category II	NA	Roof Vent	NA
RE-HM-17A	Soffit Caulk	No	М	Category II	5%CH	Roof Soffit	116 lin. ft.
RE-HM-17B	Soffit Caulk	No	М	Category II	NA	Roof Soffit	NA
RE-HM-18A	Rear Porch Roofing	No	М	Category I	ND/ND	Rear Porch Roof	NA
RE-HM-18B	Rear Porch Roofing	No	М	Category I	ND/ND	Rear Porch Roof	NA
RE-HS-01A	Tan Glue	No	S	Category II	ND	Kitchen	NA
RE-HS-01B	Tan Glue	No	S	Category II	ND	Kitchen	NA
RE-HS-01C	Tan Glue	No	S	Category II	ND	Kitchen	NA
RE-HS-02A	Brown Glue	No	S	Category II	ND	Bathroom	NA
RE-HS-02B	Brown Glue	No	S	Category II	ND	Bathroom	NA
RE-HS-02C	Brown Glue	No	S	Category II	ND	Bathroom	NA
RE-HS-03A	Tar Coat	No	S	Category II	10%CH	Exterior Heating Unit	30 sq. ft.
RE-HS-03B	Tar Coat	No	S	Category II	NA	Exterior Heating Unit	NA
RE-HS-03C	Tar Coat	No	S	Category II	NA	Exterior Heating Unit	NA
RE-HS-04A	Plaster	No	S	Category II	ND	Kitchen Ceiling	NA
RE-HS-04B	Plaster	No	S	Category II	ND	NE Bedroom Ceiling	NA
RE-HS-04C	Plaster	No	S	Category II	ND	NW Bedroom Ceiling	NA

#### Notes:

Material Types

M = Miscellaneous building material

TSI = Thermal System Insulation

S = Surfacing Material

PC = Point Count Analysis

CH = Chrysotile Asbestos

#### Abbreviations

NQ = Not quantified

NA = Not applicable

ND = Not detected. Laboratory result is less than 1 % asbestos

lin. ft. = linear feet

sq. ft. = square feet

#### Table 2 - Summary of Sample Descriptions and Asbestos Laboratory Results, 1932 Reynolds St., Muskegon, Michigan

Asbestos Containing Material (ACM) is defined as any material containing more than 1 percent asbestos as determined utilizing Polarized Light Microscopy.

### Table 3 - Summary of Presumed Asbestos Containing Materials, 1932 Reynolds St., Muskegon, Michigan

Asbestos Containing Material Description and Location							
Location	Material Description	Friable	Condition	Material Type	Approx. Quantity		
No Presumed Asbestos Containing Materials Identified							

Notes:

Material Types		Abbrev	<u>iations</u>
TSI	<ul> <li>Miscellaneous building material</li> <li>Thermal System Insulation</li> <li>Surfacing Material</li> </ul>		= linear feet = square feet

Interior - Asbestos Containing Materials				
Location	Material Description		Friable	Approx. Quantity
Bathroom	Gray Linoleum		No	40 sq. ft.
NW Bedroom	9x9 Tan Speck VFT		No	150 sq. ft.
		Total		190 sq. ft.
Interior - Asbestos Containing Materials				
Location	<b>Material Description</b>		Friable	Approx. Quantity
Building Exterior	Roof Vent Caulk		No	5 lin. ft.
Building Exterior	Soffit Caulk		No	116 lin. ft.
		Total		121 lin. ft.
Interior - Asbestos Containing Materials				
Location	<b>Material Description</b>		Friable	Approx. Quantity
Building Exterior	Flashing		No	10 sq. ft.
-	-	Total		10 sq. ft.
Interior - Asbestos Containing Materials				
Location	<b>Material Description</b>		Friable	Approx. Quantity
External Heat Unit	Tar Coat		No	30 sq. ft.
		Total		30 sq. ft.
Interior - Asbestos Containing Materials				
Location	<b>Material Description</b>		Friable	Approx. Quantity
1 window 27" wide x 62" tall	Glazing		Yes	1 Windows
2 windows 24" wide x 40" tall	Glazing		Yes	2 Windows
3 windows 24" wide x 53" tall	Glazing		Yes	3 Windows
4 windows 22" wide x 53" tall	Glazing		Yes	4 Windows
1 window 27" wide x 53" tall	Glazing		Yes	1 Window
1 window 24" wide x 33" tall	Glazing		Yes	1 Window
1 window 27" wide x 33" tall	Glazing		Yes	1 Window
1 window 27" wide x 28" tall	Glazing		Yes	1 Window
		Total		<b>14 Windows</b>

## Table 4 - Summary of All Asbestos Containing Materials, 1932 Reynolds St., Muskegon, Michigan

#### Table 4 - Summary of All Asbestos Containing Materials, 1932 Reynolds St., Muskegon, Michigan

Notes: Abbreviations

lin. ft. = linear feet sq. ft. = square feet

**Shaded/Bolded** = Friable ACM and any Category I and Category II non-friable ACM that has a high probability of becoming crumbled, pulverized, or reduced to powder by the demolition or renovation activities that must be properly abated prior to commencement of any demolition/renovation activities.

Demolition/renovation activities completed with intact Category I non-friable ACM are regulated by OSHA and must be completed following the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

Please note that a Negative Pressure Enclosure must be utilized during abatement when Site Conditions Warrant. Examples of these conditions include the abatement of Plaster and Vermiculite insulation, HVAC Duct Wrap in Poor Condition, and Air-O-Cell/Mag Pipe Wrap. Conditions outside of these should be assessed on a case by case basis during the Asbestos Abatement Contractors site walk and Work Plan Preparation.



P.O. Box 13216 Lansing, MI 48901 Phone: 888.449.4566 Fax: 888.448.8739 www.redcedarconsulting.net

October 31, 2018

Mr. Tim Burgess Muskegon County Land Bank Land Bank Coordinator 173 E. Apple Avenue, Suite 104 Muskegon, MI 49442

#### RE: Asbestos Containing Material and Hazardous Materials Inspection 1967 Reynolds St., Muskegon, MI 49442 Parcel ID: 61-24-796-003-0009-00

Dear Mr. Burgess:

Red Cedar Consulting has completed an asbestos-containing material (ACM) and hazardous materials inspection at 1967 Reynolds St., Muskegon, Michigan (Subject Property). This inspection was completed at the request of the Muskegon County Land Bank to comply with the United States Environmental Protection Agency (USEPA) requirements for demolition and renovation set forth under the National Emissions Standards for Hazardous Air Pollutants (NESHAP, 40 CFR Part 61). This inspection was also completed to comply with the Occupational Safety and Health Administration (OSHA) Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

#### SUBJECT PROPERTY

The Subject Property is comprised of a .14 acre residential parcel which contains a 504 sq. ft. detached garage and approximate 1,096 square foot residential building (the Building) with an unknown construction date. The Building was constructed on a concrete block basement with two aboveground floors. The exterior walls of the Building were finished with asphalt siding over wood lap and a vapor barrier while the roof was sealed with asphalt shingles. The Building can be further divided into a front entry, living room, dining room, kitchen, bath, bedroom and rear entry on the first floor while the second floor contains four bedrooms and a bathroom.

#### VISUAL INSPECTION AND SAMPLING

#### **Asbestos Containing Materials Inspection**

Mr. Aaron Paquet of Red Cedar Consulting (Red Cedar), an accredited State of Michigan/EPA Asbestos Building Inspector (Accreditation Number A30955) whom completed training per the Michigan Asbestos Workers Accreditation Act 440 completed an inspection of the Subject Property on October 16, 2018 for suspected asbestos containing building materials.

This inspection, and subsequent sample collection was completed in accordance with the USEPA Asbestos Hazard Emergency Response Act (AHERA) (40 CFR Part 763) assessment and sampling protocol.

During the completion of the inspection, each area of the Subject Property was visually inspected for asbestos containing building materials (ACBM). Following the completion of the visual inspection, Red Cedar staff identified each suspect area of friable and non-friable ACBM and sorted them into one of three homogenous categories for sampling purposes. AHERA defines friable as a material that when dry, may be crumbled, pulverized, or reduced to powder by hand pressure. A homogenous area is defined by OSHA as an area of surfacing, thermal system insulation (TSI) or miscellaneous material that is uniform in color and texture. Surfacing materials are most commonly found in sprayed-on, troweled-on or otherwise applied to surfaces, such as acoustical plaster on ceilings and fireproofing materials on structural members. TSI refers to materials applied to pipes, fittings, boilers, ductwork, or other components to prevent heat loss or gain, or condensation. Any material that does not fall under the surfacing or TSI category, such as floor tile, drywall, and acoustical ceiling tile are placed into the miscellaneous materials category.

Following the completion of the visual inspection, Red Cedar staff identified the following materials as suspect ACBM:

- Asphalt Siding
- Vapor Barrier
- Asphalt Shingle
- Linoleum
- 9"x9" Vinyl Floor Tile
- Drywall and Joint Compound
- Window Glazing
- Tarpaper
- Plaster
- Textured Surfacing

Red Cedar staff collected thirty eight samples of suspect ACBM separated into seventeen distinct homogenous groups for laboratory analysis. Samples were collected and submitted to APEX Research Inc. Laboratories (APEX) (Accreditation Number 102118-0) for laboratory analysis. Analysis was completed utilizing polarized light microscopy (PLM) which is the Environmental Protection Agency (EPA) approved method for analysis of bulk materials for asbestos. PLM analysis completed pursuant to method (EPA 600/M4-82-020) identifies asbestos fiber bundles by the visual properties displayed when the sample is treated with various dispersion staining liquids. The laboratory report completed following the sample analysis indicates if asbestos is present, and at what percentage along with a description and percentage of other fibrous and non-fibrous materials and sample color. Chain-of-custody documentation was followed from sample collection through shipping and receiving of the samples at the designated laboratory. The documentation assures that samples will meet the quality assurance/quality control measures defined by AHERA. The laboratory analytical report prepared by APEX for the thirty eight samples is included as Attachment A.

#### **Hazardous Materials Inspection**

On October 16, 2018 the Subject Property was also inspected for the presence of hazardous materials which include but are not limited to polychlorinated biphenyls (PCBs) and potential mercury containing equipment and any items or containers that may contain or be classified as a hazardous or regulated material. Each material, if identified, was documented along with the approximate location. Any materials identified as hazardous are included in Table 1.

#### **INSPECTION RESULTS AND RECOMMENDATIONS**

During the completion of the asbestos inspection, thirty eight samples of suspect ACM were collected and are documented in Table 2 along with the Red Cedar sample number, description, friability, material type, ACM classification, sample location, material quantity and laboratory analytical results.

ACM, as defined by the USEPA NESHAP is "any material containing more than 1 percent asbestos as determined using the method specified in appendix E, subpart E, 40 CFR part 763 Section 1, Polarized Light Microscopy".

Friable ACM is defined by NESHAP as any material containing more than 1 percent asbestos that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. Friable ACM is a concern due the ease of unintentionally disturbing the ACM which may result in "visible emissions" which is known as a Fiber Release Episode.

Non-friable asbestos-containing material is defined as "material containing more than 1 percent asbestos that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. Non-friable ACM's are separated into Category I and Category II ACM. Category I ACM is any asbestos containing packing's, gaskets, resilient floor coverings (vinyl floor tile and linoleum are examples of these) and asphalt roofing products. Category II ACM is stated by NESHAP as any material excluding Category I non-friable ACM such as drywall, plaster or fiberboard insulation.

#### **Presumed Asbestos Containing Material**

Presumed Asbestos Containing Materials (PACM) are suspect surfacing, TSI and miscellaneous materials found in buildings constructed prior to 1980 which are classified as and due to the age of the structure, are assumed to be ACM and do not require sample collection and analysis. OSHA dictates that PACM may be "rebutted" following a complete inspection pursuant to AHERA protocol.

The HVAC Duct Wrap located in the Building was classified as PACM due to the age of the structure and samples were not collected.

Table 3 lists the location, material description, friability, condition, material type (surfacing, thermal or miscellaneous) and approximate quantity of all PACM documented at the Subject Property.

Table 4 provides a summary all ACM documented at the Subject Property which includes the material location, description, and approximate quantity.

#### Friable ACM's

Duct Wrap identified in the building in conjunction with the forced air heating system is classified as friable ACM. The visual assessment to quantify the extent of this material identified HVAC Duct Wrap at the following locations within the basement, first and second floors:

- Living (1 register, 15 sq. ft.)
- Front Entry (1 register, 10 sq. ft.)
- Kitchen (1 register, 15 sq. ft.)
- Bathroom (1 register, 15 sq. ft.)
- 2nd Fl. SW Bedroom (1 vertical chase to basement, 25 sq. ft.)
- Basement (6" to 12" in. dia. HVAC Wrapped Ductwork, 37 lin. ft.)

#### **Category I ACM**

Three types of resilient floor covering (Layered Gray Linoleum, Yellow Linoleum and 9"x9" Gray Vinyl Floor Tile) located within the front entry, kitchen and hallway were found to contain up to 30% Chrysotile asbestos. The assessment to quantify the extent of this material identified approximately 269 sq. ft. of this material within the Building.

Asphalt roof samples collected during the completion of the inspection were found to contain up to 10% Chrysotile asbestos. The assessment to quantify the extent of this material identified 1,152 sq. ft. of asphalt roofing materials on the Garage.

#### **Category II ACM**

Plaster samples collected from the 2<sup>nd</sup> floor SW bedroom ceiling were found to contain up to 1.50% asbestos following analysis. The assessment to quantify the extent of this material identified approximately 4,041 sq. ft. of plaster within the Building.

Textured Surfacing samples collected from the 2<sup>nd</sup> floor NE bedroom ceiling were found to contain up to 5% asbestos following analysis. The assessment to quantify the extent of this material identified approximately 486 sq. ft. of textured surfacing within the Building.

#### **RECOMMENDATIONS**

#### **Asbestos Containing Materials**

HVAC material identified in the Building system and listed below is classified as friable ACM and should be removed prior to any renovation/demolition activities.

- Living (1 register, 15 sq. ft.)
- Front Entry (1 register, 10 sq. ft.)
- Kitchen (1 register, 15 sq. ft.)
- Bathroom (1 register, 15 sq. ft.)
- 2nd Fl. SW Bedroom (1 vertical chase to basement, 25 sq. ft.)
- Basement (6" to 12" in. dia. HVAC Wrapped Ductwork, 37 lin. ft.)

Plaster identified on the interior of the Building must be abated prior to completion of any renovation/demolition activities at the Subject Property. Any Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of renovation or demolition operations must be properly abated.

Textured surfacing identified on the interior of the Building must be abated prior to completion of any renovation/demolition activities at the Subject Property. Any Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of renovation or demolition operations must be properly abated.

The Category I roofing materials and resilient floor coverings (Layered Gray Linoleum, Yellow Linoleum and 9"x9" Gray Vinyl Floor Tile) are non-friable ACM's that may be left in place as long as the demolition/renovation activities are completed following the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

Please note: The location of samples obtained during this inspection were in a random fashion and areas that were not identified during this inspection may be damaged or have become damaged since the inspection was completed. If Category I or Category II friable materials are discovered prior to or during the demolition/renovation process, these materials must be abated prior to commencement of any demolition/renovation activities at the Subject Property.

#### **Hazardous Materials**

Hazardous Materials identified at the Subject Property and documented in Table 1 which require proper removal and disposal consist of the following items:

• Smoke Detector (3)

#### **REGULATORY REQUIREMENTS**

A Notification of Intent to Renovate/Demolish form must be filed with the Michigan Department of Environmental Quality- Air Quality Division at least 10 working days prior to any renovation or demolition activities at a site.

The Notification of Intent to Renovate/Demolish form must also be completed and submitted to the MIOSHA-Asbestos Program whenever demolition, encapsulation and/or renovation activities at a site involving greater than ten lineal feet and/or fifteen square feet of ACM will be completed.

Regulated asbestos containing materials per NESHAP (40 CFR Part 61) which falls into any of the following categories are ACM's that must be removed prior to any renovation/demolition activities at the Subject Property.

- Friable asbestos material.
- Category I non-friable ACM that has become friable.
- Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading.
- Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of renovation or demolition operations.

Asbestos abatement should only be performed by a certified asbestos abatement contractor licensed to complete abatement work. The contractor must also follow the standards and requirements set forth per the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) and the USEPA NESHAP (40 CFR Part 61).

Additional information regarding the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) and the USEPA NESHAP (40 CFR Part 61) can be obtained by contacting the associated agency below.

NESHAP Asbestos Program Department of Environmental Quality Phone: 517-284-6777 MIOSHA-CSHD-Asbestos Program State of Michigan Phone: 517-284-7680 Email: asbestos@michigan.gov

#### **DISCLAIMER**

Red Cedar Consulting performed destructive testing methods in an attempt to access and inspect all areas of the Building. Unfortunately, due to the age of construction along with multiple additions/renovations that may have been completed on the Building, additional inspections may be required if suspect ACM material not documented within this report is encountered during renovation/demolition activities.

This report was prepared at the request and for exclusive use by the Muskegon County Land Bank and may not be reproduced or sold without written permission from Red Cedar Consulting.

We appreciate the opportunity to provide the requested services. Please contact us at (888) 449-4566 with any questions or concerns.

Sincerely, Red Cedar Consulting

Raion Poquet

Aaron Paquet Michigan/EPA Certified Asbestos Building Inspector (A30955)

Red Cedar Consulting

## Attachment 1

APEX Research Laboratory Analytical Results

**Certificate of Laboratory Analysis** Test Method, Polarized Light Microscopy (PLM)

Project : 1967 Reynolds St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80446Date Collected:10/16/18Date Received:10/18/18Date Analyzed:10/23/18Date Reported:10/25/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80446 - 01 Cust. #: RS-HM-01A Material: Asphalt Siding Location: Appearance: black,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 60% Other - 40%
Lab ID #: 80446 - 02 Cust. #: RS-HM-01B Material: Asphalt Siding Location: Appearance: black,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 60% Other - 40%
Lab ID #: 80446 - 03 Cust. #: RS-HM-02A Material: Black Vapor Barrier Location: House Appearance: black,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 85% Other - 15%

For Layered Samples, each component will be analyzed and reported separately.

Sent

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.



Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project : 1967 Reynolds St.



	ARI Report #18-80446Date Collected:10/16/18Date Received:10/18/18Date Analyzed:10/23/18Date Reported:10/25/18
Asbestos Type/Percent	Non-Asbestos Material
Asbestos Present: <b>NO</b>	Cellulose - 85%
No Asbestos Observed	Other - 15%
Asbestos Present: <b>NO</b>	Cellulose - 95%
No Asbestos Observed	Other - 5%
Asbestos Present: <b>NO</b>	Cellulose - 95%
No Asbestos Observed	Other - 5%
	Asbestos Present: <b>NO</b> No Asbestos Observed Asbestos Present: <b>NO</b> No Asbestos Observed Asbestos Present: <b>NO</b>

Kant Jett

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.



# Page 3 of 22

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.

Lab ID #: 80446 - 07b Asbestos Present: NO Cust. #: RS-HM-04A No Asbestos Observed Material: Shingle Location: Garage Appearance: black,fibrous,homogenous

ARI Report # Date Collected: Date Received: Date Analyzed: Date Reported:

Certific	ate of Laboratory Analysis
Test Method,	Polarized Light Microscopy (PLM)

Asbestos Type/Percent

Lab ID #: 80446 - 07 Asbestos Present: YES Cellulose - 25% Other - 70% Cust. #: RS-HM-04A Chrysotile - 5% Material: Black Shingle Location: Garage Appearance: black,fibrous,homogenous Layer: of 3 1 Asbestos Present: NO Cellulose - 30% 80446 - 07a Lab ID #: Cust. #: RS-HM-04A No Asbestos Observed Other - 70% Material: Shingle Location: Garage Appearance: black,fibrous,homogenous Layer: 2 of 3 Cellulose - 30% Other - 70% Layer: 3 of 3 For Layered Samples, each component will be analyzed and reported separately. Kant -

Project : 1967 Reynolds St.



18-80446

10/16/18

10/18/18

10/23/18

10/25/18

Non-Asbestos Material

NVLAP Lab Code 102118-0

**Report To:** 

Mr. Aaron Paquet

P.O. Box 13216

Lansing, MI 48901

Red Cedar Consulting

Sample Information

Robert T. Letarte Jr., Laboratory Director

**Certificate of Laboratory Analysis** Test Method, Polarized Light Microscopy (PLM)

Project : 1967 Reynolds St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80446         Date Collected:       10/16/18         Date Received:       10/18/18         Date Analyzed:       10/23/18         Date Reported:       10/25/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80446 - 08 Cust. #: RS-HM-04B Material: Black Shingle	Asbestos Present:	
Location: Garage Appearance: Layer: 1 of 3	NOT ANALYZED	
Lab ID #: 80446 - 08a Cust. #: RS-HM-04B Material: Shingle Location: Garage Appearance: black,fibrous,homogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%
Lab ID #: 80446 - 08b Cust. #: RS-HM-04B Material: Shingle Location: Garage Appearance: black,fibrous,homogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%
For Layered Samples, each component will be analyzed and repo	rted separately.	

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.



Lansing, MI 48901		Date Reported: 10/25/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80446 - 09 Cust. #: RS-HM-05A Material: Layered Grey Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Fiberglass - 10% Other - 70%
Lab ID #: 80446 - 09a Cust. #: RS-HM-05A Material: Linoleum Location: Appearance: yellow,fibrous,nonhomogenous Layer: 2 of 3	Asbestos Present: <b>YES</b> Chrysotile - 30%	Other - 70%
Lab ID #: 80446 - 09b Cust. #: RS-HM-05A Material: Fiberboard Location: Appearance: brown,fibrous,homogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 95% Other - 5%
For Layered Samples, each component will be analyzed and report	ted separately.	

**Report To:** Mr. Aaron Paquet

Red Cedar Consulting P.O. Box 13216 Longing MI 48001

ARI Report # 18-80446 Date Collected: 10/16/18 Date Received: 10/18/18 Date Analyzed: 10/23/18 10/25/10 Date Reported

**Certificate of Laboratory Analysis** 

Test Method, Polarized Light Microscopy (PLM)

Project : 1967 Reynolds St.



Robert T. Letarte Jr., Laboratory Director

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**Certificate of Laboratory Analysis** 

Test Method, Polarized Light Microscopy (PLM)

Project : 1967 Reynolds St.

#### Date Collected: Mr. Aaron Paquet 10/16/18 Red Cedar Consulting Date Received: 10/18/18 P.O. Box 13216 Date Analyzed: 10/23/18 Lansing, MI 48901 Date Reported: 10/25/18 Sample Information Asbestos Type/Percent Non-Asbestos Material Lab ID #: 80446 - 10 Asbestos Present: NO Cellulose - 20% Cust. #: RS-HM-05B No Asbestos Observed Fiberglass - 10% Material: Layered Grey Linoleum Other - 70% Location: Appearance: beige, fibrous, nonhomogenous Layer: of 3 1 Asbestos Present: 80446 - 10a Lab ID #: Cust. #: RS-HM-05B Material: Linoleum NOT ANALYZED Location: Appearance: Layer: 2 of 3 Lab ID #: 80446 - 10b Asbestos Present: NO Cellulose - 95% RS-HM-05B No Asbestos Observed Other - 5% Cust. #: Material: Fiberboard Location: Appearance: brown,fibrous,homogenous Layer: 3 of 3

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.

**Report To:** 



18-80446

ARI Report #

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80446 - 11 Cust. #: RS-HM-06A Material: Yellow Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>YES</b> Chrysotile - 30%	Other - 70%
Lab ID #: 80446 - 12 Cust. #: RS-HM-06B Material: Yellow Linoleum Location: Appearance: Layer: of	Asbestos Present: NOT ANALYZED	
Lab ID #: 80446 - 13 Cust. #: RS-HM-07A Material: Charcoal Linoleum Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 10% Other - 90%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.

**Report To:** 

Mr. Aaron Paquet

P.O. Box 13216

Lansing, MI 48901

Red Cedar Consulting



18-80446

10/16/18

10/18/18

10/23/18

10/25/18

ARI Report #

Date Collected:

Date Received:

Date Analyzed:

Date Reported:

Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project : 1967 Reynolds St.

For Layered Samples, each component will be analyzed and reported separately.

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## **Certificate of Laboratory Analysis**

Test Method, Polarized Light Microscopy (PLM)

Project : 1967 Reynolds St.

Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80446Date Collected:10/16/18Date Received:10/18/18Date Analyzed:10/23/18Date Reported:10/25/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80446 - 14 Cust. #: RS-HM-07B Material: Charcoal Linoleum Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 10% Other - 90%
Lab ID #: 80446 - 15 Cust. #: RS-HM-08A Material: Green Marble Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 35% Other - 65%
Lab ID #: 80446 - 16 Cust. #: RS-HM-08B Material: Green Marble Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 35% Other - 65%



Robert T. Letarte Jr., Laboratory Director

## Test Method, Polarized Light Microscopy (PLM)

**Certificate of Laboratory Analysis** 

Project : 1967 Reynolds St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80446Date Collected:10/16/18Date Received:10/18/18Date Analyzed:10/23/18Date Reported:10/25/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80446 - 17 Cust. #: RS-HM-09A Material: 9x9 Grey VFT Location: Appearance: beige,fibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>YES</b> Chrysotile - 5%	Other - 95%
Lab ID #: 80446 - 17a Cust. #: RS-HM-09A Material: Mastic Location: Appearance: yellow,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80446 - 18 Cust. #: RS-HM-09B Material: 9x9 Grey VFT Location: Appearance: Layer: 1 of 2	Asbestos Present: NOT ANALYZED	
For I avered Samples, each component will be analyzed and report	ed separately	

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.



## Project : 1967 Reynolds St.

**Certificate of Laboratory Analysis** Test Method, Polarized Light Microscopy (PLM)



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80446Date Collected:10/16/18Date Received:10/18/18Date Analyzed:10/23/18Date Reported:10/25/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80446 - 18a Cust. #: RS-HM-09B Material: Mastic Location: Appearance: yellow,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80446 - 19 Cust. #: RS-HM-10A Material: Drywall Location: Appearance: white,fibrous,nonhomogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80446 - 19a Cust. #: RS-HM-10A Material: Joint Compound Location: Appearance: white,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the US Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.



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Test Method, Polarized Light Microscopy (PLM)

Project : 1967 Reynolds St.

Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80446         Date Collected:       10/16/18         Date Received:       10/18/18         Date Analyzed:       10/23/18         Date Reported:       10/25/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80446 - 20 Cust. #: RS-HM-10B Material: Drywall Location: Appearance: white,fibrous,nonhomogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80446 - 20a Cust. #: RS-HM-10B Material: Joint Compound Location: Appearance: white,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80446 - 21 Cust. #: RS-HM-11A Material: Window Glazing Location: Appearance: beige,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



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**Certificate of Laboratory Analysis** Test Method, Polarized Light Microscopy (PLM)

Project : 1967 Reynolds St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80446Date Collected:10/16/18Date Received:10/18/18Date Analyzed:10/23/18Date Reported:10/25/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80446 - 22 Cust. #: RS-HM-11B Material: Window Glazing Location: Appearance: beige,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80446 - 23 Cust. #: RS-HM-12A Material: Layered Yellow Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Fiberglass - 10% Other - 70%
Lab ID #: 80446 - 23a Cust. #: RS-HM-12A Material: Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Fiberglass - 10% Other - 70%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the US Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.



Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project : 1967 Reynolds St.

#### Date Collected: Mr. Aaron Paquet 10/16/18 Red Cedar Consulting Date Received: 10/18/18 P.O. Box 13216 Date Analyzed: 10/23/18 Lansing, MI 48901 Date Reported: 10/25/18 Sample Information Asbestos Type/Percent Non-Asbestos Material Lab ID #: 80446 - 24 Asbestos Present: NO Cellulose - 20% Cust. #: RS-HM-12B No Asbestos Observed Fiberglass - 10% Material: Layered Yellow Linoleum Other - 70% Location: Appearance: beige, fibrous, nonhomogenous Layer: of 2 1 Asbestos Present: NO Lab ID #: 80446 - 24a Cellulose - 20% Cust. #: RS-HM-12B No Asbestos Observed Fiberglass - 10% Linoleum Material: Other - 70% Location: Appearance: beige, fibrous, nonhomogenous of Layer: 2 2 Lab ID #: 80446 - 25 Asbestos Present: NO Fiberglass - 20% RS-HM-13A No Asbestos Observed Other - 80% Cust. #: Material: Shingle Roof Location: House Appearance: black,fibrous,homogenous Layer: 1 of 3

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the US Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.

**Report To:** 



18-80446

ARI Report #

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APEX Research Inc., 11054 Hi Tech Drive, Whitmore Lake, MI 48189

(734) 449-9990, Fax (734) 449-9991

# **Certificate of Laboratory Analysis**

Test Method, Polarized Light Microscopy (PLM)

Project : 1967 Reynolds St.

#### Date Collected: Mr. Aaron Paquet 10/16/18 Red Cedar Consulting Date Received: 10/18/18 P.O. Box 13216 Date Analyzed: 10/23/18 Lansing, MI 48901 Date Reported: 10/25/18 Sample Information Asbestos Type/Percent Non-Asbestos Material Lab ID #: 80446 - 25a Asbestos Present: NO Fiberglass - 20% Cust. #: RS-HM-13A No Asbestos Observed Other - 80% Material: Shingle Location: House Appearance: black,fibrous,homogenous Layer: of 3 2 Asbestos Present: NO Lab ID #: 80446 - 25b Fiberglass - 20% Cust. #: RS-HM-13A No Asbestos Observed Other - 80% Material: Shingle Location: House Appearance: black,fibrous,homogenous of Layer: 3 3 Lab ID #: 80446 - 26 Asbestos Present: NO Fiberglass - 20% RS-HM-13B No Asbestos Observed Other - 80% Cust. #: Material: Shingle Roof Location: House Appearance: black,fibrous,homogenous Layer: 1 of 3 For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the US Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.





**Report To:** 

ARI Report # 18-80446

APEX Research Inc., 11054 Hi Tech Drive, Whitmore Lake, MI 48189 (734) 449-9990, Fax (734) 449-9991

Certificate of Laboratory Analysis Test Method, Polarized Light Microscopy (PLM) Project : 1967 Reynolds St.		
Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80446         Date Collected:       10/16/18         Date Received:       10/18/18         Date Analyzed:       10/23/18         Date Reported:       10/25/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80446 - 26a Cust. #: RS-HM-13B Material: Shingle Location: House Appearance: black,fibrous,homogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 20% Other - 80%
Lab ID #: 80446 - 26b Cust. #: RS-HM-13B Material: Shingle Location: House Appearance: black,fibrous,homogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 20% Other - 80%
Lab ID #: 80446 - 27 Cust. #: RS-HM-14A Material: Tar Paper Location: House Appearance: black,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 35% Other - 65%

For Layered Samples, each component will be analyzed and reported separately.

NVLAP Lab Code 102118-0

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Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the US Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.

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NVLAP Lab Code 102118-0

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P.O. Box 13216 Date Analyzed: 10/23/18 Lansing, MI 48901 Date Reported: 10/25/18 Sample Information Asbestos Type/Percent Non-Asbestos Material Lab ID #: 80446 - 28 Asbestos Present: NO Cellulose - 35% Cust. #: RS-HM-14B No Asbestos Observed Other - 65% Material: Tar Paper Location: House Appearance: black,fibrous,homogenous Layer: of 1 1 Asbestos Present: NO 80446 - 29 Lab ID #: Fiberglass - 20% Cust. #: RS-HM-15A No Asbestos Observed Other - 80% Material: Shingle Roof- Red Location: Garage Appearance: black,fibrous,homogenous of Layer: 1 3 Lab ID #: 80446 - 29a Asbestos Present: NO Cellulose - 30% No Asbestos Observed Other - 70% Cust. #: RS-HM-15A Material: Shingle Location: Garage Appearance: black,fibrous,homogenous Layer: 2 of 3 For Layered Samples, each component will be analyzed and reported separately.

**Report To:** Mr. Aaron Paquet Red Cedar Consulting ARI Report # 18-80446 Date Collected: 10/16/18 Date Received: 10/18/18

Test Method, Polarized Light Microscopy (PLM)

Project : 1967 Reynolds St.



Robert T. Letarte Jr., Laboratory Director

#### Date Received:

For Layered Samples, each component will be analyzed and reported separately.

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Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the US Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.

# Date Reported:

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80446 - 29b Cust. #: RS-HM-15A Material: Shingle Location: Garage Appearance: black,fibrous,nonhomogenous Layer: 3 of 3	Asbestos Present: <b>YES</b> Chrysotile - 10%	Cellulose - 25% Other - 65%
Lab ID #: 80446 - 30 Cust. #: RS-HM-15B Material: Shingle Roof- Red Location: Garage Appearance: black,fibrous,homogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 20% Other - 80%
Lab ID #: 80446 - 30a Cust. #: RS-HM-15B Material: Shingle Location: Garage Appearance: black,fibrous,homogenous Laver: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%

**Report To:** Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901

ARI Report # Date Collected:

Date Analyzed:

Test Method, Polarized Light Microscopy (PLM)

**Certificate of Laboratory Analysis** 

Project : 1967 Reynolds St.



18-80446

10/16/18

10/18/18

10/23/18

10/25/18

**Certificate of Laboratory Analysis** Test Method, Polarized Light Microscopy (PLM)

Project : 1967 Reynolds St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report # 18-80446 Date Collected: 10/16/18 Date Received: 10/18/18 Date Analyzed: 10/23/18 Date Reported: 10/25/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80446 - 30b Cust. #: RS-HM-15B Material: Shingle	Asbestos Present:	
Location: Garage Appearance: Layer: 3 of 3	NOT ANALYZED	
Lab ID #: 80446 - 31 Cust. #: RS-HS-01A Material: Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80446 - 31a Cust. #: RS-HS-01A Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Other - 98%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



### Test Method, Polarized Light Microscopy (PLM)

**Certificate of Laboratory Analysis** 

Project : 1967 Reynolds St.



Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80446Date Collected:10/16/18Date Received:10/18/18Date Analyzed:10/23/18Date Reported:10/25/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80446 - 32 Cust. #: RS-HS-01B Material: Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80446 - 32a Cust. #: RS-HS-01B Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Other - 98%
Lab ID #: 80446 - 33 Cust. #: RS-HS-01C Material: Plaster Finish Coat Location: Appearance: green,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director



Date F

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80446 - 33a	Asbestos Present: NO	Cellulose - 2%
Cust. #: RS-HS-01C	No Asbestos Observed	Other - 98%
Material: Plaster Base Coat		
Location:		
Appearance: grey,fibrous,homogenous		
Layer: 2 of 2		
Lab ID #: 80446 - 34	Asbestos Present: YES	Other - 98.50%
Cust. #: RS-HS-01D	Chrysotile - 1.50%	Other - 98.30%
Material: Plaster Texture	Chrysothe - 1.5070	
Location:		
Appearance: beige,fibrous,nonhomogenous	POINT COUNT RESULT	
Layer: 1 of 2		
	Asbestos Present: NO	Cellulose - 2%
Lab ID #: 80446 - 34a Cust. #: RS-HS-01D	No Asbestos Observed	Other - 98%
Cust. #: RS-HS-01D Material: Plaster Base Coat	No Asbestos Observed	Otner - 98%
Location:		
Appearance: grey,fibrous,homogenous		
Laver: 2 of 2		

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the US Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901 
 ARI Report #
 18-80446

 Date Collected:
 10/16/18

 Date Received:
 10/18/18

 Date Analyzed:
 10/23/18

 Date Reported:
 10/25/18

Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project : 1967 Reynolds St.

containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the US Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles

**Report To:** 

### **Certificate of Laboratory Analysis**

Test Method, Polarized Light Microscopy (PLM)

Project : 1967 Reynolds St.

Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		Date Collected:10/16/18Date Received:10/18/18Date Analyzed:10/23/18Date Reported:10/25/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80446 - 35 Cust. #: RS-HS-01E Material: Plaster Location: Appearance: white,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Other - 98%
Lab ID #: 80446 - 36 Cust. #: RS-HS-02A Material: Textured Surfacing Location: Appearance: beige,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>YES</b> Chrysotile - 5%	Other - 95%
Lab ID #: 80446 - 37 Cust. #: RS-HS-02B Material: Textured Surfacing	Asbestos Present:	
Location: Appearance: Layer: of	NOT ANALYZED	
For Lavered Samples, each component will be analyzed and ren	orted separately	

Jan

Robert T. Letarte Jr., Laboratory Director



18-80446

ARI Report #

**Certificate of Laboratory Analysis** Test Method, Polarized Light Microscopy (PLM)

Project : 1967 Reynolds St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80446         Date Collected:       10/16/18         Date Received:       10/18/18         Date Analyzed:       10/23/18         Date Reported:       10/25/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80446 - 38 Cust. #: RS-HS-02C Material: Textured Surfacing	Asbestos Present:	
Location:	NOT ANALYZED	
Appearance: Layer: of		
Lab ID #: Cust. #: Material: Location: Appearance: Layer: of	Asbestos Present:	
Lab ID #: Cust. #: Material: Location: Appearance: Layer: of	Asbestos Present:	

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



1 4 4	ke, MI 48189 Phone: 734-449-9990	urvey : /2 -/6 -/8	t # : Report	Contact Person: Aaron Paquet apaquet@redcedarconsulting.net PC all samples with a detection of <5% ACM.		Paint	BIOSIS Unter EPA Level II	Volume Area Results										Received by:	UUI Date: 2018 10-1 8-18 1134	APEX RESEARCH
80446	<b>IC.</b> 1105		Project # :	148-8739 Pr.M RPA 600.	tos: Bulk <sup>x</sup>	Bulk	Mold: Buik 1ape TEM: AHERA 7400 Bulk/NOB	Material/Location	hashalt Liderig	/	Black Vapor Berrice (House	Brown Vapor Barrier (Here		Black Shingle (Derage)	Loud Man Lundan	· · · · · · · · · · · · ·	Hollow Two lesse	LAS Relinquished by:	) ~ / l/ - / S Date :	
	APEX Research, Ir	ame:	Address: PO Box 13216 City. St., Zin: Lansing, MI 48901	149-4566		48 hour 72 hour	Other: 5 day (TTP) All Samples	Lab ID # Client ID #	1 RS-HM-01A	2 25- HM-018	1× 22A	 5 RS-HM- 034	RSHM-OZB	F KS-HM-041	4 RS-HM-D4B a R2_HM. 24B	NH-82	RS-HM	In there we we		

1054 Hi Tech Drive, Whitmore Lak         E-mail: apexresearch@chartel         E-mail: apexresearch@chartel         Bulk       Date of         Project         Project         Project         Project         Publik       Wipe         Bulk       Wipe         Bulk       Tape         AHERA 7400       Bulk/h	II 48189 Phone: 734-449-9990 АРЕХ net Fax: 734-449-9991	Survey:       /b / l - / l       Lab Use Only Log-In         ::       /flog Report       Report         #:       Aaron Paquet       Report         Person:       Aaron Paquet       Aaron sulting.net         Point Count       PCM	Air Paint Soil	Volume Area Results							Kecelved by: UCT 1 8 2018
	$APEX \ Research, Inc. {}^{11054  \mathrm{Hi}  \mathrm{Tech}  \mathrm{Drive},  \mathrm{Whitmore}  \mathrm{Lake},  \mathrm{MI}  ^{48189}}{}^{\mathrm{B-mail: apexresearch@chartermi.net}}$	Insulting     Date of       Balance     Project       AB901     Project       AB901     Project       About State     Project       Contact     PLM EPA 600, PC all       Acheetos: Bulk     Wine	Bulk Wipe Bulk Tape AHERA 7400 Bulk/NOB	W	4 Chesesel From	~	. 6	A LAL	10 R (11		Received by: CI

	344
APEX Research, Inc. 11054 Hi Tech Drive, Whitmore Lake, MI 48189 Phone: 7. E-mail: apexresearch@chartermi.net Fax: 73	Phone: 734-449-9990 Fax: 734-449-9991
Client Name: Red Cedar Consulting Date of Survey : <u>/o -/</u>	10-1/c-18 Lab Use Only
PO Box 13216	elde Al Report
City, St., Zip: Lansing, MI 48901 Project #: Project #: Contact Person: Aaron	Paquet
Around Times: (Circle One) PLM EPA 600, PC all Achestoc: Bulk X Wine	apaquet@redcedarconsulting.net samples with a detection of <5% ACM. Point Count PCM
Wipe	
72 hour	Other Viable
Other: 2det (TTP) All Samples TEM: AHERA 7400 Bulk/NOB EPA Level II	vel II
Lab ID #     Client ID #     Material/Location     Volume	Area Results
23 R5-4M-12 A Seyered Vollow Senoleum	
35 RS-HM - 13 A Shingle Leaf (House)	
36 RS-HM-138	
125-HM-14 TI	
38 RS-HM- MB " 0 D. J. D. 1 M	
- Low - 25(- WH-52	
R3 - H5 - 0	
P RS.	
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- 18/-	Date: 0CT18 2018
Rev. 12/03 Work Forms: COC	APEX RESEARCH

APEX Research, Inc. 11054 Hi Tech Drive, Whitmore Lake, MI 48189 Phone: 734-449-9990	189 Phone: 734-449-999 187 Fav. 734-440-0001		
Red Cedar Consulting PO Box 13216	Cy: 18-16-1	tt.	Lab Use Only Log-in Report
/, St., Zlp:       Lansing, MI 48901       Project #         ne:       (888) 449-4566       Fax:       (888) 448-8739       Contact Pt         ne:       (888) 449-4566       Fax:       (888) 448-8739       Contact Pt         irn       Around Times:       (Circle One)       PLM EPA 600, PC all san         Asbestos:       Bulk       x       Wipe	Point Count Paguet	t cedarconsulting.r on of <5% ACM.	ند لا
Rush     24 hour     Lead:     Bulk     Wipe     Air       48 hour     72 hour     Mold:     Bulk     Tape     Biok       Other :     Air     TTP     All Samples     TEM:     AHERA 7400     Bulk/NOB	Air Paint BioSIS Other EPA Level II	Soil	
Lab ID #     Client ID #     Material/Location	Volume Ar	Area Results	ts
34 R5-H5-01D Pleater 35 R5-H5.01F			
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Red Cedar Consulting

Tables

#### Table 1 - Summary of Hazardous Materials, 1967 Reynolds St., Muskegon, Michigan

Hazardous Materials Description and Location							
Location Material Description Qua							
2 <sup>nd</sup> Floor SW Bedroom	Smoke Detector	1					
2 <sup>nd</sup> Floor NE Bedroom Closet	<sup>ad</sup> Floor NE Bedroom Closet Smoke Detector						
Basement	Smoke Detector	1					

Sample Number	Sample Description	Friable	Material Type	Material Classification	% Asbestos Laboratory Result	Sample Location	Approx. Material Quantity
RS-HM-01A	Asphalt Siding	No	М	Category I	ND	House Exterior	NA
RS-HM-01B	Asphalt Siding	No	М	Category I	ND	House Exterior	NA
RS-HM-02A	Black Vapor Barrier	Yes	М	Category II	ND	House Exterior	NA
RS-HM-02B	Black Vapor Barrier	Yes	М	Category II	ND	House Exterior	NA
RS-HM-03A	Brown Vapor Barrier	Yes	М	Category II	ND	Garage Exterior	NA
RS-HM-03B	Brown Vapor Barrier	Yes	М	Category II	ND	Garage Exterior	NA
RS-HM-04A	Black Shingle	No	М	Category I	5%CH/ND/ND	Garage Exterior	576 sq. ft.
RS-HM-04B	Black Shingle	No	М	Category I	NA/ND/ND	Garage Exterior	NA
RS-HM-05A	Layered Grey Linoleum	No	М	Category I	ND/30%CH/ND	Front Entry	84 sq. ft.
RS-HM-05B	Layered Grey Linoleum	No	М	Category I	ND/NA/ND	Front Entry	NA
RS-HM-06A	Yellow Linoleum	No	М	Category I	30%CH	Kitchen	176 sq. ft.
RS-HM-06B	Yellow Linoleum	No	М	Category I	NA	Kitchen	NA
RS-HM-07A	Charcoal Linoleum	No	М	Category I	ND	Bathroom	NA
RS-HM-07B	Charcoal Linoleum	No	М	Category I	ND	Bathroom	NA
RS-HM-08A	Green Marble Linoleum	No	М	Category I	ND	SE Bedroom Closet	NA
RS-HM-08B	Green Marble Linoleum	No	М	Category I	ND	SE Bedroom Closet	NA
RS-HM-09A	9x9 Grey VFT	No	М	Category II	5%CH/ND	Hallway	9 sq. ft.
RS-HM-09B	9x9 Grey VFT	No	М	Category II	NA/ND	Hallway	NA
RS-HM-10A	Drywall and Joint Compound	No	М	Category II	ND/ND	Front Entry Ceiling	NA
RS-HM-10B	Drywall and Joint Compound	No	М	Category II	ND/ND	Kitchen Wall	NA
RS-HM-11A	Window Glazing	Yes	М	Category II	ND	Front Entry	NA
RS-HM-11B	Window Glazing	Yes	М	Category II	ND	SE Bedroom	NA
RS-HM-12A	Layered Yellow Linoleum	No	М	Category I	ND/ND	2 <sup>nd</sup> Fl. Bathroom	NA
RS-HM-12B	Layered Yellow Linoleum	No	М	Category I	ND/ND	2 <sup>nd</sup> Fl. Bathroom	NA
RS-HM-13A	Shingle Roof	No	М	Category I	ND/ND/ND	House Exterior	NA
RS-HM-13B	Shingle Roof	No	М	Category I	ND/ND/ND	House Exterior	NA
RS-HM-14A	Tar Paper	Yes	М	Category II	ND	House Exterior	NA

Table 2 - Summary of Sample Descriptions and Asbestos Laboratory Results, 1967 Reynolds St., Muskegon, Michigan

Sample Number	Sample Description	Friable	Material Type	Material Classification	% Asbestos Laboratory Result	Sample Location	Approx. Material Quantity
RS-HM-14B	Tar Paper	Yes	М	Category II	ND	House Exterior	NA
RS-HM-15A	Shingle Roof- Red	No	М	Category I	ND/ND/10%CH	Garage Exterior	576 sq. ft.
RS-HM-15B	Shingle Roof- Red	No	М	Category I	ND/ND/NA	Garage Exterior	NA
RS-HS-01A	Plaster	No	S	Category II	ND/ND	Living Ceiling	NA
RS-HS-01B	Plaster	No	S	Category II	ND/ND	Living Wall	NA
RS-HS-01C	Plaster	No	S	Category II	ND/ND	Dining Wall	NA
RS-HS-01D	Plaster	No	S	Category II	1.50%CH/ND	2 <sup>nd</sup> Fl. SW Bedroom Ceiling	4,041 sq. ft.
RS-HS-01E	Plaster	No	S	Category II	ND	2 <sup>nd</sup> Fl. SE Bedroom Wall	NA
RS-HS-02A	Textured Surfacing	No	S	Category II	5%CH	2 <sup>nd</sup> Fl. NE Bedroom Ceiling	486 sq. ft.
RS-HS-02B	Textured Surfacing	No	S	Category II	NA	2 <sup>nd</sup> Fl. SE Bedroom Ceiling	NA
RS-HS-02C	Textured Surfacing	No	S	Category II	NA	2 <sup>nd</sup> Fl. SW Bedroom Ceiling	NA

#### Notes:

#### Material Types

M = Miscellaneous building material

- TSI = Thermal System Insulation
- S = Surfacing Material
- PC = Point Count Analysis
- CH = Chrysotile Asbestos

#### Abbreviations

- NQ = Not quantified
- NA = Not applicable
- ND = Not detected. Laboratory result is less than 1 % asbestos
- lin. ft. = linear feet
- sq. ft. = square feet

Asbestos Containing Material (ACM) is defined as any material containing more than 1 percent asbestos as determined utilizing Polarized Light Microscopy.

Asbestos Containing Material Description and Location					
Location	Material Description	Friable	Condition	Material Type	Approx. Quantity
Living (1 register, 15 sq. ft.) Front Entry (1 register, 10 sq. ft.) Kitchen (1 register, 15 sq. ft.) Bathroom (1 register, 15 sq. ft.) 2 <sup>nd</sup> Fl. SW Bedroom (1 vertical chase to basement, 25 sq. ft.)	HVAC Duct Wrap	Yes	Fair	TSI	80 sq. ft.
Basement (6" to 12" in. dia. HVAC Wrapped Ductwork, 37 lin. ft.)	HVAC Duct Wrap	Yes	Fair	TSI	37 lin. ft.

#### Notes:

Material Types

#### Abbreviations

- M = Miscellaneous building material TSI = Thermal System Insulation

S = Surfacing Material

lin. ft. = linear feet sq. ft. = square feet

Exterior - Asbestos Containing Materials				
Location	Material Description		Friable	Approx. Quantity
Garage Roof	Black Asphalt Shingles		No	576 sq. ft.
Garage Roof	Red Asphalt Shingles		No	576 sq. ft.
		Total		1,152 sq. ft.
Interior - Asbestos Containing Materials				
Location	<b>Material Description</b>		Friable	Approx. Quantity
Front Entry	Layered Gray Linoleum		No	84 sq. ft.
Kitchen	Yellow Linoleum		No	176 sq. ft.
Hallway	9x9 Gray VFT		No	9 sq. ft.
		Total		269 sq. ft.
Interior - Asbestos Containing Materials				
Location	<b>Material Description</b>		Friable	Approx. Quantity
Living (1 register, 15 sq. ft.)				
Front Entry (1 register, 10 sq. ft.) Kitchen (1 register, 15 sq. ft.)	HVAC Duct Wrap		Yes	80 sq. ft.
Bathroom (1 register, 15 sq. ft.)	none Duct whip		103	00 34.11.
2 <sup>nd</sup> Fl. SW Bedroom (1 vertical chase to basement, 25 sq. ft.)				
		Total		80 sq. ft.
Interior - Asbestos Containing Materials				
Location	<b>Material Description</b>		Friable	Approx. Quantity
Basement (6" to 12" in. dia. HVAC Wrapped Ductwork, 37 lin. ft.)	HVAC Duct Wrap		Yes	37 lin. ft.
ini ioj		Total		37 lin. ft.

### Table 4 - Summary of All Asbestos Containing Materials, 1967 Reynolds St., Muskegon, Michigan

Interior - Asbestos Containing Materials				
Location	<b>Material Description</b>		Friable	Approx. Quantity
1 <sup>st</sup> Floor	Wall Plaster		No	1,120 sq. ft.
1 <sup>st</sup> Floor	Ceiling Plaster		No	443 sq. ft.
2 <sup>nd</sup> Floor	Wall Plaster		No	1,808 sq. ft.
2 <sup>nd</sup> Floor	Ceiling Plaster		No	670 sq. ft.
		Total		4,041 sq. ft.
Interior - Asbestos Containing Materials				
Location	<b>Material Description</b>		Friable	Approx. Quantity
2 <sup>nd</sup> Fl. NE Bedroom Ceiling	Textured Surfacing		No	168 sq. ft.
2 <sup>nd</sup> Fl. SE Bedroom Ceiling	Textured Surfacing		No	110 sq. ft.
2 <sup>nd</sup> Fl. SW Bedroom Ceiling	Textured Surfacing		No	208 sq. ft.
		Total		486 sq. ft.

#### Table 4 - Summary of All Asbestos Containing Materials, 1967 Reynolds St., Muskegon, Michigan

#### Notes:

Abbreviations

#### lin. ft. = linear feet sq. ft. = square feet

**Shaded/Bolded** = Friable ACM and any Category I and Category II non-friable ACM that has a high probability of becoming crumbled, pulverized, or reduced to powder by the demolition or renovation activities that must be properly abated prior to commencement of any demolition/renovation activities.

Demolition/renovation activities completed with intact Category I non-friable ACM are regulated by OSHA and must be completed following the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

Please note that a Negative Pressure Enclosure must be utilized during abatement when Site Conditions Warrant. Examples of these conditions include the abatement of Plaster and Vermiculite insulation, HVAC Duct Wrap in Poor Condition, and Air-O-Cell/Mag Pipe Wrap. Conditions outside of these should be assessed on a case by case basis during the Asbestos Abatement Contractors site walk and Work Plan Preparation.



P.O. Box 13216 Lansing, MI 48901 Phone: 888.449.4566 Fax: 888.448.8739 www.redcedarconsulting.net

November 2, 2018

Mr. Tim Burgess Muskegon County Land Bank Land Bank Coordinator 173 E. Apple Avenue, Suite 104 Muskegon, MI 49442

#### RE: Asbestos Containing Material and Hazardous Materials Inspection 2032 Ray St., Muskegon Heights, MI 49444 Parcel ID: 61-26-650-017-0028-00

Dear Mr. Burgess:

Red Cedar Consulting has completed an asbestos-containing material (ACM) and hazardous materials inspection at 2032 Ray St., Muskegon Heights, Michigan (Subject Property). This inspection was completed at the request of the Muskegon County Land Bank to comply with the United States Environmental Protection Agency (USEPA) requirements for demolition and renovation set forth under the National Emissions Standards for Hazardous Air Pollutants (NESHAP, 40 CFR Part 61). This inspection was also completed to comply with the Occupational Safety and Health Administration (OSHA) Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

#### **SUBJECT PROPERTY**

The Subject Property is comprised of a .14 acre residential parcel which contains an approximate 675 square foot residential building (the Building) constructed in 1920. The Building was constructed on a concrete block basement with two aboveground floors. The exterior walls of the Building were finished with fiber lap over wood lap while the roof was sealed with asphalt shingles. The Building can be further divided into a living room, dining room, kitchen, bath, bedroom and rear entry on the first floor while the second floor contains one open room.

#### VISUAL INSPECTION AND SAMPLING

#### **Asbestos Containing Materials Inspection**

Mr. Aaron Paquet of Red Cedar Consulting (Red Cedar), an accredited State of Michigan/EPA Asbestos Building Inspector (Accreditation Number A30955) whom completed training per the Michigan Asbestos Workers Accreditation Act 440 completed an inspection of the Subject Property on October 24, 2018 for suspected asbestos containing building materials.

This inspection, and subsequent sample collection was completed in accordance with the USEPA Asbestos Hazard Emergency Response Act (AHERA) (40 CFR Part 763) assessment and sampling protocol.

During the completion of the inspection, each area of the Subject Property was visually inspected for asbestos containing building materials (ACBM). Following the completion of the visual inspection, Red Cedar staff identified each suspect area of friable and non-friable ACBM and sorted them into one of three homogenous categories for sampling purposes. AHERA defines friable as a material that when dry, may be crumbled, pulverized, or reduced to powder by hand pressure. A homogenous area is defined by OSHA as an area of surfacing, thermal system insulation (TSI) or miscellaneous material that is uniform in color and texture. Surfacing materials are most commonly found in sprayed-on, troweled-on or otherwise applied to surfaces, such as acoustical plaster on ceilings and fireproofing materials on structural members. TSI refers to materials applied to pipes, fittings, boilers, ductwork, or other components to prevent heat loss or gain, or condensation. Any material that does not fall under the surfacing or TSI category, such as floor tile, drywall, and acoustical ceiling tile are placed into the miscellaneous materials category.

Following the completion of the visual inspection, Red Cedar staff identified the following materials as suspect ACBM:

- Asphalt Shingle
- Chimney Flashing
- Fiberboard
- Linoleum
- 12x12 Vinyl Floor Tile
- Drywall and Joint Compound
- Glazing
- Plaster

Red Cedar staff collected twenty nine samples of suspect ACBM separated into thirteen distinct homogenous groups for laboratory analysis. Samples were collected and submitted to APEX Research Inc. Laboratories (APEX) (Accreditation Number 102118-0) for laboratory analysis. Analysis was completed utilizing polarized light microscopy (PLM) which is the Environmental Protection Agency (EPA) approved method for analysis of bulk materials for asbestos. PLM analysis completed pursuant to method (EPA 600/M4-82-020) identifies asbestos fiber bundles by the visual properties displayed when the sample is treated with various dispersion staining liquids. The laboratory report completed following the sample analysis indicates if asbestos is present, and at what percentage along with a description and percentage of other fibrous and non-fibrous materials and sample color. Chain-of-custody documentation was followed from sample collection through shipping and receiving of the samples at the designated laboratory. The documentation assures that samples will meet the quality assurance/quality control measures defined by AHERA. The laboratory analytical report prepared by APEX for the twenty nine samples is included as Attachment A.

#### **Hazardous Materials Inspection**

On October 24, 2018 the Subject Property was also inspected for the presence of hazardous materials which include but are not limited to polychlorinated biphenyls (PCBs) and potential mercury containing equipment and any items or containers that may contain or be classified as a hazardous or regulated material. Each material, if identified, was documented along with the approximate location. Any materials identified as hazardous are included in Table 1.

#### **INSPECTION RESULTS AND RECOMMENDATIONS**

During the completion of the asbestos inspection, twenty nine samples of suspect ACM were collected and are documented in Table 2 along with the Red Cedar sample number, description, friability, material type, ACM classification, sample location, material quantity and laboratory analytical results.

ACM, as defined by the USEPA NESHAP is "any material containing more than 1 percent asbestos as determined using the method specified in appendix E, subpart E, 40 CFR part 763 Section 1, Polarized Light Microscopy".

Friable ACM is defined by NESHAP as any material containing more than 1 percent asbestos that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. Friable ACM is a concern due the ease of unintentionally disturbing the ACM which may result in "visible emissions" which is known as a Fiber Release Episode.

Non-friable asbestos-containing material is defined as "material containing more than 1 percent asbestos that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. Non-friable ACM's are separated into Category I and Category II ACM. Category I ACM is any asbestos containing packing's, gaskets, resilient floor coverings (vinyl floor tile and linoleum are examples of these) and asphalt roofing products. Category II ACM is stated by NESHAP as any material excluding Category I non-friable ACM such as drywall, plaster or fiberboard insulation.

#### **Presumed Asbestos Containing Material**

Presumed Asbestos Containing Materials (PACM) are suspect surfacing, TSI and miscellaneous materials found in buildings constructed prior to 1980 which are classified as and due to the age of the structure, are assumed to be ACM and do not require sample collection and analysis. OSHA dictates that PACM may be "rebutted" following a complete inspection pursuant to AHERA protocol.

No PACM was identified during the completion of this inspection. All suspect materials identified were sampled and analyzed for ACM.

Table 3 lists the location, material description, friability, condition, material type (surfacing, thermal or miscellaneous) and approximate quantity of all PACM documented at the Subject Property.

Table 4 provides a summary all ACM documented at the Subject Property which includes the material location, description, and approximate quantity.

#### Friable ACM's

No friable ACM's were identified during the completion of this inspection.

#### **Category I ACM**

No Category I ACM was identified during the completion of this inspection.

#### **Category II ACM**

Chimney flashing samples collected during the completion of the inspection were found to contain up to 10% Chrysotile asbestos. The assessment to quantify the extent of this material identified 10 sq. ft. of chimney flashing materials on the Building.

#### **RECOMMENDATIONS**

#### **Asbestos Containing Materials**

Chimney flashing identified on the exterior of the Building must be abated prior to completion of any renovation/demolition activities at the Subject Property. Any Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of renovation or demolition operations must be properly abated.

Please note: The location of samples obtained during this inspection were in a random fashion and areas that were not identified during this inspection may be damaged or have become damaged since the inspection was completed. If Category I or Category II friable materials are discovered prior to or during the demolition/renovation process, these materials must be abated prior to commencement of any demolition/renovation activities at the Subject Property.

#### **Hazardous Materials**

Hazardous Materials identified at the Subject Property and documented in Table 1 which require proper removal and disposal consist of the following items:

- Smoke Detector (5)
- 2' Fluorescent Light (Fixture and Ballast Only) (1)

#### **REGULATORY REQUIREMENTS**

A Notification of Intent to Renovate/Demolish form must be filed with the Michigan Department of Environmental Quality- Air Quality Division at least 10 working days prior to any renovation or demolition activities at a site.

The Notification of Intent to Renovate/Demolish form must also be completed and submitted to the MIOSHA-Asbestos Program whenever demolition, encapsulation and/or renovation activities at a site involving greater than ten lineal feet and/or fifteen square feet of ACM will be completed.

Regulated asbestos containing materials per NESHAP (40 CFR Part 61) which falls into any of the following categories are ACM's that must be removed prior to any renovation/demolition activities at the Subject Property.

- Friable asbestos material.
- Category I non-friable ACM that has become friable.
- Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading.
- Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of renovation or demolition operations.

Asbestos abatement should only be performed by a certified asbestos abatement contractor licensed to complete abatement work. The contractor must also follow the standards and requirements set forth per the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) and the USEPA NESHAP (40 CFR Part 61).

Additional information regarding the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) and the USEPA NESHAP (40 CFR Part 61) can be obtained by contacting the associated agency below.

NESHAP Asbestos Program Department of Environmental Quality Phone: 517-284-6777 MIOSHA-CSHD-Asbestos Program State of Michigan Phone: 517-284-7680 Email: asbestos@michigan.gov

#### **DISCLAIMER**

Red Cedar Consulting performed destructive testing methods in an attempt to access and inspect all areas of the Building. Unfortunately, due to the age of construction along with multiple additions/renovations that may have been completed on the Building, additional inspections may be required if suspect ACM material not documented within this report is encountered during renovation/demolition activities.

This report was prepared at the request and for exclusive use by the Muskegon County Land Bank and may not be reproduced or sold without written permission from Red Cedar Consulting.

We appreciate the opportunity to provide the requested services. Please contact us at (888) 449-4566 with any questions or concerns.

Sincerely, Red Cedar Consulting

Raion Poquet

Aaron Paquet Michigan/EPA Certified Asbestos Building Inspector (A30955)

Red Cedar Consulting

### Attachment 1

APEX Research Laboratory Analytical Results

Test Method, Polarized Light Microscopy (PLM)

Project : 2032 Ray St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80577Date Collected:10/24/18Date Received:10/25/18Date Analyzed:10/30/18Date Reported:10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80577 - 01 Cust. #: RS-HM-01A Material: Asphalt Shingle Location: Appearance: black,fibrous,homogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Other - 90%
Lab ID #: 80577 - 01a Cust. #: RS-HM-01A Material: Shingle Location: Appearance: black,fibrous,homogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Other - 90%
Lab ID #: 80577 - 01b Cust. #: RS-HM-01A Material: Shingle Location: Appearance: black,fibrous,homogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Other - 90%

For Layered Samples, each component will be analyzed and reported separately.

Kut Joh

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.



APEX Research Inc., 11054 Hi Tech Drive, Whitmore Lake, MI 48189 (734) 449-9990, Fax (734) 449-9991

Test Method, Polarized Light Microscopy (PLM)

Project : 2032 Ray St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80577Date Collected:10/24/18Date Received:10/25/18Date Analyzed:10/30/18Date Reported:10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80577 - 02 Cust. #: RS-HM-01B Material: Asphalt Shingle Location: Appearance: black,fibrous,homogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Other - 90%
Lab ID #: 80577 - 02a Cust. #: RS-HM-01B Material: Shingle Location: Appearance: black,fibrous,homogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Other - 90%
Lab ID #: 80577 - 02b Cust. #: RS-HM-01B Material: Shingle Location: Appearance: black,fibrous,homogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Other - 90%

For Layered Samples, each component will be analyzed and reported separately.

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Page 3 of 15

Lab ID #: 80577 - 03 Cust. #: RS-HM-02A Material: Flashing Location: Appearance: black,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>YES</b> Chrysotile - 10%	Other - 90%
Lab ID #: 80577 - 04 Cust. #: RS-HM-02B Material: Flashing Location: Appearance: Layer: of	Asbestos Present: NOT ANALYZED	
Lab ID #: 80577 - 05 Cust. #: RS-HM-03A Material: Asphalt Siding Location: Appearance: black,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 60% Other - 40%
For Layered Samples, each component will be analyzed and reporte	d separately.	2, Pat

#### **Report To:** Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901

Sample Information

ARI Report # 18-80577 Date Collected: 10/24/18 Date Received: 10/25/18 Date Analyzed: 10/30/18 Date Reported: 10/30/18

Non-Asbestos Material

## **Certificate of Laboratory Analysis**

Test Method, Polarized Light Microscopy (PLM)

Project : 2032 Ray St.

Asbestos Type/Percent



Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2032 Ray St.



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Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80577 - 06 Cust. #: RS-HM-03B Material: Asphalt Siding Location: Appearance: black,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 60% Other - 40%
Lab ID #: 80577 - 07 Cust. #: RS-HM-04A Material: Brown Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 15% Other - 85%
Lab ID #: 80577 - 08 Cust. #: RS-HM-04B Material: Brown Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 15% Other - 85%

For Layered Samples, each component will be analyzed and reported separately.

Kut Joh

Robert T. Letarte Jr., Laboratory Director

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For Layered Samples, each component will be analyzed and reported separately.

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NVLAP Lab Code 102118-0

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Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resoluti	on limits may yield false/negative results in certain circur	mstances. Suspect floor tile
containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples	tested and to insure the integrity of the results, may only	be reproduced in full. This
certificate must not be used by the customer to claim product certification, approval, or endorsement by NV	LAP, NIST, or any agency of the Federal Government. /	APEX Research Inc. is not

Test Method, Polarized Light Microscopy (PLM)

Project : 2032 Ray St.

Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80577Date Collected:10/24/18Date Received:10/25/18Date Analyzed:10/30/18Date Reported:10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80577 - 09 Cust. #: RS-HM-05A Material: Blue 12x12 VFT Location: Appearance: black,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 15% Fiberglass - 10% Other - 75%
Lab ID #: 80577 - 10 Cust. #: RS-HM-05B Material: Blue 12x12 VFT Location: Appearance: black,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 15% Fiberglass - 10% Other - 75%
Lab ID #: 80577 - 11 Cust. #: RS-HM-06A Material: Green Linoleum Location: Appearance: green,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%



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Robert T. Letarte Jr., Laboratory Director

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Test Method, Polarized Light Microscopy (PLM)

Project : 2032 Ray St.



Lansing, MI 48901Date Reported:10/30/18	
Sample Information Asbestos Type/Percent Non-Asbestos Materi	ıl
Lab ID #:80577 - 12Asbestos Present:NOCellulose - 20%Cust. #:RS-HM-06BNo Asbestos ObservedOther - 80%Material:Green LinoleumLocation:Location:Appearance:green,fibrous,nonhomogenousLayer:1of1	
Lab ID #:80577 - 13Asbestos Present:NOCellulose - 35%Cust. #:RS-HM-07ANo Asbestos ObservedOther - 65%Material:Brown Stone LinoleumLocation:Location:Appearance:brown,fibrous,nonhomogenousLayer:1of1	
Lab ID #:80577 - 14Asbestos Present:NOCellulose - 35%Cust. #:RS-HM-07BNo Asbestos ObservedOther - 65%Material:Brown Stone LinoleumLocation:Location:Appearance:brown,fibrous,nonhomogenousLayer:1of1	

For Layered Samples, each component will be analyzed and reported separately.

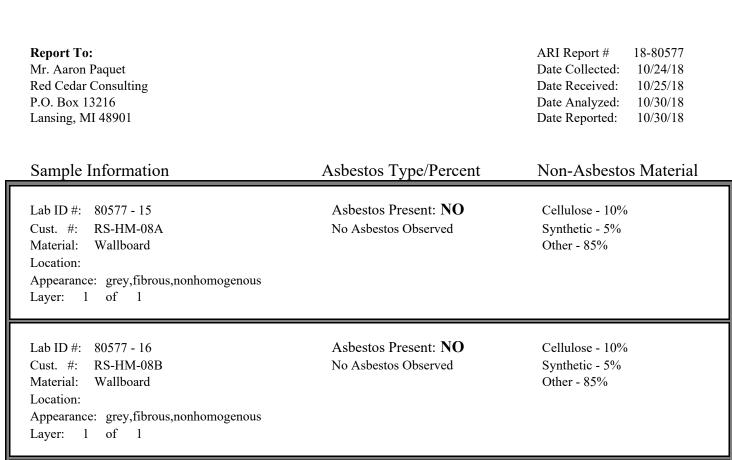
Kut Joh

Robert T. Letarte Jr., Laboratory Director

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Lab ID #: 80577 - 17 RS-HM-09A Cust. #: Material: Window Glazing Location: House Appearance: beige,fibrous,homogenous Layer: 1 of 1

Asbestos Present: NO Chrysotile - Trace

POINT COUNT RESULT

Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

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Test Method, Polarized Light Microscopy (PLM)

Project : 2032 Ray St.

**Certificate of Laboratory Analysis** 

### Test Method, Polarized Light Microscopy (PLM)

Project : 2032 Ray St.

**Certificate of Laboratory Analysis** 



Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-805 //Date Collected:10/24/18Date Received:10/25/18Date Analyzed:10/30/18Date Reported:10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80577 - 18 Cust. #: RS-HM-09B Material: Window Glazing Location: House Appearance: beige,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80577 - 19 Cust. #: RS-HM-10A Material: Pebbled Linoleum Location: Appearance: brown,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80577 - 20 Cust. #: RS-HM-10B Material: Pebbled Linoleum Location: Appearance: brown,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2032 Ray St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80577Date Collected:10/24/18Date Received:10/25/18Date Analyzed:10/30/18Date Reported:10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80577 - 21 Cust. #: RS-HM-11A Material: Drywall Location: Appearance: white,fibrous,nonhomogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 15% Other - 85%
Lab ID #: 80577 - 21a Cust. #: RS-HM-11A Material: Joint Compound Location: Appearance: green,nonfibrous,homogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80577 - 21b Cust. #: RS-HM-11A Material: Textured Paint Location: Appearance: white,fibrous,nonhomogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Vermiculite - 10% Other - 90%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2032 Ray St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80577Date Collected:10/24/18Date Received:10/25/18Date Analyzed:10/30/18Date Reported:10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80577 - 22 Cust. #: RS-HM-11B Material: Drywall Location: Appearance: white,fibrous,nonhomogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 15% Other - 85%
Lab ID #: 80577 - 22a Cust. #: RS-HM-11B Material: Joint Compound Location: Appearance: green,nonfibrous,homogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80577 - 22b Cust. #: RS-HM-11B Material: Textured Paint Location: Appearance: white,fibrous,nonhomogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Vermiculite - 10% Other - 90%

For Layered Samples, each component will be analyzed and reported separately.

Sout

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2032 Ray St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80577Date Collected:10/24/18Date Received:10/25/18Date Analyzed:10/30/18Date Reported:10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80577 - 23 Cust. #: RS-HM-12A Material: Window Glazing Location: Basement Appearance: beige,nonfibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80577 - 24 Cust. #: RS-HM-12B Material: Window Glazing Location: Basement Appearance: beige,nonfibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80577 - 25 Cust. #: RS-HS-01A Material: Plaster Location: Appearance: grey,fibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Other - 98%

For Layered Samples, each component will be analyzed and reported separately.

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Test Method, Polarized Light Microscopy (PLM)

Project : 2032 Ray St.



Sample InformationAsbestos Type/PercentNon-Asbestos MaterialLab ID #: 80577 - 25aAsbestos Present: NOCellulose - 1%Cust. #: RS-HS-01ANo Asbestos ObservedOther - 99%Material: PlasterLocation:Haspearance: beige,fibrous,homogenousLayer: 2 of 2	7 8 8 8 8
Cust. #:RS-HS-01ANo Asbestos ObservedOther - 99%Material:PlasterLocation:Appearance:beige,fibrous,homogenous	ial
Lab ID #:80577 - 26Asbestos Present: NOOther - 100%Cust. #:RS-HS-01BNo Asbestos ObservedMaterial:Material:TextureLocation:Appearance:white,nonfibrous,homogenousLayer:1of3	
Lab ID #:80577 - 26aAsbestos Present: NOCellulose - 2%Cust. #:RS-HS-01BNo Asbestos ObservedOther - 98%Material:PlasterLocation:Location:Appearance:grey,fibrous,homogenousLayer:2of3	

For Layered Samples, each component will be analyzed and reported separately.

Kut Joh

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2032 Ray St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80577Date Collected:10/24/18Date Received:10/25/18Date Analyzed:10/30/18Date Reported:10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80577 - 26b Cust. #: RS-HS-01B Material: Plaster Location: Appearance: beige,nonfibrous,homogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80577 - 27 Cust. #: RS-HS-01C Material: Texture Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80577 - 27a Cust. #: RS-HS-01C Material: Plaster Location: Appearance: grey,fibrous,homogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Other - 98%
Layer: 2 of 3		

For Layered Samples, each component will be analyzed and reported separately.

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Test Method, Polarized Light Microscopy (PLM)

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Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80577Date Collected:10/24/18Date Received:10/25/18Date Analyzed:10/30/18Date Reported:10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80577 - 27b Cust. #: RS-HS-01C Material: Plaster Location: Appearance: beige,fibrous,homogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Hair - 1% Other - 99%
Lab ID #: 80577 - 28 Cust. #: RS-HS-01D Material: Texture Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80577 - 28a Cust. #: RS-HS-01D Material: Plaster Location: Appearance: grey,fibrous,homogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Other - 98%

For Layered Samples, each component will be analyzed and reported separately.

Sent

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2032 Ray St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80577Date Collected:10/24/18Date Received:10/25/18Date Analyzed:10/30/18Date Reported:10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80577 - 28b Cust. #: RS-HS-01D Material: Mortar Location: Appearance: grey,fibrous,homogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Hair - 5% Other - 95%
Lab ID #: 80577 - 29 Cust. #: RS-HS-01E Material: Plaster Location: Appearance: grey,fibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Other - 98%
Lab ID #: 80577 - 29a Cust. #: RS-HS-01E Material: Plaster Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 5% Other - 95%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director



APEX R	Lesearch,	Inc. 11054 Hir Tech Dr	rive, Whitmore Lak			
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	Lansing, MI 48901		-	. # :		
hone: (888)44	9-4566 Fax	(888) 448-8739	Contact	t Person:	n Paquet uet@redcedarco	
furn Arou	ind Times: (	Circle One) PLM EPA	.600, PC all	samples with a	detection of <	:5% ACM.
		Asbestos: Bulk	Wipe	Point Count	PCM	
ısh 24 hour		Lead: Bulk	Wipe	Air Pa	int Soil	
hour 72 hour		Mold: Bulk	Таре	BioSIS	Other Via	able
ther :						
		TEM: AHERA 740	J0 Bulk/I	NOB EPA I		
Lab ID #	Client ID #	Material/Lo	cation	Volume	Area	Results
1	RS-HM-OIA	Asphalt Shin	sle			
6	RS-41-013	- n				
3	RS-Um-02A	Floshing				
4	RS-HM-02B	F 3				
<u> </u>	RS-14-03A	Fibertup Sodih	×.			
<u>6</u>	RS. HM-0313	+4 +1				
	R3-1+m.04A	Brown Linste	$\sim$			
9	25 pm-04 B	n				
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10	RS-4m- 05B	** +>				
	RS-HM-06A	Green Linoleu	my -			
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Work Forms: COC

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APEX R	Lesearch,	Inc. 11054 Hi Tech Di E-mail: ap	rive, Whitmore Lak exresearch@charter		734-449-9990 /34-449-9991	APEX RESEARCH
Client Name: 13	Red Cedar Consultin	ng	Date of	Survey : 10	0-24-13	Lab Use Only Log-In
Address:			Project	: 2032 1	2 my st.	Report
	Lansing, MI 48901			#:		
$\mathbf{hone}  (888)  44$	9-4566 Fax	• (888) 448-8739	Contact	Person: Aarc	on Paquet	
Furn Arou	und Times:	Circle One) PLM EPA	600, PC all	apaq samples with a	uet@redcedarco detection of <	nsulting.net 5% ACM.
		Asbestos: Bulk	Wipe	Point Count	PCM	
Rush 24 hour		Lead: Bulk	Wipe	Air Pa	aint Soil	
18 hour $(72$ hour)					Other Vi	
Other :						
		TEM: AHERA 74	00 Bulk/N	IOB EPA		
Lab ID #	Client ID #	Material/Lo	cation	Volume	Area	Results
R	RS-HM-26B	Green Einden	~			<u> </u>
B	RS-HM-07A	Brown Stone Li	noterm			
14	RS-HM-07B	n	• (			
5	RS-HM-38A	Woll Board				
16	125-HM-08B	63				
i)	RS-HM-09A	windows Chazil	- House			
	RS-HM-09B	•2	Fl			
<u> </u>	RS-HM-10A	Publed Londeur	<u>~</u>			
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21	B-HM-11A	Drywood & Cong	Low			
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Rev: 12/03	-				. AP	EX RESEARCH

· Work Forms: COC·

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APEX R	Lesearch,	Inc. 11054 Hi Tech Drive, Whitmore Lake E-mail: apexresearch@charter		34-449-9990 4-449-9991	
	:				••••••••••••••••••••••••••••••••••••••
Client Name: 13	Red Cedar Consulti	ng Date of	Survey : Vo	-24-18	Lab Use Only Log-In
Address:		Project	Survey : <u>10</u> : <u>2032</u>	Brin St	Report
		Project	#:		
			Person: Aaron		
Turn Arou	ind Times:	Circle One) PLM EPA 600, PC all	apaqu	et@redcedarco	onsulting.net
		Circle One) PLA EFA 800, PC arr $A$ Asbestos: Bulk Wipe	Point Count	PCM	
Rush _ 24 hour					
48 hour $(72 \text{ hour})$		Lead: Bulk Wipe			
		Mold: Bulk Tape	BioSIS	Other V	iable
Other :	_ (TTP) All Samples	TEM: AHERA 7400 Bulk/N	OB EPA L	evel II	
Lab ID #	Client ID #	Material/Location	Volume	Area	Results
72	Parton 2A	Window Charges Bond	A		
23 Ali	RS-11-12A RS-11-12R	Window Glazing -BSm	ł		
24	125-HM-128	61 LT 71	f		
24 25	125-HM-128 PS-H8-21A				
24 25 26	125-HM-128 PS-H8-21A RS-H5-01B	Plasto 11			
24 25 26 27	125-11-128 125-118-21A 125-115-01B 125-115-020	11 11			
247 25 26 27 27	125-14-128 125-148-21A 125-145-01B 125-145-02 123-145-02	Plasto 11			
24 25 26 27	125-11-128 125-118-21A 125-115-01B 125-115-020	11 11 11			
247 25 26 27 27	125-14-128 125-148-21A 125-145-01B 125-145-02 123-145-02	11 11 11			
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Work Forms: COC

Red Cedar Consulting

Tables

### Table 1 - Summary of Hazardous Materials, 2032 Ray St., Muskegon Heights, Michigan

Hazardous Materials Description and Location				
Location	Location Material Description			
Living Room	Smoke Detector	1		
Kitchen	Smoke Detector	1		
Kitchen	2' Fluorescent Light (Fixture and Ballast Only)	1		
Bedroom	Smoke Detector	1		
Stairwell to 2 <sup>nd</sup> Floor	Smoke Detector	1		
2 <sup>nd</sup> Floor Main Room	Smoke Detector	1		

 Table 2 - Summary of Sample Descriptions and Asbestos Laboratory Results, 2032 Ray St., Muskegon Heights, Michigan

Sample Number	Sample Description	Friable	Material Type	Material Classification	% Asbestos Laboratory Result	Sample Location	Approx. Material Quantity
RS-HM-01A	Asphalt Shingle	No	М	Category I	ND/ND/ND	House Roof	NA
RS-HM-01B	Asphalt Shingle	No	М	Category I	ND/ND/ND	House Roof	NA
RS-HM-02A	Chimney Flashing	No	М	Category II	10% CH	Chimney	10 sq. ft.
RS-HM-02B	Chimney Flashing	No	М	Category II	NA	Chimney	NA
RS-HM-03A	Fiberlap Siding	Yes	М	Category II	ND	House Exterior	NA
RS-HM-03B	Fiberlap Siding	Yes	М	Category II	ND	House Exterior	NA
RS-HM-04A	Brown Linoleum	No	М	Category I	ND	Kitchen/Dining	NA
RS-HM-04B	Brown Linoleum	No	М	Category I	ND	Kitchen/Dining	NA
RS-HM-05A	Blue 12x12 VFT	No	М	Category I	ND	Bathroom	NA
RS-HM-05B	Blue 12x12 VFT	No	М	Category I	ND	Bathroom	NA
RS-HM-06A	Green Linoleum	No	М	Category I	ND	Bedroom	NA
RS-HM-06B	Green Linoleum	No	М	Category I	ND	Bedroom	NA
RS-HM-07A	Brown Stone Linoleum ML	No	М	Category I	ND	Rear Entry	NA
RS-HM-07B	Brown Stone Linoleum ML	No	М	Category I	ND	Rear Entry	NA
RS-HM-08A	Wallboard	No	М	Category II	ND	Rear Entry	NA
RS-HM-08B	Wallboard	No	М	Category II	ND	Rear Entry	NA
RS-HM-09A	Window Glazing-House	Yes	М	Category II	ND	Kitchen Window	NA
RS-HM-09B	Window Glazing-House	Yes	М	Category II	ND	Bathroom Window	NA
RS-HM-10A	Pebbled Linoleum	No	М	Category I	ND	2 <sup>nd</sup> Floor Main Room	NA
RS-HM-10B	Pebbled Linoleum	No	М	Category I	ND	2 <sup>nd</sup> Floor Main Room	NA
RS-HM-11A	Drywall and Joint Compound	No	М	Category I	ND/ND/ND	2 <sup>nd</sup> Floor Main Room	NA
RS-HM-11B	Drywall and Joint Compound	No	М	Category I	ND	2 <sup>nd</sup> Floor Main Room	NA
RS-HM-12A	Window Glazing-Basement	Yes	М	Category II	ND	Basement Window	NA
RS-HM-12B	Window Glazing-Basement	Yes	М	Category II	ND	Basement Window	NA
RS-HS-01A	Plaster	No	S	Category II	ND/ND	Kitchen Ceiling	NA
RS-HS-01B	Plaster	No	S	Category II	ND/ND/ND	Living Room Ceiling	NA
RS-HS-01C	Plaster	No	S	Category II	ND/ND/ND	Living Room Wall	NA

Table 2 - Summary of Sample Descriptions and Asbestos Laboratory Results, 2032 Ray St., Muskegon Heights, Michigan

Sample Number	Sample Description	Friable	Material Type	Material Classification	% Asbestos Laboratory Result	Sample Location	Approx. Material Quantity
RS-HS-01D	Plaster	No	S	Category II	ND/ND/ND	Bedroom Wall	NA
RS-HS-01E	Plaster	No	S	Category II	ND/ND	Bathroom Wall	NA

Notes:

Material Types

Abbreviations

TSI S PC	<ul> <li>= Miscellaneous building material</li> <li>= Thermal System Insulation</li> <li>= Surfacing Material</li> <li>= Point Count Analysis</li> <li>= Chrysotile Asbestos</li> </ul>		<ul> <li>Not quantified</li> <li>Not applicable</li> <li>Not detected. Laboratory result is less than 1 % asbestos</li> <li>linear feet</li> <li>square feet</li> </ul>
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Asbestos Containing Material (ACM) is defined as any material containing more than 1 percent asbestos as determined utilizing Polarized Light Microscopy.

### Table 3 - Summary of Presumed Asbestos Containing Materials, 2032 Ray St., Muskegon Heights, Michigan

Asbestos Containing Material Description and Location					
Location	Material Description	Friable	Condition	Material Type	Approx. Quantity
No Presumed Asbestos Containing Materials Identified					

Notes:

Mater	rial Types	Abbreviations		
TSI	<ul> <li>Miscellaneous building material</li> <li>Thermal System Insulation</li> <li>Surfacing Material</li> </ul>		= linear feet = square feet	

#### Table 4 - Summary of All Asbestos Containing Materials, 2032 Ray St., Muskegon Heights, Michigan

Exterior - Asbestos Containing Mat	erials			
Location	Material Description		Friable	Approx. Quantity
Building Roof	Chimney Flashing		No	10 sq. ft.
		Total		10 sq. ft.

Notes: Abbreviations

lin. ft. = linear feet sq. ft. = square feet

**Shaded/Bolded** = Friable ACM and any Category I and Category II non-friable ACM that has a high probability of becoming crumbled, pulverized, or reduced to powder by the demolition or renovation activities that must be properly abated prior to commencement of any demolition/renovation activities.

Demolition/renovation activities completed with intact Category I non-friable ACM are regulated by OSHA and must be completed following the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

Please note that a Negative Pressure Enclosure must be utilized during abatement when Site Conditions Warrant. Examples of these conditions include the abatement of Plaster and Vermiculite insulation, HVAC Duct Wrap in Poor Condition, and Air-O-Cell/Mag Pipe Wrap. Conditions outside of these should be assessed on a case by case basis during the Asbestos Abatement Contractors site walk and Work Plan Preparation.



P.O. Box 13216 Lansing, MI 48901 Phone: 888.449.4566 Fax: 888.448.8739 www.redcedarconsulting.net

November 2, 2018

Mr. Tim Burgess Muskegon County Land Bank Land Bank Coordinator 173 E. Apple Avenue, Suite 104 Muskegon, MI 49442

#### RE: Asbestos Containing Material and Hazardous Materials Inspection 2037 Hoyt St., Muskegon Heights, MI 49444 Parcel ID: 61-26-595-034-0010-00

Dear Mr. Burgess:

Red Cedar Consulting has completed an asbestos-containing material (ACM) and hazardous materials inspection at 2037 Hoyt St., Muskegon Heights, Michigan (Subject Property). This inspection was completed at the request of the Muskegon County Land Bank to comply with the United States Environmental Protection Agency (USEPA) requirements for demolition and renovation set forth under the National Emissions Standards for Hazardous Air Pollutants (NESHAP, 40 CFR Part 61). This inspection was also completed to comply with the Occupational Safety and Health Administration (OSHA) Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

#### **SUBJECT PROPERTY**

The Subject Property is comprised of a .14 acre residential parcel which contains a 360 sq. ft. detached garage and approximate 872 square foot residential building (the Building) constructed in 1930. The Building was constructed on a concrete foundation with one aboveground floor. The exterior walls of the Building were finished with wood lap over a vapor barrier while the roof was sealed with asphalt shingles. The Building can be further divided into a front entry, living room, dining room, kitchen, bathroom, two bedrooms and a rear entry.

#### VISUAL INSPECTION AND SAMPLING

#### **Asbestos Containing Materials Inspection**

Mr. Aaron Paquet of Red Cedar Consulting (Red Cedar), an accredited State of Michigan/EPA Asbestos Building Inspector (Accreditation Number A30955) whom completed training per the Michigan Asbestos Workers Accreditation Act 440 completed an inspection of the Subject Property on October 24, 2018 for suspected asbestos containing building materials.

This inspection, and subsequent sample collection was completed in accordance with the USEPA Asbestos Hazard Emergency Response Act (AHERA) (40 CFR Part 763) assessment and sampling protocol.

During the completion of the inspection, each area of the Subject Property was visually inspected for asbestos containing building materials (ACBM). Following the completion of the visual inspection, Red Cedar staff identified each suspect area of friable and non-friable ACBM and sorted them into one of three homogenous categories for sampling purposes. AHERA defines friable as a material that when dry, may be crumbled, pulverized, or reduced to powder by hand pressure. A homogenous area is defined by OSHA as an area of surfacing, thermal system insulation (TSI) or miscellaneous material that is uniform in color and texture. Surfacing materials are most commonly found in sprayed-on, troweled-on or otherwise applied to surfaces, such as acoustical plaster on ceilings and fireproofing materials on structural members. TSI refers to materials applied to pipes, fittings, boilers, ductwork, or other components to prevent heat loss or gain, or condensation. Any material that does not fall under the surfacing or TSI category, such as floor tile, drywall, and acoustical ceiling tile are placed into the miscellaneous materials category.

Following the completion of the visual inspection, Red Cedar staff identified the following materials as suspect ACBM:

- Asphalt Shingle
- Chimney Flashing
- Vapor Barrier
- Linoleum
- 12x12 Vinyl Floor Tile
- 1x1 Ceiling Tile
- Glazing
- Plaster

Red Cedar staff collected fifteen samples of suspect ACBM separated into eleven distinct homogenous groups for laboratory analysis. Samples were collected and submitted to APEX Research Inc. Laboratories (APEX) (Accreditation Number 102118-0) for laboratory analysis. Analysis was completed utilizing polarized light microscopy (PLM) which is the Environmental Protection Agency (EPA) approved method for analysis of bulk materials for asbestos. PLM analysis completed pursuant to method (EPA 600/M4-82-020) identifies asbestos fiber bundles by the visual properties displayed when the sample is treated with various dispersion staining liquids. The laboratory report completed following the sample analysis indicates if asbestos is present, and at what percentage along with a description and percentage of other fibrous and non-fibrous materials and sample color. Chain-of-custody documentation was followed from sample collection through shipping and receiving of the samples at the designated laboratory. The documentation assures that samples will meet the quality assurance/quality control measures defined by AHERA. The laboratory analytical report prepared by APEX for the fifteen samples is included as Attachment A.

#### **Hazardous Materials Inspection**

On October 24, 2018 the Subject Property was also inspected for the presence of hazardous materials which include but are not limited to polychlorinated biphenyls (PCBs) and potential mercury containing equipment and any items or containers that may contain or be classified as a hazardous or regulated material. Each material, if identified, was documented along with the approximate location. Any materials identified as hazardous are included in Table 1.

#### **INSPECTION RESULTS AND RECOMMENDATIONS**

During the completion of the asbestos inspection, fifteen samples of suspect ACM were collected and are documented in Table 2 along with the Red Cedar sample number, description, friability, material type, ACM classification, sample location, material quantity and laboratory analytical results.

ACM, as defined by the USEPA NESHAP is "any material containing more than 1 percent asbestos as determined using the method specified in appendix E, subpart E, 40 CFR part 763 Section 1, Polarized Light Microscopy".

Friable ACM is defined by NESHAP as any material containing more than 1 percent asbestos that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. Friable ACM is a concern due the ease of unintentionally disturbing the ACM which may result in "visible emissions" which is known as a Fiber Release Episode.

Non-friable asbestos-containing material is defined as "material containing more than 1 percent asbestos that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. Non-friable ACM's are separated into Category I and Category II ACM. Category I ACM is any asbestos containing packing's, gaskets, resilient floor coverings (vinyl floor tile and linoleum are examples of these) and asphalt roofing products. Category II ACM is stated by NESHAP as any material excluding Category I non-friable ACM such as drywall, plaster or fiberboard insulation.

#### **Presumed Asbestos Containing Material**

Presumed Asbestos Containing Materials (PACM) are suspect surfacing, TSI and miscellaneous materials found in buildings constructed prior to 1980 which are classified as and due to the age of the structure, are assumed to be ACM and do not require sample collection and analysis. OSHA dictates that PACM may be "rebutted" following a complete inspection pursuant to AHERA protocol.

The HVAC Duct Wrap located in the Building was classified as PACM due to the age of the structure and samples were not collected.

Table 3 lists the location, material description, friability, condition, material type (surfacing, thermal or miscellaneous) and approximate quantity of all PACM documented at the Subject Property.

Table 4 provides a summary all ACM documented at the Subject Property which includes the material location, description, and approximate quantity.

#### Friable ACM's

A window glazing sample collected from a window in the living room was found to contain up to 2.25% asbestos following analysis. The assessment to quantify the extent of this material identified eight windows that would fall into the same homogenous group. The windows are listed below:

- (5 windows 28" wide x 64" tall)
- (1 window 24" wide x 46" tall)
- (2 windows 24" wide x 34" tall)

Duct Wrap identified in the building in conjunction with the forced air heating system is classified as friable ACM. The visual assessment to quantify the extent of this material identified HVAC Duct Wrap at the following locations within the basement, first and second floors:

- Living (1 register, 10 sq. ft.)
- Dining (1 register, 10 sq. ft.)
- Kitchen (1 register, 10 sq. ft.)
- Bathroom (1 register, 10 sq. ft.)
- NW Bedroom (1 register, 10 sq. ft.)
- NE Bedroom (1 register, 10 sq. ft.)
- Basement (misc. HVAC wrap on Cold Air Ductwork, 20 sq. ft.)
- Basement (misc. HVAC wrap debris on floor, 50 sq. ft.)

#### Category I ACM

One type of resilient floor covering (Yellow Linoleum Multi Layered) located within the kitchen was found to contain up to 1.5% Chrysotile asbestos. The assessment to quantify the extent of this material identified approximately 168 sq. ft. of this material within the Building.

#### Category II ACM

Chimney Flashing samples collected during the completion of the inspection were found to contain up to 1.75% Chrysotile asbestos. The assessment to quantify the extent of this material identified 10 sq. ft. of chimney flashing materials on the Building.

Plaster samples, collected from the Living Room, NW Bedroom, Dining Room, Bathroom, and NE Bedroom were each found to contain up to 2.25% asbestos following analysis. The assessment to quantify the extent of this material identified approximately 3,604 sq. ft. of plaster within the Building.

#### **RECOMMENDATIONS**

#### **Asbestos Containing Materials**

HVAC material identified in the Building system and listed below is classified as friable ACM and should be removed prior to any renovation/demolition activities.

• Living (1 register, 10 sq. ft.)

- Dining (1 register, 10 sq. ft.)
- Kitchen (1 register, 10 sq. ft.)
- Bathroom (1 register, 10 sq. ft.)
- NW Bedroom (1 register, 10 sq. ft.)
- NE Bedroom (1 register, 10 sq. ft.)
- Basement (misc. HVAC wrap on Cold Air Ductwork, 20 sq. ft.)
- Basement (misc. HVAC wrap debris on floor, 50 sq. ft.)

Friable asbestos containing window glazing was identified on eight windows throughout the Building. The windows that should be abated prior to demolition/renovation activities are listed below:

- (5 windows 28" wide x 64" tall)
- (1 window 24" wide x 46" tall)
- (2 windows 24" wide x 34" tall)

Please note: Other different sized windows are located throughout the Building but these windows were assessed and found to be constructed either without window glazing or were sampled and found to not contain asbestos and therefore are not required to be removed.

Chimney flashing identified on the interior of the Building must be abated prior to completion of any renovation/demolition activities at the Subject Property. Any Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of renovation or demolition operations must be properly abated.

Plaster identified on the interior of the Building must be abated prior to completion of any renovation/demolition activities at the Subject Property. Any Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of renovation or demolition operations must be properly abated.

The Category I resilient floor covering (Yellow Linoleum Multi Layered) is a non-friable ACM that may be left in place as long as the demolition/renovation activities are completed following the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

Please note: The location of samples obtained during this inspection were in a random fashion and areas that were not identified during this inspection may be damaged or have become damaged since the inspection was completed. If Category I or Category II friable materials are discovered prior to or during the demolition/renovation process, these materials must be abated prior to commencement of any demolition/renovation activities at the Subject Property.

#### **Hazardous Materials**

Hazardous Materials identified at the Subject Property and documented in Table 1 which require proper removal and disposal consist of the following items:

- Automobile Tire (12)
- Thermostat (1)

#### **REGULATORY REQUIREMENTS**

A Notification of Intent to Renovate/Demolish form must be filed with the Michigan Department of Environmental Quality- Air Quality Division at least 10 working days prior to any renovation or demolition activities at a site.

The Notification of Intent to Renovate/Demolish form must also be completed and submitted to the MIOSHA-Asbestos Program whenever demolition, encapsulation and/or renovation activities at a site involving greater than ten lineal feet and/or fifteen square feet of ACM will be completed.

Regulated asbestos containing materials per NESHAP (40 CFR Part 61) which falls into any of the following categories are ACM's that must be removed prior to any renovation/demolition activities at the Subject Property.

- Friable asbestos material.
- Category I non-friable ACM that has become friable.
- Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading.
- Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of renovation or demolition operations.

Asbestos abatement should only be performed by a certified asbestos abatement contractor licensed to complete abatement work. The contractor must also follow the standards and requirements set forth per the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) and the USEPA NESHAP (40 CFR Part 61).

Additional information regarding the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) and the USEPA NESHAP (40 CFR Part 61) can be obtained by contacting the associated agency below.

NESHAP Asbestos Program Department of Environmental Quality Phone: 517-284-6777 MIOSHA-CSHD-Asbestos Program State of Michigan Phone: 517-284-7680 Email: asbestos@michigan.gov

#### **DISCLAIMER**

Red Cedar Consulting performed destructive testing methods in an attempt to access and inspect all areas of the Building. Unfortunately, due to the age of construction along with multiple additions/renovations that may have been completed on the Building, additional inspections may be required if suspect ACM material not documented within this report is encountered during renovation/demolition activities.

This report was prepared at the request and for exclusive use by the Muskegon County Land Bank and may not be reproduced or sold without written permission from Red Cedar Consulting.

We appreciate the opportunity to provide the requested services. Please contact us at (888) 449-4566 with any questions or concerns.

Sincerely, Red Cedar Consulting

Raion Poquet

Aaron Paquet Michigan/EPA Certified Asbestos Building Inspector (A30955)

Red Cedar Consulting

### Attachment 1

APEX Research Laboratory Analytical Results

Test Method, Polarized Light Microscopy (PLM)

Project : 2037 Hoyt St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80580Date Collected:10/24/18Date Received:10/25/18Date Analyzed:10/30/18Date Reported:10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80580 - 01 Cust. #: HS-HM-01A Material: Asphalt Shingle Location: Appearance: black,fibrous,homogenous Layer: 1 of 5	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80580 - 01a Cust. #: HS-HM-01A Material: Shingle Location: Appearance: black,fibrous,homogenous Layer: 2 of 5	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80580 - 01b Cust. #: HS-HM-01A Material: Shingle Location: Appearance: black,fibrous,homogenous Layer: 3 of 5	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

Kut Joh

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2037 Hoyt St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80580Date Collected:10/24/18Date Received:10/25/18Date Analyzed:10/30/18Date Reported:10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80580 - 01c Cust. #: HS-HM-01A Material: Shingle Location: Appearance: black,fibrous,homogenous Layer: 4 of 5	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80580 - 01d Cust. #: HS-HM-01A Material: Shingle Location: Appearance: black,fibrous,homogenous Layer: 5 of 5	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80580 - 02 Cust. #: HS-HM-01B Material: Asphalt Shingle Location: Appearance: black,fibrous,homogenous Layer: 1 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

Kent Jet

Robert T. Letarte Jr., Laboratory Director

Test Method, Polarized Light Microscopy (PLM)

Project : 2037 Hoyt St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80580Date Collected:10/24/18Date Received:10/25/18Date Analyzed:10/30/18Date Reported:10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80580 - 02a Cust. #: HS-HM-01B Material: Shingle Location: Appearance: black,fibrous,homogenous Layer: 2 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80580 - 02b Cust. #: HS-HM-01B Material: Shingle Location: Appearance: black,fibrous,homogenous Layer: 3 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80580 - 02c Cust. #: HS-HM-01B Material: Shingle Location: Appearance: black,fibrous,homogenous Layer: 4 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

Kent Jor

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.



APEX Research Inc., 11054 Hi Tech Drive, Whitmore Lake, MI 48189 (734) 449-9990, Fax (734) 449-9991

Test Method, Polarized Light Microscopy (PLM)

Project : 2037 Hoyt St.



00500

Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80580Date Collected:10/24/18Date Received:10/25/18Date Analyzed:10/30/18Date Reported:10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80580 - 03 Cust. #: HS-HM-02A Material: Flashing Location:	Asbestos Present: <b>YES</b> Chrysotile - 1.75%	Cellulose - 20% Other - 78.25%
Appearance: black,fibrous,nonhomogenous Layer: 1 of 1	POINT COUNT RESULT	
Lab ID #: 80580 - 04 Cust. #: HS-HM-02B Material: Flashing	Asbestos Present:	
Location: Appearance: Layer: of	NOT ANALYZED	
Lab ID #: 80580 - 05 Cust. #: HS-HM-03A Material: Vapor Barrier Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 95% Other - 5%
For Layered Samples, each component will be analyzed and repor	ted separately.	Rent Jett

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2037 Hoyt St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80580Date Collected:10/24/18Date Received:10/25/18Date Analyzed:10/30/18Date Reported:10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80580 - 06 Cust. #: HS-HM-03B Material: Vapor Barrier Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 95% Other - 5%
Lab ID #: 80580 - 07 Cust. #: HS-HM-04A Material: Yellow Mottled Linoleum Location: Appearance: yellow,fibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Fiberglass - 8% Wollastonite - 2% Other - 70%
Lab ID #: 80580 - 07a Cust. #: HS-HM-04A Material: Linoleum Location: Appearance: beige,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Synthetic - 10% Other - 70%

For Layered Samples, each component will be analyzed and reported separately.

Kent Jor

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.



APEX Research Inc., 11054 Hi Tech Drive, Whitmore Lake, MI 48189 (734) 449-9990, Fax (734) 449-9991

Test Method, Polarized Light Microscopy (PLM)

Project : 2037 Hoyt St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80580         Date Collected:       10/24/18         Date Received:       10/25/18         Date Analyzed:       10/30/18         Date Reported:       10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80580 - 08 Cust. #: HS-HM-04B Material: Yellow Mottled Linoleum Location: Appearance: yellow,fibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Fiberglass - 10% Wollastonite - 2% Other - 68%
Lab ID #: 80580 - 08a Cust. #: HS-HM-04B Material: Linoleum Location: Appearance: beige,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Synthetic - 10% Other - 70%
Lab ID #: 80580 - 09 Cust. #: HS-HM-05A Material: Floor Tile Location: Appearance: beige,fibrous,homogenous Layer: 1 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Synthetic - 10% Other - 90%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director

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Test Method, Polarized Light Microscopy (PLM)

Project : 2037 Hoyt St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80580Date Collected:10/24/18Date Received:10/25/18Date Analyzed:10/30/18Date Reported:10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80580 - 09a Cust. #: HS-HM-05A Material: Mastic Location: Appearance: yellow,nonfibrous,homogenous Layer: 2 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80580 - 09b Cust. #: HS-HM-05A Material: Flooring Location: Appearance: black,fibrous,homogenous Layer: 3 of 4	Asbestos Present: <b>YES</b> Chrysotile - 1.50% POINT COUNT RESULT	Other - 98.50%
Lab ID #: 80580 - 09c Cust. #: HS-HM-05A Material: Tar Paper Location: Appearance: black,fibrous,homogenous Layer: 4 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 50% Other - 50%
For Layered Samples, each component will be analyzed and reported	ed separately.	

Robert T. Letarte Jr., Laboratory Director

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Test Method, Polarized Light Microscopy (PLM)

Project : 2037 Hoyt St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80580Date Collected:10/24/18Date Received:10/25/18Date Analyzed:10/30/18Date Reported:10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80580 - 10 Cust. #: HS-HM-05B Material: Floor Tile Location: Appearance: beige,fibrous,homogenous Layer: 1 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Synthetic - 20% Other - 80%
Lab ID #: 80580 - 10a Cust. #: HS-HM-05B Material: Mastic Location: Appearance: yellow,nonfibrous,homogenous Layer: 2 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80580 - 10b Cust. #: HS-HM-05B Material: Flooring Location: Appearance: Layer: 3 of 4	Asbestos Present: NOT ANALYZED	
For Lourned Samples, each common art will be analyzed and manage		

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2037 Hoyt St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80580Date Collected:10/24/18Date Received:10/25/18Date Analyzed:10/30/18Date Reported:10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80580 - 10c Cust. #: HS-HM-05B Material: Tar Paper Location: Appearance: black,fibrous,homogenous Layer: 4 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 50% Other - 50%
Lab ID #: 80580 - 11 Cust. #: HS-HM-06A Material: Blue 12x12 VFT Location: Appearance: beige,nonfibrous,homogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80580 - 11a Cust. #: HS-HM-06A Material: Mastic Location: Appearance: clear,nonfibrous,homogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

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### Page 10 of 17

Date Collected: Mr. Aaron Paquet 10/24/18 Red Cedar Consulting Date Received: 10/25/18 P.O. Box 13216 Date Analyzed: 10/30/18 Lansing, MI 48901 Date Reported: 10/30/18 Sample Information Asbestos Type/Percent Non-Asbestos Material Lab ID #: 80580 - 11b Asbestos Present: NO Cellulose - 5% Cust. #: HS-HM-06A No Asbestos Observed Fiberglass - 10% Material: Linoleum Wollastonite - 2% Other - 83% Location: Appearance: beige,fibrous,homogenous Layer: 3 of 3 Asbestos Present: NO Other - 100% 80580 - 12 Lab ID #: Cust. #: HS-HM-06B No Asbestos Observed Material: Blue 12x12 VFT Location: Appearance: blue,nonfibrous,homogenous of Layer: 1 3 Lab ID #: 80580 - 12a Asbestos Present: NO Other - 100% Cust. #: HS-HM-06B No Asbestos Observed Material: Mastic Location: Appearance: clear, nonfibrous, homogenous Layer: 2 of 3

**Report To:** 

ARI Report # 18-80580

**Certificate of Laboratory Analysis** 

Test Method, Polarized Light Microscopy (PLM)

Project : 2037 Hoyt St.



Robert T. Letarte Jr., Laboratory Director

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For Layered Samples, each component will be analyzed and reported separately.

Lab ID #: 80580 - 13a Cust. #: HS-HM-07A Material: Linoleum Location:

**Report To:** 

Mr. Aaron Paquet

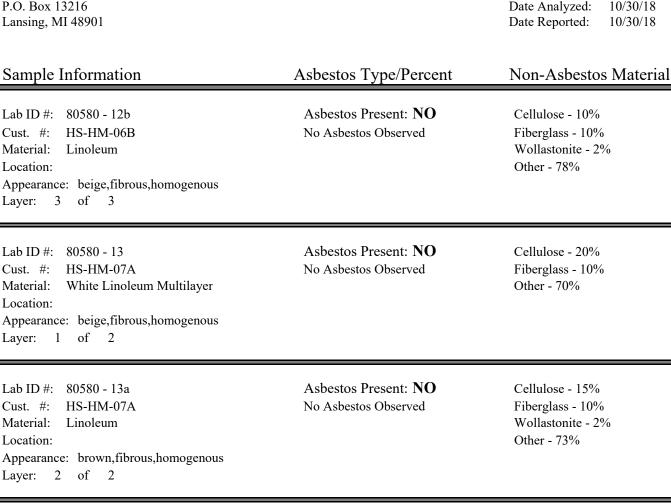
Red Cedar Consulting

For Layered Samples, each component will be analyzed and reported separately.

Certificate of Laboratory Analysis
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Test Method, Polarized Light Microscopy (PLM)

Project : 2037 Hoyt St.



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18-80580

10/24/18

10/25/18

ARI Report #

Date Collected:

Date Received:

Test Method, Polarized Light Microscopy (PLM)

Project : 2037 Hoyt St.



<b>Report To:</b> Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80580Date Collected:10/24/18Date Received:10/25/18Date Analyzed:10/30/18Date Reported:10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80580 - 14 Cust. #: HS-HM-07B Material: White Linoleum Multilayer Location: Appearance: beige,fibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Fiberglass - 10% Other - 70%
Lab ID #: 80580 - 14a Cust. #: HS-HM-07B Material: Linoleum Location: Appearance: brown,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Fiberglass - 10% Wollastonite - 2% Other - 68%
Lab ID #: 80580 - 15 Cust. #: HS-HM-08A Material: White 1x1 Ceiling Tile Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 90% Fiberglass - 2% Other - 8%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director

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Test Method, Polarized Light Microscopy (PLM)

Project : 2037 Hoyt St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80580Date Collected:10/24/18Date Received:10/25/18Date Analyzed:10/30/18Date Reported:10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80580 - 16 Cust. #: HS-HM-08B Material: White 1x1 Ceiling Tile Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 90% Fiberglass - 2% Other - 8%
Lab ID #: 80580 - 17 Cust. #: HS-HM-09A Material: Glazing Location: House Appearance: beige,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80580 - 18 Cust. #: HS-HM-09B Material: Glazing Location: House Appearance: beige,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>YES</b> Chrysotile - 2.25% POINT COUNT RESULT	Other - 97.75%

For Layered Samples, each component will be analyzed and reported separately.

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Test Method, Polarized Light Microscopy (PLM)

Project : 2037 Hoyt St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80580Date Collected:10/24/18Date Received:10/25/18Date Analyzed:10/30/18Date Reported:10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80580 - 19 Cust. #: HS-HM-10A Material: Glazing Location: Basement Appearance: beige,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80580 - 20 Cust. #: HS-HM-10B Material: Glazing Location: Basement Appearance: beige,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80580 - 21 Cust. #: HS-HS-01A Material: Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

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Test Method, Polarized Light Microscopy (PLM)

Project : 2037 Hoyt St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80580Date Collected:10/24/18Date Received:10/25/18Date Analyzed:10/30/18Date Reported:10/30/18		
Sample Information	Asbestos Type/Percent	Non-Asbestos Material		
Lab ID #: 80580 - 21a Cust. #: HS-HS-01A Material: Plaster Base Coat Location:	Asbestos Present: <b>YES</b> Chrysotile - 2.25%	Hair - 2% Other - 95.75%		
Appearance: grey,fibrous,homogenous Layer: 2 of 2	POINT COUNT RESULT			
Lab ID #: 80580 - 22 Cust. #: HS-HS-01B Material: Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%		
Lab ID #: 80580 - 22a Cust. #: HS-HS-01B Material: Plaster Base Coat	Asbestos Present:			
Location: Appearance: Layer: 2 of 2	NOT ANALYZED			
For Layered Samples, each component will be analyzed and reported separately.				

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Page 16 of 17

**Certificate of Laboratory Analysis** 

Test Method, Polarized Light Microscopy (PLM)

Project : 2037 Hoyt St.

Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80580Date Collected:10/24/18Date Received:10/25/18Date Analyzed:10/30/18Date Reported:10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80580 - 23 Cust. #: HS-HS-01C Material: Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80580 - 23a Cust. #: HS-HS-01C Material: Plaster Base Coat Location: Appearance: Layer: 2 of 2	Asbestos Present: NOT ANALYZED	
Lab ID #: 80580 - 24 Cust. #: HS-HS-01D Material: Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
For Layered Samples, each component will be analyzed and report	ed separately.	



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Test Method, Polarized Light Microscopy (PLM)

Project : 2037 Hoyt St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80580Date Collected:10/24/18Date Received:10/25/18Date Analyzed:10/30/18Date Reported:10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80580 - 24a Cust. #: HS-HS-01D Material: Plaster Base Coat	Asbestos Present:	
Location: Appearance: Layer: 2 of 2	NOT ANALYZED	
Lab ID #: 80580 - 25 Cust. #: HS-HS-01E Material: Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80580 - 25a Cust. #: HS-HS-01E Material: Plaster Base Coat	Asbestos Present:	
Location: Appearance: Layer: 2 of 2	NOT ANALYZED	
For Layered Samples, each component will be analyzed and repor	ted separately.	

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Robert T. Letarte Jr., Laboratory Director



APEX Rese Client Name: Red Ced Address: Red Ced Address: Red Ced Address: Red Ced Address: Red Ced Address: Red Ced Address: Red Ced Phone: (888) 449-456 Turn Around T Rush 24 hour A hour A hour Choir Other: Chour A hour A hou	APEX Research, Inc. 11054 Hi Tech Drive, Whitmore Lake, MI 48189 Phone: 734-449-9990 E-mail: apexresearch@chartermi.net Fax: 734-449-9991	La Po	#       Client ID #       Material/Location       Volume       Area       Results         1       H5-4m-01B       N       Material/Location       Volume       Area       Results         3       H5-4m-01B       N       N       Area       Results         3       H5-4m-01B       N       N       Area       Results         4       H5-4m-01B       N       Area       Results         5       H5-4m-02A       Y       Area       Results         6       H5-4m-02A       N       Area       Results         6       H5-4m-02A       N       Area       Results         6       H5-4m-02A       N       Hallel       Area         7       Return-04A       Value       Area       Results         6       H5-4m-02B       N       N       Area         7       Return-04B       N       N       Area         8       H6-4m       N       N       Area         1       H5-4m       N       N       Area         1       H5-4m       N       N       Area         1       H5-4m       N       N       Area         <
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	Research	Red Cedar Consulting PO Box 13216	9, MI 46	Around Times		(		Client ID #	15-4m-06R	HO-MA-SH	18-14m-0713	HS-14m-084	15-14m-08B	HS-HM-244	HS-HM-09B	Holm +104	HS-HM-103	Ho-SH-SH	HS-NB-018	2 Received by:	181	
	APEX F	Client Name: Address:	City, St., Zip:	Phone: (BBB) 449-4566 Fax : (BBB) 4 Turn Around Times: (Circle One)		48 hour 7/2 hour	Other :	Lab ID #	6	2	Ŧ	Ñ	9)	Ct	Ł	6	R	). E	te l	Relinquished by: CAA	Date: 10-74-18	Rev: 12/03 • Work Forms: COC

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Phone: 734-449-9990 Fax: 734-449-9991	10-24-18 037 Hartst. Aaron Paquet apaquet@redcedarcon th a detection of c	Soil	Area
Л 48189 Phone: 73 et Fax: 73	urvey: 10 2037 : 2037 : apaque mples with a d	Air Paint BioSIS Othe	Volume
Inc. 11054 Hi Tech Drive, Whitmore Lake, MI 48189 Phone: 734-449-9990 E-mail: apexresearch@chartermi.net Fax: 734-449-9991	Ig     Date of Survey :     I @ 124 Use       Implement     Project :     2037 HartSt.       Project :     2037 HartSt.       Project :     2037 HartSt.       Report     Report       Droject # :     Asbestos: Bulk X       Wipe     Point Count	Lead: Bulk Wipe Mold: Bulk Tape TEM: AHERA 7400 Bulk/NOB	Material/Location Plester 11 11 11 11 11 11 11 11 11 1
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Tables

#### Table 1 - Summary of Hazardous Materials, 2037 Hoyt St., Muskegon Heights, Michigan

Hazardous Materials Description and Location					
Location	Material Description	Quantity			
Exterior	Automobile Tire	12			
Dining Room	Thermostat	1			

 Table 2 - Summary of Sample Descriptions and Asbestos Laboratory Results, 2037 Hoyt St., Muskegon Heights, Michigan

Sample Number	Sample Description	Friable	Material Type	Material Classification	% Asbestos Laboratory Result	Sample Location	Approx. Material Quantity
HS-HM-01A	Asphalt Shingle	No	М	Category I	ND/ND/ND/ ND/ND	House Roof	NA
HS-HM-01B	Asphalt Shingle	No	М	Category I	ND/ND/ND/ ND	House Roof	NA
HS-HM-02A	Flashing	No	М	Category II	1.75% CH	Chimney	10 sq. ft.
HS-HM-02B	Flashing	No	М	Category II	NA	Chimney	NA
HS-HM-03A	Vapor Barrier	Yes	М	Category II	ND	House Exterior	NA
HS-HM-03B	Vapor Barrier	Yes	М	Category II	ND	House Exterior	NA
HS-HM-04A	Yellow Mottled Linoleum	No	М	Category I	ND/ND	Dining Room	NA
HS-HM-04B	Yellow Mottled Linoleum	No	М	Category I	ND/ND	Dining Room	NA
HS-HM-05A	Yellow Linoleum ML	No	М	Category I	ND/ND/ 1.5% CH/ND	Kitchen	168 sq. ft.
HS-HM-05B	Yellow Linoleum ML	No	М	Category I	ND/ND/NA/ ND	Kitchen	NA
HS-HM-06A	Blue 12x12 VFT	No	М	Category I	ND/ND/ND	Bathroom	NA
HS-HM-06B	Blue 12x12 VFT	No	М	Category I	ND/ND/ND	Bathroom	NA
HS-HM-07A	White Linoleum ML	No	М	Category I	ND/ND	Rear Entry	NA
HS-HM-07B	White Linoleum ML	No	М	Category I	ND/ND	Rear Entry	NA
HS-HM-08A	White 1x1 CT	Yes	М	Category II	ND	Living Room	NA
HS-HM-08B	White 1x1 CT	Yes	М	Category II	ND	Living Room	NA
HS-HM-09A	Glazing House	Yes	М	Category II	ND	Bathroom Window	NA
HS-HM-09B	Glazing House	Yes	М	Category II	2.25% CH	Living Room Window	8 Windows
HS-HM-10A	Glazing Bsmt.	Yes	М	Category II	ND	Basement Window	NA
HS-HM-10B	Glazing Bsmt.	Yes	М	Category II	ND	Basement Window	NA
HS-HS-01A	Plaster	No	S	Category II	ND/2.25% CH	Living Room Ceiling	3,604 sq. ft.
HS-HS-01B	Plaster	No	S	Category II	ND/NA	NW Bedroom Ceiling	NA
HS-HS-01C	Plaster	No	S	Category II	ND/NA	Dining Room Wall	NA
HS-HS-01D	Plaster	No	S	Category II	ND/NA	Bathroom Wall	NA
HS-HS-01E	Plaster	No	S	Category II	ND/NA	NE Bedroom Wall	NA

#### Table 2 - Summary of Sample Descriptions and Asbestos Laboratory Results, 2037 Hoyt St., Muskegon Heights, Michigan

#### Notes:

Material Types	Abbreviations
M = Miscellaneous building material	NQ = Not quantified
TSI = Thermal System Insulation	NA = Not applicable
S = Surfacing Material	ND = Not detected. Laboratory result is less than 1 % asbestos
PC = Point Count Analysis	lin. ft. $=$ linear feet
CH = Chrysotile Asbestos	sq. ft. $=$ square feet

Asbestos Containing Material (ACM) is defined as any material containing more than 1 percent asbestos as determined utilizing Polarized Light Microscopy.

Location	Material Description	Friable	Condition	Material Type	Approx. Quantity
Living (1 register, 10 sq. ft.) Dining (1 register, 10 sq. ft.) Kitchen (1 register, 10 sq. ft.) Bathroom (1 register, 10 sq. ft.) NW Bedroom (1 register, 10 sq. ft.) NE Bedroom (1 register, 10 sq. ft.) Basement (misc. HVAC wrap on Cold Air Ductwork, 20 sq. ft.) Basement (misc. HVAC wrap debris on floor, 50 sq. ft.)	HVAC Duct Wrap	Yes	Fair	TSI	130 sq. ft.

#### Table 3 - Summary of Presumed Asbestos Containing Materials, 2037 Hoyt St., Muskegon Heights, Michigan

Notes:

Material Types

#### Abbreviations

М	= Miscellaneous building material	lin. ft.	= linea
TSI	= Thermal System Insulation	sq. ft.	= squa

= Surfacing Material S

ear feet are feet

Exterior - Asbestos Containing Materials				
Location	<b>Material Description</b>		Friable	Approx. Quantity
Building Roof	Chimney Flashing		No	10 sq. ft.
		Total		10 sq. ft.
Interior - Asbestos Containing Materials				
Location	<b>Material Description</b>		Friable	Approx. Quantity
Kitchen	Yellow Linoleum ML		No	168 sq. ft.
		Total		168 sq. ft.
Interior - Asbestos Containing Materials				
Location	<b>Material Description</b>		Friable	Approx. Quantity
Living (1 register, 10 sq. ft.) Dining (1 register, 10 sq. ft.) Kitchen (1 register, 10 sq. ft.) Bathroom (1 register, 10 sq. ft.) NW Bedroom (1 register, 10 sq. ft.) NE Bedroom (1 register, 10 sq. ft.) Basement (misc. HVAC wrap on Cold Air Ductwork, 20 sq. ft.) Basement (misc. HVAC wrap debris on floor, 50 sq. ft.)	HVAC Duct Wrap		Yes	130 sq. ft.
		Total		130 sq. ft.
Interior - Asbestos Containing Materials				
Location	<b>Material Description</b>		Friable	Approx. Quantity
(5 windows 28" wide x 64" tall)	Glazing		Yes	5 Windows
(1 window 24" wide x 46" tall)	Glazing		Yes	1 Window
(2 windows 24" wide x 34" tall)	Glazing		Yes	2 Windows
		Total		8 Windows
Interior - Asbestos Containing Materials				
Location	<b>Material Description</b>		Friable	Approx. Quantity
1 <sup>st</sup> Floor	Wall Plaster		No	2,736 sq. ft.
1 <sup>st</sup> Floor	Ceiling Plaster		No	868 sq. ft.
		Total		3,604 sq. ft.

### Table 4 - Summary of All Asbestos Containing Materials, 2037 Hoyt St., Muskegon Heights, Michigan

#### Table 4 - Summary of All Asbestos Containing Materials, 2037 Hoyt St., Muskegon Heights, Michigan

Notes: Abbreviations

lin. ft. = linear feet sq. ft. = square feet

**Shaded/Bolded** = Friable ACM and any Category I and Category II non-friable ACM that has a high probability of becoming crumbled, pulverized, or reduced to powder by the demolition or renovation activities that must be properly abated prior to commencement of any demolition/renovation activities.

Demolition/renovation activities completed with intact Category I non-friable ACM are regulated by OSHA and must be completed following the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

Please note that a Negative Pressure Enclosure must be utilized during abatement when Site Conditions Warrant. Examples of these conditions include the abatement of Plaster and Vermiculite insulation, HVAC Duct Wrap in Poor Condition, and Air-O-Cell/Mag Pipe Wrap. Conditions outside of these should be assessed on a case by case basis during the Asbestos Abatement Contractors site walk and Work Plan Preparation.



P.O. Box 13216 Lansing, MI 48901 Phone: 888.449.4566 Fax: 888.448.8739 www.redcedarconsulting.net

November 2, 2018

Mr. Tim Burgess Muskegon County Land Bank Land Bank Coordinator 173 E. Apple Avenue, Suite 104 Muskegon, MI 49442

#### RE: Asbestos Containing Material and Hazardous Materials Inspection 2041 Riordan St., Muskegon Heights, MI 49444 Parcel ID: 61-26-185-031-0010-00

Dear Mr. Burgess:

Red Cedar Consulting has completed an asbestos-containing material (ACM) and hazardous materials inspection at 2041 Riordan St., Muskegon Heights, Michigan (Subject Property). This inspection was completed at the request of the Muskegon County Land Bank to comply with the United States Environmental Protection Agency (USEPA) requirements for demolition and renovation set forth under the National Emissions Standards for Hazardous Air Pollutants (NESHAP, 40 CFR Part 61). This inspection was also completed to comply with the Occupational Safety and Health Administration (OSHA) Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

#### **SUBJECT PROPERTY**

The Subject Property is comprised of a .14 acre residential parcel which contains an approximate 840 square foot residential building (the Building) constructed in 1925. The Building was constructed on a concrete block basement with one aboveground floor. The exterior walls of the Building were finished with aluminum lap while the roof was sealed with asphalt shingles. The Building can be further divided into a front entry, living room, dining/kitchen, bath, two bedrooms and a rear entry.

#### VISUAL INSPECTION AND SAMPLING

#### **Asbestos Containing Materials Inspection**

Mr. Aaron Paquet of Red Cedar Consulting (Red Cedar), an accredited State of Michigan/EPA Asbestos Building Inspector (Accreditation Number A30955) whom completed training per the Michigan Asbestos Workers Accreditation Act 440 completed an inspection of the Subject Property on October 23, 2018 for suspected asbestos containing building materials.

This inspection, and subsequent sample collection was completed in accordance with the USEPA Asbestos Hazard Emergency Response Act (AHERA) (40 CFR Part 763) assessment and sampling protocol.

During the completion of the inspection, each area of the Subject Property was visually inspected for asbestos containing building materials (ACBM). Following the completion of the visual inspection, Red Cedar staff identified each suspect area of friable and non-friable ACBM and sorted them into one of three homogenous categories for sampling purposes. AHERA defines friable as a material that when dry, may be crumbled, pulverized, or reduced to powder by hand pressure. A homogenous area is defined by OSHA as an area of surfacing, thermal system insulation (TSI) or miscellaneous material that is uniform in color and texture. Surfacing materials are most commonly found in sprayed-on, troweled-on or otherwise applied to surfaces, such as acoustical plaster on ceilings and fireproofing materials on structural members. TSI refers to materials applied to pipes, fittings, boilers, ductwork, or other components to prevent heat loss or gain, or condensation. Any material that does not fall under the surfacing or TSI category, such as floor tile, drywall, and acoustical ceiling tile are placed into the miscellaneous materials category.

Following the completion of the visual inspection, Red Cedar staff identified the following materials as suspect ACBM:

- Vapor Barrier
- Shingle Roof
- Vinyl Flooring
- 1'x1' Ceiling Tile
- Drywall
- 2'x4' Ceiling Tile
- Wall Panel Glue
- Window Glazing
- Linoleum
- Roof Flashing
- Plaster

Red Cedar staff collected thirty five samples of suspect ACBM separated into sixteen distinct homogenous groups for laboratory analysis. Samples were collected and submitted to APEX Research Inc. Laboratories (APEX) (Accreditation Number 102118-0) for laboratory analysis. Analysis was completed utilizing polarized light microscopy (PLM) which is the Environmental Protection Agency (EPA) approved method for analysis of bulk materials for asbestos. PLM analysis completed pursuant to method (EPA 600/M4-82-020) identifies asbestos fiber bundles by the visual properties displayed when the sample is treated with various dispersion staining liquids. The laboratory report completed following the sample analysis indicates if asbestos is present, and at what percentage along with a description and percentage of other fibrous and non-fibrous materials and sample color. Chain-of-custody documentation was followed from sample collection through shipping and receiving of the samples at the designated laboratory. The documentation assures that samples will meet the quality assurance/quality control measures defined by AHERA. The laboratory analytical report prepared by APEX for the thirty five samples is included as Attachment A.

#### **Hazardous Materials Inspection**

On October 23, 2018 the Subject Property was also inspected for the presence of hazardous materials which include but are not limited to polychlorinated biphenyls (PCBs) and potential mercury containing equipment and any items or containers that may contain or be classified as a hazardous or regulated material. Each material, if identified, was documented along with the approximate location. Any materials identified as hazardous are included in Table 1.

#### **INSPECTION RESULTS AND RECOMMENDATIONS**

During the completion of the asbestos inspection, thirty five samples of suspect ACM were collected and are documented in Table 2 along with the Red Cedar sample number, description, friability, material type, ACM classification, sample location, material quantity and laboratory analytical results.

ACM, as defined by the USEPA NESHAP is "any material containing more than 1 percent asbestos as determined using the method specified in appendix E, subpart E, 40 CFR part 763 Section 1, Polarized Light Microscopy".

Friable ACM is defined by NESHAP as any material containing more than 1 percent asbestos that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. Friable ACM is a concern due the ease of unintentionally disturbing the ACM which may result in "visible emissions" which is known as a Fiber Release Episode.

Non-friable asbestos-containing material is defined as "material containing more than 1 percent asbestos that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. Non-friable ACM's are separated into Category I and Category II ACM. Category I ACM is any asbestos containing packing's, gaskets, resilient floor coverings (vinyl floor tile and linoleum are examples of these) and asphalt roofing products. Category II ACM is stated by NESHAP as any material excluding Category I non-friable ACM such as drywall, plaster or fiberboard insulation.

#### **Presumed Asbestos Containing Material**

Presumed Asbestos Containing Materials (PACM) are suspect surfacing, TSI and miscellaneous materials found in buildings constructed prior to 1980 which are classified as and due to the age of the structure, are assumed to be ACM and do not require sample collection and analysis. OSHA dictates that PACM may be "rebutted" following a complete inspection pursuant to AHERA protocol.

No PACM was identified during the completion of this inspection. All suspect materials identified were sampled and analyzed for ACM.

Table 3 lists the location, material description, friability, condition, material type (surfacing, thermal or miscellaneous) and approximate quantity of all PACM documented at the Subject Property.

Table 4 provides a summary all ACM documented at the Subject Property which includes the material location, description, and approximate quantity.

#### Friable ACM's

No friable ACM's were identified during the completion of this inspection.

#### **Category I ACM**

One type of resilient floor covering (Gray Layered Vinyl) located within the bathroom was found to contain up to 30% Chrysotile asbestos. The assessment to quantify the extent of this material identified approximately 88 sq. ft. of this material within the Building.

#### **Category II ACM**

Roof Flashing samples collected during the completion of the inspection were found to contain up to 20% Chrysotile asbestos. The assessment to quantify the extent of this material identified 10 sq. ft. of roof flashing materials on the Building.

Black Wall Panel Glue samples, collected from the Living Room and NW Bedroom were found to contain up to 10% asbestos following analysis. The assessment to quantify the extent of this material identified approximately 1,312 sq. ft. of black wall panel glue within the Building.

#### **RECOMMENDATIONS**

#### **Asbestos Containing Materials**

Roof Flashing identified on the exterior of the Building must be abated prior to completion of any renovation/demolition activities at the Subject Property. Any Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of renovation or demolition operations must be properly abated.

Black Wall Panel Glue identified on the interior of the Building must be abated prior to completion of any renovation/demolition activities at the Subject Property. Any Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of renovation or demolition operations must be properly abated.

The Category I resilient floor covering (Gray Layered Vinyl) is a non-friable ACM that may be left in place as long as the demolition/renovation activities are completed following the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

Please note: The location of samples obtained during this inspection were in a random fashion and areas that were not identified during this inspection may be damaged or have become damaged since the inspection was completed. If Category I or Category II friable materials are discovered prior to or during the demolition/renovation process, these materials must be abated prior to commencement of any demolition/renovation activities at the Subject Property.

#### **Hazardous Materials**

Hazardous Materials identified at the Subject Property and documented in Table 1 which require proper removal and disposal consist of the following items:

- 1-Quart Container Misc. (5)
- 4' Fluorescent Bulb (9)
- Smoke Detector (2)
- Old Thermostat (1)
- Thermostat (1)
- 4' Fluorescent Light (Fixture and Ballast Only) (1)
- 1-Gallon Container Misc. (4)

#### **REGULATORY REQUIREMENTS**

A Notification of Intent to Renovate/Demolish form must be filed with the Michigan Department of Environmental Quality- Air Quality Division at least 10 working days prior to any renovation or demolition activities at a site.

The Notification of Intent to Renovate/Demolish form must also be completed and submitted to the MIOSHA-Asbestos Program whenever demolition, encapsulation and/or renovation activities at a site involving greater than ten lineal feet and/or fifteen square feet of ACM will be completed.

Regulated asbestos containing materials per NESHAP (40 CFR Part 61) which falls into any of the following categories are ACM's that must be removed prior to any renovation/demolition activities at the Subject Property.

- Friable asbestos material.
- Category I non-friable ACM that has become friable.
- Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading.
- Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of renovation or demolition operations.

Asbestos abatement should only be performed by a certified asbestos abatement contractor licensed to complete abatement work. The contractor must also follow the standards and requirements set forth per the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) and the USEPA NESHAP (40 CFR Part 61).

Additional information regarding the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) and the USEPA NESHAP (40 CFR Part 61) can be obtained by contacting the associated agency below.

NESHAP Asbestos Program Department of Environmental Quality Phone: 517-284-6777 MIOSHA-CSHD-Asbestos Program State of Michigan Phone: 517-284-7680 Email: asbestos@michigan.gov

#### **DISCLAIMER**

Red Cedar Consulting performed destructive testing methods in an attempt to access and inspect all areas of the Building. Unfortunately, due to the age of construction along with multiple additions/renovations that may have been completed on the Building, additional inspections may be required if suspect ACM material not documented within this report is encountered during renovation/demolition activities.

This report was prepared at the request and for exclusive use by the Muskegon County Land Bank and may not be reproduced or sold without written permission from Red Cedar Consulting.

We appreciate the opportunity to provide the requested services. Please contact us at (888) 449-4566 with any questions or concerns.

Sincerely, Red Cedar Consulting

Raion Poquet

Aaron Paquet Michigan/EPA Certified Asbestos Building Inspector (A30955)

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Red Cedar Consulting

# Attachment 1

APEX Research Laboratory Analytical Results

Test Method, Polarized Light Microscopy (PLM)

Project : 2041 Riordan St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80578Date Collected:10/23/18Date Received:10/25/18Date Analyzed:10/30/18Date Reported:10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80578 - 01 Cust. #: RS-HM-01A Material: Brown Vapor Barrier Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 80% Other - 20%
Lab ID #: 80578 - 02 Cust. #: RS-HM-01B Material: Brown Vapor Barrier Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 80% Other - 20%
Lab ID #: 80578 - 03 Cust. #: RS-HM-02A Material: Black Vapor Barrier Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 80% Other - 20%

For Layered Samples, each component will be analyzed and reported separately.

Sout

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2041 Riordan St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80578         Date Collected:       10/23/18         Date Received:       10/25/18         Date Analyzed:       10/30/18         Date Reported:       10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80578 - 04 Cust. #: RS-HM-02B Material: Black Vapor Barrier Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 80% Other - 20%
Lab ID #: 80578 - 05 Cust. #: RS-HM-03A Material: Shingle Roof Location: Appearance: black,fibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 40% Other - 60%
Lab ID #: 80578 - 05a Cust. #: RS-HM-03A Material: Felt Location: Appearance: black,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 60% Other - 40%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2041 Riordan St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80578         Date Collected:       10/23/18         Date Received:       10/25/18         Date Analyzed:       10/30/18         Date Reported:       10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80578 - 06 Cust. #: RS-HM-03B Material: Shingle Roof Location: Appearance: black,fibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 40% Other - 60%
Lab ID #: 80578 - 06a Cust. #: RS-HM-03B Material: Felt Location: Appearance: black,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 60% Other - 40%
Lab ID #: 80578 - 07 Cust. #: RS-HM-04A Material: Lite Grey Vinyl Location: Appearance: grey,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Fiberglass - 10% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

Kut Joh

Robert T. Letarte Jr., Laboratory Director



APEX Research Inc., 11054 Hi Tech Drive, Whitmore Lake, MI 48189

(734) 449-9990, Fax (734) 449-9991

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. APEX Research Inc. is not

responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.

Robert T. Letarte Jr., Laboratory Director

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80578 - 08 Cust. #: RS-HM-04B Material: Lite Grey Vinyl Location: Appearance: grey,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Fiberglass - 10% Other - 80%
Lab ID #: 80578 - 09 Cust. #: RS-HM-05A Material: Beige Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Fiberglass - 10% Other - 80%
Lab ID #: 80578 - 09a Cust. #: RS-HM-05A Material: Yellow Linoleum Location: Appearance: yellow,fibrous,nonhomogenous Layer: 2 of 4	Asbestos Present: <b>YES</b> Chrysotile - 30%	Other - 70%
Layered Samples, each component will be analyzed and reported	d separately.	2+ PAL

Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901

For

NVLAP Lab Code 102118-0

 ARI Report #
 18-80578

 Date Collected:
 10/23/18

 Date Received:
 10/25/18

 Date Analyzed:
 10/30/18

 Date Reported:
 10/30/18

<b>Certificate of Laboratory Analysis</b>	
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Test Method, Polarized Light Microscopy (PLM)

Project : 2041 Riordan St.



Test Method, Polarized Light Microscopy (PLM)

Project : 2041 Riordan St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-805/8Date Collected:10/23/18Date Received:10/25/18Date Analyzed:10/30/18Date Reported:10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80578 - 09b Cust. #: RS-HM-05A Material: Floor Tile Location: Appearance: beige,nonfibrous,homogenous Layer: 3 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80578 - 09c Cust. #: RS-HM-05A Material: Glue Location: Appearance: clear,nonfibrous,homogenous Layer: 4 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80578 - 10 Cust. #: RS-HM-05B Material: Beige Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Fiberglass - 10% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2041 Riordan St.



Report 10:Mr. Aaron PaquetRed Cedar ConsultingP.O. Box 13216Lansing, MI 48901		ARI Report #18-805/8Date Collected:10/23/18Date Received:10/25/18Date Analyzed:10/30/18Date Reported:10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80578 - 10a Cust. #: RS-HM-05B Material: Yellow Linoleum	Asbestos Present:	
Location: Appearance: Layer: 2 of 4	NOT ANALYZED	
Lab ID #: 80578 - 10b Cust. #: RS-HM-05B Material: Floor Tile Location: Appearance: beige,nonfibrous,homogenous Layer: 3 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80578 - 10c Cust. #: RS-HM-05B Material: Glue Location: Appearance: clear,nonfibrous,homogenous Layer: 4 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2041 Riordan St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80578Date Collected:10/23/18Date Received:10/25/18Date Analyzed:10/30/18Date Reported:10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80578 - 11 Cust. #: RS-HM-06A Material: Brown Vinyl Location: Appearance: brown,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 40% Other - 60%
Lab ID #: 80578 - 12 Cust. #: RS-HM-06B Material: Brown Vinyl Location: Appearance: brown,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 40% Other - 60%
Lab ID #: 80578 - 13 Cust. #: RS-HM-07A Material: 1x1 White Smooth Ceiling Tile Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 80% Other - 20%

For Layered Samples, each component will be analyzed and reported separately.

Sout

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2041 Riordan St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80578Date Collected:10/23/18Date Received:10/25/18Date Analyzed:10/30/18Date Reported:10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80578 - 14 Cust. #: RS-HM-07B Material: 1x1 White Smooth Ceiling Tile Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 80% Other - 20%
Lab ID #: 80578 - 15 Cust. #: RS-HM-08A Material: Drywall Location: Appearance: white,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80578 - 16 Cust. #: RS-HM-08B Material: Drywall Location: Appearance: white,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

Sout

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2041 Riordan St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80578Date Collected:10/23/18Date Received:10/25/18Date Analyzed:10/30/18Date Reported:10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80578 - 17 Cust. #: RS-HM-09A Material: 2x4 White Smooth Ceiling Tile Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 80% Other - 20%
Lab ID #: 80578 - 18 Cust. #: RS-HM-09B Material: 2x4 White Smooth Ceiling Tile Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 80% Other - 20%
Lab ID #: 80578 - 19 Cust. #: RS-HM-10A Material: Black Wall Panel Glue Location: Appearance: black,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>YES</b> Chrysotile - 5%	Other - 95%

For Layered Samples, each component will be analyzed and reported separately.

Sout

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.



APEX Research Inc., 11054 Hi Tech Drive, Whitmore Lake, MI 48189 (734) 449-9990, Fax (734) 449-9991

Test Method, Polarized Light Microscopy (PLM)

Project : 2041 Riordan St.



Keport 10: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-805/8Date Collected:10/23/18Date Received:10/25/18Date Analyzed:10/30/18Date Reported:10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80578 - 20 Cust. #: RS-HM-10B Material: Black Wall Panel Glue	Asbestos Present:	
Location: Appearance: Layer: of	NOT ANALYZED	
Lab ID #: 80578 - 21 Cust. #: RS-HM-11A Material: Brown Wall Panel Glue Location: Appearance: brown,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80578 - 22 Cust. #: RS-HM-11B Material: Brown Wall Panel Glue Location: Appearance: brown,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2041 Riordan St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80578Date Collected:10/23/18Date Received:10/25/18Date Analyzed:10/30/18Date Reported:10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80578 - 23 Cust. #: RS-HM-12A Material: House Window Glazing Location: Appearance: beige,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 1% Other - 99%
Lab ID #: 80578 - 24 Cust. #: RS-HM-12B Material: House Window Glazing Location: Appearance: beige,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 1% Other - 99%
Lab ID #: 80578 - 25 Cust. #: RS-HM-13A Material: Storm Window Glazing Location: Appearance: beige,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Wollastonite - 1% Other - 99%

For Layered Samples, each component will be analyzed and reported separately.

Sout

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2041 Riordan St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80578Date Collected:10/23/18Date Received:10/25/18Date Analyzed:10/30/18Date Reported:10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80578 - 26 Cust. #: RS-HM-13B Material: Storm Window Glazing Location: Appearance: beige,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Wollastonite - 1% Other - 99%
Lab ID #: 80578 - 27 Cust. #: RS-HM-14A Material: Charcoal Linoleum Location: Appearance: brown,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Fiberglass - 10% Other - 80%
Lab ID #: 80578 - 28 Cust. #: RS-HM-14B Material: Charcoal Linoleum Location: Appearance: brown,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Fiberglass - 10% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director



Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the US Government. APEX Research Inc. is not

Lansing, MI 48901		Date Reported: 10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80578 - 29 Cust. #: RS-HM-15A Material: Roof Flashing Location: Appearance: black,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>YES</b> Chrysotile - 20%	Other - 80%
Lab ID #: 80578 - 30 Cust. #: RS-HM-15B Material: Roof Flashing Location: Appearance: Layer: of	Asbestos Present: NOT ANALYZED	
Lab ID #: 80578 - 31 Cust. #: RS-HS-01A Material: Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Layered Samples, each component will be analyzed and reported	separately.	

Project : 2041 Riordan St.

**Report To:** Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216

ARI Report # 18-80578 Date Collected: 10/23/18 Date Received: 10/25/18 Date Analyzed 10/30/18





Sent

Robert T. Letarte Jr., Laboratory Director

NVLAP Lab Code 102118-0

Test Method, Polarized Light Microscopy (PLM)

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Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80578Date Collected:10/23/18Date Received:10/25/18Date Analyzed:10/30/18Date Reported:10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80578 - 31a Cust. #: RS-HS-01A Material: Plaster Base Coat Location: Appearance: brown,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Hair - 2% Other - 98%
Lab ID #: 80578 - 32 Cust. #: RS-HS-01B Material: Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80578 - 32a Cust. #: RS-HS-01B Material: Plaster Base Coat Location: Appearance: brown,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Hair - 1% Other - 99%

For Layered Samples, each component will be analyzed and reported separately.

Sout

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2041 Riordan St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80578Date Collected:10/23/18Date Received:10/25/18Date Analyzed:10/30/18Date Reported:10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80578 - 33 Cust. #: RS-HS-01C Material: Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80578 - 33a Cust. #: RS-HS-01C Material: Plaster Base Coat Location: Appearance: brown,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Hair - 2% Other - 98%
Lab ID #: 80578 - 34 Cust. #: RS-HS-01D Material: Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2041 Riordan St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80578Date Collected:10/23/18Date Received:10/25/18Date Analyzed:10/30/18Date Reported:10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80578 - 34a Cust. #: RS-HS-01D Material: Plaster Base Coat Location: Appearance: brown,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Hair - 2% Other - 98%
Lab ID #: 80578 - 35 Cust. #: RS-HS-01E Material: Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80578 - 35a Cust. #: RS-HS-01E Material: Plaster Base Coat Location: Appearance: brown,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Hair - 2% Other - 98%

For Layered Samples, each component will be analyzed and reported separately.

Sout

Robert T. Letarte Jr., Laboratory Director



89 Phone: 734-449-9990 Fax: 734-449-9991	Date of Survey :	Paint   Soil     IS   Other   Viable     EPA Level II	Volume Area Area Acsults Recedence Area Acsults
Trch, Inc. 11054 Hi Tech Drive, Whitmore Lake, MI 48189 B-mail: apexresearch@chartermi.net	148-8739 148-8739 PLM EPA Ins: Buik X	Lead: Bulk Wipe Wipe Mold: Bulk Tape TEM: AHERA 7400 Bulk/NOB	Material/Location Blueb Vaga Bernee Blueb Vega Bernee Might Roof Lingle Roof Set they time Ling Seyered Vingl Brown Ving Brown Ving Sam Ving Sam Ving
APEX Research, Inc	Client Name: Red Cedar Consulting Address: PO Box 13216 City, St., Zip: Lansing, MI 48901 Phone: (888) 449-4566 Fax: (888) 4 <b>Phone:</b> (888) 449-4566 Fax: (888) 4 <b>Phone:</b> (888) 449-4566 Fax: (888) 4 <b>Phone:</b> (888) 449-4566 Fax: (888) 4	Rush 24 hour 48 hour 72 hour Other : TTP All Samples	Lab ID #     Client ID #       1     RS-HM-0/4       3     RS-HM-0/4       3     0.28       4     0.28       6     0.28       7     0.28       6     0.28       7     0.48       6     0.48       7     0.48       1     1       8     0.58       1     0.58       1     0.58       1     0.58       1     0.58       1     0.58       1     0.58       1     0.58

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344	APEX	Lab Use Only Log-in		:onsulting.net <5% ACM.		Viable	Results										001 2 3 2018	APEX RESEARCH
	Phone: 734-449-9990 Fax: 734-449-9991	10-23-15 Riorden A	Aaron Paquet	et@redcedarc letection of PCM	it Soil_	4	Area									Received by:	Date :	
	MI 48189 Phone: 7: i.net Fax: 73	N,		apaquet@redcedarconsulting.net samples with a detection of <5% ACM. Point Count PCM	Air Paint	BioSIS Othe BioSIS Dthe Othe	Volume											
	$APEX \ Research, Inc. {}^{11054  \mathrm{Hi}  \mathrm{Tech}  \mathrm{Drive}, \mathrm{Whitmore}  \mathrm{Lake}, \mathrm{MI}  ^{48189}}{}^{\mathrm{B-mail:} \ \mathrm{apextresearch}(\mathbb{R}) \mathrm{chartermi.net}}$	Date of Survey : Project : 2 a イ	48901         Project # :           Fax • (888) 448-8739         Contact Person:	e One) FLM EPA 600, PC all Asbestos: Bulk <sup>x</sup> Wipe		Mold: Bulk Tape moles TEM: AHERA 7400 Bulk/NOB	0 # Material/Location	2.4 Hence blindow Maring		3A Storme Lindow Hleging		15A Roof Fleaking	V 15B 0 HS-NN FlanTed	0.18	01C	cceivzd by: UFS Relinquished by:	-23-18	
	APEX Researc	Client Name: Red Cedar Consulting Address: PO Box 13216	Zip: Lansing, MI (888)449-4566		Rush 24 hour 48 hour 77 hour	J	Lab ID #   Client ID #	23 RS-HN-12A	21 / 1C		32	39	2 Br HS		1 1	Relinquished by: A. C. Re C. Letter Received by:	Date: 10-23-15 Da	Rev: 12/03 Work Forms: COC

APEX Research, Inc. 11054 Hi Tech Drive, Whitmore Lake, MI 48189 Phone: 734-449-9990 E-mail: apexresearch@chartermi.net Fax: 734-449-9991	Red Cedar Consulting PO Box 13216		Client ID #     Material/Location     Bulk/NOB     EPA Level II	#     Client ID #     Material/Location       34     RS-HS-OID     Plealut       35     RS-HS-OIE     *       32<-18     Date: _O-23-18     Date: _
APEX R	Client Name: Re Address: Po City St 7in: L	Phone: (888) 449- Phone: (888) 449- Turn Arour Rush 24 hour 48 hour 72 hour	Lab ID #	Lab LU # 24 34 35 35 35 35 35 7 Relinquished by: <i>Lab LU #</i> Relinquished by: <i>Lab LU #</i> Rev. 12/03

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Red Cedar Consulting

Tables

Hazardous Materials Description and Location						
Location	Material Description	Quantity				
Bathroom	1-Quart Container Misc.	5				
NW Bedroom	4' Fluorescent Light Bulb	7				
NE Bedroom	Smoke Detector	1				
Living Room	Old Thermostat	1				
Living Room	Thermostat	1				
Living Room	4' Fluorescent Light (Fixture and Ballast Only)	1				
Living Room	Living Room 4' Fluorescent Light Bulb					
Living Room	Smoke Detector	1				
Basement	1-Gallon Container Misc.	4				

Table 2 - Summary of Sample Descriptions and Asbestos Laboratory Results, 2041 Riordan St., Muskegon Heights, Michigan

Sample Number	Sample Description	Friable	Material Type	Material Classification	% Asbestos Laboratory Result	Sample Location	Approx. Material Quantity
RS-HM-01A	Brown Vapor Barrier	Yes	М	Category II	ND	House Exterior	NA
RS-HM-01B	Brown Vapor Barrier	Yes	М	Category II	ND	House Exterior	NA
RS-HM-02A	Gray Vapor Barrier	Yes	М	Category II	ND	House Exterior	NA
RS-HM-02B	Gray Vapor Barrier	Yes	М	Category II	ND	House Exterior	NA
RS-HM-03A	Shingle Roof	No	М	Category I	ND/ND	House Roof	NA
RS-HM-03B	Shingle Roof	No	М	Category I	ND/ND	House Roof	NA
RS-HM-04A	Light Gray Vinyl	No	М	Category I	ND	Kitchen	NA
RS-HM-04B	Light Gray Vinyl	No	М	Category I	ND	Kitchen	NA
RS-HM-05A	Gray Layered Vinyl	No	М	Category I	ND/30% CH/ ND/ND	Bathroom	88 sq. ft.
RS-HM-05B	Gray Layered Vinyl	No	М	Category I	ND/NA/ND/ ND	Bathroom	NA
RS-HM-06A	Brown Vinyl	No	М	Category I	ND	Rear Entry	NA
RS-HM-06B	Brown Vinyl	No	М	Category I	ND	Rear Entry	NA
RS-HM-07A	1x1White Smooth CT	Yes	М	Category II	ND	Bathroom	NA
RS-HM-07B	1x1 White Smooth CT	Yes	М	Category II	ND	NE Bedroom	NA
RS-HM-08A	Drywall	No	М	Category II	ND	Kitchen Ceiling	NA
RS-HM-08B	Drywall	No	М	Category II	ND	Kitchen Wall	NA
RS-HM-09A	2x4 White Smooth CT	Yes	М	Category II	ND	Living Room	NA
RS-HM-09B	2x4 White Smooth CT	Yes	М	Category II	ND	Living Room	NA
RS-HM-10A	Black Wall Panel Glue	No	М	Category II	10% CH	Living Room	1,312 sq. ft.
RS-HM-10B	Black Wall Panel Glue	No	М	Category II	NA	NW Bedroom	NA
RS-HM-11A	Brown Wall Panel Glue	No	М	Category II	ND	Bathroom	NA
RS-HM-11B	Brown Wall Panel Glue	No	М	Category II	ND	Bathroom	NA
RS-HM-12A	House Window Glazing	Yes	М	Category II	ND	Living Room Window	NA
RS-HM-12B	House Window Glazing	Yes	М	Category II	ND	W Bedroom Window	NA
RS-HM-13A	Storm Window Glazing	Yes	М	Category II	ND	Storm Window	NA
RS-HM-13B	Storm Window Glazing	Yes	М	Category II	ND	Storm Window	NA

Table 2 - Summary of Sample Descriptions and Asbestos Laboratory Results, 2041 Riordan St., Muskegon Heights, Michigan

Sample Number	Sample Description	Friable	Material Type	Material Classification	% Asbestos Laboratory Result	Sample Location	Approx. Material Quantity
RS-HM-14A	Charcoal Linoleum	No	М	Category I	ND	Basement	NA
RS-HM-14B	Charcoal Linoleum	No	М	Category I	ND	Basement	NA
RS-HM-15A	Roof Flashing	No	М	Category II	20% CH	House Roof	10 sq. ft.
RS-HM-15B	Roof Flashing	No	М	Category II	NA	House Roof	NA
RS-HS-01A	Plaster	No	S	Category II	ND/ND	Living Room Ceiling	NA
RS-HS-01B	Plaster	No	S	Category II	ND/ND	NW Bedroom Ceiling	NA
RS-HS-01C	Plaster	No	S	Category II	ND/ND	NW Bedroom Wall	NA
RS-HS-01D	Plaster	No	S	Category II	ND/ND	Living Room Wall	NA
RS-HS-01E	Plaster	No	S	Category II	ND/ND	Bathroom Wall	NA

#### Notes:

Material Types

M = Miscellaneous building material

TSI = Thermal System Insulation

S = Surfacing Material

PC = Point Count Analysis

CH = Chrysotile Asbestos

#### Abbreviations

NQ= Not quantifiedNA= Not applicableND= Not detected. Laboratory result is less than 1 % asbestoslin. ft.= linear feet

sq. ft. = square feet

Asbestos Containing Material (ACM) is defined as any material containing more than 1 percent asbestos as determined utilizing Polarized Light Microscopy.

## Table 3 - Summary of Presumed Asbestos Containing Materials, 2041 Riordan St., Muskegon Heights, Michigan

Asbestos Containing Material Description and Location					
Location	Material Description	Friable	Condition	Material Type	Approx. Quantity
No Presumed Asbestos Containing Materials Identified					

Notes:

Mater	<u>ial Types</u>	Abbrev	<u>iations</u>
TSI	<ul><li>= Miscellaneous building material</li><li>= Thermal System Insulation</li><li>= Surfacing Material</li></ul>		= linear feet = square feet

Exterior - Asbestos Containing Materials				
Location	Material Description		Friable	Approx. Quantity
Building Roof	Roof Flashing		No	10 sq. ft.
		Total		10 sq. ft.
Interior - Asbestos Containing Materials				
Location	Material Description		Friable	Approx. Quantity
Bathroom	Gray Layered Vinyl		No	88 sq. ft.
		Total		88 sq. ft.
Interior - Asbestos Containing Materials				
Location	<b>Material Description</b>		Friable	Approx. Quantity
Living Room, NW Bedroom, and NE Bedroom Wall Panels	Black Wall Panel Glue		No	1,312 sq. ft.
		Total		1,312 sq. ft.

#### Table 4 - Summary of All Asbestos Containing Materials, 2041 Riordan St., Muskegon Heights, Michigan

#### Notes:

Abbreviations

lin. ft. = linear feet sq. ft. = square feet

**Shaded/Bolded** = Friable ACM and any Category I and Category II non-friable ACM that has a high probability of becoming crumbled, pulverized, or reduced to powder by the demolition or renovation activities that must be properly abated prior to commencement of any demolition/renovation activities.

Demolition/renovation activities completed with intact Category I non-friable ACM are regulated by OSHA and must be completed following the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

Please note that a Negative Pressure Enclosure must be utilized during abatement when Site Conditions Warrant. Examples of these conditions include the abatement of Plaster and Vermiculite insulation, HVAC Duct Wrap in Poor Condition, and Air-O-Cell/Mag Pipe Wrap. Conditions outside of these should be assessed on a case by case basis during the Asbestos Abatement Contractors site walk and Work Plan Preparation.



P.O. Box 13216 Lansing, MI 48901 Phone: 888.449.4566 Fax: 888.448.8739 www.redcedarconsulting.net

October 29, 2018

Mr. Tim Burgess Muskegon County Land Bank Land Bank Coordinator 173 E. Apple Avenue, Suite 104 Muskegon, MI 49442

### RE: Asbestos Containing Material and Hazardous Materials Inspection 2201 Reynolds St., Muskegon Heights, MI 49444 Parcel ID: 61-26-185-066-0001-00

Dear Mr. Burgess:

Red Cedar Consulting has completed an asbestos-containing material (ACM) and hazardous materials inspection at 2201 Reynolds St., Muskegon Heights, Michigan (Subject Property). This inspection was completed at the request of the Muskegon County Land Bank to comply with the United States Environmental Protection Agency (USEPA) requirements for demolition and renovation set forth under the National Emissions Standards for Hazardous Air Pollutants (NESHAP, 40 CFR Part 61). This inspection was also completed to comply with the Occupational Safety and Health Administration (OSHA) Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

#### **SUBJECT PROPERTY**

The Subject Property is comprised of a .10 acre residential parcel which contains an approximate 1,056 square foot residential building (the Building) constructed in 1920. The Building was constructed on a concrete block basement with two aboveground floors. The exterior walls of the Building were finished with Transite over a vapor barrier while the roof was sealed with asphalt shingles. The Building can be further divided into a living room, dining room, kitchen, bath, two bedrooms and rear entry on the first floor while the second floor contains three bedrooms.

### VISUAL INSPECTION AND SAMPLING

#### **Asbestos Containing Materials Inspection**

Mr. Aaron Paquet of Red Cedar Consulting (Red Cedar), an accredited State of Michigan/EPA Asbestos Building Inspector (Accreditation Number A30955) whom completed training per the Michigan Asbestos Workers Accreditation Act 440 completed an inspection of the Subject Property on October 11, 2018 for suspected asbestos containing building materials.

This inspection, and subsequent sample collection was completed in accordance with the USEPA Asbestos Hazard Emergency Response Act (AHERA) (40 CFR Part 763) assessment and sampling protocol.

During the completion of the inspection, each area of the Subject Property was visually inspected for asbestos containing building materials (ACBM). Following the completion of the visual inspection, Red Cedar staff identified each suspect area of friable and non-friable ACBM and sorted them into one of three homogenous categories for sampling purposes. AHERA defines friable as a material that when dry, may be crumbled, pulverized, or reduced to powder by hand pressure. A homogenous area is defined by OSHA as an area of surfacing, thermal system insulation (TSI) or miscellaneous material that is uniform in color and texture. Surfacing materials are most commonly found in sprayed-on, troweled-on or otherwise applied to surfaces, such as acoustical plaster on ceilings and fireproofing materials on structural members. TSI refers to materials applied to pipes, fittings, boilers, ductwork, or other components to prevent heat loss or gain, or condensation. Any material that does not fall under the surfacing or TSI category, such as floor tile, drywall, and acoustical ceiling tile are placed into the miscellaneous materials category.

Following the completion of the visual inspection, Red Cedar staff identified the following materials as suspect ACBM:

- Asphalt Shingle
- Rolled Roofing
- Vapor Barrier
- 12"x12" Vinyl Floor Tile
- Fiberboard
- Felt
- Drywall and Joint Compound
- Glazing
- Caulk
- Linoleum
- Flashing
- Plaster

Red Cedar staff collected thirty three samples of suspect ACBM separated into fifteen distinct homogenous groups for laboratory analysis. Samples were collected and submitted to APEX Research Inc. Laboratories (APEX) (Accreditation Number 102118-0) for laboratory analysis. Analysis was completed utilizing polarized light microscopy (PLM) which is the Environmental Protection Agency (EPA) approved method for analysis of bulk materials for asbestos. PLM analysis completed pursuant to method (EPA 600/M4-82-020) identifies asbestos fiber bundles by the visual properties displayed when the sample is treated with various dispersion staining liquids. The laboratory report completed following the sample analysis indicates if asbestos is present, and at what percentage along with a description and percentage of other fibrous and non-fibrous materials and sample color. Chain-of-custody documentation was followed from sample collection through shipping and receiving of the samples at the designated laboratory. The documentation assures that samples will meet the quality assurance/quality control measures defined by AHERA. The laboratory analytical report prepared by APEX for the thirty three samples is included as Attachment A.

#### **Hazardous Materials Inspection**

On October 11, 2018 the Subject Property was also inspected for the presence of hazardous materials which include but are not limited to polychlorinated biphenyls (PCBs) and potential mercury containing equipment and any items or containers that may contain or be classified as a hazardous or regulated material. Each material, if identified, was documented along with the approximate location. Any materials identified as hazardous are included in Table 1.

## **INSPECTION RESULTS AND RECOMMENDATIONS**

During the completion of the asbestos inspection, thirty three samples of suspect ACM were collected and are documented in Table 2 along with the Red Cedar sample number, description, friability, material type, ACM classification, sample location, material quantity and laboratory analytical results.

ACM, as defined by the USEPA NESHAP is "any material containing more than 1 percent asbestos as determined using the method specified in appendix E, subpart E, 40 CFR part 763 Section 1, Polarized Light Microscopy".

Friable ACM is defined by NESHAP as any material containing more than 1 percent asbestos that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. Friable ACM is a concern due the ease of unintentionally disturbing the ACM which may result in "visible emissions" which is known as a Fiber Release Episode.

Non-friable asbestos-containing material is defined as "material containing more than 1 percent asbestos that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. Non-friable ACM's are separated into Category I and Category II ACM. Category I ACM is any asbestos containing packing's, gaskets, resilient floor coverings (vinyl floor tile and linoleum are examples of these) and asphalt roofing products. Category II ACM is stated by NESHAP as any material excluding Category I non-friable ACM such as drywall, plaster or fiberboard insulation.

### **Presumed Asbestos Containing Material**

Presumed Asbestos Containing Materials (PACM) are suspect surfacing, TSI and miscellaneous materials found in buildings constructed prior to 1980 which are classified as and due to the age of the structure, are assumed to be ACM and do not require sample collection and analysis. OSHA dictates that PACM may be "rebutted" following a complete inspection pursuant to AHERA protocol.

The HVAC Duct Wrap located in the Building and the Cementatious "Transite" Siding on the Building was classified as PACM due to the age of the structure and samples were not collected.

Table 3 lists the location, material description, friability, condition, material type (surfacing, thermal or miscellaneous) and approximate quantity of all PACM documented at the Subject Property.

Table 4 provides a summary all ACM documented at the Subject Property which includes the material location, description, and approximate quantity.

### Friable ACM's

Duct Wrap identified in the building in conjunction with the forced air heating system is classified as friable ACM. The visual assessment to quantify the extent of this material identified HVAC Duct Wrap at the following locations within the basement, first and second floors:

- Living (1 register, 10 sq. ft.)
- Basement (misc. HVAC Wrap on Ductwork and Framing, 5 sq. ft.)

#### **Category I ACM**

Two types of resilient floor covering (Brown 12"x12" Vinyl Tile Multilayer and 12"x12" Vinyl Tile Multilayer) located within the kitchen and bathroom were found to contain up to 30% Chrysotile asbestos. The assessment to quantify the extent of this material identified approximately 177 sq. ft. of this material within the Building.

Rolled Roofing samples collected during the completion of the inspection were found to contain up to 10% Chrysotile asbestos. The assessment to quantify the extent of this material identified 364 sq. ft. of asphalt roofing materials on the Building.

#### **Category II ACM**

The cementatious "Transite" siding located on the exterior of the Building was classified as PACM and no samples were collected. The visual assessment to quantify the extent of this material identified 1,506 sq. ft. of cementatious (Transite) siding on the Building.

#### **RECOMMENDATIONS**

#### **Asbestos Containing Materials**

HVAC material identified in the Building system and listed below is classified as friable ACM and should be removed prior to any renovation/demolition activities.

- Living (1 register, 10 sq. ft.)
- Basement (misc. HVAC Wrap on Ductwork and Framing, 5 sq. ft.)

Transite siding was identified on the exterior of the Building and must be abated prior to completion of any demolition activities at the Subject Property. In demolition, all cementatious ACM must be removed prior to demolition due to the likelihood of becoming regulated due to the demolition process.

The Category I roofing materials and resilient floor coverings (Brown 12"x12" Vinyl Tile Multilayer and 12"x12" Vinyl Tile Multilayer) are non-friable ACM's that may be left in place as long as the demolition/renovation activities are completed following the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

Please note: The location of samples obtained during this inspection were in a random fashion and areas that were not identified during this inspection may be damaged or have become damaged since the inspection was completed. If Category I or Category II friable materials are discovered prior to or during

the demolition/renovation process, these materials must be abated prior to commencement of any demolition/renovation activities at the Subject Property.

#### **Hazardous Materials**

Hazardous Materials identified at the Subject Property and documented in Table 1 which require proper removal and disposal consist of the following items:

• No Hazardous Materials Identified

#### **REGULATORY REQUIREMENTS**

A Notification of Intent to Renovate/Demolish form must be filed with the Michigan Department of Environmental Quality- Air Quality Division at least 10 working days prior to any renovation or demolition activities at a site.

The Notification of Intent to Renovate/Demolish form must also be completed and submitted to the MIOSHA-Asbestos Program whenever demolition, encapsulation and/or renovation activities at a site involving greater than ten lineal feet and/or fifteen square feet of ACM will be completed.

Regulated asbestos containing materials per NESHAP (40 CFR Part 61) which falls into any of the following categories are ACM's that must be removed prior to any renovation/demolition activities at the Subject Property.

- Friable asbestos material.
- Category I non-friable ACM that has become friable.
- Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading.
- Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of renovation or demolition operations.

Asbestos abatement should only be performed by a certified asbestos abatement contractor licensed to complete abatement work. The contractor must also follow the standards and requirements set forth per the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) and the USEPA NESHAP (40 CFR Part 61).

Additional information regarding the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) and the USEPA NESHAP (40 CFR Part 61) can be obtained by contacting the associated agency below.

NESHAP Asbestos Program Department of Environmental Quality Phone: 517-284-6777 MIOSHA-CSHD-Asbestos Program State of Michigan Phone: 517-284-7680 Email: asbestos@michigan.gov

### **DISCLAIMER**

Red Cedar Consulting performed destructive testing methods in an attempt to access and inspect all areas of the Building. Unfortunately, due to the age of construction along with multiple additions/renovations that may have been completed on the Building, additional inspections may be required if suspect ACM material not documented within this report is encountered during renovation/demolition activities.

This report was prepared at the request and for exclusive use by the Muskegon County Land Bank and may not be reproduced or sold without written permission from Red Cedar Consulting.

We appreciate the opportunity to provide the requested services. Please contact us at (888) 449-4566 with any questions or concerns.

Sincerely, Red Cedar Consulting

Raion Poquet

Aaron Paquet Michigan/EPA Certified Asbestos Building Inspector (A30955)

Red Cedar Consulting

## Attachment 1

APEX Research Laboratory Analytical Results

Test Method, Polarized Light Microscopy (PLM)

Project : 2201 Reynolds



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80288         Date Collected:       10/11/18         Date Received:       10/12/18         Date Analyzed:       10/17/18         Date Reported:       10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80288 - 01 Cust. #: RS-HM-01A Material: Asphalt Shingle Location: Appearance: black,fibrous,homogenous Layer: 1 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%
Lab ID #: 80288 - 01a Cust. #: RS-HM-01A Material: Shingle Location: Appearance: black,fibrous,homogenous Layer: 2 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%
Lab ID #: 80288 - 01b Cust. #: RS-HM-01A Material: Shingle Location: Appearance: black,fibrous,homogenous Layer: 3 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%

For Layered Samples, each component will be analyzed and reported separately.

Kut Joh

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2201 Reynolds



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80288         Date Collected:       10/11/18         Date Received:       10/12/18         Date Analyzed:       10/17/18         Date Reported:       10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80288 - 01c Cust. #: RS-HM-01A Material: Shingle Location: Appearance: black,fibrous,homogenous Layer: 4 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%
Lab ID #: 80288 - 02 Cust. #: RS-HM-01B Material: Asphalt Shingle Location: Appearance: black,fibrous,homogenous Layer: 1 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%
Lab ID #: 80288 - 02a Cust. #: RS-HM-01B Material: Shingle Location: Appearance: black,fibrous,homogenous Layer: 2 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%

For Layered Samples, each component will be analyzed and reported separately.

Kut Jet

Robert T. Letarte Jr., Laboratory Director

Test Method, Polarized Light Microscopy (PLM)

Project : 2201 Reynolds



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80288         Date Collected:       10/11/18         Date Received:       10/12/18         Date Analyzed:       10/17/18         Date Reported:       10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80288 - 02b Cust. #: RS-HM-01B Material: Shingle Location: Appearance: black,fibrous,homogenous Layer: 3 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%
Lab ID #: 80288 - 02c Cust. #: RS-HM-01B Material: Shingle Location: Appearance: black,fibrous,homogenous Layer: 3 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%
Lab ID #: 80288 - 03 Cust. #: RS-HM-02A Material: Rolled Roofing Location: Appearance: black,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>YES</b> Chrysotile - 10%	Cellulose - 20% Other - 70%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2201 Reynolds



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80288Date Collected:10/11/18Date Received:10/12/18Date Analyzed:10/17/18Date Reported:10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80288 - 04 Cust. #: RS-HM-02B Material: Rolled Roofing	Asbestos Present:	
Location: Appearance: Layer: of	NOT ANALYZED	
Lab ID #: 80288 - 05 Cust. #: RS-HM-03A Material: Vapor Barrier Location: Appearance: black,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 35% Other - 65%
Lab ID #: 80288 - 06 Cust. #: RS-HM-03B Material: Vapor Barrier Location: Appearance: black,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 35% Other - 65%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

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APEX Research Inc., 11054 Hi Tech Drive, Whitmore Lake, MI 48189 (734) 449-9990, Fax (734) 449-9991

Test Method, Polarized Light Microscopy (PLM)

Project : 2201 Reynolds



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report # 18-80288 Date Collected: 10/11/18 Date Received: 10/12/18 Date Analyzed: 10/17/18 Date Reported: 10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80288 - 07 Cust. #: RS-HM-04A Material: Brown 12x12 VFT ML Location: Appearance: brown,nonfibrous,homogenous Layer: 1 of 6	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80288 - 07a Cust. #: RS-HM-04A Material: Mastic Location: Appearance: clear,nonfibrous,homogenous Layer: 2 of 6	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80288 - 07b Cust. #: RS-HM-04A Material: Floor Tile Location: Appearance: beige,nonfibrous,homogenous Layer: 3 of 6	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2201 Reynolds



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80288Date Collected:10/11/18Date Received:10/12/18Date Analyzed:10/17/18Date Reported:10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80288 - 07c Cust. #: RS-HM-04A Material: Mastic Location: Appearance: clear,nonfibrous,homogenous Layer: 4 of 6	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80288 - 07d Cust. #: RS-HM-04A Material: Floor Tile Location: Appearance: yellow,nonfibrous,homogenous Layer: 5 of 6	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 100%
Lab ID #: 80288 - 07e Cust. #: RS-HM-04A Material: Mastic Location: Appearance: clear,nonfibrous,homogenous Layer: 6 of 6	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

# Test Method, Polarized Light Microscopy (PLM)

Project : 2201 Reynolds

**Certificate of Laboratory Analysis** 



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80288Date Collected:10/11/18Date Received:10/12/18Date Analyzed:10/17/18Date Reported:10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80288 - 08 Cust. #: RS-HM-04B Material: Brown 12x12 VFT ML Location: Appearance: brown,nonfibrous,homogenous Layer: 1 of 8	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 100%
Lab ID #: 80288 - 08a Cust. #: RS-HM-04B Material: Mastic Location: Appearance: clear,nonfibrous,homogenous Layer: 2 of 8	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 100%
Lab ID #: 80288 - 08b Cust. #: RS-HM-04B Material: Floor Tile Location: Appearance: beige,nonfibrous,homogenous Layer: 3 of 8	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



## Test Method, Polarized Light Microscopy (PLM)

Project : 2201 Reynolds

**Certificate of Laboratory Analysis** 



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80288Date Collected:10/11/18Date Received:10/12/18Date Analyzed:10/17/18Date Reported:10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80288 - 08c Cust. #: RS-HM-04B Material: Mastic Location: Appearance: clear,nonfibrous,homogenous Layer: 4 of 8	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 100%
Lab ID #: 80288 - 08d Cust. #: RS-HM-04B Material: Floor Tile Location: Appearance: beige,nonfibrous,homogenous Layer: 5 of 8	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 100%
Lab ID #: 80288 - 08e Cust. #: RS-HM-04B Material: Mastic Location: Appearance: clear,nonfibrous,homogenous Layer: 6 of 8	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



APEX Research Inc., 11054 Hi Tech Drive, Whitmore Lake, MI 48189 (734) 449-9990, Fax (734) 449-9991

Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80288Date Collected:10/11/18Date Received:10/12/18Date Analyzed:10/17/18Date Reported:10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80288 - 08f Cust. #: RS-HM-04B Material: Floor Tile Location: Appearance: beige,fibrous,homogenous Layer: 7 of 8	Asbestos Present: <b>YES</b> Chrysotile - 5%	Cellulose - 95%
Lab ID #: 80288 - 08g Cust. #: RS-HM-04B Material: Mastic Location: Appearance: yellow,nonfibrous,homogenous Layer: 8 of 8	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 100%
Lab ID #: 80288 - 09 Cust. #: RS-HM-05A Material: 12x12 VFT ML Location: Bath Appearance: grey,nonfibrous,homogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 100%
For Layered Samples, each component will be analyzed and report	ed separately.	

Project : 2201 Reynolds



Robert T. Letarte Jr., Laboratory Director

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NVLAP Lab Code 102118-0

## **Certificate of Laboratory Analysis** Test Method, Polarized Light Microscopy (PLM)

# Page 10 of 26

## **Certificate of Laboratory Analysis**

Test Method, Polarized Light Microscopy (PLM)

Project : 2201 Reynolds

Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80288         Date Collected:       10/11/18         Date Received:       10/12/18         Date Analyzed:       10/17/18         Date Reported:       10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80288 - 09a Cust. #: RS-HM-05A Material: Mastic Location: Bath Appearance: clear,nonfibrous,homogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 100%
Lab ID #: 80288 - 09b Cust. #: RS-HM-05A Material: Linoleum Location: Bath Appearance: yellow,fibrous,nonhomogenous Layer: 3 of 3	Asbestos Present: <b>YES</b> Chrysotile - 30%	Cellulose - 70%
Lab ID #: 80288 - 10 Cust. #: RS-HM-05B Material: 12x12 VFT ML Location: Bath Appearance: grey,nonfibrous,homogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director





Robert T. Letarte Jr., Laboratory Director

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**Report To:** 

**Certificate of Laboratory Analysis** 

Test Method, Polarized Light Microscopy (PLM)

Project : 2201 Reynolds

Date Collected: Mr. Aaron Paquet 10/11/18 Red Cedar Consulting Date Received: 10/12/18 P.O. Box 13216 Date Analyzed: 10/17/18 Lansing, MI 48901 Date Reported: 10/19/18 Sample Information Asbestos Type/Percent Non-Asbestos Material Lab ID #: 80288 - 10a Asbestos Present: NO Cellulose - 100% Cust. #: RS-HM-05B No Asbestos Observed Material: Mastic Location: Bath Appearance: clear, nonfibrous, homogenous Layer: of 3 2 Asbestos Present: 80288 - 10b Lab ID #: Cust. #: RS-HM-05B Material: Linoleum NOT ANALYZED Location: Bath Appearance: Layer: 3 of 3 Lab ID #: 80288 - 11 Asbestos Present: NO Cellulose - 35% RS-HM-06A No Asbestos Observed Other - 65% Cust. #: Material: Tar Paper Location: Appearance: black,fibrous,homogenous Layer: 1 of 2 For Layered Samples, each component will be analyzed and reported separately.



18-80288

ARI Report #

Test Method, Polarized Light Microscopy (PLM)

Project : 2201 Reynolds



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80288         Date Collected:       10/11/18         Date Received:       10/12/18         Date Analyzed:       10/17/18         Date Reported:       10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80288 - 11a Cust. #: RS-HM-06A Material: Fiberboard Location: Appearance: brown,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 95% Other - 5%
Lab ID #: 80288 - 12 Cust. #: RS-HM-06B Material: Tar Paper Location: Appearance: black,fibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 35% Other - 65%
Lab ID #: 80288 - 12a Cust. #: RS-HM-06B Material: Fiberboard Location: Appearance: brown,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 95% Other - 5%

For Layered Samples, each component will be analyzed and reported separately.

Cant Jor

Robert T. Letarte Jr., Laboratory Director



Lab ID #: 80288 - 13 Asbestos Present: NO Cellulose - 15% No Asbestos Observed Cust. #: RS-HM-07A Fiberglass - 5% Material: Drywall Other - 80% Location: Appearance: white, fibrous, nonhomogenous Layer: of 2 1 Asbestos Present: NO Other - 100% Lab ID #: 80288 - 13a Cust. #: RS-HM-07A No Asbestos Observed Material: Joint Compound Location: Appearance: white, nonfibrous, homogenous of Layer: 2 2 Lab ID #: 80288 - 14 Asbestos Present: NO Other - 100% RS-HM-07B No Asbestos Observed Cust. #: Material: Joint Compound Location: Appearance: white, nonfibrous, homogenous Layer: 1 of 1

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

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18-80288

10/11/18

10/12/18

10/17/18

10/19/18

ARI Report #

Date Collected:

Date Received:

Date Analyzed:

Date Reported:

**Certificate of Laboratory Analysis** 

Test Method, Polarized Light Microscopy (PLM)

Project : 2201 Reynolds

Sample Information Asbestos Type/Percent Non-Asbestos Material

NVLAP Lab Code 102118-0

**Report To:** 

Mr. Aaron Paquet

P.O. Box 13216

Lansing, MI 48901

Red Cedar Consulting

Test Method, Polarized Light Microscopy (PLM)

Project : 2201 Reynolds



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80288Date Collected:10/11/18Date Received:10/12/18Date Analyzed:10/17/18Date Reported:10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80288 - 15 Cust. #: RS-HM-08A Material: Glazing Location: Appearance: beige,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80288 - 16 Cust. #: RS-HM-08B Material: Glazing Location: Appearance: beige,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80288 - 17 Cust. #: RS-HM-09A Material: Tan Caulk Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2201 Reynolds



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Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80288 - 18 Cust. #: RS-HM-09B Material: Tan Caulk Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80288 - 19 Cust. #: RS-HM-10A Material: White Caulk Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80288 - 20 Cust. #: RS-HM-10B Material: White Caulk Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2201 Reynolds



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80288         Date Collected:       10/11/18         Date Received:       10/12/18         Date Analyzed:       10/17/18         Date Reported:       10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80288 - 21 Cust. #: RS-HM-11A Material: Floor Tile Location: Appearance: grey,nonfibrous,homogenous Layer: 1 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80288 - 21a Cust. #: RS-HM-11A Material: Mastic Location: Appearance: clear,nonfibrous,homogenous Layer: 2 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80288 - 21b Cust. #: RS-HM-11A Material: Linoleum Location: Appearance: green,fibrous,nonhomogenous Layer: 3 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Fiberglass - 10% Other - 70%

For Layered Samples, each component will be analyzed and reported separately.

Cant Jor

Robert T. Letarte Jr., Laboratory Director



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Test Method, Polarized Light Microscopy (PLM)

Project : 2201 Reynolds

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responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.

18-80288

10/11/18

ARI Report #

Date Collected:

Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		Date Received:10/12/18Date Analyzed:10/17/18Date Reported:10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80288 - 21c Cust. #: RS-HM-11A Material: Linoleum Location: Appearance: yellow,fibrous,nonhomogenous Layer: 4 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Fiberglass - 10% Other - 70%
Lab ID #: 80288 - 22 Cust. #: RS-HM-11B Material: Floor Tile Location: Appearance: grey,nonfibrous,homogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80288 - 22a Cust. #: RS-HM-11B Material: Mastic Location: Appearance: clear,nonfibrous,homogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

**Report To:** 

Mr. Aaron Paquet

Test Method, Polarized Light Microscopy (PLM)

Project : 2201 Reynolds



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80288         Date Collected:       10/11/18         Date Received:       10/12/18         Date Analyzed:       10/17/18         Date Reported:       10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80288 - 22b Cust. #: RS-HM-11B Material: Linoleum Location: Appearance: yellow,fibrous,nonhomogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Fiberglass - 10% Other - 70%
Lab ID #: 80288 - 23 Cust. #: RS-HM-12A Material: Vent Flashing Location: Appearance: black,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 15% Other - 85%
Lab ID #: 80288 - 24 Cust. #: RS-HM-12B Material: Vent Flashing Location: Appearance: black,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 15% Other - 85%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director

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Test Method, Polarized Light Microscopy (PLM)

Project : 2201 Reynolds



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80288Date Collected:10/11/18Date Received:10/12/18Date Analyzed:10/17/18Date Reported:10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80288 - 25 Cust. #: RS-HM-13A Material: Grey Mottled Linoleum Location: Appearance: grey,fibrous,nonhomogenous Layer: 1 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 35% Other - 65%
Lab ID #: 80288 - 25a Cust. #: RS-HM-13A Material: Flooring Location: Appearance: beige,fibrous,nonhomogenous Layer: 2 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 35% Other - 65%
Lab ID #: 80288 - 25b Cust. #: RS-HM-13A Material: Flooring Location: Appearance: beige,fibrous,nonhomogenous Layer: 3 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 35% Other - 65%

For Layered Samples, each component will be analyzed and reported separately.

Cant Jor

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2201 Reynolds



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80288         Date Collected:       10/11/18         Date Received:       10/12/18         Date Analyzed:       10/17/18         Date Reported:       10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80288 - 25c Cust. #: RS-HM-13A Material: Flooring Location: Appearance: beige,fibrous,nonhomogenous Layer: 4 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 35% Other - 65%
Lab ID #: 80288 - 26 Cust. #: RS-HM-13B Material: Grey Mottled Linoleum Location: Appearance: grey,fibrous,nonhomogenous Layer: 1 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 35% Other - 65%
Lab ID #: 80288 - 26a Cust. #: RS-HM-13B Material: Flooring Location: Appearance: beige,fibrous,nonhomogenous Layer: 2 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 35% Other - 65%

For Layered Samples, each component will be analyzed and reported separately.

Cant Jor

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2201 Reynolds



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80288Date Collected:10/11/18Date Received:10/12/18Date Analyzed:10/17/18Date Reported:10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80288 - 26b Cust. #: RS-HM-13B Material: Flooring Location: Appearance: beige,fibrous,nonhomogenous Layer: 3 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 35% Other - 65%
Lab ID #: 80288 - 26c Cust. #: RS-HM-13B Material: Flooring Location: Appearance: beige,fibrous,nonhomogenous Layer: 4 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 35% Other - 65%
Lab ID #: 80288 - 27 Cust. #: RS-HM-14A Material: Stone Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 35% Other - 65%

For Layered Samples, each component will be analyzed and reported separately.

Kent Jot

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2201 Reynolds



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80288         Date Collected:       10/11/18         Date Received:       10/12/18         Date Analyzed:       10/17/18         Date Reported:       10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80288 - 27a Cust. #: RS-HM-14A Material: Flooring Location: Appearance: beige,fibrous,nonhomogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 35% Other - 65%
Lab ID #: 80288 - 27b Cust. #: RS-HM-14A Material: Flooring Location: Appearance: beige,fibrous,nonhomogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 35% Other - 65%
Lab ID #: 80288 - 28 Cust. #: RS-HM-14B Material: Stone Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 35% Other - 65%

For Layered Samples, each component will be analyzed and reported separately.

Kent Jor

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2201 Reynolds



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80288         Date Collected:       10/11/18         Date Received:       10/12/18         Date Analyzed:       10/17/18         Date Reported:       10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80288 - 28a Cust. #: RS-HM-14B Material: Flooring Location: Appearance: beige,fibrous,nonhomogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 35% Other - 65%
Lab ID #: 80288 - 28b Cust. #: RS-HM-14B Material: Flooring Location: Appearance: beige,fibrous,nonhomogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 35% Other - 65%
Lab ID #: 80288 - 29 Cust. #: RS-HS-01A Material: Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Kent Jor

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2201 Reynolds



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80288         Date Collected:       10/11/18         Date Received:       10/12/18         Date Analyzed:       10/17/18         Date Reported:       10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80288 - 29a Cust. #: RS-HS-01A Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Other - 98%
Lab ID #: 80288 - 30 Cust. #: RS-HS-01B Material: Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80288 - 30a Cust. #: RS-HS-01B Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Other - 98%

For Layered Samples, each component will be analyzed and reported separately.

Kent Jor

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2201 Reynolds



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80288         Date Collected:       10/11/18         Date Received:       10/12/18         Date Analyzed:       10/17/18         Date Reported:       10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80288 - 31 Cust. #: RS-HS-01C Material: Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80288 - 31a Cust. #: RS-HS-01C Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Other - 98%
Lab ID #: 80288 - 32 Cust. #: RS-HS-01D Material: Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Kent Jor

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2201 Reynolds



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80288         Date Collected:       10/11/18         Date Received:       10/12/18         Date Analyzed:       10/17/18         Date Reported:       10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80288 - 32a Cust. #: RS-HS-01D Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Other - 98%
Lab ID #: 80288 - 33 Cust. #: RS-HS-01E Material: Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80288 - 33a Cust. #: RS-HS-01E Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Other - 98%

For Layered Samples, each component will be analyzed and reported separately.

Kent Jor

Robert T. Letarte Jr., Laboratory Director



C1 1-53	APEX RESEARCH	Lab Use Only Log-In	Report			consulting.net <5% ACM.	1		Viable		Results								-			RECEIVE	(Traces 0CT 1 2 2018	118 112 APEX RESEARCH	
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 ∞	, MI 48189 Phone: 73. mi.net Fax: 734	Date of Survey : Lo	2201		Contact Person: Aaron	apaquet@redcedarconsulting.net samples with a detection of <5% ACM.	Foint Count	Air Paint	BioSIS	OB EPA Level II	Volume														
A pex # 80288	11054 Hi <sup>.</sup> Tech D E-mail: ap		Project :	Project # :	Fax : (888) 448-8739 Contact	PLM EPA 600, PC all	Asbestos: Bulk	Lead: Bulk Wipe	Mold: Bulk Tape	TEM: AHERA 7400 Bulk/NOB	Material/Location	Asphalt Shingle	<u>ل</u> ر ، بر	Rolles Poofing		Vaper Barrier	P.C. P.C.	Brown 12×12 UA ML		12×12 UST ML Buth.	11 11	filor bead feft	ULS Relinquished by:	16-11-18 Date:	
	APEX Research, Inc.	Client Name: Red Cedar Consulting	Address: PO Box 13216	City, St., Zip: Lansing, MI 48901	49-4566		Rush 24 hour			Other: 2 Work (TTP) All Samples	Lab ID # Client ID #	RS-HM-01A	2 REALM-OR	3 ZS-WM-024	t NS-HM-22B		6 RS-41-233	7 Rewmould	5 RE-HMM-0413	9 RS-HM-054	10 25 41-053	11 ES-HM-DEA	Relinquished by:	Date: $\frac{1}{1000}$ Date: $\frac{1}{1000}$	Bev. 12/03

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• •	MI 48189 Phone: 73 i.net Fax: 734				Person: Aaron	apaquet@redcedarconsulting.net 600, PC all samples with a detection of <5% ACM. Wind Doint Count		Air Paint	BioSIS	B EPA Level II	Volume														
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Za Zafa	Lab Use Only Log-in Report S% ACM.	Results RECEIVED 0CT 1 2 2018 APEX RESEARCH
MI 48189 Phone: 734-449-9990 .net Fax: 734-449-9991	Survey :       Lab Use         Log-in       Log-in         # :       Report         # :       Report         Report       Report         Person:       Aaron Paguet         Report       Report         Point Count       PCM         Air       Paint       Soil         BioSIS       Other       Viable	Volume     Area       Image: Second structure     Image: Second structure
<b>nc.</b> 11054 Hi Tech Drive, Whitmore Lake, MI 4 E-mail: apexresearch@chartermi.net	Date of       Project       Project       Project       Project       PLM EPA 600, PC all       os: Bulk       Wipe       Bulk       Nipe       Bulk       Tape       AHERA 7400       Bulk/	Material/Location Uert Flashing i Grang Marked Linden Grang Marked Linden i Flaster 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.
APEX Research, Inc. 11054 Hi Tech Drive, Whitmore Lake, MI 48189 Phone: 734-449-9990 E-mail: apexresearch@chartermi.net Fax: 734-449-9991	2: Red PO B) 449-4	Lab ID #       Client ID #         23       R5-HMM-12B         24       R5-HMM-12B         35       R5-HMM-12B         35       R5-HMM-12B         35       R5-HMM-12B         35       R5-HMM-12B         35       R5-HMM-12B         36       R5-HMM-12B         37       R5-HMM-12B         38       R5-HMM-12B         37       R5-HMM-14B         37       R5-H5-01B         38       R5-H5-01B         39       R5-H5-01B         37       R5-H5-01B         38       R5-H5-01B         37       R5-H5-01B         38       R5-H5-01B         39       R5-H5-01B         31

Red Cedar Consulting

Tables

### Table 1 - Summary of Hazardous Materials, 2201 Reynolds St., Muskegon Heights, Michigan

Hazardous Materials Description and Location									
Location	Material Description	Quantity							
No Hazardous Materials Identified									

Table 2 - Summary of Sample Descriptions and Asbestos Laboratory Results, 2201 Reynolds St., Muskegon Heights, Michigan

Sample Number	Sample Description	Friable	Material Type	Material Classification	% Asbestos Laboratory Result	Sample Location	Approx. Material Quantity
RS-HM-01A	Asphalt Shingle	No	М	Category I	ND/ND/ND/ND	Exterior	NA
RS-HM-01B	Asphalt Shingle	No	М	Category I	ND/ND/ND/ND	Exterior	NA
RS-HM-02A	Rolled Roofing	No	М	Category I	10%CH	Exterior	364 sq. ft.
RS-HM-02B	Rolled Roofing	No	М	Category I	NA	Exterior	NA
RS-HM-03A	Vapor Barrier	Yes	М	Category II	ND	Exterior	NA
RS-HM-03B	Vapor Barrier	Yes	М	Category II	ND	Exterior	NA
RS-HM-04A	Brown 12"x12" Vinyl Tile Multilayer	No	М	Category I	ND/ND/ND/ ND/ND/ND	Kitchen	NA
RS-HM-04B	Brown 12"x12" Vinyl Tile Multilayer	No	М	Category I	ND/ND/ND/ ND/ND/ND/ 5%CH/ND	Kitchen	135 sq. ft.
RS-HM-05A	12"x12" Vinyl Tile Multilayer	No	М	Category I	ND/ND/ 30%CH	Bathroom	42 sq. ft.
RS-HM-05B	12"x12" Vinyl Tile Multilayer	No	М	Category I	ND/ND/NA	Bathroom	NA
RS-HM-06A	Fiberboard/Felt	Yes	М	Category II	ND/ND	Rear Entry	NA
RS-HM-06B	Fiberboard/Felt	Yes	М	Category II	ND/ND	Rear Entry	NA
RS-HM-07A	Drywall and Joint Compound	No	М	Category II	ND/ND	E Bedroom Ceiling	NA
RS-HM-07B	Drywall and Joint Compound	No	М	Category II	ND	Kitchen Wall	NA
RS-HM-08A	Glazing	Yes	М	Category II	ND	E Bedroom	NA
RS-HM-08B	Glazing	Yes	М	Category II	ND	Kitchen	NA
RS-HM-09A	Tan Caulk	No	М	Category II	ND	E Bedroom	NA
RS-HM-09B	Tan Caulk	No	М	Category II	ND	E Bedroom	NA
RS-HM-10A	White Caulk	No	М	Category I	ND	Living	NA
RS-HM-10B	White Caulk	No	М	Category I	ND	Living	NA
RS-HM-11A	White Linoleum Multilayer	No	М	Category I	ND/ND/ND/ND	Stairway	NA
RS-HM-11B	White Linoleum Multilayer	No	М	Category I	ND/ND/ND	Stairway	NA
RS-HM-12A	Vent Flashing	No	М	Category I	ND	Exterior	NA
RS-HM-12B	Vent Flashing	No	М	Category I	ND	Exterior	NA
RS-HM-13A	Grey Mottled Linoleum	No	М	Category I	ND/ND/ND/ND	2 <sup>nd</sup> Fl. Center Bedroom	NA

Table 2 - Summary of Sample Descriptions and Asbestos Laboratory Results, 2201 Reynolds St., Muskegon Heights, Michigan

Sample Number	Sample Description	Friable	Material Type	Material Classification	% Asbestos Laboratory Result	Sample Location	Approx. Material Quantity
RS-HM-13B	Grey Mottled Linoleum	No	М	Category I	ND/ND/ND/ND	2 <sup>nd</sup> Fl. Center Bedroom	NA
RS-HM-14A	Stone Linoleum	No	М	Category I	ND/ND/ND	2 <sup>nd</sup> Fl. W Bedroom	NA
RS-HM-14B	Stone Linoleum	No	М	Category I	ND/ND/ND	2 <sup>nd</sup> Fl. W Bedroom	NA
RS-HS-01A	Plaster	No	S	Category II	ND/ND	Dining Ceiling	NA
RS-HS-01B	Plaster	No	S	Category II	ND/ND	Kitchen Ceiling	NA
RS-HS-01C	Plaster	No	S	Category II	ND/ND	Living Wall	NA
RS-HS-01D	Plaster	No	S	Category II	ND/ND	E Bedroom Wall	NA
RS-HS-01E	Plaster	No	S	Category II	ND/ND	W Bedroom Wall	NA

#### Notes:

Material Types

M = Miscellaneous building material

TSI = Thermal System Insulation

S = Surfacing Material

PC = Point Count Analysis

CH = Chrysotile Asbestos

#### Abbreviations

NQ = Not quantified

NA = Not applicable

ND = Not detected. Laboratory result is less than 1 % asbestos

lin. ft. = linear feet

sq. ft. = square feet

Asbestos Containing Material (ACM) is defined as any material containing more than 1 percent asbestos as determined utilizing Polarized Light Microscopy.

A	Asbestos Containing Material Description a	nd Location			
Location	Material Description	Friable	Condition	Material Type	Approx. Quantity
Building Exterior	Transite Siding	No	Fair	М	1,506 sq. ft.
Living (1 register, 10 sq. ft.) Basement (misc. HVAC Wrap on Ductwork and Framing, 5 sq. ft.)	HVAC Duct Wrap	Yes	Fair	TSI	15 sq. ft.

Notes:

Material Types

#### Abbreviations

- M = Miscellaneous building material
- TSI = Thermal System Insulation
- S = Surfacing Material

lin. ft. = linear feet sq. ft. = square feet

Exterior - Asbestos Containing Materials				
Location	Material Description		Friable	Approx. Quantity
Building Roof	Rolled Roofing		No	364 sq. ft.
		Total		364 sq. ft.
Interior - Asbestos Containing Materials				
Location	Material Description		Friable	Approx. Quantity
Kitchen	Brown 12"x12" Vinyl Tile Multilayer		No	135 sq. ft.
Bathroom	12"x12" Vinyl Tile Multilayer		No	42 sq. ft.
		Total		177 sq. ft.
Interior - Asbestos Containing Materials				
Location	<b>Material Description</b>		Friable	Approx. Quantity
Living (1 register, 10 sq. ft.) Basement (misc. HVAC Wrap on Ductwork and Framing, 5 sq. ft.)	HVAC Duct Wrap		Yes	15 sq. ft.
		Total		15 sq. ft.
Exterior - Asbestos Containing Materials				
Location	Material Description		Friable	Approx. Quantity
Building Exterior	Transite Siding		No	1,506 sq. ft.
		Total		1,506 sq. ft.

#### Table 4 - Summary of All Asbestos Containing Materials, 2201 Reynolds St., Muskegon Heights, Michigan

#### Notes:

Abbreviations

lin. ft. = linear feet sq. ft. = square feet

**Shaded/Bolded** = Friable ACM and any Category I and Category II non-friable ACM that has a high probability of becoming crumbled, pulverized, or reduced to powder by the demolition or renovation activities that must be properly abated prior to commencement of any demolition/renovation activities.

Demolition/renovation activities completed with intact Category I non-friable ACM are regulated by OSHA and must be completed following the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

### Table 4 - Summary of All Asbestos Containing Materials, 2201 Reynolds St., Muskegon Heights, Michigan

Please note that a Negative Pressure Enclosure must be utilized during abatement when Site Conditions Warrant. Examples of these conditions include the abatement of Plaster and Vermiculite insulation, HVAC Duct Wrap in Poor Condition, and Air-O-Cell/Mag Pipe Wrap. Conditions outside of these should be assessed on a case by case basis during the Asbestos Abatement Contractors site walk and Work Plan Preparation.



P.O. Box 13216 Lansing, MI 48901 Phone: 888.449.4566 Fax: 888.448.8739 www.redcedarconsulting.net

November 2, 2018

Mr. Tim Burgess Muskegon County Land Bank Land Bank Coordinator 173 E. Apple Avenue, Suite 104 Muskegon, MI 49442

### RE: Asbestos Containing Material and Hazardous Materials Inspection 2245 Sanford St., Muskegon Heights, MI 49444 Parcel ID: 61-26-185-072-0012-00

Dear Mr. Burgess:

Red Cedar Consulting has completed an asbestos-containing material (ACM) and hazardous materials inspection at 2245 Sanford St., Muskegon Heights, Michigan (Subject Property). This inspection was completed at the request of the Muskegon County Land Bank to comply with the United States Environmental Protection Agency (USEPA) requirements for demolition and renovation set forth under the National Emissions Standards for Hazardous Air Pollutants (NESHAP, 40 CFR Part 61). This inspection was also completed to comply with the Occupational Safety and Health Administration (OSHA) Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

#### **SUBJECT PROPERTY**

The Subject Property is comprised of a .15 acre residential parcel which contains a 480 sq. ft. detached garage and approximate 1,576 square foot residential building (the Building) constructed in 1920. The Building was constructed on a concrete block basement with two aboveground floors. The exterior walls of the Building were finished with Transite siding over wood lap while the roof was sealed with asphalt shingles. The Building can be further divided into two apartments for inspection purposes.

### VISUAL INSPECTION AND SAMPLING

#### **Asbestos Containing Materials Inspection**

Mr. Aaron Paquet of Red Cedar Consulting (Red Cedar), an accredited State of Michigan/EPA Asbestos Building Inspector (Accreditation Number A30955) whom completed training per the Michigan Asbestos Workers Accreditation Act 440 completed an inspection of the Subject Property on October 26, 2018 for suspected asbestos containing building materials.

This inspection, and subsequent sample collection was completed in accordance with the USEPA Asbestos Hazard Emergency Response Act (AHERA) (40 CFR Part 763) assessment and sampling protocol.

During the completion of the inspection, each area of the Subject Property was visually inspected for asbestos containing building materials (ACBM). Following the completion of the visual inspection, Red Cedar staff identified each suspect area of friable and non-friable ACBM and sorted them into one of three homogenous categories for sampling purposes. AHERA defines friable as a material that when dry, may be crumbled, pulverized, or reduced to powder by hand pressure. A homogenous area is defined by OSHA as an area of surfacing, thermal system insulation (TSI) or miscellaneous material that is uniform in color and texture. Surfacing materials are most commonly found in sprayed-on, troweled-on or otherwise applied to surfaces, such as acoustical plaster on ceilings and fireproofing materials on structural members. TSI refers to materials applied to pipes, fittings, boilers, ductwork, or other components to prevent heat loss or gain, or condensation. Any material that does not fall under the surfacing or TSI category, such as floor tile, drywall, and acoustical ceiling tile are placed into the miscellaneous materials category.

Following the completion of the visual inspection, Red Cedar staff identified the following materials as suspect ACBM:

- Roofing Shingle
- Vapor Barrier
- Linoleum
- 1x1 Ceiling Tile
- Drywall and Joint Compound
- Window Glazing
- Plaster
- Textured Surfacing

Red Cedar staff collected thirty nine samples of suspect ACBM separated into seventeen distinct homogenous groups for laboratory analysis. Samples were collected and submitted to APEX Research Inc. Laboratories (APEX) (Accreditation Number 102118-0) for laboratory analysis. Analysis was completed utilizing polarized light microscopy (PLM) which is the Environmental Protection Agency (EPA) approved method for analysis of bulk materials for asbestos. PLM analysis completed pursuant to method (EPA 600/M4-82-020) identifies asbestos fiber bundles by the visual properties displayed when the sample is treated with various dispersion staining liquids. The laboratory report completed following the sample analysis indicates if asbestos is present, and at what percentage along with a description and percentage of other fibrous and non-fibrous materials and sample color. Chain-of-custody documentation was followed from sample collection through shipping and receiving of the samples at the designated laboratory. The documentation assures that samples will meet the quality assurance/quality control measures defined by AHERA. The laboratory analytical report prepared by APEX for the thirty nine samples is included as Attachment A.

#### **Hazardous Materials Inspection**

On October 26, 2018 the Subject Property was also inspected for the presence of hazardous materials which include but are not limited to polychlorinated biphenyls (PCBs) and potential mercury containing equipment and any items or containers that may contain or be classified as a hazardous or regulated material. Each material, if identified, was documented along with the approximate location. Any materials identified as hazardous are included in Table 1.

### **INSPECTION RESULTS AND RECOMMENDATIONS**

During the completion of the asbestos inspection, thirty nine samples of suspect ACM were collected and are documented in Table 2 along with the Red Cedar sample number, description, friability, material type, ACM classification, sample location, material quantity and laboratory analytical results.

ACM, as defined by the USEPA NESHAP is "any material containing more than 1 percent asbestos as determined using the method specified in appendix E, subpart E, 40 CFR part 763 Section 1, Polarized Light Microscopy".

Friable ACM is defined by NESHAP as any material containing more than 1 percent asbestos that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. Friable ACM is a concern due the ease of unintentionally disturbing the ACM which may result in "visible emissions" which is known as a Fiber Release Episode.

Non-friable asbestos-containing material is defined as "material containing more than 1 percent asbestos that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. Non-friable ACM's are separated into Category I and Category II ACM. Category I ACM is any asbestos containing packing's, gaskets, resilient floor coverings (vinyl floor tile and linoleum are examples of these) and asphalt roofing products. Category II ACM is stated by NESHAP as any material excluding Category I non-friable ACM such as drywall, plaster or fiberboard insulation.

### **Presumed Asbestos Containing Material**

Presumed Asbestos Containing Materials (PACM) are suspect surfacing, TSI and miscellaneous materials found in buildings constructed prior to 1980 which are classified as and due to the age of the structure, are assumed to be ACM and do not require sample collection and analysis. OSHA dictates that PACM may be "rebutted" following a complete inspection pursuant to AHERA protocol.

The HVAC Duct Wrap located in the Building and the Cementatious "Transite" Siding on the Building was classified as PACM due to the age of the structure and samples were not collected.

Table 3 lists the location, material description, friability, condition, material type (surfacing, thermal or miscellaneous) and approximate quantity of all PACM documented at the Subject Property.

Table 4 provides a summary all ACM documented at the Subject Property which includes the material location, description, and approximate quantity.

### Friable ACM's

Window glazing samples collected from windows in the living room and basement were found to contain up to 10% asbestos following analysis. The assessment to quantify the extent of this material identified sixteen windows at the following locations that would fall into the same homogenous group. The locations of the windows are listed below:

- (5 windows 28" wide x 64" tall)
- (2 windows 24" wide x 44" tall)
- (1 window 24" wide x 48" tall)
- (1 window 28" wide x 28" tall)
- (1 window 39" wide x 37" tall)
- (1 window 24" wide x 40" tall)
- Basement (5 windows 32" wide x 14" tall)

Duct Wrap identified in the building in conjunction with the forced air heating system is classified as friable ACM. The visual assessment to quantify the extent of this material identified HVAC Duct Wrap at the following locations within the basement, first and second floors:

- Living (1 register, 15 sq. ft.)
- Kitchen (1 register, 15 sq. ft.)
- Bathroom (1 register, 15 sq. ft.)
- 2<sup>nd</sup> Floor Kitchen (1 register, 10 sq. ft. and vertical chase to basement, 15 sq. ft.)
- 2<sup>nd</sup> Floor Bedroom (1 register, 10 sq. ft. and vertical chase to basement, 15 sq. ft.)
- Basement (misc. HVAC wrap on Ductwork, 10 sq. ft.)
- Basement Crawl Space (Duct Wrap Debris, 25 sq. ft.)

### Category I ACM

Three types of resilient floor covering (Layered Yellow Linoleum, Charcoal Pebble Linoleum, and Lite Brown Layered Linoleum) located within the kitchen were found to contain up to 30% Chrysotile asbestos. The assessment to quantify the extent of this material identified approximately 557 sq. ft. of this material within the Building.

#### **Category II ACM**

The cementatious "Transite" siding located on the exterior of the Building and in the basement was classified as PACM and no samples were collected. The visual assessment to quantify the extent of this material identified 2,043 sq. ft. of cementatious (Transite) siding on the Building.

#### **RECOMMENDATIONS**

#### **Asbestos Containing Materials**

HVAC material identified in the Building system and listed below is classified as friable ACM and should be removed prior to any renovation/demolition activities.

• Living (1 register, 15 sq. ft.)

- Kitchen (1 register, 15 sq. ft.)
- Bathroom (1 register, 15 sq. ft.)
- 2<sup>nd</sup> Floor Kitchen (1 register, 10 sq. ft. and vertical chase to basement, 15 sq. ft.)
- 2<sup>nd</sup> Floor Bedroom (1 register, 10 sq. ft. and vertical chase to basement, 15 sq. ft.)
- Basement (misc. HVAC wrap on Ductwork, 10 sq. ft.)
- Basement Crawl Space (Duct Wrap Debris, 25 sq. ft.)

Friable asbestos containing window glazing was identified on sixteen windows throughout the Building. The locations of these windows that should be abated prior to demolition/renovation activities are listed below:

- (5 windows 28" wide x 64" tall)
- (2 windows 24" wide x 44" tall)
- (1 window 24" wide x 48" tall)
- (1 window 28" wide x 28" tall)
- (1 window 39" wide x 37" tall)
- (1 window 24" wide x 40" tall)
- Basement (5 windows 32" wide x 14" tall)

Please note: Other different sized windows are located throughout the Building but these windows were assessed and found to be constructed either without window glazing or were sampled and found to not contain asbestos and therefore are not required to be removed.

Transite siding was identified on the exterior of the Building and in the basement and must be abated prior to completion of any demolition activities at the Subject Property. In demolition, all cementatious ACM must be removed prior to demolition due to the likelihood of becoming regulated due to the demolition process.

The Category I resilient floor coverings (Layered Yellow Linoleum, Charcoal Pebble Linoleum, and Lite Brown Layered Linoleum) are non-friable ACM's that may be left in place as long as the demolition/renovation activities are completed following the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

Please note: The location of samples obtained during this inspection were in a random fashion and areas that were not identified during this inspection may be damaged or have become damaged since the inspection was completed. If Category I or Category II friable materials are discovered prior to or during the demolition/renovation process, these materials must be abated prior to commencement of any demolition/renovation activities at the Subject Property.

#### **Hazardous Materials**

Hazardous Materials identified at the Subject Property and documented in Table 1 which require proper removal and disposal consist of the following items:

- Automobile Tire (4)
- 1-Gallon Container (4)
- Thermostat (1)
- Smoke Detector (1)

- 1-Pint Container Misc. (6)
- 4' Fluorescent Light (Fixture and Ballast Only) (2)
- 4' Fluorescent Light Bulb (2)

### **REGULATORY REQUIREMENTS**

A Notification of Intent to Renovate/Demolish form must be filed with the Michigan Department of Environmental Quality- Air Quality Division at least 10 working days prior to any renovation or demolition activities at a site.

The Notification of Intent to Renovate/Demolish form must also be completed and submitted to the MIOSHA-Asbestos Program whenever demolition, encapsulation and/or renovation activities at a site involving greater than ten lineal feet and/or fifteen square feet of ACM will be completed.

Regulated asbestos containing materials per NESHAP (40 CFR Part 61) which falls into any of the following categories are ACM's that must be removed prior to any renovation/demolition activities at the Subject Property.

- Friable asbestos material.
- Category I non-friable ACM that has become friable.
- Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading.
- Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of renovation or demolition operations.

Asbestos abatement should only be performed by a certified asbestos abatement contractor licensed to complete abatement work. The contractor must also follow the standards and requirements set forth per the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) and the USEPA NESHAP (40 CFR Part 61).

Additional information regarding the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) and the USEPA NESHAP (40 CFR Part 61) can be obtained by contacting the associated agency below.

NESHAP Asbestos Program Department of Environmental Quality Phone: 517-284-6777 MIOSHA-CSHD-Asbestos Program State of Michigan Phone: 517-284-7680 Email: asbestos@michigan.gov

### **DISCLAIMER**

Red Cedar Consulting performed destructive testing methods in an attempt to access and inspect all areas of the Building. Unfortunately, due to the age of construction along with multiple additions/renovations that may have been completed on the Building, additional inspections may be required if suspect ACM material not documented within this report is encountered during renovation/demolition activities.

This report was prepared at the request and for exclusive use by the Muskegon County Land Bank and may not be reproduced or sold without written permission from Red Cedar Consulting.

We appreciate the opportunity to provide the requested services. Please contact us at (888) 449-4566 with any questions or concerns.

Sincerely, Red Cedar Consulting

Raion Poquet

Aaron Paquet Michigan/EPA Certified Asbestos Building Inspector (A30955)

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Red Cedar Consulting

# Attachment 1

APEX Research Laboratory Analytical Results

Test Method, Polarized Light Microscopy (PLM)

Project : 2245 Sanford St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80634Date Collected:10/26/18Date Received:10/29/18Date Analyzed:10/31/18Date Reported:11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80634 - 01 Cust. #: SS-HM-01A Material: Roofing Shingle Location: Appearance: black,fibrous,homogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 30% Other - 70%
Lab ID #: 80634 - 01a Cust. #: SS-HM-01A Material: Black Shingle Location: Appearance: black,fibrous,homogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 30% Other - 70%
Lab ID #: 80634 - 01b Cust. #: SS-HM-01A Material: Felt Location: Appearance: black,fibrous,homogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 60% Other - 40%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method, Polarized Light Microscopy (PLM)

Project : 2245 Sanford St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80634Date Collected:10/26/18Date Received:10/29/18Date Analyzed:10/31/18Date Reported:11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80634 - 02 Cust. #: SS-HM-01B Material: Roofing Shingle Location: Appearance: black,fibrous,homogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 30% Other - 70%
Lab ID #: 80634 - 02a Cust. #: SS-HM-01B Material: Black Shingle Location: Appearance: black,fibrous,homogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 30% Other - 70%
Lab ID #: 80634 - 02b Cust. #: SS-HM-01B Material: Felt Location: Appearance: black,fibrous,homogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 60% Other - 40%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method, Polarized Light Microscopy (PLM)

Project : 2245 Sanford St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80634Date Collected:10/26/18Date Received:10/29/18Date Analyzed:10/31/18Date Reported:11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80634 - 03 Cust. #: SS-HM-02A Material: Vapor Barrier Location: Appearance: black,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 60% Other - 40%
Lab ID #: 80634 - 04 Cust. #: SS-HM-02B Material: Vapor Barrier Location: Appearance: black,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 60% Other - 40%
Lab ID #: 80634 - 05 Cust. #: SS-HM-03A Material: Layered Yellow Linoleum Location: Appearance: yellow,fibrous,nonhomogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Fiberglass - 10% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2245 Sanford St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80634Date Collected:10/26/18Date Received:10/29/18Date Analyzed:10/31/18Date Reported:11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80634 - 05a Cust. #: SS-HM-03A Material: Green Linoleum Location: Appearance: green,fibrous,nonhomogenous Layer: 2 of 3	Asbestos Present: <b>YES</b> Chrysotile - 30%	Other - 70%
Lab ID #: 80634 - 05b Cust. #: SS-HM-03A Material: Fiberboard Location: Appearance: brown,fibrous,homogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 80% Other - 20%
Lab ID #: 80634 - 06 Cust. #: SS-HM-03B Material: Layered Yellow Linoleum Location: Appearance: yellow,fibrous,nonhomogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Fiberglass - 10% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method, Polarized Light Microscopy (PLM)

Project : 2245 Sanford St.



Report 10: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80634Date Collected:10/26/18Date Received:10/29/18Date Analyzed:10/31/18Date Reported:11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80634 - 06a Cust. #: SS-HM-03B	Asbestos Present:	
Material: Green Linoleum Location: Appearance: Layer: 2 of 3	NOT ANALYZED	
Lab ID #: 80634 - 06b Cust. #: SS-HM-03B Material: Fiberboard Location: Appearance: brown,fibrous,homogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 80% Other - 20%
Lab ID #: 80634 - 07 Cust. #: SS-HM-04A Material: Charcoal Pebble Linoleum Location: Appearance: grey,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>YES</b> Chrysotile - 20%	Cellulose - 2% Other - 78%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2245 Sanford St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report # 18-80634 Date Collected: 10/26/18 Date Received: 10/29/18 Date Analyzed: 10/31/18 Date Reported: 11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80634 - 08 Cust. #: SS-HM-04B	Asbestos Present:	
Material: Charcoal Pebble Linoleum Location: Appearance: Layer: of	NOT ANALYZED	
Lab ID #: 80634 - 09 Cust. #: SS-HM-05A Material: Green Linoleum Location: Appearance: green,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 40% Other - 60%
Lab ID #: 80634 - 10 Cust. #: SS-HM-05B Material: Green Linoleum Location: Appearance: green,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 40% Other - 60%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2245 Sanford St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80634Date Collected:10/26/18Date Received:10/29/18Date Analyzed:10/31/18Date Reported:11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80634 - 11 Cust. #: SS-HM-06A Material: 1x1 White Smooth Ceiling Tile Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 80% Other - 20%
Lab ID #: 80634 - 12 Cust. #: SS-HM-06B Material: 1x1 White Smooth Ceiling Tile Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 80% Other - 20%
Lab ID #: 80634 - 13 Cust. #: SS-HM-07A Material: Drywall Location: Appearance: white,fibrous,nonhomogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method, Polarized Light Microscopy (PLM)

Project : 2245 Sanford St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report # 18-80634 Date Collected: 10/26/18 Date Received: 10/29/18 Date Analyzed: 10/31/18 Date Reported: 11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80634 - 13a Cust. #: SS-HM-07A Material: Joint Compound Location: Appearance: white,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80634 - 14 Cust. #: SS-HM-07B Material: Drywall Location: Appearance: white,fibrous,nonhomogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80634 - 14a Cust. #: SS-HM-07B Material: Joint Compound Location: Appearance: white,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method, Polarized Light Microscopy (PLM)

Project : 2245 Sanford St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80634         Date Collected:       10/26/18         Date Received:       10/29/18         Date Analyzed:       10/31/18         Date Reported:       11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80634 - 15 Cust. #: SS-HM-08A Material: Crème Glazing Location: Appearance: beige,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>YES</b> Chrysotile - 10%	Other - 90%
Lab ID #: 80634 - 16 Cust. #: SS-HM-08B Material: Crème Glazing Location: Appearance: Layer: of	Asbestos Present: NOT ANALYZED	
Lab ID #: 80634 - 17 Cust. #: SS-HM-09A Material: Basement Window Glazing Location: Appearance: beige,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>YES</b> Chrysotile - 10%	Other - 90%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method, Polarized Light Microscopy (PLM)

Project : 2245 Sanford St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80634Date Collected:10/26/18Date Received:10/29/18Date Analyzed:10/31/18Date Reported:11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80634 - 18 Cust. #: SS-HM-09B	Asbestos Present:	
Material: Basement Window Glazing Location: Appearance: Layer: of	NOT ANALYZED	
Lab ID #: 80634 - 19 Cust. #: SS-HM-10A Material: Patch Window Glazing Location: Appearance: beige,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 1% Other - 99%
Lab ID #: 80634 - 20 Cust. #: SS-HM-10B Material: Patch Window Glazing Location: Appearance: beige,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method, Polarized Light Microscopy (PLM)

Project : 2245 Sanford St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80634Date Collected:10/26/18Date Received:10/29/18Date Analyzed:10/31/18Date Reported:11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80634 - 21 Cust. #: SS-HM-11A Material: Red Brick Linoleum Location: Appearance: red,fibrous,nonhomogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Fiberglass - 10% Other - 80%
Lab ID #: 80634 - 21a Cust. #: SS-HM-11A Material: Fiberboard Location: Appearance: brown,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 80% Other - 20%
Lab ID #: 80634 - 22 Cust. #: SS-HM-11B Material: Red Brick Linoleum Location: Appearance: red,fibrous,nonhomogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Fiberglass - 10% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method, Polarized Light Microscopy (PLM)

Project : 2245 Sanford St.



Report 10: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80634Date Collected:10/26/18Date Received:10/29/18Date Analyzed:10/31/18Date Reported:11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80634 - 22a Cust. #: SS-HM-11B Material: Fiberboard Location: Appearance: brown,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 80% Other - 20%
Lab ID #: 80634 - 23 Cust. #: SS-HM-12A Material: Lite Brown Layered Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 2	Asbestos Present: <b>YES</b> Chrysotile - 30%	Other - 70%
Lab ID #: 80634 - 23a Cust. #: SS-HM-12A Material: Sheet Flooring Location: Appearance: brown,fibrous,nonhomogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 40% Other - 60%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2245 Sanford St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901	A du sta a Trava (Deussaut	ARI Report # 18-80634 Date Collected: 10/26/18 Date Received: 10/29/18 Date Analyzed: 10/31/18 Date Reported: 11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80634 - 24 Cust. #: SS-HM-12B	Asbestos Present:	
Material: Lite Brown Layered Linoleum Location: Appearance: Layer: 1 of 2	NOT ANALYZED	
Lab ID #: 80634 - 24a Cust. #: SS-HM-12B Material: Sheet Flooring Location: Appearance: brown,fibrous,nonhomogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 40% Other - 60%
Lab ID #: 80634 - 25 Cust. #: SS-HM-13A Material: Grey Speckled Linoleum Location: Appearance: grey,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 40% Other - 60%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method, Polarized Light Microscopy (PLM)

Project : 2245 Sanford St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report # 18-80634 Date Collected: 10/26/18 Date Received: 10/29/18 Date Analyzed: 10/31/18 Date Reported: 11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80634 - 26 Cust. #: SS-HM-13B Material: Grey Speckled Linoleum Location: Appearance: grey,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 50% Other - 50%
Lab ID #: 80634 - 27 Cust. #: SS-HM-14A Material: Garage Window Glazing Location: Appearance: beige,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Wollastonite - 1% Other - 99%
Lab ID #: 80634 - 28 Cust. #: SS-HM-14B Material: Garage Window Glazing Location: Appearance: beige,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Wollastonite - 1% Other - 99%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method, Polarized Light Microscopy (PLM)

Project : 2245 Sanford St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80634Date Collected:10/26/18Date Received:10/29/18Date Analyzed:10/31/18Date Reported:11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80634 - 29 Cust. #: SS-HS-01A Material: Sand Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80634 - 29a Cust. #: SS-HS-01A Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Hair - 5% Other - 95%
Lab ID #: 80634 - 30 Cust. #: SS-HS-01B Material: Sand Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method, Polarized Light Microscopy (PLM)

Project : 2245 Sanford St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80634Date Collected:10/26/18Date Received:10/29/18Date Analyzed:10/31/18Date Reported:11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80634 - 30a Cust. #: SS-HS-01B Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Hair - 2% Other - 98%
Lab ID #: 80634 - 31 Cust. #: SS-HS-01C Material: Sand Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80634 - 31a Cust. #: SS-HS-01C Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Hair - 2% Other - 98%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2245 Sanford St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80634Date Collected:10/26/18Date Received:10/29/18Date Analyzed:10/31/18Date Reported:11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80634 - 32 Cust. #: SS-HS-01D Material: Sand Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80634 - 32a Cust. #: SS-HS-01D Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Hair - 5% Other - 95%
Lab ID #: 80634 - 33 Cust. #: SS-HS-01E Material: Sand Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method, Polarized Light Microscopy (PLM)

Project : 2245 Sanford St.



Keport 10: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80634Date Collected:10/26/18Date Received:10/29/18Date Analyzed:10/31/18Date Reported:11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80634 - 33a Cust. #: SS-HS-01E Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Hair - 5% Other - 95%
Lab ID #: 80634 - 34 Cust. #: SS-HS-02A Material: Grey Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80634 - 34a Cust. #: SS-HS-02A Material: Plaster Base Coat Location: Appearance: grey,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 1% Other - 99%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method, Polarized Light Microscopy (PLM)

Project : 2245 Sanford St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80634Date Collected:10/26/18Date Received:10/29/18Date Analyzed:10/31/18Date Reported:11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80634 - 35 Cust. #: SS-HS-02B Material: Grey Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80634 - 35a Cust. #: SS-HS-02B Material: Plaster Base Coat Location: Appearance: grey,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80634 - 36 Cust. #: SS-HS-02C Material: Grey Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method, Polarized Light Microscopy (PLM)

Project : 2245 Sanford St.



Keport 10:Mr. Aaron PaquetRed Cedar ConsultingP.O. Box 13216Lansing, MI 48901		ARI Report #18-80634Date Collected:10/26/18Date Received:10/29/18Date Analyzed:10/31/18Date Reported:11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80634 - 36a Cust. #: SS-HS-02C Material: Plaster Base Coat Location: Appearance: grey,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80634 - 37 Cust. #: SS-HS-03A Material: Textured Surfacing Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 1% Other - 99%
Lab ID #: 80634 - 38 Cust. #: SS-HS-03B Material: Textured Surfacing Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 1% Other - 99%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method, Polarized Light Microscopy (PLM)

Project : 2245 Sanford St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901 Sample Information	Asbestos Type/Percent	ARI Report # 18-80634 Date Collected: 10/26/18 Date Received: 10/29/18 Date Analyzed: 10/31/18 Date Reported: 11/01/18 Non-Asbestos Material
Lab ID #: 80634 - 39 Cust. #: SS-HS-03C Material: Textured Surfacing Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 1% Other - 99%
Lab ID #: Cust. #: Material: Location: Appearance: Layer: of	Asbestos Present:	
Lab ID #: Cust. #: Material: Location: Appearance: Layer: of	Asbestos Present:	

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

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E-mail: apexresearch@chartermi.net	cermi.net Fax: 734-449-9991	49-9991	
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Zip: Lansing, MI 48901			
449-4566 Fax: (888) 448-8739	Contact Person: Aaron P	Paquet	
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3074	Phone: 734-449-9990 Fax: 734-449-9991	26-18 Lab Use Only Log-In Report	<pre>t Person: Aaron Paquet apaquet@redcedarconsulting.net amples with a detection of &lt;5% ACM. Point Count PCM</pre>	t Soil Other Viable vel II	Area Results		
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Red Cedar Consulting

Tables

Hazardous Materials Description and Location			
Location	Material Description	Quantity	
Exterior	Automobile Tire	4	
Exterior	Mercury Vapor Light	1	
Exterior	1-Gallon Container Paint	4	
Living Room	Thermostat	1	
2 <sup>nd</sup> Floor S Bedroom	Smoke Detector	1	
Basement	1-Gallon Container Paint	6	
Basement	5-Gallon Container Oil	1	
Basement	1-Pint Container Misc.	6	
Detached Garage	4' Fluorescent Light (Fixture and Ballast Only)	2	
Detached Garage	4' Fluorescent Light Bulb	2	

Table 2 - Summary of Sample Descriptions and Asbestos Laboratory Results, 2245 Sanford St., Muskegon Heights, Michigan

Sample Number	Sample Description	Friable	Material Type	Material Classification	% Asbestos Laboratory Result	Sample Location	Approx. Material Quantity
SS-HM-01A	Roofing Shingle	No	М	Category I	ND/ND/ND	House Roof	NA
SS-HM-01B	Roofing Shingle	No	М	Category I	ND/ND/ND	Garage Roof	NA
SS-HM-02A	Vapor Barrier	Yes	М	Category II	ND	House Exterior	NA
SS-HM-02B	Vapor Barrier	Yes	М	Category II	ND	House Exterior	NA
SS-HM-03A	Layered Yellow Linoleum	No	М	Category I	ND/30%CH/ND	Kitchen	352 sq. ft.
SS-HM-03B	Layered Yellow Linoleum	No	М	Category I	ND/NA/ND	Kitchen	NA
SS-HM-04A	Charcoal Pebble Linoleum	No	М	Category I	20%CH	Front Entry	82 sq. ft.
SS-HM-04B	Charcoal Pebble Linoleum	No	М	Category I	NA	Front Entry	NA
SS-HM-05A	Green Linoleum	No	М	Category I	ND	Green Linoleum	NA
SS-HM-05B	Green Linoleum	No	М	Category I	ND	Green Linoleum	NA
SS-HM-06A	1x1 White Smooth Ceiling Tile	Yes	М	Category II	ND	Bathroom	NA
SS-HM-06B	1x1 White Smooth Ceiling Tile	Yes	М	Category II	ND	Bathroom	NA
SS-HM-07A	Drywall and Joint Compound	No	М	Category II	ND/ND	Living Room Ceiling	NA
SS-HM-07B	Drywall and Joint Compound	No	М	Category II	ND/ND	Living Room Wall	NA
SS-HM-08A	Crème Glazing	Yes	М	Category II	10%CH	Living Room Window	11 Windows
SS-HM-08B	Crème Glazing	Yes	М	Category II	NA	Kitchen Window	NA
SS-HM-09A	Basement Window Glazing	Yes	М	Category II	10%CH	Basement Window	5 Windows
SS-HM-09B	Basement Window Glazing	Yes	М	Category II	NA	Basement Window	NA
SS-HM-10A	Patch Window Glazing	Yes	М	Category II	ND	Porch Window	NA
SS-HM-10B	Patch Window Glazing	Yes	М	Category II	ND	Porch Window	NA
SS-HM-11A	Red Brick Linoleum	No	М	Category I	ND/ND	2 <sup>nd</sup> Floor Living Room	NA
SS-HM-11B	Red Brick Linoleum	No	М	Category I	ND/ND	2 <sup>nd</sup> Floor Living Room	NA
SS-HM-12A	Lite Brown Layered Linoleum	No	М	Category I	30%CH/ND	2 <sup>nd</sup> Floor Kitchen	123 sq. ft.
SS-HM-12B	Lite Brown Layered Linoleum	No	М	Category I	NA/ND	2 <sup>nd</sup> Floor Kitchen	NA
SS-HM-13A	Grey Speckled Linoleum	No	М	Category I	ND	2 <sup>nd</sup> Floor S Bedroom	NA
SS-HM-13B	Grey Speckled Linoleum	No	М	Category I	ND	2 <sup>nd</sup> Floor S Bedroom	NA
SS-HM-14A	Garage Window Glazing	Yes	М	Category II	ND	Garage Window	NA

Table 2 - Summar	v of Sample Descr	iptions and Asbestos	S Laboratory Results	s. 2245 Sanford St	Muskegon Heights, Michigan
				.,	

Sample Number	Sample Description	Friable	Material Type	Material Classification	% Asbestos Laboratory Result	Sample Location	Approx. Material Quantity
SS-HM-14B	Garage Window Glazing	Yes	М	Category II	ND	Garage Window	NA
SS-HS-01A	Sand Plaster	No	S	Category II	ND/ND	Living Room Ceiling	NA
SS-HS-01B	Plaster	No	S	Category II	ND/ND	Bathroom Wall	NA
SS-HS-01C	Plaster	No	S	Category II	ND/ND	E Bedroom Wall	NA
SS-HS-01D	Plaster	No	S	Category II	ND/ND	2 <sup>nd</sup> Floor Living Room Ceiling	NA
SS-HS-01E	Plaster	No	S	Category II	ND/ND	2 <sup>nd</sup> Floor Living Room Wall	NA
SS-HS-02A	Plaster	No	S	Category II	ND/ND	Kitchen Ceiling	NA
SS-HS-02B	Plaster	No	S	Category II	ND/ND	Kitchen Wall	NA
SS-HS-02C	Plaster	No	S	Category II	ND/ND	Kitchen Wall	NA
SS-HS-03A	Textured Surfacing	No	S	Category II	ND	2 <sup>nd</sup> Floor Living Room Ceiling	NA
SS-HS-03B	Textured Surfacing	No	S	Category II	ND	2 <sup>nd</sup> Floor Living Room Ceiling	NA
SS-HS-03C	Textured Surfacing	No	S	Category II	ND	2 <sup>nd</sup> Floor Living Room Ceiling	NA

#### Notes:

#### Material Types

- M = Miscellaneous building material
- TSI = Thermal System Insulation
- S = Surfacing Material
- PC = Point Count Analysis
- CH = Chrysotile Asbestos

### Abbreviations

- NQ = Not quantified
- NA = Not applicable
- ND = Not detected. Laboratory result is less than 1 % asbestos
- lin. ft. = linear feet
- sq. ft. = square feet

Asbestos Containing Material (ACM) is defined as any material containing more than 1 percent asbestos as determined utilizing Polarized Light Microscopy.

Asbestos Containing Material Description and Location					
Location	Material Description	Friable	Condition	Material Type	Approx. Quantity
Building Exterior	Transite Siding	No	Fair	М	2,033 sq. ft.
Basement	Stack of Transite	No	Fair	М	10 sq. ft.
Living (1 register, 15 sq. ft.) Kitchen (1 register, 15 sq. ft.) Bathroom (1 register, 15 sq. ft.) 2 <sup>nd</sup> Floor Kitchen (1 register, 10 sq. ft. and vertical chase to basement, 15 sq. ft.) 2 <sup>nd</sup> Floor Bedroom (1 register, 10 sq. ft. and vertical chase to basement, 15 sq. ft.) Basement (misc. HVAC wrap on Ductwork, 10 sq. ft.) Basement Crawl Space (Duct Wrap Debris, 25 sq. ft.)	HVAC Duct Wrap	Yes	Fair	TSI	130 sq. ft.

Table 3 - Summary of Presumed Asbestos Containing Materials, 2245 Sanford St., Muskegon Heights, Michigan

Notes:

Material Types

#### Abbreviations

M = Miscellaneous building material

TSI = Thermal System Insulation

S = Surfacing Material

lin. ft. = linear feet sq. ft. = square feet

Interior - Asbestos Containing Materials				
Location	Material Description		Friable	Approx. Quantity
Kitchen	Layered Yellow Linoleum		No	352 sq. ft.
Front Entry	Charcoal Pebble Linoleum		No	42 sq. ft.
Pantry	Charcoal Pebble Linoleum		No	40 sq. ft.
2 <sup>nd</sup> Floor Kitchen	Lite Brown Layered Linoleum		No	123 sq. ft.
		Total		557 sq. ft.
Interior - Asbestos Containing Materials				
Location	<b>Material Description</b>		Friable	Approx. Quantity
Living (1 register, 15 sq. ft.) Kitchen (1 register, 15 sq. ft.) Bathroom (1 register, 15 sq. ft.) 2 <sup>nd</sup> Floor Kitchen (1 register, 10 sq. ft. and vertical chase to basement, 15 sq. ft.) 2 <sup>nd</sup> Floor Bedroom (1 register, 10 sq. ft. and vertical chase to basement, 15 sq. ft.) Basement (misc. HVAC wrap on Ductwork, 10 sq. ft.) Basement Crawl Space (Duct Wrap Debris, 25 sq. ft.)	HVAC Duct Wrap	Total	Yes	130 sq. ft. 130 sq. ft.
Interior - Asbestos Containing Materials				
Location	<b>Material Description</b>		Friable	Approx. Quantity
(5 windows 28" wide x 64" tall)	Glazing		Yes	5 Windows
(2 windows 24" wide x 44" tall)	Glazing		Yes	2 Windows
(1 window 24" wide x 48" tall)	Glazing		Yes	1 Window
(1 window 28" wide x 28" tall)	Glazing		Yes	1 Window
(1 window 39" wide x 37" tall)	Glazing		Yes	1 Window
(1 window 24" wide x 40" tall)	Glazing		Yes	1 Window
Basement (5 windows 32" wide x 14" tall)	Glazing		Yes	5 Windows
		Total		16 Windows
Interior - Asbestos Containing Materials				
Location	Material Description		Friable	Approx. Quantity
Basement	Stack of Transite		No	10 sq. ft.

### Table 4 - Summary of All Asbestos Containing Materials, 2245 Sanford St., Muskegon Heights, Michigan

### Table 4 - Summary of All Asbestos Containing Materials, 2245 Sanford St., Muskegon Heights, Michigan

		Total		10 sq. ft.
<b>Exterior - Asbestos Containing Materials</b>				
Location	<b>Material Description</b>		Friable	Approx. Quantity
Building Exterior	Transite Siding		No	2,033 sq. ft.
		Total		2,033 sq. ft.

Notes: Abbreviations

lin. ft. = linear feet sq. ft. = square feet

**Shaded/Bolded** = Friable ACM and any Category I and Category II non-friable ACM that has a high probability of becoming crumbled, pulverized, or reduced to powder by the demolition or renovation activities that must be properly abated prior to commencement of any demolition/renovation activities.

Demolition/renovation activities completed with intact Category I non-friable ACM are regulated by OSHA and must be completed following the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

Please note that a Negative Pressure Enclosure must be utilized during abatement when Site Conditions Warrant. Examples of these conditions include the abatement of Plaster and Vermiculite insulation, HVAC Duct Wrap in Poor Condition, and Air-O-Cell/Mag Pipe Wrap. Conditions outside of these should be assessed on a case by case basis during the Asbestos Abatement Contractors site walk and Work Plan Preparation.



P.O. Box 13216 Lansing, MI 48901 Phone: 888.449.4566 Fax: 888.448.8739 www.redcedarconsulting.net

November 1, 2018

Mr. Tim Burgess Muskegon County Land Bank Land Bank Coordinator 173 E. Apple Avenue, Suite 104 Muskegon, MI 49442

### RE: Asbestos Containing Material and Hazardous Materials Inspection 2312 Hoyt St., Muskegon Heights, MI 49444 Parcel ID: 61-26-185-099-0021-00

Dear Mr. Burgess:

Red Cedar Consulting has completed an asbestos-containing material (ACM) and hazardous materials inspection at 2312 Hoyt St., Muskegon Heights, Michigan (Subject Property). This inspection was completed at the request of the Muskegon County Land Bank to comply with the United States Environmental Protection Agency (USEPA) requirements for demolition and renovation set forth under the National Emissions Standards for Hazardous Air Pollutants (NESHAP, 40 CFR Part 61). This inspection was also completed to comply with the Occupational Safety and Health Administration (OSHA) Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

#### SUBJECT PROPERTY

The Subject Property is comprised of a .30 acre residential parcel which contains a 640 sq. ft. detached garage and approximate 1,431 square foot residential building (the Building) constructed in 1935. The Building was constructed on a concrete block basement with two aboveground floors. The exterior walls of the Building were finished with wood lap over a vapor barrier while the roof was sealed with asphalt shingles. The Building can be further divided into a front entry, living room, dining room, kitchen, bath, three bedrooms and a laundry room on the first floor while the second floor contains a living room, kitchen, pantry and bathroom.

#### VISUAL INSPECTION AND SAMPLING

#### **Asbestos Containing Materials Inspection**

Mr. Aaron Paquet of Red Cedar Consulting (Red Cedar), an accredited State of Michigan/EPA Asbestos Building Inspector (Accreditation Number A30955) whom completed training per the Michigan Asbestos Workers Accreditation Act 440 completed an inspection of the Subject Property on October 23, 2018 for

suspected asbestos containing building materials. This inspection, and subsequent sample collection was completed in accordance with the USEPA Asbestos Hazard Emergency Response Act (AHERA) (40 CFR Part 763) assessment and sampling protocol.

During the completion of the inspection, each area of the Subject Property was visually inspected for asbestos containing building materials (ACBM). Following the completion of the visual inspection, Red Cedar staff identified each suspect area of friable and non-friable ACBM and sorted them into one of three homogenous categories for sampling purposes. AHERA defines friable as a material that when dry, may be crumbled, pulverized, or reduced to powder by hand pressure. A homogenous area is defined by OSHA as an area of surfacing, thermal system insulation (TSI) or miscellaneous material that is uniform in color and texture. Surfacing materials are most commonly found in sprayed-on, troweled-on or otherwise applied to surfaces, such as acoustical plaster on ceilings and fireproofing materials on structural members. TSI refers to materials applied to pipes, fittings, boilers, ductwork, or other components to prevent heat loss or gain, or condensation. Any material that does not fall under the surfacing or TSI category, such as floor tile, drywall, and acoustical ceiling tile are placed into the miscellaneous materials category.

Following the completion of the visual inspection, Red Cedar staff identified the following materials as suspect ACBM:

- Vapor Barrier
- Shingle Roof
- Roof Flashing
- Rolled Roofing
- Linoleum
- Vinyl Floor Tile
- 1x1 Ceiling Tile
- Window Glazing
- Drywall and Joint Compound
- 16x16 Ceiling Tile
- Vinvl Flooring
- Window Caulk
- Plaster

Red Cedar staff collected forty five samples of suspect ACBM separated into twenty distinct homogenous groups for laboratory analysis. Samples were collected and submitted to APEX Research Inc. Laboratories (APEX) (Accreditation Number 102118-0) for laboratory analysis. Analysis was completed utilizing polarized light microscopy (PLM) which is the Environmental Protection Agency (EPA) approved method for analysis of bulk materials for asbestos. PLM analysis completed pursuant to method (EPA 600/M4-82-020) identifies asbestos fiber bundles by the visual properties displayed when the sample is treated with various dispersion staining liquids. The laboratory report completed following the sample analysis indicates if asbestos is present, and at what percentage along with a description and percentage of other fibrous and non-fibrous materials and sample color. Chain-of-custody documentation was followed from sample collection through shipping and receiving of the samples at the designated laboratory. The documentation assures that samples will meet the quality assurance/quality control measures defined by AHERA. The laboratory analytical report prepared by APEX for the forty five samples is included as Attachment A.

### **Hazardous Materials Inspection**

On October 23, 2018 the Subject Property was also inspected for the presence of hazardous materials which include but are not limited to polychlorinated biphenyls (PCBs) and potential mercury containing equipment and any items or containers that may contain or be classified as a hazardous or regulated material. Each material, if identified, was documented along with the approximate location. Any materials identified as hazardous are included in Table 1.

### **INSPECTION RESULTS AND RECOMMENDATIONS**

During the completion of the asbestos inspection, forty five samples of suspect ACM were collected and are documented in Table 2 along with the Red Cedar sample number, description, friability, material type, ACM classification, sample location, material quantity and laboratory analytical results.

ACM, as defined by the USEPA NESHAP is "any material containing more than 1 percent asbestos as determined using the method specified in appendix E, subpart E, 40 CFR part 763 Section 1, Polarized Light Microscopy".

Friable ACM is defined by NESHAP as any material containing more than 1 percent asbestos that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. Friable ACM is a concern due the ease of unintentionally disturbing the ACM which may result in "visible emissions" which is known as a Fiber Release Episode.

Non-friable asbestos-containing material is defined as "material containing more than 1 percent asbestos that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. Non-friable ACM's are separated into Category I and Category II ACM. Category I ACM is any asbestos containing packing's, gaskets, resilient floor coverings (vinyl floor tile and linoleum are examples of these) and asphalt roofing products. Category II ACM is stated by NESHAP as any material excluding Category I non-friable ACM such as drywall, plaster or fiberboard insulation.

### **Presumed Asbestos Containing Material**

Presumed Asbestos Containing Materials (PACM) are suspect surfacing, TSI and miscellaneous materials found in buildings constructed prior to 1980 which are classified as and due to the age of the structure, are assumed to be ACM and do not require sample collection and analysis. OSHA dictates that PACM may be "rebutted" following a complete inspection pursuant to AHERA protocol.

The HVAC Duct Wrap located in the Building was classified as PACM due to the age of the structure and samples were not collected.

Table 3 lists the location, material description, friability, condition, material type (surfacing, thermal or miscellaneous) and approximate quantity of all PACM documented at the Subject Property.

Table 4 provides a summary all ACM documented at the Subject Property which includes the material location, description, and approximate quantity.

### Friable ACM's

Duct Wrap identified in the building in conjunction with the forced air heating system is classified as friable ACM. The visual assessment to quantify the extent of this material identified HVAC Duct Wrap at the following locations within the basement, first and second floors:

- Living (1 register, 10 sq. ft.)
- Dining (1 register, 10 sq. ft.)
- 2<sup>nd</sup> Floor Kitchen (1 register, 10 sq. ft. and vertical chase to basement, 25 sq. ft.)
- 2<sup>nd</sup> Floor Air Handler Duct (20 sq. ft.)

### Category I ACM

Three types of resilient floor covering (Parkay Linoleum, Red and Cream Layered Linoleum and 12"x12" Blue Layered Vinyl Floor Tile) located within the front entry, kitchen and bathroom were found to contain up to 30% Chrysotile asbestos. The assessment to quantify the extent of this material identified approximately 240 sq. ft. of this material within the Building.

Roof Flashing samples collected during the completion of the inspection were found to contain up to 20% Chrysotile asbestos. The assessment to quantify the extent of this material identified 120 lin. ft. of flashing materials on the Building.

### **Category II ACM**

No Category II non-friable ACM was identified during the completion of this inspection.

### **RECOMMENDATIONS**

#### **Asbestos Containing Materials**

HVAC material identified in the Building system and listed below is classified as friable ACM and should be removed prior to any renovation/demolition activities.

- Living (1 register, 10 sq. ft.)
- Dining (1 register, 10 sq. ft.)
- 2<sup>nd</sup> Floor Kitchen (1 register, 10 sq. ft. and vertical chase to basement, 25 sq. ft.)
- 2<sup>nd</sup> Floor Air Handler Duct (20 sq. ft.)

Roof Flashing identified on the exterior of the Building must be abated prior to completion of any renovation/demolition activities at the Subject Property. Any Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of renovation or demolition operations must be properly abated.

The Category I resilient floor coverings (Parkay Linoleum, Red and Cream Layered Linoleum and 12"x12" Blue Layered Vinyl Floor Tile) are non-friable ACM's that may be left in place as long as the

demolition/renovation activities are completed following the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

Please note: The location of samples obtained during this inspection were in a random fashion and areas that were not identified during this inspection may be damaged or have become damaged since the inspection was completed. If Category I or Category II friable materials are discovered prior to or during the demolition/renovation process, these materials must be abated prior to commencement of any demolition/renovation activities at the Subject Property.

### **Hazardous Materials**

Hazardous Materials identified at the Subject Property and documented in Table 1 which require proper removal and disposal consist of the following items:

- 1-Gallon Container Misc. (6)
- 1-Quart Container Misc. (11)
- 1-Pint Container Misc. (10)
- Spray Can Misc. (5)
- 12' Fluorescent Light (Fixture and Ballast Only) (1)
- 4' Fluorescent Light (Fixture and Ballast Only) (2)
- 4' Fluorescent Light Bulb (4)
- Television (2)
- Air Conditioning Unit (1)

### **REGULATORY REQUIREMENTS**

A Notification of Intent to Renovate/Demolish form must be filed with the Michigan Department of Environmental Quality- Air Quality Division at least 10 working days prior to any renovation or demolition activities at a site.

The Notification of Intent to Renovate/Demolish form must also be completed and submitted to the MIOSHA-Asbestos Program whenever demolition, encapsulation and/or renovation activities at a site involving greater than ten lineal feet and/or fifteen square feet of ACM will be completed.

Regulated asbestos containing materials per NESHAP (40 CFR Part 61) which falls into any of the following categories are ACM's that must be removed prior to any renovation/demolition activities at the Subject Property.

- Friable asbestos material.
- Category I non-friable ACM that has become friable.
- Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading.
- Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of renovation or demolition operations.

Asbestos abatement should only be performed by a certified asbestos abatement contractor licensed to complete abatement work. The contractor must also follow the standards and requirements set forth per the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) and the USEPA NESHAP (40 CFR Part 61).

Additional information regarding the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) and the USEPA NESHAP (40 CFR Part 61) can be obtained by contacting the associated agency below.

NESHAP Asbestos Program Department of Environmental Quality Phone: 517-284-6777 MIOSHA-CSHD-Asbestos Program State of Michigan Phone: 517-284-7680 Email: asbestos@michigan.gov

### DISCLAIMER

Red Cedar Consulting performed destructive testing methods in an attempt to access and inspect all areas of the Building. Unfortunately, due to the age of construction along with multiple additions/renovations that may have been completed on the Building, additional inspections may be required if suspect ACM material not documented within this report is encountered during renovation/demolition activities.

This report was prepared at the request and for exclusive use by the Muskegon County Land Bank and may not be reproduced or sold without written permission from Red Cedar Consulting.

We appreciate the opportunity to provide the requested services. Please contact us at (888) 449-4566 with any questions or concerns.

Sincerely, Red Cedar Consulting

Caron Poquet

Aaron Paquet Michigan/EPA Certified Asbestos Building Inspector (A30955)

Red Cedar Consulting

# Attachment 1

APEX Research Laboratory Analytical Results

Test Method, Polarized Light Microscopy (PLM)

Project : 2312 Hoyt St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80565         Date Collected:       10/23/18         Date Received:       10/24/18         Date Analyzed:       10/29/18         Date Reported:       10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80565 - 01 Cust. #: HS-HM-01A Material: Vapor Barrier Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 80% Other - 20%
Lab ID #: 80565 - 02 Cust. #: HS-HM-01B Material: Vapor Barrier Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 80% Other - 20%
Lab ID #: 80565 - 03 Cust. #: HS-HM-02A Material: House Roofing Shingle Location: Appearance: black,fibrous,homogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 40% Other - 60%

For Layered Samples, each component will be analyzed and reported separately.

Kut Joh

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2312 Hoyt St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80565Date Collected:10/23/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80565 - 03a Cust. #: HS-HM-02A Material: Grey Shingle Location: Appearance: black,fibrous,homogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 40% Other - 60%
Lab ID #: 80565 - 03b Cust. #: HS-HM-02A Material: Felt Location: Appearance: black,fibrous,homogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 60% Other - 40%
Lab ID #: 80565 - 04 Cust. #: HS-HM-02B Material: House Roofing Shingle Location: Appearance: black,fibrous,homogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 40% Other - 60%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director

### **Certificate of Laboratory Analysis** Test Method, Polarized Light Microscopy (PLM)

Project : 2312 Hoyt St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80565         Date Collected:       10/23/18         Date Received:       10/24/18         Date Analyzed:       10/29/18         Date Reported:       10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80565 - 04a Cust. #: HS-HM-02B Material: Grey Shingle Location: Appearance: black,fibrous,homogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 40% Other - 60%
Lab ID #: 80565 - 04b Cust. #: HS-HM-02B Material: Felt Location: Appearance: black,fibrous,homogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 60% Other - 40%
Lab ID #: 80565 - 05 Cust. #: HS-HM-03A Material: Roof Flashing Location: Appearance: black,fibrous,homogenous Layer: 1 of 1	Asbestos Present: YES Chrysotile - 20%	Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

Kut Jet

Robert T. Letarte Jr., Laboratory Director

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Test Method, Polarized Light Microscopy (PLM)

Project : 2312 Hoyt St.



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Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80565 - 06 Cust. #: HS-HM-03B Material: Roof Flashing	Asbestos Present:	
Location: Appearance: Layer: of	NOT ANALYZED	
Lab ID #: 80565 - 07 Cust. #: HS-HM-04A Material: Garage Roofing Shingle Location: Appearance: black,fibrous,homogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 30% Other - 70%
Lab ID #: 80565 - 07a Cust. #: HS-HM-04A Material: Black Shingle Location: Appearance: black,fibrous,homogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 30% Other - 70%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2312 Hoyt St.



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Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80565 - 07b Cust. #: HS-HM-04A Material: Felt Location: Appearance: black,fibrous,homogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 60% Other - 40%
Lab ID #: 80565 - 08 Cust. #: HS-HM-04B Material: Garage Roofing Shingle Location: Appearance: black,fibrous,homogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 30% Other - 70%
Lab ID #: 80565 - 08a Cust. #: HS-HM-04B Material: Black Shingle Location: Appearance: black,fibrous,homogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 30% Other - 70%
For Lavered Samples, each component will be analyzed and rep	orted separately	

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2312 Hoyt St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80565         Date Collected:       10/23/18         Date Received:       10/24/18         Date Analyzed:       10/29/18         Date Reported:       10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80565 - 08b Cust. #: HS-HM-04B Material: Felt Location: Appearance: black,fibrous,homogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 60% Other - 40%
Lab ID #: 80565 - 09 Cust. #: HS-HM-05A Material: Rolled Roofing Location: Appearance: black,fibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Synthetic - 40% Other - 60%
Lab ID #: 80565 - 09a Cust. #: HS-HM-05A Material: Felt Location: Appearance: black,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 60% Other - 40%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director

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Test Method, Polarized Light Microscopy (PLM)

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Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80565Date Collected:10/23/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80565 - 10 Cust. #: HS-HM-05B Material: Rolled Roofing Location: Appearance: black,fibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Synthetic - 35% Other - 65%
Lab ID #: 80565 - 10a Cust. #: HS-HM-05B Material: Felt Location: Appearance: black,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 60% Other - 40%
Lab ID #: 80565 - 11 Cust. #: HS-HM-06A Material: Parkay Linoleum Location: Appearance: brown,fibrous,nonhomogenous Layer: 1 of 2	Asbestos Present: YES Chrysotile - 30%	Other - 70%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2312 Hoyt St.



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Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80565 - 11a Cust. #: HS-HM-06A Material: Sheet Flooring Location: Appearance: brown,fibrous,nonhomogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 40% Other - 60%
Lab ID #: 80565 - 12 Cust. #: HS-HM-06B Material: Parkay Linoleum Location: Appearance: Layer: 1 of 2	Asbestos Present: NOT ANALYZED	
Lab ID #: 80565 - 12a Cust. #: HS-HM-06B Material: Sheet Flooring Location: Appearance: brown,fibrous,nonhomogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 40% Other - 60%
For Layered Samples, each component will be analyzed and reporte	ed separately.	

Robert T. Letarte Jr., Laboratory Director

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Test Method, Polarized Light Microscopy (PLM)

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Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80565 - 13 Cust. #: HS-HM-07A Material: Red/Cream Layered Linoleum Location: Appearance: white,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>YES</b> Chrysotile - 30%	Other - 70%
Lab ID #: 80565 - 14 Cust. #: HS-HM-07B Material: Red/Cream Layered Linoleum Location: Appearance: Layer: of	Asbestos Present: NOT ANALYZED	
Lab ID #: 80565 - 15 Cust. #: HS-HM-08A Material: Red Floor Tile Location: Appearance: red,fibrous,homogenous Layer: 1 of 5	Asbestos Present: <b>YES</b> Chrysotile - 1.75% POINT COUNT RESULT	Other - 98.25%
For Layered Samples, each component will be analyzed and repor	ted separately.	

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2312 Hoyt St.



Keport 10: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80565Date Collected:10/23/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80565 - 15a Cust. #: HS-HM-08A Material: Glue Location: Appearance: clear,nonfibrous,homogenous Layer: 2 of 5	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80565 - 15b Cust. #: HS-HM-08A Material: Linoleum Location: Appearance: white,fibrous,nonhomogenous Layer: 3 of 5	Asbestos Present: <b>YES</b> Chrysotile - 30%	Other - 70%
Lab ID #: 80565 - 15c Cust. #: HS-HM-08A Material: Etched Floor Tile Location: Appearance: white,fibrous,homogenous Layer: 4 of 5	Asbestos Present: <b>YES</b> Chrysotile - 5%	Other - 95%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



#### containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the US Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles

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Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80565         Date Collected:       10/23/18         Date Received:       10/24/18         Date Analyzed:       10/29/18         Date Reported:       10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80565 - 15d Cust. #: HS-HM-08A Material: Glue Location: Appearance: yellow,nonfibrous,homogenous Layer: 5 of 5	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80565 - 16 Cust. #: HS-HM-08B Material: Red Floor Tile	Asbestos Present:	
Location: Appearance: Layer: 1 of 5	NOT ANALYZED	
Lab ID #: 80565 - 16a Cust. #: HS-HM-08B Material: Glue	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%



Test Method, Polarized Light Microscopy (PLM)

Project : 2312 Hoyt St.





Location:

2 of 5

Layer:

Appearance: clear,nonfibrous,homogenous

For Layered Samples, each component will be analyzed and reported separately.

Test Method, Polarized Light Microscopy (PLM)

Project : 2312 Hoyt St.



Report 10: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80565Date Collected:10/23/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80565 - 16b Cust. #: HS-HM-08B Material: Linoleum	Asbestos Present:	
Location: Appearance: Layer: 3 of 5	NOT ANALYZED	
Lab ID #: 80565 - 16c Cust. #: HS-HM-08B Material: Etched Floor Tile	Asbestos Present:	
Location: Appearance: Layer: 4 of 5	NOT ANALYZED	
Lab ID #: 80565 - 16d Cust. #: HS-HM-08B Material: Glue Location: Appearance: yellow,nonfibrous,homogenous Layer: 5 of 5	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2312 Hoyt St.



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Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80565 - 17 Cust. #: HS-HM-09A Material: Ceiling Tile Location: Appearance: brown,fibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 80% Other - 20%
Lab ID #: 80565 - 17a Cust. #: HS-HM-09A Material: Ceiling Tile Location: Appearance: brown,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 65% Perlite - 15% Other - 20%
Lab ID #: 80565 - 18 Cust. #: HS-HM-09B Material: Ceiling Tile Location: Appearance: brown,fibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 80% Other - 20%

For Layered Samples, each component will be analyzed and reported separately.

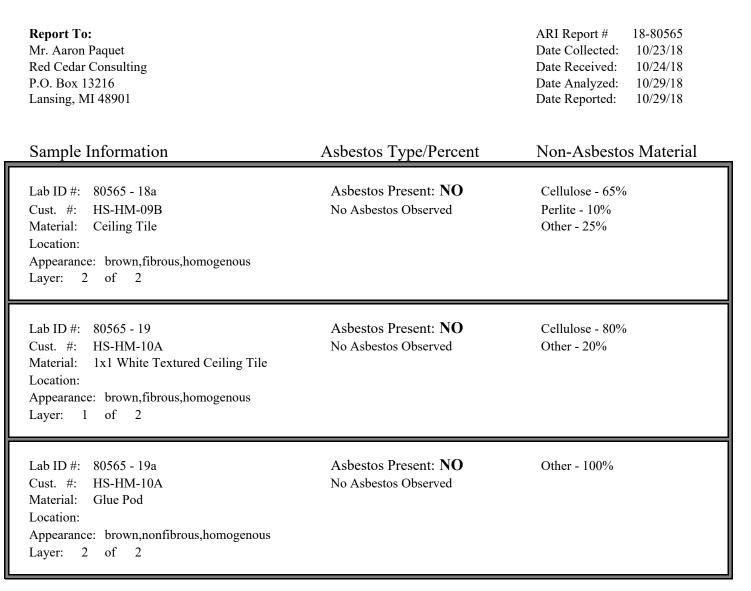
Kent Jor

Robert T. Letarte Jr., Laboratory Director



<b>Certificate of Laboratory Analysis</b>	-
Test Method, Polarized Light Microscopy (PLM)	

Project : 2312 Hoyt St.



For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director





Test Method, Polarized Light Microscopy (PLM)

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Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80565 - 20 Cust. #: HS-HM-10B Material: 1x1 White Textured Ceiling Tile Location: Appearance: brown,fibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 80% Other - 20%
Lab ID #: 80565 - 20a Cust. #: HS-HM-10B Material: Glue Pod Location: Appearance: brown,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80565 - 21 Cust. #: HS-HM-11A Material: House Window Glazing Location: Appearance: beige,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 1% Other - 99%

For Layered Samples, each component will be analyzed and reported separately.

Sout

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2312 Hoyt St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80565Date Collected:10/23/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80565 - 22 Cust. #: HS-HM-11B Material: House Window Glazing Location: Appearance: beige,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80565 - 23 Cust. #: HS-HM-12A Material: Front Porch Window Glazing Location: Appearance: beige,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 1% Other - 99%
Lab ID #: 80565 - 24 Cust. #: HS-HM-12B Material: Front Porch Window Glazing Location: Appearance: beige,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 1% Other - 99%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

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Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80565 - 25 Cust. #: HS-HM-13A Material: Drywall Location: Appearance: white,fibrous,nonhomogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80565 - 25a Cust. #: HS-HM-13A Material: Joint Compound Location: Appearance: white,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80565 - 26 Cust. #: HS-HM-13B Material: Drywall Location: Appearance: white,fibrous,nonhomogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

Kent Jor

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2312 Hoyt St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80565Date Collected:10/23/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80565 - 26a Cust. #: HS-HM-13B Material: Joint Compound Location: Appearance: white,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 1% Other - 99%
Lab ID #: 80565 - 27 Cust. #: HS-HM-14A Material: 16x16 White Smooth Ceiling Tile Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 80% Other - 20%
Lab ID #: 80565 - 28 Cust. #: HS-HM-14B Material: 16x16 White Smooth Ceiling Tile Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 80% Other - 20%

For Layered Samples, each component will be analyzed and reported separately.

Kent Jor

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2312 Hoyt St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80565Date Collected:10/23/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80565 - 29 Cust. #: HS-HM-15A Material: 12x12 Grey VFT Location: Appearance: grey,fibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 1% Other - 99%
Lab ID #: 80565 - 29a Cust. #: HS-HM-15A Material: Glue Location: Appearance: clear,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80565 - 30 Cust. #: HS-HM-15B Material: 12x12 Grey VFT Location: Appearance: grey,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 1% Other - 99%

For Layered Samples, each component will be analyzed and reported separately.

Kant Jot

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2312 Hoyt St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80565Date Collected:10/23/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80565 - 30a Cust. #: HS-HM-15B Material: Glue Location: Appearance: clear,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80565 - 31 Cust. #: HS-HM-16A Material: Tan Layered Vinyl Location: Appearance: beige,nonfibrous,nonhomogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80565 - 31a Cust. #: HS-HM-16A Material: Linoleum Location: Appearance: black,fibrous,nonhomogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 20% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2312 Hoyt St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80565Date Collected:10/23/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80565 - 32 Cust. #: HS-HM-16B Material: Tan Layered Vinyl Location: Appearance: beige,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80565 - 32a Cust. #: HS-HM-16B Material: Linoleum Location: Appearance: grey,fibrous,nonhomogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 20% Other - 80%
Lab ID #: 80565 - 33 Cust. #: HS-HM-17A Material: Lite Brown Layered Vinyl Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 7	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Fiberglass - 10% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director

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Test Method, Polarized Light Microscopy (PLM)

Project : 2312 Hoyt St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80565Date Collected:10/23/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80565 - 33a Cust. #: HS-HM-17A Material: White Floor Tile Location: Appearance: white,nonfibrous,homogenous Layer: 2 of 7	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 1% Other - 99%
Lab ID #: 80565 - 33b Cust. #: HS-HM-17A Material: Glue Location: Appearance: clear,nonfibrous,homogenous Layer: 3 of 7	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80565 - 33c Cust. #: HS-HM-17A Material: White Floor Tile Location: Appearance: white,nonfibrous,homogenous Layer: 4 of 7	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2312 Hoyt St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80565Date Collected:10/23/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80565 - 33d Cust. #: HS-HM-17A Material: Glue Location: Appearance: yellow,nonfibrous,homogenous Layer: 5 of 7	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80565 - 33e Cust. #: HS-HM-17A Material: Brown Floor Tile Location: Appearance: brown,nonfibrous,homogenous Layer: 6 of 7	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80565 - 33f Cust. #: HS-HM-17A Material: Glue Location: Appearance: yellow,nonfibrous,homogenous Layer: 7 of 7	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



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Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles

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Page 24 of 32

P.O. Box 13216 Lansing, MI 48901		Date Analyzed: 10/29/18 Date Reported: 10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80565 - 34 Cust. #: HS-HM-17B Material: Lite Brown Layered Vinyl Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 7	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Fiberglass - 10% Other - 80%
Lab ID #: 80565 - 34a Cust. #: HS-HM-17B Material: White Floor Tile Location: Appearance: white,nonfibrous,homogenous Layer: 2 of 7	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80565 - 34b Cust. #: HS-HM-17B Material: Glue Location: Appearance: clear,nonfibrous,homogenous Layer: 3 of 7	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

**Report To:** Mr. Aaron Paquet Red Cedar Consulting

For Layered Samples, each component will be analyzed and reported separately.

NVLAP Lab Code 102118-0

ARI Report # 18-80565 Date Collected: 10/23/18 Date Received: 10/24/18

Robert T. Letarte Jr., Laboratory Director



**Certificate of Laboratory Analysis** 

Test Method, Polarized Light Microscopy (PLM)

Project : 2312 Hoyt St.

Test Method, Polarized Light Microscopy (PLM)

Project : 2312 Hoyt St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80565Date Collected:10/23/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80565 - 34c Cust. #: HS-HM-17B Material: White Floor Tile Location: Appearance: white,nonfibrous,homogenous Layer: 4 of 7	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80565 - 34d Cust. #: HS-HM-17B Material: Glue Location: Appearance: yellow,nonfibrous,homogenous Layer: 5 of 7	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80565 - 34e Cust. #: HS-HM-17B Material: Brown Floor Tile Location: Appearance: brown,nonfibrous,homogenous Layer: 6 of 7	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 1% Other - 99%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2312 Hoyt St.



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Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80565 - 34f Cust. #: HS-HM-17B Material: Glue Location: Appearance: yellow,nonfibrous,homogenous Layer: 7 of 7	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80565 - 35 Cust. #: HS-HM-18A Material: Grey Vinyl Flooring Location: Appearance: grey,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Fiberglass - 10% Other - 80%
Lab ID #: 80565 - 36 Cust. #: HS-HM-18B Material: Grey Vinyl Flooring Location: Appearance: grey,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Fiberglass - 10% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director

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Test Method, Polarized Light Microscopy (PLM)

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Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80565 - 37 Cust. #: HS-HM-19A Material: Basement Window Caulk Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80565 - 38 Cust. #: HS-HM-19B Material: Basement Window Caulk Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80565 - 39 Cust. #: HS-HS-01A Material: Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2312 Hoyt St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80565Date Collected:10/23/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80565 - 39a Cust. #: HS-HS-01A Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Hair - 2% Other - 98%
Lab ID #: 80565 - 40 Cust. #: HS-HS-01B Material: Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80565 - 40a Cust. #: HS-HS-01B Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Hair - 2% Other - 98%

For Layered Samples, each component will be analyzed and reported separately.

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Test Method, Polarized Light Microscopy (PLM)

Project : 2312 Hoyt St.



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Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80565 - 41 Cust. #: HS-HS-01C Material: Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80565 - 41a Cust. #: HS-HS-01C Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Hair - 2% Other - 98%
Lab ID #: 80565 - 42 Cust. #: HS-HS-01D Material: Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2312 Hoyt St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80565Date Collected:10/23/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80565 - 42a Cust. #: HS-HS-01D Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Hair - 2% Other - 98%
Lab ID #: 80565 - 43 Cust. #: HS-HS-01E Material: Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80565 - 43a Cust. #: HS-HS-01E Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Hair - 5% Other - 95%

For Layered Samples, each component will be analyzed and reported separately.

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Test Method, Polarized Light Microscopy (PLM)

Project : 2312 Hoyt St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80565Date Collected:10/23/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80565 - 44 Cust. #: HS-HS-01F Material: Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80565 - 44a Cust. #: HS-HS-01F Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Hair - 2% Other - 98%
Lab ID #: 80565 - 45 Cust. #: HS-HS-01G Material: Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

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Asbestos Present: Lab ID #: Cust. #: Material: Location: Appearance: Layer: of Lab ID #: Asbestos Present: Cust. #: Material: Location: Appearance: Layer: of

For Layered Samples, each component will be analyzed and reported separately.

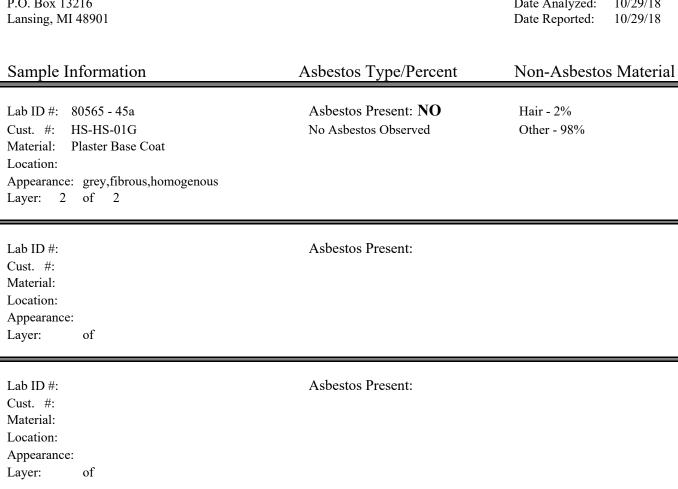
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**Certificate of Laboratory Analysis** Test Method, Polarized Light Microscopy (PLM)

Project : 2312 Hoyt St.





Red Cedar Consulting P.O. Box 13216

Mr. Aaron Paquet

**Report To:** 

ARI Report # 18-80565 Date Collected: 10/23/18 Date Received: 10/24/18 Date Analyzed: 10/29/18

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Russi Physical Clip Add Clip A	APEX Research, Inc. 11054 Hi Tech Drive, Whitmore Lake, MI 48189 Phone: 734-449-9990 E-mail: apexresearch@chartermi.net Fax: 734-449-9991	Red Cedar Consulting       Date of         PO Box 13216       Project         Lansing, MI 48901       Project         Lansing, MI 48901       Project         Lansing, MI 48901       Project         Lansing, MI 48901       PLA PROJECT         Lansing, MI 48901       Project         Agbestos       PLM EPA 600, PC all         Project       PLM EPA 600, PC all         Mold       Bulk       Wipe         Mold:       Bulk       Tape         TTP       Temples       TEM: AHERA7400       Bulk/N	# Client ID # Material/Location Volume	#       Client ID #       Material/Location       Volume         1       HS. HM0/A       Veron Zerrie       Volume         2       HS HM0/B       None       None         3       HS HM0/B       None       None         4       0.28       None       Zerie       None         4       0.28       None       Zerie       Zerie       None         5       0.28       Monte Roduing Munde       None       Zerie       Zerie <td></td>	

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2 d S APEX REBEARCH	Lab Use Only Log-In	Viable	Results AECEIVED VEX RESEARCH
Phone: 734-449-9990 Fax: 734-449-9991	-23-/8 -22-/8 Paquet et@redcedarc letection of PCM	soil Soil	Area Received by:
	Survey : /o-23-/8       Lab Use (         : 23/2       Herd       Report         # :       Report       Report         # :       apaquet@redcedarconsulting.net       samples with a detection of <5% ACM.	Air Paint BioSIS Othe B EPA Level II	Volume
APEX Research, Inc. 11054 Hi Tech Drive, Whitmore Lake, MI 48189 E-mail: apexresearch@chartermi.net	Client Name: Red Cedar Consulting Address: PO Box 13216 City, St., Zip: Lansing, MI 48901 Phone: (888) 449-4566 Phone: (888) 449-4566 Turn Around TimeS: (Circle One) PLM EPA 600, PC all samples W Asbestos: Bulk X Wipe Point Cou	Rush     24 hour     24 hour     Lead:     Bulk     Wipe       48 hour     72 hour     Mold:     Bulk     Tape       Other:     TTP     TTP     A11 Samples     TEM:     AHERA 7400     Bulk/NOB	Lab ID #Client ID #Material/Location $12$ HS - HIY - 06ZPackeng Knocken $12$ HS - HIY - 06ZPackeng Knocken $13$ N $07A$ Packeng Knocken $14$ N $07A$ Packeng Knocken $15$ N $07A$ Packeng Knocken $17$ N $07A$ $2X/2$ Educe Kayened WFT $17$ N $07A$ $2X/2$ $17$ N $07A$ $2X/2$ $17$ N $07A$ $2X/2$ $2X$ N $07A$ $2X/2$ $2X$ N $07A$ $2X/2$ $2X/2$ $02A$ $07A$ $02A$ $07A$ $07A$ $02A$ $07A$ $07A$ $02A$ $07A$ $07A$

<b>flC.</b> 11054 Hi Tech Drive, Whimore Lake, MI 48189 Phone: 734.449-9990       E-mail: appexresearch@chartermi.net     Fax: 734.449-9990       Date of Survey :	345	ADEX	Lab Use Only Log-in Report	irconsulting.net of <5% ACM.	viable		Results										المعنية ومنتقد والمراجع المناسبة المحالي		NC1 2 4 7010	APEX RESEARCH
110. 11054 (888) 448-6 (888) 448-6 (888) 448-6 (888) 448-6 Asbestos: B Asbestos: B Asbestos: A Asbestos: A Asbesto		Drive, Whitmore Lake, MI 48189 Phone: 734-449-9990 apexresearch@chartermi.net Fax: 734-449-9991	10-23-	Contact Person: Aaron Pag 600, PC all samples with a deter Wipe Point Count	Air Paint BioSIS	Bulk/NOB	Volume	indows Alexing		7 Compound			(ET		Vingl		Eycest Vary	Received b		- Y
		APEX Research, Inc. 11054 HF Tech E-mail:	с Со: 3216 МТ	Fax : (888) 448-8739         ImeS: (Circle One)         PLM         Asbestos: Bulk	Lead: Mold:	TEM:	#	Front Porch W	1 / 128	134 Sunal	144 16 × 11 11 11 11 1	146	15A 12X12 Ste	158	1 16A Ten	168	V V 17A Site	Received by:	Date : 10-23-10	

545	APEX	Lab Use Only Log-In	- nsulting.net <5% ACM.	Viable		Results						001 Z 7 7010	APEX RESEARCH
	II 48189 Phone: 734-449-9990 aet Fax: 734-449-9991	ITVEY : 10 - 23 - 18 2312 Hout at	Contact Person:       Aaron Paquet         600, PC all samples with a detection of <5% ACM.	Air   Paint   Soil     BioSIS   Other   Vi		Volume Area					Received by:	Date :	
	<b>ПС.</b> 11054 Hi Tech Drive, Whitmore Lake, MI 4 E-mail: apexresearch@chartermi.net	Date of Survey : Project : 23/2 Project # .	:48-8739 PLM EPA os: Bulk X	Lead: Bulk Wipe Mold: Bulk Tape	TEM: AHERA 7400 Bulk/NOB	Material/Location	Plenter				UPS Relinquished by:	3-18 Date:	
	$APEX \ Research, Inc. {}^{11054\rm HiTechDrive,WhitmoreLake,MI} {}^{48189}$	Client Name: Red Cedar Consulting Address: PO Box 13216 City St Zin: Lansing MT 48901	ne: (888) 449-4566 Irn Around Tim	Kush 24 hour 48 hour 72 hour Other: TTP all Samples			45 HS-HS-01G				Relinquished by And Western Received by:	Date: 12-23-18 Date: 10-23-	Rev. 12/03 Work Forms: COC

Red Cedar Consulting

Tables

Hazardous Materials Description and Location									
Location	Location Material Description Qua								
Front Entry	1-Quart Container Misc.	5							
Front Entry	1-Gallon Container Misc.	5							
Front Entry	1-Pint Container Misc.	1							
Kitchen	12' Fluorescent Light (Fixture and Ballast Only)	1							
NE Bedroom	Television	1							
Laundry Room	1-Pint Container Misc.	5							
2 <sup>nd</sup> Floor Bedroom	Television	1							
2 <sup>nd</sup> Floor Bedroom	Air Conditioning Unit	1							
2 <sup>nd</sup> Floor Bathroom	Spray Can Misc.	1							
2 <sup>nd</sup> Floor Bathroom	1-Quart Container Misc.	1							
Basement	4' Fluorescent Light (Fixture and Ballast Only)	2							
Basement	4' Fluorescent Light Bulb	4							
Basement	Spray Can Misc.	4							
Basement	1-Quart Container Misc.	5							
Basement	1-Pint Container Misc.	4							
Basement	1-Gallon Container Misc.	1							

Table 2 - Summary of Sample Descriptions and Asbestos Laboratory Results, 2312 Hoyt St., Muskegon Heights, Michigan

Sample Number	Sample Description	Friable	Material Type	Material Classification	% Asbestos Laboratory Result	Sample Location	Approx. Material Quantity
HS-HM-01A	Vapor Barrier	Yes	М	Category II	ND	House Exterior	NA
HS-HM-01B	Vapor Barrier	Yes	М	Category II	ND	House Exterior	NA
HS-HM-02A	Shingle Roof	No	М	Category I	ND/ND/ND	House Roof	NA
HS-HM-02B	Shingle Roof	No	М	Category I	ND/ND/ND	House Roof	NA
HS-HM-03A	Roof Flashing	No	М	Category II	20% CH	Chimney	120 lin. ft.
HS-HM-03B	Roof Flashing	No	М	Category II	NA	House Rear Roof	NA
HS-HM-04A	Shingle Roof	No	М	Category I	ND/ND/ND	Garage Roof	NA
HS-HM-04B	Shingle Roof	No	М	Category I	ND/ND/ND	Garage Roof	NA
HS-HM-05A	Rolled Roofing	No	М	Category I	ND/ND	House Roof	NA
HS-HM-05B	Rolled Roofing	No	М	Category I	ND/ND	House Roof	NA
HS-HM-06A	Parkay Linoleum	No	М	Category I	30% CH/ND	Front Entry	84 sq. ft.
HS-HM-06B	Parkay Linoleum	No	М	Category I	NA/ND	Front Entry	NA
HS-HM-07A	Red and Cream Layered Linoleum	No	М	Category I	30% CH	Kitchen	108 sq. ft.
HS-HM-07B	Red and Cream Layered Linoleum	No	М	Category I	NA	Kitchen	NA
HS-HM-08A	12x12 Blue Layered VFT	No	М	Category I	1.75% CH/ND/ 30% CH/ 5% CH/ND	Bathroom	48 sq. ft.
HS-HM-08B	12x12 Blue Layered VFT	No	М	Category I	NA/ND/NA/ NA/ND	Bathroom	NA
HS-HM-09A	1x1 Layered White Smooth CT	Yes	М	Category II	ND/ND	N Bedroom	NA
HS-HM-09B	1x1 Layered White Smooth CT	Yes	М	Category II	ND/ND	N Bedroom	NA
HS-HM-10A	1x1 White Textured CT	Yes	М	Category II	ND/ND	Living Room	NA
HS-HM-10B	1x1 White Textured CT	Yes	М	Category II	ND/ND	Dining Room	NA
HS-HM-11A	Window Glazing	Yes	М	Category II	ND	Living Room Window	NA
HS-HM-11B	Window Glazing	Yes	М	Category II	ND	2 <sup>nd</sup> Floor Landing Window	NA
HS-HM-12A	Window Glazing	Yes	М	Category II	ND	Front Entry (Porch) Window	NA
HS-HM-12B	Window Glazing	Yes	М	Category II	ND	Front Entry (Porch) Window	NA

Table 2 - Summar	v of Sample Descr	iptions and Asbesto	s Laboratory	Results, 2312 Hoyt St	t., Muskegon Heigh	ts, Michigan

Sample Number	Sample Description	Friable	Material Type	Material Classification	% Asbestos Laboratory Result	Sample Location	Approx. Material Quantity
HS-HM-13A	Drywall and Joint Compound	No	М	Category II	ND/ND	2 <sup>nd</sup> Floor Hallway Wall	NA
HS-HM-13B	Drywall and Joint Compound	No	М	Category II	ND/ND	2 <sup>nd</sup> Floor Pantry Wall	NA
HS-HM-14A	16x16 White Smooth CT	Yes	М	Category II	ND	2 <sup>nd</sup> Floor Living Room	NA
HS-HM-14B	16x16 White Smooth CT	Yes	М	Category II	ND	2 <sup>nd</sup> Floor Living Room	NA
HS-HM-15A	12x12 Gray VFT	No	М	Category I	ND/ND	2 <sup>nd</sup> Floor Living Room	NA
HS-HM-15B	12x12 Gray VFT	No	М	Category I	ND/ND	2 <sup>nd</sup> Floor Living Room	NA
HS-HM-16A	Tan Layered Vinyl	No	М	Category I	ND/ND	2 <sup>nd</sup> Floor Pantry	NA
HS-HM-16B	Tan Layered Vinyl	No	М	Category I	ND/ND	2 <sup>nd</sup> Floor Pantry	NA
HS-HM-17A	Light Brown Vinyl Layered	No	М	Category I	ND/ND/ND/ ND/ND/ND/ ND	2 <sup>nd</sup> Floor Kitchen	NA
HS-HM-17B	Light Brown Vinyl Layered	No	М	Category I	ND/ND/ND/ ND/ND/ND/ ND	2 <sup>nd</sup> Floor Kitchen	NA
HS-HM-18A	Gray Vinyl Flooring	No	М	Category I	ND	Basement	NA
HS-HM-18B	Gray Vinyl Flooring	No	М	Category I	ND	Basement	NA
HS-HM-19A	Basement Window Caulk	No	М	Category II	ND	Basement Window	NA
HS-HM-19B	Basement Window Caulk	No	М	Category II	ND	Basement Window	NA
HS-HS-01A	Plaster	No	S	Category II	ND/ND	Dining Room Ceiling	NA
HS-HS-01B	Plaster	No	S	Category II	ND/ND	Bathroom Ceiling	NA
HS-HS-01C	Plaster	No	S	Category II	ND/ND	Living Room Wall	NA
HS-HS-01D	Plaster	No	S	Category II	ND/ND	Kitchen Wall	NA
HS-HS-01E	Plaster	No	S	Category II	ND/ND	2 <sup>nd</sup> Floor Kitchen Ceiling	NA
HS-HS-01F	Plaster	No	S	Category II	ND/ND	2 <sup>nd</sup> Floor Living Room Wall	NA
HS-HS-01G	Plaster	No	S	Category II	ND/ND	2 <sup>nd</sup> Floor S Bedroom Wall	NA

Notes:

Material Types

М = Miscellaneous building material

TSI = Thermal System Insulation S = Surfacing Material

#### Abbreviations

NQ = Not quantified

NA

Not applicableNot detected. Laboratory result is less than 1 % asbestos ND

#### Table 2 - Summary of Sample Descriptions and Asbestos Laboratory Results, 2312 Hoyt St., Muskegon Heights, Michigan

PC = Point Count Analysis

CH = Chrysotile Asbestos

lin. ft. = linear feet sq. ft. = square feet

Asbestos Containing Material (ACM) is defined as any material containing more than 1 percent asbestos as determined utilizing Polarized Light Microscopy.

Asbestos Containing Material Description and Location									
Location	Material Description	Friable	Condition	Material Type	Approx. Quantity				
Living (1 register, 10 sq. ft.) Dining (1 register, 10 sq. ft.) 2 <sup>nd</sup> Floor Kitchen (1 register, 10 sq. ft. and vertical chase to basement, 25 sq. ft.) 2 <sup>nd</sup> Floor Air Handler Duct (20 sq. ft.)	HVAC Duct Wrap	Yes	Fair	TSI	75 sq. ft.				

Notes:

#### Material Types

#### Abbreviations

- = Miscellaneous building material Μ
- TSI = Thermal System Insulation S = Surfacing Material

lin. ft. = linear feet sq. ft. = square feet

Exterior - Asbestos Containing Materials				
Location	<b>Material Description</b>		Friable	Approx. Quantity
Building Roof/Chimney	Flashing		No	120 lin. ft.
		Total		120 lin. ft.
Interior - Asbestos Containing Materials				
Location	Material Description		Friable	Approx. Quantity
Front Entry	Parkay Linoleum		No	84 sq. ft.
Kitchen	Red and Cream Layered Linoleum			108 sq. ft.
Bathroom	12x12 Blue Layered VFT		No	48 sq. ft.
		Total		240 sq. ft.
Interior - Asbestos Containing Materials				
Location	Material Description		Friable	Approx. Quantity
Living (1 register, 10 sq. ft.) Dining (1 register, 10 sq. ft.) 2 <sup>nd</sup> Floor Kitchen (1 register, 10 sq. ft. and vertical chase to basement, 25 sq. ft.) 2 <sup>nd</sup> Floor Air Handler Duct (20 sq. ft.)	HVAC Duct Wrap		Yes	75 sq. ft.
		Total		75 sq. ft.

#### Table 4 - Summary of All Asbestos Containing Materials, 2312 Hoyt St., Muskegon Heights, Michigan

Notes:

Abbreviations

lin. ft. = linear feet sq. ft. = square feet

**Shaded/Bolded** = Friable ACM and any Category I and Category II non-friable ACM that has a high probability of becoming crumbled, pulverized, or reduced to powder by the demolition or renovation activities that must be properly abated prior to commencement of any demolition/renovation activities.

Demolition/renovation activities completed with intact Category I non-friable ACM are regulated by OSHA and must be completed following the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

#### Table 4 - Summary of All Asbestos Containing Materials, 2312 Hoyt St., Muskegon Heights, Michigan

Please note that a Negative Pressure Enclosure must be utilized during abatement when Site Conditions Warrant. Examples of these conditions include the abatement of Plaster and Vermiculite insulation, HVAC Duct Wrap in Poor Condition, and Air-O-Cell/Mag Pipe Wrap. Conditions outside of these should be assessed on a case by case basis during the Asbestos Abatement Contractors site walk and Work Plan Preparation.



P.O. Box 13216 Lansing, MI 48901 Phone: 888.449.4566 Fax: 888.448.8739 www.redcedarconsulting.net

November 2, 2018

Mr. Tim Burgess Muskegon County Land Bank Land Bank Coordinator 173 E. Apple Avenue, Suite 104 Muskegon, MI 49442

#### RE: Asbestos Containing Material and Hazardous Materials Inspection 2332 Leahy St., Muskegon Heights, MI 49444 Parcel ID: 61-26-185-098-0016-00

Dear Mr. Burgess:

Red Cedar Consulting has completed an asbestos-containing material (ACM) and hazardous materials inspection at 2332 Leahy St., Muskegon Heights, Michigan (Subject Property). This inspection was completed at the request of the Muskegon County Land Bank to comply with the United States Environmental Protection Agency (USEPA) requirements for demolition and renovation set forth under the National Emissions Standards for Hazardous Air Pollutants (NESHAP, 40 CFR Part 61). This inspection was also completed to comply with the Occupational Safety and Health Administration (OSHA) Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

#### **SUBJECT PROPERTY**

The Subject Property is comprised of a .14 acre residential parcel which contains an approximate 825 square foot residential building (the Building) constructed in 1940. The Building was constructed on a concrete block basement with one aboveground floor. The exterior walls of the Building were finished with vinyl over wood shake while the roof was sealed with asphalt shingles. The Building can be further divided into a living room, dining room, kitchen, bathroom and two bedrooms.

#### VISUAL INSPECTION AND SAMPLING

#### **Asbestos Containing Materials Inspection**

Mr. Aaron Paquet of Red Cedar Consulting (Red Cedar), an accredited State of Michigan/EPA Asbestos Building Inspector (Accreditation Number A30955) whom completed training per the Michigan Asbestos Workers Accreditation Act 440 completed an inspection of the Subject Property on October 24, 2018 for suspected asbestos containing building materials.

This inspection, and subsequent sample collection was completed in accordance with the USEPA Asbestos Hazard Emergency Response Act (AHERA) (40 CFR Part 763) assessment and sampling protocol.

During the completion of the inspection, each area of the Subject Property was visually inspected for asbestos containing building materials (ACBM). Following the completion of the visual inspection, Red Cedar staff identified each suspect area of friable and non-friable ACBM and sorted them into one of three homogenous categories for sampling purposes. AHERA defines friable as a material that when dry, may be crumbled, pulverized, or reduced to powder by hand pressure. A homogenous area is defined by OSHA as an area of surfacing, thermal system insulation (TSI) or miscellaneous material that is uniform in color and texture. Surfacing materials are most commonly found in sprayed-on, troweled-on or otherwise applied to surfaces, such as acoustical plaster on ceilings and fireproofing materials on structural members. TSI refers to materials applied to pipes, fittings, boilers, ductwork, or other components to prevent heat loss or gain, or condensation. Any material that does not fall under the surfacing or TSI category, such as floor tile, drywall, and acoustical ceiling tile are placed into the miscellaneous materials category.

Following the completion of the visual inspection, Red Cedar staff identified the following materials as suspect ACBM:

- Asphalt Shingle
- Chimney Flashing
- 12"x12" Vinyl Floor Tile
- Linoleum
- 1'x1' Ceiling Tile
- Window Caulk
- Vapor Barrier
- Glazing

Red Cedar staff collected twenty two samples of suspect ACBM separated into eleven distinct homogenous groups for laboratory analysis. Samples were collected and submitted to APEX Research Inc. Laboratories (APEX) (Accreditation Number 102118-0) for laboratory analysis. Analysis was completed utilizing polarized light microscopy (PLM) which is the Environmental Protection Agency (EPA) approved method for analysis of bulk materials for asbestos. PLM analysis completed pursuant to method (EPA 600/M4-82-020) identifies asbestos fiber bundles by the visual properties displayed when the sample is treated with various dispersion staining liquids. The laboratory report completed following the sample analysis indicates if asbestos is present, and at what percentage along with a description and percentage of other fibrous and non-fibrous materials and sample color. Chain-of-custody documentation was followed from sample collection through shipping and receiving of the samples at the designated laboratory. The documentation assures that samples will meet the quality assurance/quality control measures defined by AHERA. The laboratory analytical report prepared by APEX for the twenty two samples is included as Attachment A.

#### **Hazardous Materials Inspection**

On October 24, 2018 the Subject Property was also inspected for the presence of hazardous materials which include but are not limited to polychlorinated biphenyls (PCBs) and potential mercury containing equipment and any items or containers that may contain or be classified as a hazardous or regulated material. Each material, if identified, was documented along with the approximate location. Any materials identified as hazardous are included in Table 1.

## **INSPECTION RESULTS AND RECOMMENDATIONS**

During the completion of the asbestos inspection, twenty two samples of suspect ACM were collected and are documented in Table 2 along with the Red Cedar sample number, description, friability, material type, ACM classification, sample location, material quantity and laboratory analytical results.

ACM, as defined by the USEPA NESHAP is "any material containing more than 1 percent asbestos as determined using the method specified in appendix E, subpart E, 40 CFR part 763 Section 1, Polarized Light Microscopy".

Friable ACM is defined by NESHAP as any material containing more than 1 percent asbestos that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. Friable ACM is a concern due the ease of unintentionally disturbing the ACM which may result in "visible emissions" which is known as a Fiber Release Episode.

Non-friable asbestos-containing material is defined as "material containing more than 1 percent asbestos that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. Non-friable ACM's are separated into Category I and Category II ACM. Category I ACM is any asbestos containing packing's, gaskets, resilient floor coverings (vinyl floor tile and linoleum are examples of these) and asphalt roofing products. Category II ACM is stated by NESHAP as any material excluding Category I non-friable ACM such as drywall, plaster or fiberboard insulation.

### **Presumed Asbestos Containing Material**

Presumed Asbestos Containing Materials (PACM) are suspect surfacing, TSI and miscellaneous materials found in buildings constructed prior to 1980 which are classified as and due to the age of the structure, are assumed to be ACM and do not require sample collection and analysis. OSHA dictates that PACM may be "rebutted" following a complete inspection pursuant to AHERA protocol.

No PACM was identified during the completion of this inspection. All suspect materials identified were sampled and analyzed for ACM.

Table 3 lists the location, material description, friability, condition, material type (surfacing, thermal or miscellaneous) and approximate quantity of all PACM documented at the Subject Property.

Table 4 provides a summary all ACM documented at the Subject Property which includes the material location, description, and approximate quantity.

### Friable ACM's

A window glazing sample collected from a window in the pile of windows in the basement was found to contain up to 5% asbestos following analysis. The assessment to quantify the extent of this material identified eleven windows at the following locations that would fall into the same homogenous group. The locations of the windows are listed below:

• Basement (11 windows 43" wide x 45" tall)

### **Category I ACM**

Two types of resilient floor covering (Stone 12"x12" Vinyl Floor Tile and Beige Linoleum) located within the living room and kitchen/hallway were found to contain up to 10% Chrysotile asbestos. The assessment to quantify the extent of this material identified approximately411 sq. ft. of this material within the Building.

### **Category II ACM**

Chimney flashing samples collected during the completion of the inspection were found to contain up to 10% Chrysotile asbestos. The assessment to quantify the extent of this material identified 15 sq. ft. of chimney flashing materials on the Building.

#### **RECOMMENDATIONS**

#### **Asbestos Containing Materials**

Chimney flashing identified on the exterior of the Building must be abated prior to completion of any renovation/demolition activities at the Subject Property. Any Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of renovation or demolition operations must be properly abated.

Friable asbestos containing window glazing was identified on eleven windows throughout the Building. The locations of these windows that should be abated prior to demolition/renovation activities are listed below:

• Basement (11 windows 43" wide x 45" tall)

Please note: Other different sized windows are located throughout the Building but these windows were assessed and found to be constructed either without window glazing or were sampled and found to not contain asbestos and therefore are not required to be removed.

The Category I resilient floor coverings (Stone 12"x12" Vinyl Floor Tile and Beige Linoleum) are nonfriable ACM's that may be left in place as long as the demolition/renovation activities are completed following the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

Please note: The location of samples obtained during this inspection were in a random fashion and areas that were not identified during this inspection may be damaged or have become damaged since the inspection was completed. If Category I or Category II friable materials are discovered prior to or during the demolition/renovation process, these materials must be abated prior to commencement of any demolition/renovation activities at the Subject Property.

### **Hazardous Materials**

Hazardous Materials identified at the Subject Property and documented in Table 1 which require proper removal and disposal consist of the following items:

- Automobile Tire (6)
- Thermostat (1)
- 1-Gallon Container Misc. (2)
- 1-Quart Container Misc. (1)

## **REGULATORY REQUIREMENTS**

A Notification of Intent to Renovate/Demolish form must be filed with the Michigan Department of Environmental Quality- Air Quality Division at least 10 working days prior to any renovation or demolition activities at a site.

The Notification of Intent to Renovate/Demolish form must also be completed and submitted to the MIOSHA-Asbestos Program whenever demolition, encapsulation and/or renovation activities at a site involving greater than ten lineal feet and/or fifteen square feet of ACM will be completed.

Regulated asbestos containing materials per NESHAP (40 CFR Part 61) which falls into any of the following categories are ACM's that must be removed prior to any renovation/demolition activities at the Subject Property.

- Friable asbestos material.
- Category I non-friable ACM that has become friable.
- Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading.
- Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of renovation or demolition operations.

Asbestos abatement should only be performed by a certified asbestos abatement contractor licensed to complete abatement work. The contractor must also follow the standards and requirements set forth per the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) and the USEPA NESHAP (40 CFR Part 61).

Additional information regarding the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) and the USEPA NESHAP (40 CFR Part 61) can be obtained by contacting the associated agency below.

NESHAP Asbestos Program Department of Environmental Quality Phone: 517-284-6777 MIOSHA-CSHD-Asbestos Program State of Michigan Phone: 517-284-7680 Email: asbestos@michigan.gov

#### **DISCLAIMER**

Red Cedar Consulting performed destructive testing methods in an attempt to access and inspect all areas of the Building. Unfortunately, due to the age of construction along with multiple additions/renovations that may have been completed on the Building, additional inspections may be required if suspect ACM material not documented within this report is encountered during renovation/demolition activities.

This report was prepared at the request and for exclusive use by the Muskegon County Land Bank and may not be reproduced or sold without written permission from Red Cedar Consulting.

We appreciate the opportunity to provide the requested services. Please contact us at (888) 449-4566 with any questions or concerns.

Sincerely, Red Cedar Consulting

arm Paquet

Aaron Paquet Michigan/EPA Certified Asbestos Building Inspector (A30955)

Red Cedar Consulting

# Attachment 1

APEX Research Laboratory Analytical Results

Test Method, Polarized Light Microscopy (PLM)

Project : 2332 Leahy St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80576         Date Collected:       10/24/18         Date Received:       10/25/18         Date Analyzed:       10/30/18         Date Reported:       10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80576 - 01 Cust. #: LS-HM-01A Material: Asphalt Shingle Location: Appearance: black,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Fiberglass - 10% Other - 80%
Lab ID #: 80576 - 02 Cust. #: LS-HM-01B Material: Asphalt Shingle Location: Appearance: black,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Fiberglass - 10% Other - 80%
Lab ID #: 80576 - 03 Cust. #: LS-HM-02A Material: Chimney Flashing Location: Appearance: black,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>YES</b> Chrysotile - 10%	Other - 90%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2332 Leahy St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80576Date Collected:10/24/18Date Received:10/25/18Date Analyzed:10/30/18Date Reported:10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80576 - 04 Cust. #: LS-HM-02B Material: Chimney Flashing	Asbestos Present:	
Location: Appearance: Layer: of	NOT ANALYZED	
Lab ID #: 80576 - 05 Cust. #: LS-HM-03A Material: Stone 12x12 VFT Location: Appearance: beige,fibrous,homogenous Layer: 1 of 2	Asbestos Present: YES Chrysotile - 5%	Other - 95%
Lab ID #: 80576 - 05a Cust. #: LS-HM-03A Material: Mastic Location: Appearance: yellow,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
For Layered Samples, each component will be analyzed and report	ed separately.	

Robert T. Letarte Jr., Laboratory Director

Kut Jet



Test Method, Polarized Light Microscopy (PLM)

Project : 2332 Leahy St.



Keport 10: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-805/6Date Collected:10/24/18Date Received:10/25/18Date Analyzed:10/30/18Date Reported:10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80576 - 06 Cust. #: LS-HM-03B Material: Stone 12x12 VFT	Asbestos Present:	
Location: Appearance: Layer: 1 of 2	NOT ANALYZED	
Lab ID #: 80576 - 06a Cust. #: LS-HM-03B Material: Mastic Location: Appearance: yellow,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80576 - 07 Cust. #: LS-HM-04A Material: Beige Linoleum Multilayer Location: Appearance: brown,fibrous,nonhomogenous Layer: 1 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Fiberglass - 10% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

Sout

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2332 Leahy St.



Report 10: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-805/6Date Collected:10/24/18Date Received:10/25/18Date Analyzed:10/30/18Date Reported:10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80576 - 07a Cust. #: LS-HM-04A Material: Mastic Location: Appearance: yellow,nonfibrous,homogenous Layer: 2 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80576 - 07b Cust. #: LS-HM-04A Material: Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 3 of 4	Asbestos Present: <b>YES</b> Chrysotile - 10%	Cellulose - 10% Other - 80%
Lab ID #: 80576 - 07c Cust. #: LS-HM-04A Material: Mastic Location: Appearance: yellow,nonfibrous,homogenous Layer: 4 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Material: Mastic Location: Appearance: yellow,nonfibrous,homogenous	No Asbestos Observed	

For Layered Samples, each component will be analyzed and reported separately.

Sout

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2332 Leahy St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80576Date Collected:10/24/18Date Received:10/25/18Date Analyzed:10/30/18Date Reported:10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80576 - 08 Cust. #: LS-HM-04B Material: Beige Linoleum Multilayer Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Fiberglass - 10% Other - 80%
Lab ID #: 80576 - 08a Cust. #: LS-HM-04B Material: Mastic Location: Appearance: yellow,nonfibrous,homogenous Layer: 2 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80576 - 08b Cust. #: LS-HM-04B Material: Linoleum Location: Appearance: Layer: 3 of 4	Asbestos Present: NOT ANALYZED	
For Lawred Samples, each component will be analyzed and report	ad comprotally	

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2332 Leahy St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80576Date Collected:10/24/18Date Received:10/25/18Date Analyzed:10/30/18Date Reported:10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80576 - 08c Cust. #: LS-HM-04B Material: Mastic Location: Appearance: yellow,nonfibrous,homogenous Layer: 4 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80576 - 09 Cust. #: LS-HM-05A Material: Blue 12x12 VFT Location: Appearance: blue,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80576 - 10 Cust. #: LS-HM-05B Material: Blue 12x12 VFT Location: Appearance: blue,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2332 Leahy St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80576Date Collected:10/24/18Date Received:10/25/18Date Analyzed:10/30/18Date Reported:10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80576 - 11 Cust. #: LS-HM-06A Material: White 1x1 Ceiling Tile w/ Pinholes Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Fiberglass - 10% Other - 80%
Lab ID #: 80576 - 12 Cust. #: LS-HM-06B Material: White 1x1 Ceiling Tile w/ Pinholes Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Fiberglass - 10% Other - 80%
Lab ID #: 80576 - 13 Cust. #: LS-HM-07A Material: White 1x1 Ceiling Tile w/ Gouges Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Fiberglass - 10% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.



APEX Research Inc., 11054 Hi Tech Drive, Whitmore Lake, MI 48189 (734) 449-9990, Fax (734) 449-9991

Test Method, Polarized Light Microscopy (PLM)

Project : 2332 Leahy St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80576Date Collected:10/24/18Date Received:10/25/18Date Analyzed:10/30/18Date Reported:10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80576 - 14 Cust. #: LS-HM-07B Material: White 1x1 Ceiling Tile w/ Gouges Location: Appearance: beige,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Fiberglass - 10% Other - 80%
Lab ID #: 80576 - 15 Cust. #: LS-HM-08A Material: Window Caulk Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80576 - 16 Cust. #: LS-HM-08B Material: Window Caulk Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2332 Leahy St.



Report 10: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-805/6Date Collected:10/24/18Date Received:10/25/18Date Analyzed:10/30/18Date Reported:10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80576 - 17 Cust. #: LS-HM-09A Material: Window Glazing- Metal Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80576 - 18 Cust. #: LS-HM-09B Material: Window Glazing- Metal Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80576 - 19 Cust. #: LS-HM-10A Material: Vapor Barrier Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 75% Other - 25%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2332 Leahy St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80576Date Collected:10/24/18Date Received:10/25/18Date Analyzed:10/30/18Date Reported:10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80576 - 20 Cust. #: LS-HM-10B Material: Vapor Barrier Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 75% Other - 25%
Lab ID #: 80576 - 21 Cust. #: LS-HM-11A Material: Window Glazing Location: Appearance: beige,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>YES</b> Chrysotile - 5%	Other - 95%
Lab ID #: 80576 - 22 Cust. #: LS-HM-11B Material: Window Glazing	Asbestos Present:	
Location: Appearance: Layer: of	NOT ANALYZED	
For Layered Samples, each component will be analyzed and report	ted separately.	

Robert T. Letarte Jr., Laboratory Director



2- <sup>1</sup> - <sup>2</sup> 2- 49-9990 АРЕХНОН 9-9991	Lo-24-17 Lab Use Only Leghy St. Report	t Person: Aaron Paquet apaquet@redcedarconsulting.net samples with a detection of <5% ACM. Point Count PCM Air Paint Soil BioSIS Other Viable VOB EPA Level II	Area     Results       Area     Results       Received by:     47 L       Received by:     47 L
APEX Research, Inc. 11054 Hi Tech Drive, Whitmore Lake, MI 48189 Phone: 734-449-9990 E-mail: apexresearch@chartermi.net Fax: 734-449-9991	Name: Red Cedar Consulting S: PO Box 13216 C., Zip: Lansing, MI 48901 Date of Survey : Project : 2332 Project #:	Phone:       (388) 449-4566       Fax : (888) 448-8739       Contact Person:       Aaron Paquet         Turn Around Times:       (Circle One)       PLM EPA 600, PC all samples with a detection apaquet@redc       Point Count       PCN         Rush       24 hour       24 hour       Lead:       Bulk       Wipe       Air       Paint       PCN         Rush       24 hour       24 hour       Lead:       Bulk       Wipe       Air       Paint       PCN         Other :       Tim All samples       Tamples       Tamp       Bulk       Uppe       Bulk/NOB       BioSIS       Other         Other :       Tim All samples       TEM:       AHERA 7400       Bulk/NOB       EPA Level II       Distriction	Lab ID #     Client ID #     Material/Location     Volume       1     L3-um-orA     L3-um-orA     L3-um-orA     L3-um-orA     L3-um-orA       2     L5-um-orA     Chibmut Flashuk     PT     L1       2     L5-um-orA     Chibmut Flashuk     PT       2     L5-um-orA     Chibmut Flashuk     L1       3     L5-um-orA     L1     L1       4     L5-um-orA     L1     L1       7     L5-um-orA     L1     L1       10     L5-um-orA     L1     L1       11     L5-um-ofA     L1     L1       11     L5-um-ofA     L1     L1       11     L5-um-ofA     L1     L1       11     L5-um-ofA     L1     L1       12     Date:     L0     L1       13     L5-um-ofA     L1     L1       14     L5-um-ofA     L1     L1       15     L5-um-ofA     L1     L1       16     L5-um-ofA     L1     L1       17     L1     L1     L1

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	Phone: 734-449-9990 Fax: 734-449-9991	Leaby St.	Aaron Paquet apaquet@redcedarcon th a detection of < u PCM		Area									Received by:	Date : 00	APEX
	MI 48189 Phone: 73 i.net Fax: 734	rvey : _ L 2332		BioSIS	Volume											
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	APEX	Client Nam Address:	Phone: (888) 4 <b>Turn Aro</b> Rush 24 hour	48 hour	Lab ID 7									Relinquished by: <u>(</u>	Date : 10-2	Rev: 12/03 Work Forms: COC

Red Cedar Consulting

Tables

# Table 1 - Summary of Hazardous Materials, 2332 Leahy St., Muskegon Heights, Michigan

Hazardous Materials Description and Location			
Location	Material Description	Quantity	
Exterior	Automobile Tire	6	
Living Room	Thermostat	1	
Basement	1-Gallon Container Misc.	2	
Basement	1-Quart Container Mise.	1	

Table 2 - Summary of Sample Descriptions and Asbestos Laboratory Results, 2332 Leahy St., Muskegon Heights, Michigan

Sample Number	Sample Description	Friable	Material Type	Material Classification	% Asbestos Laboratory Result	Sample Location	Approx. Material Quantity
LS-HM-01A	Asphalt Shingle	No	М	Category I	ND	House Roof	NA
LS-HM-01B	Asphalt Shingle	No	М	Category I	ND	House Roof	NA
LS-HM-02A	Chimney Flashing	No	М	Category II	10% CH	Chimney	15 sq. ft.
LS-HM-02B	Chimney Flashing	No	М	Category II	NA	Chimney	NA
LS-HM-03A	Stone 12x12 VFT	No	М	Category I	5% CH/ND	Living Room	240 sq. ft.
LS-HM-03B	Stone 12x12 VFT	No	М	Category I	NA/ND	Living Room	NA
LS-HM-04A	Beige Linoleum Multilayer	No	М	Category I	ND/ND/ 10% CH/ND	Hallway	171 sq. ft.
LS-HM-04B	Beige Linoleum Multilayer	No	М	Category I	ND/ND/NA/ ND	Kitchen	NA
LS-HM-05A	Blue 12x12 VFT	No	М	Category I	ND	Bathroom	NA
LS-HM-05B	Blue 12x12 VFT	No	М	Category I	ND	Bathroom	NA
LS-HM-06A	White 1x1 CT w/ Pinholes	Yes	М	Category II	ND	Living Room	NA
LS-HM-06B	White 1x1 CT w/ Pinholes	Yes	М	Category II	ND	Living Room	NA
LS-HM-07A	White 1x1 CT w/ Gouges	Yes	М	Category II	ND	SE Bedroom	NA
LS-HM-07B	White 1x1 CT w/ Gouges	Yes	М	Category II	ND	SE Bedroom	NA
LS-HM-08A	Window Caulk	No	М	Category II	ND	SW Bedroom Window	NA
LS-HM-08B	Window Caulk	No	М	Category II	ND	Living Room Window	NA
LS-HM-09A	Window Glazing - Metal	Yes	М	Category II	ND	Basement Window	NA
LS-HM-09B	Window Glazing - Metal	Yes	М	Category II	ND	Basement Window	NA
LS-HM-10A	Vapor Barrier	Yes	М	Category II	ND	Under 1 <sup>st</sup> Floor Subfloor	NA
LS-HM-10B	Vapor Barrier	Yes	М	Category II	ND	Under 1 <sup>st</sup> Floor Subfloor	NA
LS-HM-11A	Window Glazing	Yes	М	Category II	5% CH	Pile of Windows in Basement	11 Windows
LS-HM-11B	Window Glazing	Yes	М	Category II	NA	Pile of Windows in Basement	NA

### Table 2 - Summary of Sample Descriptions and Asbestos Laboratory Results, 2332 Leahy St., Muskegon Heights, Michigan

### Notes:

Material Types	Abbreviations
M = Miscellaneous building material	NQ = Not quantified
TSI = Thermal System Insulation	NA = Not applicable
S = Surfacing Material	ND = Not detected. Laboratory result is less than 1 % asbestos
PC = Point Count Analysis	lin. ft. $=$ linear feet
CH = Chrysotile Asbestos	sq. ft. $=$ square feet

Asbestos Containing Material (ACM) is defined as any material containing more than 1 percent asbestos as determined utilizing Polarized Light Microscopy.

# Table 3 - Summary of Presumed Asbestos Containing Materials, 2332 Leahy St., Muskegon Heights, Michigan

Asbestos Containing Material Description and Location					
Location Material Description			Condition	Material Type	Approx. Quantity
No Presumed Asbestos Containing Materials Identified					

Notes:

Material Types		Abbreviations	
TSI	<ul><li>= Miscellaneous building material</li><li>= Thermal System Insulation</li><li>= Surfacing Material</li></ul>		= linear feet = square feet

Exterior - Asbestos Containing Materials				
Location	Material Description		Friable	Approx. Quantity
Building Roof	Chimney Flashing		No	15 sq. ft.
		Total		15 sq. ft.
Interior - Asbestos Containing Materials				
Location	Material Description		Friable	Approx. Quantity
Living	Stone 12x12 VFT		No	240 sq. ft.
Kitchen/Hallway	Beige Linoleum Mulitlayer		No	171 sq. ft.
		Total		411 sq. ft.
Interior - Asbestos Containing Materials				
Location	<b>Material Description</b>		Friable	Approx. Quantity
Basement in a pile (11 windows 43" wide x 45" tall)	Glazing		Yes	11 Windows
		Total		11 Windows

#### Table 4 - Summary of All Asbestos Containing Materials, 2332 Leahy St., Muskegon Heights, Michigan

#### Notes: Abbreviations

lin. ft. = linear feet sq. ft. = square feet

**Shaded/Bolded** = Friable ACM and any Category I and Category II non-friable ACM that has a high probability of becoming crumbled, pulverized, or reduced to powder by the demolition or renovation activities that must be properly abated prior to commencement of any demolition/renovation activities.

Demolition/renovation activities completed with intact Category I non-friable ACM are regulated by OSHA and must be completed following the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

Please note that a Negative Pressure Enclosure must be utilized during abatement when Site Conditions Warrant. Examples of these conditions include the abatement of Plaster and Vermiculite insulation, HVAC Duct Wrap in Poor Condition, and Air-O-Cell/Mag Pipe Wrap. Conditions outside of these should be assessed on a case by case basis during the Asbestos Abatement Contractors site walk and Work Plan Preparation.



P.O. Box 13216 Lansing, MI 48901 Phone: 888.449.4566 Fax: 888.448.8739 www.redcedarconsulting.net

November 1, 2018

Mr. Tim Burgess Muskegon County Land Bank Land Bank Coordinator 173 E. Apple Avenue, Suite 104 Muskegon, MI 49442

### RE: Asbestos Containing Material and Hazardous Materials Inspection 2336 8th St., Muskegon Heights, MI 49444 Parcel ID: 61-26-185-089-0015-00

Dear Mr. Burgess:

Red Cedar Consulting has completed an asbestos-containing material (ACM) and hazardous materials inspection at 2336 8th St., Muskegon Heights, Michigan (Subject Property). This inspection was completed at the request of the Muskegon County Land Bank to comply with the United States Environmental Protection Agency (USEPA) requirements for demolition and renovation set forth under the National Emissions Standards for Hazardous Air Pollutants (NESHAP, 40 CFR Part 61). This inspection was also completed to comply with the Occupational Safety and Health Administration (OSHA) Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

#### **SUBJECT PROPERTY**

The Subject Property is comprised of a .14 acre residential parcel which contains a 252 sq. ft. attached garage and approximate 852 square foot residential building (the Building) constructed in 1935. The Building was constructed on a concrete block basement with one aboveground floor. The exterior walls of the Building were finished with Transite siding over a vapor barrier and asphalt siding while the roof was sealed with asphalt shingles. The Building can be further divided into a front entry, living room, kitchen, bathroom and four bedrooms.

### VISUAL INSPECTION AND SAMPLING

#### **Asbestos Containing Materials Inspection**

Mr. Aaron Paquet of Red Cedar Consulting (Red Cedar), an accredited State of Michigan/EPA Asbestos Building Inspector (Accreditation Number A30955) whom completed training per the Michigan Asbestos Workers Accreditation Act 440 completed an inspection of the Subject Property on October 23, 2018 for suspected asbestos containing building materials.

This inspection, and subsequent sample collection was completed in accordance with the USEPA Asbestos Hazard Emergency Response Act (AHERA) (40 CFR Part 763) assessment and sampling protocol.

During the completion of the inspection, each area of the Subject Property was visually inspected for asbestos containing building materials (ACBM). Following the completion of the visual inspection, Red Cedar staff identified each suspect area of friable and non-friable ACBM and sorted them into one of three homogenous categories for sampling purposes. AHERA defines friable as a material that when dry, may be crumbled, pulverized, or reduced to powder by hand pressure. A homogenous area is defined by OSHA as an area of surfacing, thermal system insulation (TSI) or miscellaneous material that is uniform in color and texture. Surfacing materials are most commonly found in sprayed-on, troweled-on or otherwise applied to surfaces, such as acoustical plaster on ceilings and fireproofing materials on structural members. TSI refers to materials applied to pipes, fittings, boilers, ductwork, or other components to prevent heat loss or gain, or condensation. Any material that does not fall under the surfacing or TSI category, such as floor tile, drywall, and acoustical ceiling tile are placed into the miscellaneous materials category.

Following the completion of the visual inspection, Red Cedar staff identified the following materials as suspect ACBM:

- Vapor Barrier
- Asphalt Siding
- Shingle Roof
- 12"x12" Vinyl Floor Tile
- Drywall and Joint Compound
- Window Glazing
- Roof Flashing
- Plaster

Red Cedar staff collected twenty-nine samples of suspect ACBM separated into thirteen distinct homogenous groups for laboratory analysis. Samples were collected and submitted to APEX Research Inc. Laboratories (APEX) (Accreditation Number 102118-0) for laboratory analysis. Analysis was completed utilizing polarized light microscopy (PLM) which is the Environmental Protection Agency (EPA) approved method for analysis of bulk materials for asbestos. PLM analysis completed pursuant to method (EPA 600/M4-82-020) identifies asbestos fiber bundles by the visual properties displayed when the sample is treated with various dispersion staining liquids. The laboratory report completed following the sample analysis indicates if asbestos is present, and at what percentage along with a description and percentage of other fibrous and non-fibrous materials and sample color. Chain-of-custody documentation was followed from sample collection through shipping and receiving of the samples at the designated laboratory. The documentation assures that samples will meet the quality assurance/quality control measures defined by AHERA. The laboratory analytical report prepared by APEX for the twenty-nine samples is included as Attachment A.

#### **Hazardous Materials Inspection**

On October 23, 2018 the Subject Property was also inspected for the presence of hazardous materials which include but are not limited to polychlorinated biphenyls (PCBs) and potential mercury containing equipment and any items or containers that may contain or be classified as a hazardous or regulated material. Each material, if identified, was documented along with the approximate location. Any materials identified as hazardous are included in Table 1.

## **INSPECTION RESULTS AND RECOMMENDATIONS**

During the completion of the asbestos inspection, twenty-nine samples of suspect ACM were collected and are documented in Table 2 along with the Red Cedar sample number, description, friability, material type, ACM classification, sample location, material quantity and laboratory analytical results.

ACM, as defined by the USEPA NESHAP is "any material containing more than 1 percent asbestos as determined using the method specified in appendix E, subpart E, 40 CFR part 763 Section 1, Polarized Light Microscopy".

Friable ACM is defined by NESHAP as any material containing more than 1 percent asbestos that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. Friable ACM is a concern due the ease of unintentionally disturbing the ACM which may result in "visible emissions" which is known as a Fiber Release Episode.

Non-friable asbestos-containing material is defined as "material containing more than 1 percent asbestos that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. Non-friable ACM's are separated into Category I and Category II ACM. Category I ACM is any asbestos containing packing's, gaskets, resilient floor coverings (vinyl floor tile and linoleum are examples of these) and asphalt roofing products. Category II ACM is stated by NESHAP as any material excluding Category I non-friable ACM such as drywall, plaster or fiberboard insulation.

### **Presumed Asbestos Containing Material**

Presumed Asbestos Containing Materials (PACM) are suspect surfacing, TSI and miscellaneous materials found in buildings constructed prior to 1980 which are classified as and due to the age of the structure, are assumed to be ACM and do not require sample collection and analysis. OSHA dictates that PACM may be "rebutted" following a complete inspection pursuant to AHERA protocol.

The Cementatious "Transite" Siding on the Building was classified as PACM due to the age of the structure and samples were not collected.

Table 3 lists the location, material description, friability, condition, material type (surfacing, thermal or miscellaneous) and approximate quantity of all PACM documented at the Subject Property.

Table 4 provides a summary all ACM documented at the Subject Property which includes the material location, description, and approximate quantity.

### Friable ACM's

No friable ACM's were identified during the completion of this inspection.

### **Category I ACM**

One type of resilient floor covering (12"x12" Red Layered Vinyl Floor Tile) located within the front entry was found to contain up to 5% Chrysotile asbestos. The assessment to quantify the extent of this material identified approximately 81 sq. ft. of this material within the Building.

### **Category II ACM**

The cementatious "Transite" siding located on the exterior of the Building was classified as PACM and no samples were collected. The visual assessment to quantify the extent of this material identified 1,368 sq. ft. of cementatious (Transite) siding on the Building.

Roof flashing samples collected from the exterior of the Building were found to contain up to 20% asbestos following analysis. The assessment to quantify the extent of this material identified approximately 130 lin. ft. of flashing on the Building.

#### **RECOMMENDATIONS**

### **Asbestos Containing Materials**

Transite siding was identified on the exterior of the Building and must be abated prior to completion of any demolition activities at the Subject Property. In demolition, all cementatious ACM must be removed prior to demolition due to the likelihood of becoming regulated due to the demolition process.

Flashing identified on the exterior of the Building must be abated prior to completion of any renovation/demolition activities at the Subject Property. Any Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of renovation or demolition operations must be properly abated.

The Category I resilient floor covering (12"x12" Red Layered Vinyl Floor Tile) is a non-friable ACM that may be left in place as long as the demolition/renovation activities are completed following the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

Please note: The location of samples obtained during this inspection were in a random fashion and areas that were not identified during this inspection may be damaged or have become damaged since the inspection was completed. If Category I or Category II friable materials are discovered prior to or during the demolition/renovation process, these materials must be abated prior to commencement of any demolition/renovation activities at the Subject Property.

### **Hazardous Materials**

Hazardous Materials identified at the Subject Property and documented in Table 1 which require proper removal and disposal consist of the following items:

- 1-Gallon Container Misc. (3)
- Automobile Tire (61)
- Television (4)

### **REGULATORY REQUIREMENTS**

A Notification of Intent to Renovate/Demolish form must be filed with the Michigan Department of Environmental Quality- Air Quality Division at least 10 working days prior to any renovation or demolition activities at a site.

The Notification of Intent to Renovate/Demolish form must also be completed and submitted to the MIOSHA-Asbestos Program whenever demolition, encapsulation and/or renovation activities at a site involving greater than ten lineal feet and/or fifteen square feet of ACM will be completed.

Regulated asbestos containing materials per NESHAP (40 CFR Part 61) which falls into any of the following categories are ACM's that must be removed prior to any renovation/demolition activities at the Subject Property.

- Friable asbestos material.
- Category I non-friable ACM that has become friable.
- Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading.
- Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of renovation or demolition operations.

Asbestos abatement should only be performed by a certified asbestos abatement contractor licensed to complete abatement work. The contractor must also follow the standards and requirements set forth per the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) and the USEPA NESHAP (40 CFR Part 61).

Additional information regarding the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) and the USEPA NESHAP (40 CFR Part 61) can be obtained by contacting the associated agency below.

NESHAP Asbestos Program Department of Environmental Quality Phone: 517-284-6777 MIOSHA-CSHD-Asbestos Program State of Michigan Phone: 517-284-7680 Email: asbestos@michigan.gov

### **DISCLAIMER**

Red Cedar Consulting performed destructive testing methods in an attempt to access and inspect all areas of the Building. Unfortunately, due to the age of construction along with multiple additions/renovations that may have been completed on the Building, additional inspections may be required if suspect ACM material not documented within this report is encountered during renovation/demolition activities.

This report was prepared at the request and for exclusive use by the Muskegon County Land Bank and may not be reproduced or sold without written permission from Red Cedar Consulting.

We appreciate the opportunity to provide the requested services. Please contact us at (888) 449-4566 with any questions or concerns.

Sincerely, Red Cedar Consulting

Raion Poquet

Aaron Paquet Michigan/EPA Certified Asbestos Building Inspector (A30955)

Red Cedar Consulting

# Attachment 1

APEX Research Laboratory Analytical Results

Test Method, Polarized Light Microscopy (PLM)

Project : 2336 8th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80563Date Collected:10/23/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80563 - 01 Cust. #: ES-HM-01A Material: Vapor Barrier/Asphalt Siding/Thick Felt Location: Appearance: black,fibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 50% Other - 50%
Lab ID #: 80563 - 01a Cust. #: ES-HM-01A Material: Thin Felt Location: Appearance: black,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 50% Other - 50%
Lab ID #: 80563 - 02 Cust. #: ES-HM-01B Material: Vapor Barrier/Asphalt Siding/Thick Felt Location: Appearance: black,fibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 50% Other - 50%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2336 8th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80563         Date Collected:       10/23/18         Date Received:       10/24/18         Date Analyzed:       10/29/18         Date Reported:       10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80563 - 02a Cust. #: ES-HM-01B Material: Thin Felt Location: Appearance: black,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 50% Other - 50%
Lab ID #: 80563 - 03 Cust. #: ES-HM-02A Material: Brown Shingle Roof Location: Appearance: black,fibrous,homogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 30% Other - 70%
Lab ID #: 80563 - 03a Cust. #: ES-HM-02A Material: Black Shingle Location: Appearance: black,fibrous,homogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 30% Other - 70%
For Lavered Samples, each component will be analyzed and rend	prtad separately	

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2336 8th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80563Date Collected:10/23/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80563 - 03b Cust. #: ES-HM-02A Material: Felt Location: Appearance: black,fibrous,homogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 50% Other - 50%
Lab ID #: 80563 - 04 Cust. #: ES-HM-02B Material: Brown Shingle Roof Location: Appearance: black,fibrous,homogenous Layer: 1 of 5	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 30% Other - 70%
Lab ID #: 80563 - 04a Cust. #: ES-HM-02B Material: Black Shingle Location: Appearance: black,fibrous,homogenous Layer: 2 of 5	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 30% Other - 70%
For Lavered Samples, each component will be analyzed and repo	nrted separately	

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2336 8th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80563         Date Collected:       10/23/18         Date Received:       10/24/18         Date Analyzed:       10/29/18         Date Reported:       10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80563 - 04b Cust. #: ES-HM-02B Material: Black Shingle Location: Appearance: black,fibrous,homogenous Layer: 3 of 5	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 30% Other - 70%
Lab ID #: 80563 - 04c Cust. #: ES-HM-02B Material: Black Shingle Location: Appearance: black,fibrous,homogenous Layer: 4 of 5	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 30% Other - 70%
Lab ID #: 80563 - 04d Cust. #: ES-HM-02B Material: Felt Location: Appearance: black,fibrous,homogenous Layer: 5 of 5	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 60% Other - 40%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.



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Test Method, Polarized Light Microscopy (PLM)

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Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80563 - 05 Cust. #: ES-HM-03A Material: Black Shingle Roof Location: Appearance: black,fibrous,homogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%
Lab ID #: 80563 - 05a Cust. #: ES-HM-03A Material: Green Shingle Location: Appearance: black,fibrous,homogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%
Lab ID #: 80563 - 05b Cust. #: ES-HM-03A Material: White Shingle Location: Appearance: black,fibrous,homogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2336 8th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80563         Date Collected:       10/23/18         Date Received:       10/24/18         Date Analyzed:       10/29/18         Date Reported:       10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80563 - 06 Cust. #: ES-HM-03B Material: Black Shingle Roof Location: Appearance: black,fibrous,homogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%
Lab ID #: 80563 - 06a Cust. #: ES-HM-03B Material: Green Shingle Location: Appearance: black,fibrous,homogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 40% Other - 60%
Lab ID #: 80563 - 06b Cust. #: ES-HM-03B Material: White Shingle Location: Appearance: white,fibrous,homogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 40% Other - 60%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2336 8th St.



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Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80563 - 07 Cust. #: ES-HM-04A Material: 12x12 Red Layered VFT Location: Appearance: red,fibrous,homogenous Layer: 1 of 3	Asbestos Present: <b>YES</b> Chrysotile - 5%	Other - 95%
Lab ID #: 80563 - 07a Cust. #: ES-HM-04A Material: Glue Location: Appearance: yellow,nonfibrous,homogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80563 - 07b Cust. #: ES-HM-04A Material: Sheet Flooring Location: Appearance: green,fibrous,nonhomogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 40% Other - 60%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2336 8th St.



	ARI Report #18-80563Date Collected:10/23/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Asbestos Type/Percent	Non-Asbestos Material
Asbestos Present:	
NOT ANALYZED	
Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 40% Other - 60%
	Asbestos Present: NOT ANALYZED Asbestos Present: <b>NO</b> No Asbestos Observed Asbestos Present: <b>NO</b>

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2336 8th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80563Date Collected:10/23/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80563 - 09 Cust. #: ES-HM-05A Material: 12x12 Blue VFT Location: Appearance: blue,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80563 - 09a Cust. #: ES-HM-05A Material: Glue Location: Appearance: clear,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80563 - 10 Cust. #: ES-HM-05B Material: 12x12 Blue VFT Location: Appearance: blue,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2336 8th St.



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Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80563 - 10a Cust. #: ES-HM-05B Material: Glue Location: Appearance: clear,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80563 - 11 Cust. #: ES-HM-06A Material: 12x12 Lite Grey VFT Location: Appearance: grey,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80563 - 11a Cust. #: ES-HM-06A Material: Glue Location: Appearance: clear,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

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Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80563 - 12 Cust. #: ES-HM-06B Material: 12x12 Lite Grey VFT Location: Appearance: grey,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80563 - 12a Cust. #: ES-HM-06B Material: Glue Location: Appearance: clear,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80563 - 13 Cust. #: ES-HM-07A Material: 12x12 Brown VFT Location: Appearance: brown,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2336 8th St.



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Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80563 - 13a Cust. #: ES-HM-07A Material: Glue Location: Appearance: clear,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80563 - 14 Cust. #: ES-HM-07B Material: 12x12 Brown VFT Location: Appearance: brown,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80563 - 14a Cust. #: ES-HM-07B Material: Glue Location: Appearance: clear,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2336 8th St.



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Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80563 - 15 Cust. #: ES-HM-08A Material: 12x12 Grey Layered VFT Location: Appearance: beige,nonfibrous,homogenous Layer: 1 of 6	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80563 - 15a Cust. #: ES-HM-08A Material: Glue Location: Appearance: clear,nonfibrous,homogenous Layer: 2 of 6	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80563 - 15b Cust. #: ES-HM-08A Material: Brown Floor Tile Location: Appearance: brown,nonfibrous,homogenous Layer: 3 of 6	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2336 8th St.



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Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80563 - 15c Cust. #: ES-HM-08A Material: Glue Location: Appearance: clear,nonfibrous,homogenous Layer: 4 of 6	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80563 - 15d Cust. #: ES-HM-08A Material: Green Floor Tile Location: Appearance: green,nonfibrous,homogenous Layer: 5 of 6	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80563 - 15e Cust. #: ES-HM-08A Material: Glue Location: Appearance: clear,nonfibrous,homogenous Layer: 6 of 6	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2336 8th St.



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Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80563 - 16 Cust. #: ES-HM-08B Material: 12x12 Grey Layered VFT Location: Appearance: beige,nonfibrous,homogenous Layer: 1 of 6	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80563 - 16a Cust. #: ES-HM-08B Material: Glue Location: Appearance: clear,nonfibrous,homogenous Layer: 2 of 6	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80563 - 16b Cust. #: ES-HM-08B Material: Brown Floor Tile Location: Appearance: brown,nonfibrous,homogenous Layer: 3 of 6	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2336 8th St.



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Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80563 - 16c Cust. #: ES-HM-08B Material: Glue Location: Appearance: clear,nonfibrous,homogenous Layer: 4 of 6	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80563 - 16d Cust. #: ES-HM-08B Material: Green Floor Tile Location: Appearance: green,nonfibrous,homogenous Layer: 5 of 6	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80563 - 16e Cust. #: ES-HM-08B Material: Glue Location: Appearance: clear,nonfibrous,homogenous Layer: 6 of 6	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2336 8th St.



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Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80563 - 17 Cust. #: ES-HM-09A Material: Drywall Location: Appearance: white,fibrous,nonhomogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80563 - 17a Cust. #: ES-HM-09A Material: Joint Compound Location: Appearance: white,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80563 - 18 Cust. #: ES-HM-09B Material: Drywall Location: Appearance: white,fibrous,nonhomogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2336 8th St.



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Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80563 - 18a Cust. #: ES-HM-09B Material: Joint Compound Location: Appearance: white,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80563 - 19 Cust. #: ES-HM-10A Material: House Window Glazing Location: Appearance: beige,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Wollastonite - 5% Other - 95%
Lab ID #: 80563 - 20 Cust. #: ES-HM-10B Material: House Window Glazing Location: Appearance: white,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Wollastonite - 2% Other - 98%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

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Test Method, Polarized Light Microscopy (PLM)

Project : 2336 8th St.



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Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80563 - 21 Cust. #: ES-HM-11A Material: Front Porch Window Glazing Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 1% Other - 99%
Lab ID #: 80563 - 22 Cust. #: ES-HM-11B Material: Front Porch Window Glazing Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 1% Other - 99%
Lab ID #: 80563 - 23 Cust. #: ES-HM-12A Material: Roof Flashing Location: Appearance: black,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2336 8th St.



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Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80563 - 24 Cust. #: ES-HM-12B Material: Roof Flashing Location: Appearance: black,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>YES</b> Chrysotile - 20%	Other - 80%
Lab ID #: 80563 - 25 Cust. #: ES-HS-01A Material: Plaster Texture Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 1% Other - 99%
Lab ID #: 80563 - 25a Cust. #: ES-HS-01A Material: Plaster Finish Coat Location: Appearance: green,nonfibrous,homogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Sout

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2336 8th St.



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Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80563 - 25b Cust. #: ES-HS-01A Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 5% Other - 95%
Lab ID #: 80563 - 26 Cust. #: ES-HS-01B Material: Plaster Texture Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 1% Other - 99%
Lab ID #: 80563 - 26a Cust. #: ES-HS-01B Material: Plaster Finish Coat Location: Appearance: green,nonfibrous,homogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2336 8th St.



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Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80563 - 26b Cust. #: ES-HS-01B Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 5% Other - 95%
Lab ID #: 80563 - 27 Cust. #: ES-HS-01C Material: Plaster Finish Coat Location: Appearance: green,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80563 - 27a Cust. #: ES-HS-01C Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 5% Other - 95%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2336 8th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80563Date Collected:10/23/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80563 - 28 Cust. #: ES-HS-01D Material: Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80563 - 28a Cust. #: ES-HS-01D Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 5% Other - 95%
Lab ID #: 80563 - 29 Cust. #: ES-HS-01E Material: Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2336 8th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80563Date Collected:10/23/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80563 - 29a Cust. #: ES-HS-01E Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 5% Other - 95%
Lab ID #: Cust. #: Material: Location: Appearance: Layer: of	Asbestos Present:	
Lab ID #: Cust. #: Material: Location: Appearance: Layer: of	Asbestos Present:	

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director



Apex # 80563		143
APEX Research, Inc. 11054 Hi Tech Drive, Whitmore Lake, MI 48189 Phone: 734-449-9990 E-mail: apexresearch@chartermi.net Fax: 734-449-9991	11 48189 Phone: 734-449-9990 net Fax: 734-449-9991	APEX
Client Name: Red Cedar Consulting Date of Surve Address: PO BOX 13216 Project : 23	Date of Survey : 10-23-18 Project : 2336 824.64	Lab Use Only Log-in Report
Zip:         Lansing, MI 48901         Project           (888) 449-4566         Fax : (888) 448-8739         Contact	erson: Aaron Paquet	
Irn Around Times: (Circle One) PLM EPA 600, PC all Asbestos: Bulk × Wipe	apaquetwereacedarcousurting.iner samples with a detection of <5% ACM. Point Count PCM	of <5% ACM.
Rush   24 hour     48 hour   02 hour	Paint	
	BioSIS Other	Viable
Lab ID #     Client ID #     Material/Location	Volume Area	Results
2 1 1 DIR Vapor Earier Gaplet Wind		
3 024 Diam Shingle Rod		
5 02B		
2 24/2X/2 Red Served VFT		
· 250 / /		
11 V V COA1/2X/2 duce way Vr/		
Relinquished by: ALL Relinquished by: UPS Relinquished by:	REGENCED	5
Date : 13-23-18 Date : 10-23-18 Date :	0CPat9:4_2018	018 10/24/18 085 8
Rev. 12/03 Work Forms: COC	APEX RESEARCH	- P

243	ake, MI 48189 Phone: 734-449-9990	Date of Survey : 10-23-18 Lab Use Only Project : 2336 826 At the Report	Project #: Contact Person: Aaron Paquet PC all samples with a detection of <5% ACM. pe Point Count PCM	Air Paint Soil BioSIS Other Viable	Bulk/NOB EPA Level II	Volume Area Results					Pre					Received by: 0CT 2 4	1
	<b>Arch, Inc.</b> 11054 Hi Tech Drive, Whitmore Lake, MI 48189 Phone: 734-449-9990 E-mail: apexresearch@chartermi.net Fax: 734-449-9991		148-8739 PLM EPA 600, tos: Bulk X W	Lead: Bulk Wipe Mold: Bulk Tape	TTP All Samples TEM: AHERA 7400 Bull	Client ID #   Material/Location	HM-Des 2X12 Sete Herry VI	074 12×12 Brown VFT		084/2×12 / 100 Jung Jung 16/	0 gr Shegwall & Joint Composes	035 0	10A Horde Window Maying	108 4. + Park 1 Marine Aller		The Received by: UPS Relinquished by:	12-02 18 Date
80563	APEX Research, It	PO	City, St., Zip: Lansing, MI 48901 Phone: (888) 449-4566 Fax: (888) 4 <b>Turn Around Times:</b> (Circle One) Asbesi	Rush 24 hour 48 hour 22 hour	Other :	Lab ID # Cli	13 61	13	t.	5		<u>ب</u> ج	9	æ.	in the	Relimmished hv: ASA Min	

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$APEX \ Research, Inc. {}^{11054  \rm Hi  Tech  Drive,  Whitmore  Lake, MI  48189} \\ {}^{\rm E-mail: a pexresearch@chartermi.net}$	189 Phone: 734-449-9990 Fax: 734-449-9991		ARCH
Red Cedar Consulting PO Box 13216	Date of Survey : <u>25 - 23 - 76</u> Project :		Lab Use Only Log-In Report
Project Contact	<b>ON:</b> Aaron Paquet		
Irn Around Times: (Circle One) PLM EPA 600, PC all Asbestos: Bulk × Wipe	apaquet@redcedarconsulting.net samples with a detection of <5% ACM. Point Count PCM	edarconsulti on of <5% AC M	ng.net A.
Bulk Wipe	Paint	Soil	
Other: Imp_all samples Buoks lape Buoks	SIS Other EPA Level II	Viable	1
Lab ID #     Client ID #     Material/Location     Vc	Volume Area		Results
33 ES-H17-12A Roof Alaching			
- <b> </b> *			
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ished by: ACA Waters Received by: UFS	Received by:		RECEIVEL
1-2-10 Date			APEX RESEARCH

Red Cedar Consulting

Tables

### Table 1 - Summary of Hazardous Materials, 2336 8th St., Muskegon Heights, Michigan

	Hazardous Materials Description and Location							
Location	Material Description	Quantity						
Detached Garage	1-Gallon Container Misc.	2						
Detached Garage	Automobile Tire	30						
Exterior	Television	1						
Exterior	Automobile Tire	1						
Attached Garage	Automobile Tire	30						
Attached Garage	Television	1						
1 <sup>st</sup> Floor	Television	1						
Basement	Television	1						
Basement	1-Gallon Container Mise.	1						

Sample Number	Sample Description	Friable	Material Type	Material Classification	% Asbestos Laboratory Result	Sample Location	Approx. Material Quantity
ES-HM-01A	Vapor Barrier/Asphalt Siding	Yes	М	Category II	ND/ND	House Exterior	NA
ES-HM-01B	Vapor Barrier/Asphalt Siding	Yes	М	Category II	ND/ND	House Exterior	NA
ES-HM-02A	Brown Shingle Roof	No	М	Category I	ND/ND/ND	House Roof	NA
ES-HM-02B	Brown Shingle Roof	No	М	Category I	ND/ND/ND/ ND/ND	House Roof	NA
ES-HM-03A	Black Shingle Roof	No	М	Category II	ND/ND/ND	Detached Garage Roof	NA
ES-HM-03B	Black Shingle Roof	No	М	Category II	ND/ND/ND	Detached Garage Roof	NA
ES-HM-04A	12x12 Red Layered VFT	No	М	Category I	5% CH/ND/ND	Front Entry	81 sq. ft
ES-HM-04B	12x12 Red Layered VFT	No	М	Category I	NA/ND/ND	Front Entry	NA
ES-HM-05A	12x12 Blue VFT	No	М	Category II	ND/ND	Kitchen	NA
ES-HM-05B	12x12 Blue VFT	No	М	Category II	ND/ND	Kitchen	NA
ES-HM-06A	12x12 Light Gray VFT	No	М	Category II	ND/ND	Bathroom	NA
ES-HM-06B	12x12 Light Gray VFT	No	М	Category II	ND/ND	Bathroom	NA
ES-HM-07A	12x12 Brown VFT	No	М	Category II	ND/ND	NE Bedroom	NA
ES-HM-07B	12x12 Brown VFT	No	М	Category II	ND/ND	NE Bedroom	NA
ES-HM-08A	12x12 Gray Layered VFT	No	М	Category II	ND/ND/ND/ ND/ND/ND	Basement Entry	NA
ES-HM-08B	12x12 Gray Layered VFT	No	М	Category II	ND/ND/ND/ ND/ND/ND	Basement Entry	NA
ES-HM-09A	Drywall and Joint Compound	No	М	Category II	ND/ND	S Bedroom Ceiling	NA
ES-HM-09B	Drywall and Joint Compound	No	М	Category II	ND/ND	S Bedroom Wall	NA
ES-HM-10A	House Window Glazing	Yes	М	Category II	ND	NW Bedroom Window	NA
ES-HM-10B	House Window Glazing	Yes	М	Category II	ND	Kitchen Window	NA
ES-HM-11A	Front Porch Window Glazing	Yes	М	Category II	ND	Front Porch Window	NA
ES-HM-11B	Front Porch Window Glazing	Yes	М	Category II	ND	Front Porch Window	NA
ES-HM-12A	Flashing	No	М	Category II	20% CH	House Roof	130 lin. ft.
ES-HM-12B	Flashing	No	М	Category II NA		House Roof	NA
ES-HS-01A	Plaster	No	S	Category II	ND/ND/ND	S Bedroom Ceiling	NA
ES-HS-01B	Plaster	No	S	Category II	ND/ND/ND	Kitchen Ceiling	NA

Table 2 - Summary of Sample Descriptions and Asbestos Laboratory Results, 2336 8th St., Muskegon Heights, Michigan

Sample Number	Sample Description	Friable	Material Type	Material Classification	% Asbestos Laboratory Result	Sample Location	Approx. Material Quantity
ES-HS-01C	Plaster	No	S	Category II	ND/ND	Living Room Wall	NA
ES-HS-01D	Plaster	No	S	Category II	ND/ND	NE Bedroom Wall	NA
ES-HS-01E	Plaster	No	S	Category II	ND/ND	NE Bedroom Wall	NA

Notes:

Material Types

M = Miscellaneous building material

TSI = Thermal System Insulation

S = Surfacing Material

PC = Point Count Analysis

CH = Chrysotile Asbestos

### Abbreviations

NQ = Not quantified
NA = Not applicable
ND = Not detected. Laboratory result is less than 1 % asbestos
lin. ft. = linear feet
sq. ft. = square feet

Asbestos Containing Material (ACM) is defined as any material containing more than 1 percent asbestos as determined utilizing Polarized Light Microscopy.

### Table 3 - Summary of Presumed Asbestos Containing Materials, 2336 8th St., Muskegon Heights, Michigan

Asbestos Containing Material Description and Location					
Location	Material Description	Friable	Condition	Material Type	Approx. Quantity
Building Exterior	Transite Siding	No	Fair	М	1,368 sq. ft.

Notes:

Material Types

Abbreviations

М	= Miscellaneous building material	lin. ft.	= linear feet
TSI	= Thermal System Insulation	sq. ft.	= square feet
S	= Surfacing Material		

= Surfacing Material

Exterior - Asbestos Containing Materials					
Location	Material Description		Friable	Approx. Quantity	
Building Roof	Roof Flashing		No	130 lin. ft.	
		Total		130 lin. ft.	
Interior - Asbestos Containing Materials					
Location	<b>Material Description</b>		Friable	Approx. Quantity	
Front Entry	12x12 Red Layered VFT		No	81 sq. ft.	
		Total		81 sq. ft.	
Exterior - Asbestos Containing Materials					
Location	<b>Material Description</b>		Friable	Approx. Quantity	
Building Exterior	Transite Siding		No	1,368 sq. ft.	
		Total		1,368 sq. ft.	

### Table 4 - Summary of All Asbestos Containing Materials, 2336 8th St., Muskegon Heights, Michigan

Notes:

Abbreviations

lin. ft. = linear feet sq. ft. = square feet

**Shaded/Bolded** = Friable ACM and any Category I and Category II non-friable ACM that has a high probability of becoming crumbled, pulverized, or reduced to powder by the demolition or renovation activities that must be properly abated prior to commencement of any demolition/renovation activities.

Demolition/renovation activities completed with intact Category I non-friable ACM are regulated by OSHA and must be completed following the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

Please note that a Negative Pressure Enclosure must be utilized during abatement when Site Conditions Warrant. Examples of these conditions include the abatement of Plaster and Vermiculite insulation, HVAC Duct Wrap in Poor Condition, and Air-O-Cell/Mag Pipe Wrap. Conditions outside of these should be assessed on a case by case basis during the Asbestos Abatement Contractors site walk and Work Plan Preparation.



P.O. Box 13216 Lansing, MI 48901 Phone: 888.449.4566 Fax: 888.448.8739 www.redcedarconsulting.net

November 2, 2018

Mr. Tim Burgess Muskegon County Land Bank Land Bank Coordinator 173 E. Apple Avenue, Suite 104 Muskegon, MI 49442

#### RE: Asbestos Containing Material and Hazardous Materials Inspection 2344 6th St., Muskegon Heights, MI 49444 Parcel ID: 61-26-185-091-0013-00

Dear Mr. Burgess:

Red Cedar Consulting has completed an asbestos-containing material (ACM) and hazardous materials inspection at 2344 6th St., Muskegon Heights, Michigan (Subject Property). This inspection was completed at the request of the Muskegon County Land Bank to comply with the United States Environmental Protection Agency (USEPA) requirements for demolition and renovation set forth under the National Emissions Standards for Hazardous Air Pollutants (NESHAP, 40 CFR Part 61). This inspection was also completed to comply with the Occupational Safety and Health Administration (OSHA) Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

#### **SUBJECT PROPERTY**

The Subject Property is comprised of a .14 acre residential parcel which contains an approximate 816 square foot residential building (the Building) constructed in 1935. The Building was constructed on a concrete foundation with one aboveground floor. The exterior walls of the Building were finished with wood lap over a vapor barrier while the roof was sealed with asphalt shingles. The Building can be further divided into a front entry, living room, dining room, kitchen, bathroom and three bedrooms.

### VISUAL INSPECTION AND SAMPLING

#### **Asbestos Containing Materials Inspection**

Mr. Aaron Paquet of Red Cedar Consulting (Red Cedar), an accredited State of Michigan/EPA Asbestos Building Inspector (Accreditation Number A30955) whom completed training per the Michigan Asbestos Workers Accreditation Act 440 completed an inspection of the Subject Property on October 24, 2018 for suspected asbestos containing building materials.

This inspection, and subsequent sample collection was completed in accordance with the USEPA Asbestos Hazard Emergency Response Act (AHERA) (40 CFR Part 763) assessment and sampling protocol.

During the completion of the inspection, each area of the Subject Property was visually inspected for asbestos containing building materials (ACBM). Following the completion of the visual inspection, Red Cedar staff identified each suspect area of friable and non-friable ACBM and sorted them into one of three homogenous categories for sampling purposes. AHERA defines friable as a material that when dry, may be crumbled, pulverized, or reduced to powder by hand pressure. A homogenous area is defined by OSHA as an area of surfacing, thermal system insulation (TSI) or miscellaneous material that is uniform in color and texture. Surfacing materials are most commonly found in sprayed-on, troweled-on or otherwise applied to surfaces, such as acoustical plaster on ceilings and fireproofing materials on structural members. TSI refers to materials applied to pipes, fittings, boilers, ductwork, or other components to prevent heat loss or gain, or condensation. Any material that does not fall under the surfacing or TSI category, such as floor tile, drywall, and acoustical ceiling tile are placed into the miscellaneous materials category.

Following the completion of the visual inspection, Red Cedar staff identified the following materials as suspect ACBM:

- Shingle Roof
- Chimney Flashing
- Vapor Barrier
- Fiberboard
- Multi-Layered Flooring
- Linoleum
- Drywall and Joint Compound
- Window Glazing
- 2'x4' Ceiling Tile
- Window Caulk
- Plaster

Red Cedar staff collected fifteen samples of suspect ACBM separated into eleven distinct homogenous groups for laboratory analysis. Samples were collected and submitted to APEX Research Inc. Laboratories (APEX) (Accreditation Number 102118-0) for laboratory analysis. Analysis was completed utilizing polarized light microscopy (PLM) which is the Environmental Protection Agency (EPA) approved method for analysis of bulk materials for asbestos. PLM analysis completed pursuant to method (EPA 600/M4-82-020) identifies asbestos fiber bundles by the visual properties displayed when the sample is treated with various dispersion staining liquids. The laboratory report completed following the sample analysis indicates if asbestos is present, and at what percentage along with a description and percentage of other fibrous and non-fibrous materials and sample color. Chain-of-custody documentation was followed from sample collection through shipping and receiving of the samples at the designated laboratory. The documentation assures that samples will meet the quality assurance/quality control measures defined by AHERA. The laboratory analytical report prepared by APEX for the fifteen samples is included as Attachment A.

#### **Hazardous Materials Inspection**

On October 24, 2018 the Subject Property was also inspected for the presence of hazardous materials which include but are not limited to polychlorinated biphenyls (PCBs) and potential mercury containing equipment and any items or containers that may contain or be classified as a hazardous or regulated material. Each material, if identified, was documented along with the approximate location. Any materials identified as hazardous are included in Table 1.

### **INSPECTION RESULTS AND RECOMMENDATIONS**

During the completion of the asbestos inspection, fifteen samples of suspect ACM were collected and are documented in Table 2 along with the Red Cedar sample number, description, friability, material type, ACM classification, sample location, material quantity and laboratory analytical results.

ACM, as defined by the USEPA NESHAP is "any material containing more than 1 percent asbestos as determined using the method specified in appendix E, subpart E, 40 CFR part 763 Section 1, Polarized Light Microscopy".

Friable ACM is defined by NESHAP as any material containing more than 1 percent asbestos that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. Friable ACM is a concern due the ease of unintentionally disturbing the ACM which may result in "visible emissions" which is known as a Fiber Release Episode.

Non-friable asbestos-containing material is defined as "material containing more than 1 percent asbestos that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. Non-friable ACM's are separated into Category I and Category II ACM. Category I ACM is any asbestos containing packing's, gaskets, resilient floor coverings (vinyl floor tile and linoleum are examples of these) and asphalt roofing products. Category II ACM is stated by NESHAP as any material excluding Category I non-friable ACM such as drywall, plaster or fiberboard insulation.

### **Presumed Asbestos Containing Material**

Presumed Asbestos Containing Materials (PACM) are suspect surfacing, TSI and miscellaneous materials found in buildings constructed prior to 1980 which are classified as and due to the age of the structure, are assumed to be ACM and do not require sample collection and analysis. OSHA dictates that PACM may be "rebutted" following a complete inspection pursuant to AHERA protocol.

The HVAC Duct Wrap located in the Building was classified as PACM due to the age of the structure and samples were not collected.

Table 3 lists the location, material description, friability, condition, material type (surfacing, thermal or miscellaneous) and approximate quantity of all PACM documented at the Subject Property.

Table 4 provides a summary all ACM documented at the Subject Property which includes the material location, description, and approximate quantity.

### Friable ACM's

Duct Wrap identified in the building in conjunction with the forced air heating system is classified as friable ACM. The visual assessment to quantify the extent of this material identified HVAC Duct Wrap at the following locations within the basement and first floor:

- West Bedroom (1 register, 10 sq. ft.)
- Center Bedroom (1 register, 10 sq. ft.)
- East Bedroom (1 register, 10 sq. ft.)
- Living Room (1 register, 10 sq. ft.)
- Kitchen (1 register, 10 sq. ft.)

### Category I ACM

One type of resilient floor covering (Mottled Linoleum) located within the bathroom was found to contain up to 30% Chrysotile asbestos. The assessment to quantify the extent of this material identified approximately 55 sq. ft. of this material within the Building.

### **Category II ACM**

Chimney flashing samples collected during the completion of the inspection were found to contain up to 20% Chrysotile asbestos. The assessment to quantify the extent of this material identified 15 sq. ft. of chimney flashing materials on the Building.

Plaster samples, collected from the Living Room, W Bedroom, Center Bedroom, Bathroom, and Kitchen were found to contain up to 1.25% asbestos following analysis. The assessment to quantify the extent of this material identified approximately 3,227 sq. ft. of plaster within the Building.

### **RECOMMENDATIONS**

### **Asbestos Containing Materials**

HVAC material identified in the Building system and listed below is classified as friable ACM and should be removed prior to any renovation/demolition activities.

- West Bedroom (1 register, 10 sq. ft.)
- Center Bedroom (1 register, 10 sq. ft.)
- East Bedroom (1 register, 10 sq. ft.)
- Living Room (1 register, 10 sq. ft.)
- Kitchen (1 register, 10 sq. ft.)

Chimney flashing identified on the exterior of the Building must be abated prior to completion of any renovation/demolition activities at the Subject Property. Any Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of renovation or demolition operations must be properly abated.

Plaster identified on the interior of the Building must be abated prior to completion of any renovation/demolition activities at the Subject Property. Any Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of renovation or demolition operations must be properly abated.

The Category I resilient floor covering (Mottled Linoleum) is a non-friable ACM that may be left in place as long as the demolition/renovation activities are completed following the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

Please note: The location of samples obtained during this inspection were in a random fashion and areas that were not identified during this inspection may be damaged or have become damaged since the inspection was completed. If Category I or Category II friable materials are discovered prior to or during the demolition/renovation process, these materials must be abated prior to commencement of any demolition/renovation activities at the Subject Property.

### **Hazardous Materials**

Hazardous Materials identified at the Subject Property and documented in Table 1 which require proper removal and disposal consist of the following items:

• Automobile Tire (2)

### **REGULATORY REQUIREMENTS**

A Notification of Intent to Renovate/Demolish form must be filed with the Michigan Department of Environmental Quality- Air Quality Division at least 10 working days prior to any renovation or demolition activities at a site.

The Notification of Intent to Renovate/Demolish form must also be completed and submitted to the MIOSHA-Asbestos Program whenever demolition, encapsulation and/or renovation activities at a site involving greater than ten lineal feet and/or fifteen square feet of ACM will be completed.

Regulated asbestos containing materials per NESHAP (40 CFR Part 61) which falls into any of the following categories are ACM's that must be removed prior to any renovation/demolition activities at the Subject Property.

- Friable asbestos material.
- Category I non-friable ACM that has become friable.
- Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading.
- Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of renovation or demolition operations.

Asbestos abatement should only be performed by a certified asbestos abatement contractor licensed to complete abatement work. The contractor must also follow the standards and requirements set forth per the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) and the USEPA NESHAP (40 CFR Part 61).

Additional information regarding the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) and the USEPA NESHAP (40 CFR Part 61) can be obtained by contacting the associated agency below.

NESHAP Asbestos Program Department of Environmental Quality Phone: 517-284-6777 MIOSHA-CSHD-Asbestos Program State of Michigan Phone: 517-284-7680 Email: asbestos@michigan.gov

### **DISCLAIMER**

Red Cedar Consulting performed destructive testing methods in an attempt to access and inspect all areas of the Building. Unfortunately, due to the age of construction along with multiple additions/renovations that may have been completed on the Building, additional inspections may be required if suspect ACM material not documented within this report is encountered during renovation/demolition activities.

This report was prepared at the request and for exclusive use by the Muskegon County Land Bank and may not be reproduced or sold without written permission from Red Cedar Consulting.

We appreciate the opportunity to provide the requested services. Please contact us at (888) 449-4566 with any questions or concerns.

Sincerely, Red Cedar Consulting

Raion Poquet

Aaron Paquet Michigan/EPA Certified Asbestos Building Inspector (A30955)

Red Cedar Consulting

# Attachment 1

APEX Research Laboratory Analytical Results

Test Method, Polarized Light Microscopy (PLM)

Project : 2344 6th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80579Date Collected:10/24/18Date Received:10/25/18Date Analyzed:10/30/18Date Reported:10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80579 - 01 Cust. #: SS-HM-01A Material: Asphalt Shingle Location: Appearance: black,fibrous,homogenous Layer: 1 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 30% Other - 70%
Lab ID #: 80579 - 01a Cust. #: SS-HM-01A Material: Grey Shingle Location: Appearance: black,fibrous,homogenous Layer: 2 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 30% Other - 70%
Lab ID #: 80579 - 01b Cust. #: SS-HM-01A Material: Black Shingle Location: Appearance: black,fibrous,homogenous Layer: 3 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 40% Other - 60%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

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Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80579Date Collected:10/24/18Date Received:10/25/18Date Analyzed:10/30/18Date Reported:10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80579 - 01c Cust. #: SS-HM-01A Material: Black Shingle Location: Appearance: black,fibrous,homogenous Layer: 4 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 40% Other - 60%
Lab ID #: 80579 - 02 Cust. #: SS-HM-01B Material: Asphalt Shingle Location: Appearance: black,fibrous,homogenous Layer: 1 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 30% Other - 70%
Lab ID #: 80579 - 02a Cust. #: SS-HM-01B Material: Grey Shingle Location: Appearance: black,fibrous,homogenous Layer: 2 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 30% Other - 70%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2344 6th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80579Date Collected:10/24/18Date Received:10/25/18Date Analyzed:10/30/18Date Reported:10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80579 - 02b Cust. #: SS-HM-01B Material: Black Shingle Location: Appearance: black,fibrous,homogenous Layer: 3 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 40% Other - 60%
Lab ID #: 80579 - 02c Cust. #: SS-HM-01B Material: Black Shingle Location: Appearance: black,fibrous,homogenous Layer: 4 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 40% Other - 60%
Lab ID #: 80579 - 03 Cust. #: SS-HM-02A Material: Flashing Location: Appearance: black,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>YES</b> Chrysotile - 20%	Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2344 6th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80579Date Collected:10/24/18Date Received:10/25/18Date Analyzed:10/30/18Date Reported:10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80579 - 04 Cust. #: SS-HM-02B Material: Flashing	Asbestos Present:	
Location: Appearance: Layer: of	NOT ANALYZED	
Lab ID #: 80579 - 05 Cust. #: SS-HM-03A Material: Vapor Barrier Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 80% Other - 20%
Lab ID #: 80579 - 06 Cust. #: SS-HM-03B Material: Vapor Barrier Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 80% Other - 20%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2344 6th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80579Date Collected:10/24/18Date Received:10/25/18Date Analyzed:10/30/18Date Reported:10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80579 - 07 Cust. #: SS-HM-04A Material: Fiberboard Location: Appearance: black,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 50% Other - 50%
Lab ID #: 80579 - 08 Cust. #: SS-HM-04B Material: Fiberboard Location: Appearance: black,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 50% Other - 50%
Lab ID #: 80579 - 09 Cust. #: SS-HM-05A Material: Black 12x12 VFT Location: Appearance: black,fibrous,homogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 1% Other - 99%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2344 6th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80579Date Collected:10/24/18Date Received:10/25/18Date Analyzed:10/30/18Date Reported:10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80579 - 09a Cust. #: SS-HM-05A Material: Glue Location: Appearance: clear,nonfibrous,homogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80579 - 09b Cust. #: SS-HM-05A Material: Sheet Flooring Location: Appearance: brown,fibrous,nonhomogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 40% Other - 60%
Lab ID #: 80579 - 10 Cust. #: SS-HM-05B Material: White 12x12 VFT Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 1% Other - 99%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method, Polarized Light Microscopy (PLM)

Project : 2344 6th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80579Date Collected:10/24/18Date Received:10/25/18Date Analyzed:10/30/18Date Reported:10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80579 - 10a Cust. #: SS-HM-05B Material: Glue Location: Appearance: clear,nonfibrous,homogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80579 - 10b Cust. #: SS-HM-05B Material: Sheet Flooring Location: Appearance: white,fibrous,nonhomogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 40% Other - 60%
Lab ID #: 80579 - 11 Cust. #: SS-HM-06A Material: Mottled Linoleum Location: Appearance: brown,fibrous,nonhomogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Fiberglass - 10% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method, Polarized Light Microscopy (PLM)

Project : 2344 6th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80579Date Collected:10/24/18Date Received:10/25/18Date Analyzed:10/30/18Date Reported:10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80579 - 11a Cust. #: SS-HM-06A Material: Blue Linoleum Location: Appearance: blue,fibrous,nonhomogenous Layer: 2 of 2	Asbestos Present: <b>YES</b> Chrysotile - 30%	Other - 70%
Lab ID #: 80579 - 12 Cust. #: SS-HM-06B Material: Mottled Linoleum Location: Appearance: brown,fibrous,nonhomogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Fiberglass - 10% Other - 80%
Lab ID #: 80579 - 12a Cust. #: SS-HM-06B Material: Blue Linoleum Location: Appearance: Layer: 2 of 2	Asbestos Present: NOT ANALYZED	
For I avered Samples, each component will be analyzed and report	ted concretely	

Robert T. Letarte Jr., Laboratory Director

Test Method, Polarized Light Microscopy (PLM)

Project : 2344 6th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80579Date Collected:10/24/18Date Received:10/25/18Date Analyzed:10/30/18Date Reported:10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80579 - 13 Cust. #: SS-HM-07A Material: Drywall Location: Appearance: white,fibrous,nonhomogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80579 - 13a Cust. #: SS-HM-07A Material: Joint Compound Location: Appearance: white,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80579 - 14 Cust. #: SS-HM-07B Material: Drywall Location: Appearance: white,fibrous,nonhomogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2344 6th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80579Date Collected:10/24/18Date Received:10/25/18Date Analyzed:10/30/18Date Reported:10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80579 - 14a Cust. #: SS-HM-07B Material: Joint Compound Location: Appearance: white,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80579 - 15 Cust. #: SS-HM-08A Material: Glazing Location: Appearance: beige,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 1% Other - 99%
Lab ID #: 80579 - 16 Cust. #: SS-HM-08B Material: Glazing Location: Appearance: beige,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 1% Other - 99%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2344 6th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80579Date Collected:10/24/18Date Received:10/25/18Date Analyzed:10/30/18Date Reported:10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80579 - 17 Cust. #: SS-HM-09A Material: Yellow 2x4 Ceiling Tile Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 80% Other - 20%
Lab ID #: 80579 - 18 Cust. #: SS-HM-09B Material: Yellow 2x4 Ceiling Tile Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 80% Other - 20%
Lab ID #: 80579 - 19 Cust. #: SS-HM-10A Material: Window Caulk Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2344 6th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-805/9Date Collected:10/24/18Date Received:10/25/18Date Analyzed:10/30/18Date Reported:10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80579 - 20 Cust. #: SS-HM-10B Material: Window Caulk Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80579 - 21 Cust. #: SS-HS-01A Material: Plaster Texture Location: Appearance: white,fibrous,homogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 5% Other - 95%
Lab ID #: 80579 - 21a Cust. #: SS-HS-01A Material: Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2344 6th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80579Date Collected:10/24/18Date Received:10/25/18Date Analyzed:10/30/18Date Reported:10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80579 - 21b Cust. #: SS-HS-01A Material: Plaster Base Coat Location:	Asbestos Present: <b>YES</b> Chrysotile - 1.25% POINT COUNT RESULT	Other - 98.75%
Appearance: brown,fibrous,homogenous Layer: 3 of 3	POINT COUNT RESULT	
Lab ID #: 80579 - 22 Cust. #: SS-HS-01B Material: Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80579 - 22a Cust. #: SS-HS-01B Material: Plaster Base Coat	Asbestos Present:	
Location: Appearance: Layer: 2 of 2	NOT ANALYZED	
For Lavered Samples, each component will be analyzed and report	ted separately.	

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2344 6th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80579Date Collected:10/24/18Date Received:10/25/18Date Analyzed:10/30/18Date Reported:10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80579 - 23 Cust. #: SS-HS-01C Material: Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80579 - 23a Cust. #: SS-HS-01C Material: Plaster Base Coat Location: Appearance: Layer: 2 of 2	Asbestos Present: NOT ANALYZED	
Lab ID #: 80579 - 24 Cust. #: SS-HS-01D Material: Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2344 6th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-805/9Date Collected:10/24/18Date Received:10/25/18Date Analyzed:10/30/18Date Reported:10/30/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80579 - 24a Cust. #: SS-HS-01D Material: Plaster Base Coat	Asbestos Present:	
Location: Appearance: Layer: 2 of 2	NOT ANALYZED	
Lab ID #: 80579 - 25 Cust. #: SS-HS-01E Material: Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80579 - 25a Cust. #: SS-HS-01E Material: Plaster Base Coat	Asbestos Present:	
Location: Appearance: Layer: 2 of 2	NOT ANALYZED	
For Lowerd Samples, each component will be applyzed and response	to d comparately	

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Phone	14 6th St. Report	<pre># .     DerSON: Aaron Paquet     Derson: Aaron Paquet     apaquet@redcedarconsulting.net     amples with a detection of &lt;5% ACM.     Point PCM</pre>	Paint     Soil       Other     Viable       EPA Level II	Volume Area Results								Received by: Received by: 0 CT 9 5 2018 1	Date:10/25/15/11/8	APEX RESEARCH
<b>JC.</b> 11054	E-mail: apexresea	148-8739 Contact PLM EPA 600, PC all hos: Bulk <sup>x</sup> Wine	Wipe	ation	Apphalt Shingle	Flashing	19. 19. 19. 19. 19. 19. 19. 19. 19. 19.	Varia Darie	Fiber Board	Black Subite 1242 UFT MC.	Matthe Lindenm	Skn	162478 Date:	
APEX Research, It	Red Cedar Cor PO Box 13216	City, St., Zip: Lansing, MI 48901 Phone: (888) 449-4566 Fax : (888) 4 <b>Turn Around Times:</b> (Circle One)	Rush 24 hour 48 hour 72 hour Other :	Lab ID # Client ID #	(H10~WH-SS !	2 55-Hm-013			a cs-through and	25 - HM - 054	1 55-41-06A	1 {	Date : 1074-8 Date : 10	Rev. 12/03 Work Forms: COC

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Phone: 734-449-9990 Fax: 734-449-9991	Survey:       low M-B         I:       3344       64h       34.         I:       3344       64h       34.         I:       3344       64h       34.         I:       3344       64h       34.         I:       Biosis       etection of <5% ACM.       Report         Point Count       PCM       Point Count       PCM         Air       Paint       Soil       BioSis       Other       Viable         OOB       EPA Level II	
, MI 48189 Phone: 7 mi.net Fax: 73	Date of Survey : 10-24   Project : 2344   Project # :	
LnC. 11054 Hi <sup>-</sup> Tech Drive, Whitmore Lake, MI 4 E-mail: apexresearch@chartermi.net	Date of       B) 448-8739     Date of       B) 448-8739     Project       Project     Project       One)     PIM EPA 600, PC all       Sbestos: Bulk     X wipe       Contact     Wipe       Lead:     Bulk       Mold:     Bulk       Mold:     Bulk       Material/Location     Bulk       Multicerial     N       Material/Location     Bulk       Multicerial     N       Multicerial     N       Material/Location     N       Multicerial     N       Multicerial     N       Multicerial     N       Multicerial     N       Multicerial     N       Material/Location     N       Multicerial     N       Multicerial     N       Multicerial     N       Material/Location     N       Material     N       Material     N       Material     N       Material     N       Material	
APEX Research, Inc. 11054 HF Tech Drive, Whitmore Lake, MI 48189 Phone: 734-449-9990 E-mail: apexresearch@chartermi.net Fax: 734-449-9991	Client Name: Red Cedar Consulting Address: PO Box 13216 City, St., Zip: Lansing, MI 48901 Phone: (888) 449-4566 Fax: (88 Turn Around Times: (Circle Rush 24 hour 48 hour 72 hour 48 hour 72 hour 48 hour 72 hour 6 SS-HMN-0714 Dr 14 SS-HMN-0714 Dr 14 SS-HMN-0714 Dr 17 SS-HMN-0714 Dr 18 SS-HMN-0714 Dr 17 SS-HMN-0714 Dr 18 SS-HMN-1004 Dr 18 SS-HMN-1004 Dr 17 SS-HMN-1004 Dr 18 SS-HMN-1004 Dr 18 SS-HMN-1004 Dr 18 SS-HMN-1004 Dr 19 SS-HMN-1007 Dr 10	Work Forms: COC

APEX APEX RESEARCH	Lab Use Only Log-in Report Report St ACM.	Viable	Results	OCT 2 5 2018
Phone: 734-449-9990 Fax: 734-449-9991	10-24-0 4644 St. Aaron Paquet apaquet@redcedarcon th PCM	Soil	Area	Received by: Date :
MI 48189 Phone: 73 ii.net Fax: 734		Air Paint BioSIS Othe B EPA Level II	Volume	
Inc. 11054 Hi Tech Drive, Whitmore Lake, MI 48189 Phone: 734-449-9990 E-mail: apexresearch@chartermi.net Fax: 734-449-9991	88) 448-8739 Bebestos: Bulk X	Lead: Bulk Wipe Mold: Bulk Tape TEM: AHERA 7400 Bulk/NOB	Material/Location Plasters	WS Relinquished by:
APEX Research, In	Client Name: Red Cedar Consulting Address: PO Box 13216 City, St., Zip: Lansing, MI 48901 Phone: (888) 449-4566 Fax: (8) <b>Turn Around Times:</b> (Circle Rush 24 hour	ra :-	Lab ID #Client ID # $23$ $55 - 45 - 01c$ $20$ $55 - 45 - 01c$ $35$ $55 - 45 - 01c$	Relinquished by: Com Received by: WS Date : Jor 24-18 Date : 10 24 - Rev. 12/03 Work Forms: COC

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Red Cedar Consulting

Tables

## Table 1 - Summary of Hazardous Materials, 2344 6th St., Muskegon Heights, Michigan

Hazardous Materials Description and Location				
Location	Material Description	Quantity		
Exterior	Automobile Tire	2		

Table 2 - Summary of Sample Descriptions and Asbestos Laboratory Results, 2344 6th St., Muskegon Heights, Michigan

Sample Number	Sample Description	Friable	Material Type	Material Classification	% Asbestos Laboratory Result	Sample Location	Approx. Material Quantity
SS-HM-01A	Shingle Roof	No	М	Category I	ND/ND/ND/ ND	House Roof	NA
SS-HM-01B	Shingle Roof	No	М	Category I	ND/ND/ND/ ND	House Roof	NA
SS-HM-02A	Chimney Flashing	No	М	Category II	20% CH	Chimney	15 sq. ft.
SS-HM-02B	Chimney Flashing	No	М	Category II	NA	Chimney	NA
SS-HM-03A	Vapor Barrier	Yes	М	Category II	ND	House Exterior	NA
SS-HM-03B	Vapor Barrier	Yes	М	Category II	ND	House Exterior	NA
SS-HM-04A	Fiberboard	Yes	М	Category II	ND	Front Entry	NA
SS-HM-04B	Fiberboard	Yes	М	Category II	ND	Front Entry	NA
SS-HM-05A	Black and White 12x12 ML Flooring	No	М	Category I	ND/ND/ND	Kitchen	NA
SS-HM-05B	Black and White 12x12 ML Flooring	No	М	Category I	ND/ND/ND	Kitchen	NA
SS-HM-06A	Mottled Linoleum	No	М	Category I	ND/30% CH	Bathroom	55 sq. ft.
SS-HM-06B	Mottled Linoleum	No	М	Category I	ND/NA	Bathroom	NA
SS-HM-07A	Drywall and Joint Compound	No	М	Category II	ND/ND	Kitchen	NA
SS-HM-07B	Drywall and Joint Compound	No	М	Category II	ND/ND	Living Room	NA
SS-HM-08A	Window Glazing	Yes	М	Category II	ND	West Bedroom Window	NA
SS-HM-08B	Window Glazing	Yes	М	Category II	ND	West Bedroom Window	NA
SS-HM-09A	Yellow 2x4 CT	Yes	М	Category II	ND	Kitchen	NA
SS-HM-09B	Yellow 2x4 CT	Yes	М	Category II	ND	Kitchen	NA
SS-HM-10A	Window Caulk	No	М	Category II	ND	Living Room W Window	NA
SS-HM-10B	Window Caulk	No	М	Category II	ND	Living Room S Window	NA
SS-HS-01A	Plaster	No	S	Category II	ND/ND/ 1.25% CH	Living Room Ceiling	3,227 sq. ft.
SS-HS-01B	Plaster	No	S	Category II	ND/NA	W Bedroom Ceiling	NA
SS-HS-01C	Plaster	No	S	Category II	ND/NA	Center Bedroom Wall	NA

#### Table 2 - Summary of Sample Descriptions and Asbestos Laboratory Results, 2344 6th St., Muskegon Heights, Michigan

Sample Number	Sample Description	Friable	Material Type	Material Classification	% Asbestos Laboratory Result	Sample Location	Approx. Material Quantity
SS-HS-01D	Plaster	No	S	Category II	ND/NA	Bathroom Wall	NA
SS-HS-01E	Plaster	No	S	Category II	ND/NA	Kitchen Wall	NA

#### Notes:

Material Types

Abbreviations

S PC	<ul> <li>Miscellaneous building material</li> <li>Thermal System Insulation</li> <li>Surfacing Material</li> <li>Point Count Analysis</li> <li>Chrysotile Asbestos</li> </ul>		<ul> <li>Not quantified</li> <li>Not applicable</li> <li>Not detected. Laboratory result is less than 1 % asbestos</li> <li>linear feet</li> <li>square feet</li> </ul>
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Asbestos Containing Material (ACM) is defined as any material containing more than 1 percent asbestos as determined utilizing Polarized Light Microscopy.

Asbestos Containing Material Description and Location						
Location	Material Description	Friable	Condition	Material Type	Approx. Quantity	
West Bedroom (1 register, 10 sq. ft.) Center Bedroom (1 register, 10 sq. ft.) East Bedroom (1 register, 10 sq. ft.) Living Room (1 register, 10 sq. ft.) Kitchen (1 register, 10 sq. ft.)	HVAC Duct Wrap	Yes	Fair	TSI	50 sq. ft.	

Notes:

#### Material Types

#### Abbreviations

- = Miscellaneous building material Μ
- TSI = Thermal System Insulation S = Surfacing Material

lin. ft. = linear feet sq. ft. = square feet

Exterior - Asbestos Containing Materials				
Location	<b>Material Description</b>		Friable	Approx. Quantity
Building Roof	Chimney Flashing		No	15 sq. ft.
		Total		15 sq. ft.
Interior - Asbestos Containing Materials				
Location	Material Description		Friable	Approx. Quantity
Bathroom	Mottled Linoleum		No	55 sq. ft.
		Total		55 sq. ft.
Interior - Asbestos Containing Materials				
Location	<b>Material Description</b>		Friable	Approx. Quantity
West Bedroom (1 register, 10 sq. ft.) Center Bedroom (1 register, 10 sq. ft.) East Bedroom (1 register, 10 sq. ft.) Living Room (1 register, 10 sq. ft.) Kitchen (1 register, 10 sq. ft.)	HVAC Duct Wrap		Yes	50 sq. ft.
		Total		50 sq. ft.
Interior - Asbestos Containing Materials				
Location	<b>Material Description</b>		Friable	Approx. Quantity
1 <sup>st</sup> Floor	Wall Plaster		No	2,448 sq. ft.
1 <sup>st</sup> Floor	Ceiling Plaster		No	779 sq. ft.
		Total		3,227 sq. ft.

## Table 4 - Summary of All Asbestos Containing Materials, 2344 6th St., Muskegon Heights, Michigan

### Notes:

Abbreviations

lin. ft. = linear feet sq. ft. = square feet

**Shaded/Bolded** = Friable ACM and any Category I and Category II non-friable ACM that has a high probability of becoming crumbled, pulverized, or reduced to powder by the demolition or renovation activities that must be properly abated prior to commencement of any demolition/renovation activities.

#### Table 4 - Summary of All Asbestos Containing Materials, 2344 6th St., Muskegon Heights, Michigan

Demolition/renovation activities completed with intact Category I non-friable ACM are regulated by OSHA and must be completed following the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

Please note that a Negative Pressure Enclosure must be utilized during abatement when Site Conditions Warrant. Examples of these conditions include the abatement of Plaster and Vermiculite insulation, HVAC Duct Wrap in Poor Condition, and Air-O-Cell/Mag Pipe Wrap. Conditions outside of these should be assessed on a case by case basis during the Asbestos Abatement Contractors site walk and Work Plan Preparation.



P.O. Box 13216 Lansing, MI 48901 Phone: 888.449.4566 Fax: 888.448.8739 www.redcedarconsulting.net

November 2, 2018

Mr. Tim Burgess Muskegon County Land Bank Land Bank Coordinator 173 E. Apple Avenue, Suite 104 Muskegon, MI 49442

#### RE: Asbestos Containing Material and Hazardous Materials Inspection 2345 Maffett St., Muskegon Heights, MI 49444 Parcel ID: 61-26-185-095-0012-00

Dear Mr. Burgess:

Red Cedar Consulting has completed an asbestos-containing material (ACM) and hazardous materials inspection at 2345 Maffett St., Muskegon Heights, Michigan (Subject Property). This inspection was completed at the request of the Muskegon County Land Bank to comply with the United States Environmental Protection Agency (USEPA) requirements for demolition and renovation set forth under the National Emissions Standards for Hazardous Air Pollutants (NESHAP, 40 CFR Part 61). This inspection was also completed to comply with the Occupational Safety and Health Administration (OSHA) Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

#### **SUBJECT PROPERTY**

The Subject Property is comprised of a .14 acre residential parcel which contains an approximate 953 square foot residential building (the Building) constructed in 1930. The Building was constructed on a concrete block basement with two aboveground floors. The exterior walls of the Building were finished with wood lap while the roof was sealed with asphalt shingles. The Building can be further divided into two apartments for inspection purposes.

### VISUAL INSPECTION AND SAMPLING

#### **Asbestos Containing Materials Inspection**

Mr. Aaron Paquet of Red Cedar Consulting (Red Cedar), an accredited State of Michigan/EPA Asbestos Building Inspector (Accreditation Number A30955) whom completed training per the Michigan Asbestos Workers Accreditation Act 440 completed an inspection of the Subject Property on October 25, 2018 for suspected asbestos containing building materials.

This inspection, and subsequent sample collection was completed in accordance with the USEPA Asbestos Hazard Emergency Response Act (AHERA) (40 CFR Part 763) assessment and sampling protocol.

During the completion of the inspection, each area of the Subject Property was visually inspected for asbestos containing building materials (ACBM). Following the completion of the visual inspection, Red Cedar staff identified each suspect area of friable and non-friable ACBM and sorted them into one of three homogenous categories for sampling purposes. AHERA defines friable as a material that when dry, may be crumbled, pulverized, or reduced to powder by hand pressure. A homogenous area is defined by OSHA as an area of surfacing, thermal system insulation (TSI) or miscellaneous material that is uniform in color and texture. Surfacing materials are most commonly found in sprayed-on, troweled-on or otherwise applied to surfaces, such as acoustical plaster on ceilings and fireproofing materials on structural members. TSI refers to materials applied to pipes, fittings, boilers, ductwork, or other components to prevent heat loss or gain, or condensation. Any material that does not fall under the surfacing or TSI category, such as floor tile, drywall, and acoustical ceiling tile are placed into the miscellaneous materials category.

Following the completion of the visual inspection, Red Cedar staff identified the following materials as suspect ACBM:

- Roofing Shingle
- Vapor Barrier
- Linoleum
- 12x12 Vinyl Floor Tile
- Drywall and Joint Compound
- 1x1 Ceiling Tile
- Window Glazing
- Rolled Roofing
- Plaster

Red Cedar staff collected thirty six samples of suspect ACBM separated into fifteen distinct homogenous groups for laboratory analysis. Samples were collected and submitted to APEX Research Inc. Laboratories (APEX) (Accreditation Number 102118-0) for laboratory analysis. Analysis was completed utilizing polarized light microscopy (PLM) which is the Environmental Protection Agency (EPA) approved method for analysis of bulk materials for asbestos. PLM analysis completed pursuant to method (EPA 600/M4-82-020) identifies asbestos fiber bundles by the visual properties displayed when the sample is treated with various dispersion staining liquids. The laboratory report completed following the sample analysis indicates if asbestos is present, and at what percentage along with a description and percentage of other fibrous and non-fibrous materials and sample color. Chain-of-custody documentation was followed from sample collection through shipping and receiving of the samples at the designated laboratory. The documentation assures that samples will meet the quality assurance/quality control measures defined by AHERA. The laboratory analytical report prepared by APEX for the thirty six samples is included as Attachment A.

#### **Hazardous Materials Inspection**

On October 25, 2018 the Subject Property was also inspected for the presence of hazardous materials which include but are not limited to polychlorinated biphenyls (PCBs) and potential mercury containing equipment and any items or containers that may contain or be classified as a hazardous or regulated material. Each material, if identified, was documented along with the approximate location. Any materials identified as hazardous are included in Table 1.

### **INSPECTION RESULTS AND RECOMMENDATIONS**

During the completion of the asbestos inspection, thirty six samples of suspect ACM were collected and are documented in Table 2 along with the Red Cedar sample number, description, friability, material type, ACM classification, sample location, material quantity and laboratory analytical results.

ACM, as defined by the USEPA NESHAP is "any material containing more than 1 percent asbestos as determined using the method specified in appendix E, subpart E, 40 CFR part 763 Section 1, Polarized Light Microscopy".

Friable ACM is defined by NESHAP as any material containing more than 1 percent asbestos that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. Friable ACM is a concern due the ease of unintentionally disturbing the ACM which may result in "visible emissions" which is known as a Fiber Release Episode.

Non-friable asbestos-containing material is defined as "material containing more than 1 percent asbestos that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. Non-friable ACM's are separated into Category I and Category II ACM. Category I ACM is any asbestos containing packing's, gaskets, resilient floor coverings (vinyl floor tile and linoleum are examples of these) and asphalt roofing products. Category II ACM is stated by NESHAP as any material excluding Category I non-friable ACM such as drywall, plaster or fiberboard insulation.

### **Presumed Asbestos Containing Material**

Presumed Asbestos Containing Materials (PACM) are suspect surfacing, TSI and miscellaneous materials found in buildings constructed prior to 1980 which are classified as and due to the age of the structure, are assumed to be ACM and do not require sample collection and analysis. OSHA dictates that PACM may be "rebutted" following a complete inspection pursuant to AHERA protocol.

No PACM was identified during the completion of this inspection. All suspect materials identified were sampled and analyzed for ACM.

Table 3 lists the location, material description, friability, condition, material type (surfacing, thermal or miscellaneous) and approximate quantity of all PACM documented at the Subject Property.

Table 4 provides a summary all ACM documented at the Subject Property which includes the material location, description, and approximate quantity.

#### Friable ACM's

A window glazing sample collected from a window in the basement was found to contain up to 5% asbestos following analysis. The assessment to quantify the extent of this material identified six windows at the following locations that would fall into the same homogenous group. The locations of the windows are listed below:

• Basement (6 windows 32" wide x 14" tall)

#### **Category I ACM**

One type of resilient floor covering (12"x12" Burgundy Layered Vinyl Tile) located within the 2<sup>nd</sup> Floor Bathroom was found to contain up to 30% Chrysotile asbestos. The assessment to quantify the extent of this material identified approximately 35 sq. ft. of this material within the Building.

#### **Category II ACM**

No Category II non-friable ACM was identified during the completion of this inspection.

#### **RECOMMENDATIONS**

#### **Asbestos Containing Materials**

Friable asbestos containing window glazing was identified on six windows throughout the Building. The locations of these windows that should be abated prior to demolition/renovation activities are listed below:

• Basement (6 windows 32" wide x 14" tall)

Please note: Other different sized windows are located throughout the Building but these windows were assessed and found to be constructed either without window glazing or were sampled and found to not contain asbestos and therefore are not required to be removed.

The Category I resilient floor coverings (12"x12" Burgundy Layered Vinyl Tile) are non-friable ACM's that may be left in place as long as the demolition/renovation activities are completed following the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

Please note: The location of samples obtained during this inspection were in a random fashion and areas that were not identified during this inspection may be damaged or have become damaged since the inspection was completed. If Category I or Category II friable materials are discovered prior to or during the demolition/renovation process, these materials must be abated prior to commencement of any demolition/renovation activities at the Subject Property.

#### **Hazardous Materials**

Hazardous Materials identified at the Subject Property and documented in Table 1 which require proper removal and disposal consist of the following items:

- Smoke Detector (2)
- Thermostat (1)
- Automobile Tire (4)

## **REGULATORY REQUIREMENTS**

A Notification of Intent to Renovate/Demolish form must be filed with the Michigan Department of Environmental Quality- Air Quality Division at least 10 working days prior to any renovation or demolition activities at a site.

The Notification of Intent to Renovate/Demolish form must also be completed and submitted to the MIOSHA-Asbestos Program whenever demolition, encapsulation and/or renovation activities at a site involving greater than ten lineal feet and/or fifteen square feet of ACM will be completed.

Regulated asbestos containing materials per NESHAP (40 CFR Part 61) which falls into any of the following categories are ACM's that must be removed prior to any renovation/demolition activities at the Subject Property.

- Friable asbestos material.
- Category I non-friable ACM that has become friable.
- Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading.
- Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of renovation or demolition operations.

Asbestos abatement should only be performed by a certified asbestos abatement contractor licensed to complete abatement work. The contractor must also follow the standards and requirements set forth per the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) and the USEPA NESHAP (40 CFR Part 61).

Additional information regarding the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) and the USEPA NESHAP (40 CFR Part 61) can be obtained by contacting the associated agency below.

NESHAP Asbestos Program Department of Environmental Quality Phone: 517-284-6777 MIOSHA-CSHD-Asbestos Program State of Michigan Phone: 517-284-7680 Email: asbestos@michigan.gov

### **DISCLAIMER**

Red Cedar Consulting performed destructive testing methods in an attempt to access and inspect all areas of the Building. Unfortunately, due to the age of construction along with multiple additions/renovations that may have been completed on the Building, additional inspections may be required if suspect ACM material not documented within this report is encountered during renovation/demolition activities.

This report was prepared at the request and for exclusive use by the Muskegon County Land Bank and may not be reproduced or sold without written permission from Red Cedar Consulting.

We appreciate the opportunity to provide the requested services. Please contact us at (888) 449-4566 with any questions or concerns.

Sincerely, Red Cedar Consulting

Raion Poquet

Aaron Paquet Michigan/EPA Certified Asbestos Building Inspector (A30955)

Red Cedar Consulting

# Attachment 1

APEX Research Laboratory Analytical Results

Test Method, Polarized Light Microscopy (PLM)

Project : 2345 Maffett St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80633Date Collected:10/25/18Date Received:10/29/18Date Analyzed:11/01/18Date Reported:11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80633 - 01 Cust. #: MS-HM-01A Material: Red Shingle Location: Appearance: black,fibrous,homogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 20% Other - 80%
Lab ID #: 80633 - 01a Cust. #: MS-HM-01A Material: Shingle Location: Appearance: black,fibrous,homogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 20% Other - 80%
Lab ID #: 80633 - 01b Cust. #: MS-HM-01A Material: Tar Paper Material Location: Appearance: black,fibrous,nonhomogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 20% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2345 Maffett St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80633         Date Collected:       10/25/18         Date Received:       10/29/18         Date Analyzed:       11/01/18         Date Reported:       11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80633 - 02 Cust. #: MS-HM-01B Material: Red Shingle Location: Appearance: black,fibrous,nonhomogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 20% Other - 80%
Lab ID #: 80633 - 02 Cust. #: MS-HM-01B Material: Shingle Location: Appearance: black,fibrous,nonhomogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 20% Other - 80%
Lab ID #: 80633 - 02a Cust. #: MS-HM-01B Material: Tar Paper Material Location: Appearance: black,fibrous,homogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 35% Other - 65%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method, Polarized Light Microscopy (PLM)

Project : 2345 Maffett St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80633         Date Collected:       10/25/18         Date Received:       10/29/18         Date Analyzed:       11/01/18         Date Reported:       11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80633 - 03 Cust. #: MS-HM-02A Material: Black Shingle Location: Appearance: black,fibrous,homogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%
Lab ID #: 80633 - 03a Cust. #: MS-HM-02A Material: Shingle Location: Appearance: black,fibrous,homogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%
Lab ID #: 80633 - 03b Cust. #: MS-HM-02A Material: Tar Paper Location: Appearance: black,fibrous,homogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 35% Other - 65%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2345 Maffett St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80633Date Collected:10/25/18Date Received:10/29/18Date Analyzed:11/01/18Date Reported:11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80633 - 04 Cust. #: MS-HM-02B Material: Black Shingle Location: Appearance: black,fibrous,homogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%
Lab ID #: 80633 - 04a Cust. #: MS-HM-02B Material: Shingle Location: Appearance: black,fibrous,homogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%
Lab ID #: 80633 - 04b Cust. #: MS-HM-02B Material: Tar Paper Location: Appearance: black,fibrous,homogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 35% Other - 65%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2345 Maffett St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80633Date Collected:10/25/18Date Received:10/29/18Date Analyzed:11/01/18Date Reported:11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80633 - 05 Cust. #: MS-HM-03A Material: Vapor Barrier Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 95% Other - 5%
Lab ID #: 80633 - 06 Cust. #: MS-HM-03B Material: Vapor Barrier Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 95% Other - 5%
Lab ID #: 80633 - 07 Cust. #: MS-HM-04A Material: Brown 2" Square Linoleum Location: Appearance: grey,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Fiberglass - 10% Other - 70%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2345 Maffett St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80633Date Collected:10/25/18Date Received:10/29/18Date Analyzed:11/01/18Date Reported:11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80633 - 08 Cust. #: MS-HM-04B Material: Brown 2" Square Linoleum Location: Appearance: grey,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Fiberglass - 10% Other - 70%
Lab ID #: 80633 - 09 Cust. #: MS-HM-05A Material: 12x12 Burgundy VFT Location: Appearance: grey,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80633 - 09a Cust. #: MS-HM-05A Material: Mastic Location: Appearance: clear,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2345 Maffett St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80633Date Collected:10/25/18Date Received:10/29/18Date Analyzed:11/01/18Date Reported:11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80633 - 10 Cust. #: MS-HM-05B Material: 12x12 Burgundy VFT Location: Appearance: grey,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80633 - 10a Cust. #: MS-HM-05B Material: Mastic Location: Appearance: clear,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80633 - 11 Cust. #: MS-HM-06A Material: Drywall Location: Appearance: white,fibrous,nonhomogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2345 Maffett St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80633Date Collected:10/25/18Date Received:10/29/18Date Analyzed:11/01/18Date Reported:11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80633 - 11a Cust. #: MS-HM-06A Material: Joint Compound Location: Appearance: white,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80633 - 12 Cust. #: MS-HM-06B Material: Drywall Location: Appearance: white,fibrous,nonhomogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80633 - 12a Cust. #: MS-HM-06B Material: Joint Compound Location: Appearance: white,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method, Polarized Light Microscopy (PLM)

Project : 2345 Maffett St.



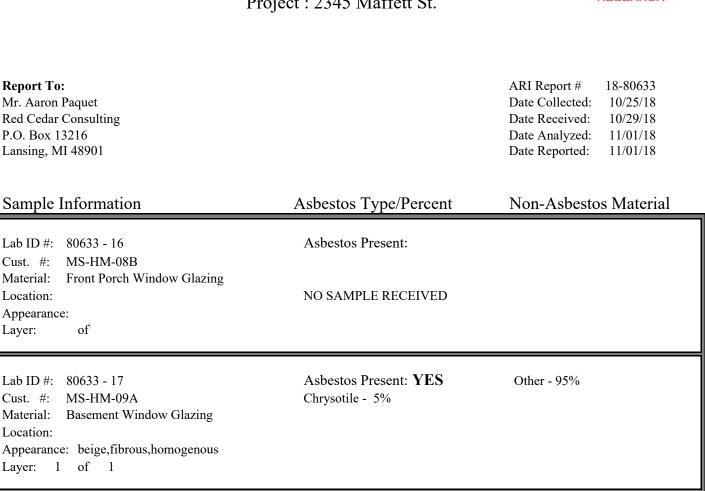
Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80633Date Collected:10/25/18Date Received:10/29/18Date Analyzed:11/01/18Date Reported:11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80633 - 13 Cust. #: MS-HM-07A Material: 1x1 White Smooth Ceiling Tile Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 90% Other - 10%
Lab ID #: 80633 - 14 Cust. #: MS-HM-07B Material: 1x1 White Smooth Ceiling Tile Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 90% Other - 10%
Lab ID #: 80633 - 15 Cust. #: MS-HM-08A Material: Front Porch Window Glazing Location: Appearance: beige,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method, Polarized Light Microscopy (PLM)

Project : 2345 Maffett St.



Lab ID #: 80633 - 18	Asbestos Present:
Cust. #: MS-HM-09B Material: Basement Window Glazing	
Location: Appearance:	NOT ANALYZED
Layer: of	

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the US Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.



**Report To:** 

Lab ID #:

Cust. #:

Material:

Location: Appearance: Layer:

Lab ID #:

Cust. #:

Material: Location:

Layer:

Mr. Aaron Paquet

P.O. Box 13216

Lansing, MI 48901

Red Cedar Consulting

Sample Information

80633 - 16

of

of

1

80633 - 17

MS-HM-09A

1

MS-HM-08B

Test Method, Polarized Light Microscopy (PLM)

Project : 2345 Maffett St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80633Date Collected:10/25/18Date Received:10/29/18Date Analyzed:11/01/18Date Reported:11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80633 - 19 Cust. #: MS-HM-10A Material: 12x12 Blue/White Layered VFT Location: Appearance: blue,nonfibrous,homogenous Layer: 1 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80633 - 19a Cust. #: MS-HM-10A Material: Mastic Location: Appearance: clear,nonfibrous,homogenous Layer: 2 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80633 - 19b Cust. #: MS-HM-10A Material: Linoleum Location: Appearance: yellow,fibrous,nonhomogenous Layer: 3 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Fiberglass - 10% Other - 70%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method, Polarized Light Microscopy (PLM)

Project : 2345 Maffett St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80633Date Collected:10/25/18Date Received:10/29/18Date Analyzed:11/01/18Date Reported:11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80633 - 19c Cust. #: MS-HM-10A Material: Linoleum Location: Appearance: yellow,fibrous,nonhomogenous Layer: 4 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Fiberglass - 10% Other - 70%
Lab ID #: 80633 - 20 Cust. #: MS-HM-10B Material: 12x12 Blue/White Layered VFT Location: Appearance: blue,nonfibrous,homogenous Layer: 1 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80633 - 20a Cust. #: MS-HM-10B Material: Mastic Location: Appearance: clear,nonfibrous,homogenous Layer: 2 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method, Polarized Light Microscopy (PLM)

Project : 2345 Maffett St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80633Date Collected:10/25/18Date Received:10/29/18Date Analyzed:11/01/18Date Reported:11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80633 - 20b Cust. #: MS-HM-10B Material: Linoleum Location: Appearance: yellow,fibrous,nonhomogenous Layer: 3 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Fiberglass - 10% Other - 70%
Lab ID #: 80633 - 20c Cust. #: MS-HM-10B Material: Linoleum Location: Appearance: yellow,fibrous,nonhomogenous Layer: 4 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Fiberglass - 10% Other - 70%
Lab ID #: 80633 - 21 Cust. #: MS-HM-11A Material: 12x12 Burgundy Layered VFT Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Fiberglass - 10% Other - 70%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method, Polarized Light Microscopy (PLM)

Project : 2345 Maffett St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report # 18-80633 Date Collected: 10/25/18 Date Received: 10/29/18 Date Analyzed: 11/01/18 Date Reported: 11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80633 - 21a Cust. #: MS-HM-11A Material: Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 2 of 3	Asbestos Present: <b>YES</b> Chrysotile - 30%	Other - 70%
Lab ID #: 80633 - 21b Cust. #: MS-HM-11A Material: Flooring Location: Appearance: beige,fibrous,nonhomogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 35% Other - 65%
Lab ID #: 80633 - 22 Cust. #: MS-HM-11B Material: 12x12 Burgundy Layered VFT Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Fiberglass - 10% Other - 70%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

### **Certificate of Laboratory Analysis** Test Method, Polarized Light Microscopy (PLM)

Project : 2345 Maffett St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80633Date Collected:10/25/18Date Received:10/29/18Date Analyzed:11/01/18Date Reported:11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80633 - 22a Cust. #: MS-HM-11B Material: Linoleum	Asbestos Present:	
Location: Appearance: Layer: 2 of 3	NOT ANALYZED	
Lab ID #: 80633 - 22b Cust. #: MS-HM-11B Material: Flooring Location: Appearance: beige,fibrous,nonhomogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 35% Other - 65%
Lab ID #: 80633 - 23 Cust. #: MS-HM-12A Material: House Window Glazing Location: Appearance: beige,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2345 Maffett St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80633Date Collected:10/25/18Date Received:10/29/18Date Analyzed:11/01/18Date Reported:11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80633 - 24 Cust. #: MS-HM-12B Material: House Window Glazing Location: Appearance: beige,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80633 - 25 Cust. #: MS-HM-13A Material: Rolled Roofing Location: Appearance: black,fibrous,nonhomogenous Layer: 1 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 25% Other - 75%
Lab ID #: 80633 - 25a Cust. #: MS-HM-13A Material: Shingle Location: Appearance: black,fibrous,homogenous Layer: 2 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 20% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2345 Maffett St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80633         Date Collected:       10/25/18         Date Received:       10/29/18         Date Analyzed:       11/01/18         Date Reported:       11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80633 - 25b Cust. #: MS-HM-13A Material: Shingle Location: Appearance: black,fibrous,homogenous Layer: 3 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 20% Other - 80%
Lab ID #: 80633 - 25c Cust. #: MS-HM-13A Material: Tar Paper Location: Appearance: black,fibrous,homogenous Layer: 4 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 20% Other - 80%
Lab ID #: 80633 - 26 Cust. #: MS-HM-13B Material: Rolled Roofing Location: Appearance: black,fibrous,nonhomogenous Layer: 1 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 25% Other - 75%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2345 Maffett St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80633Date Collected:10/25/18Date Received:10/29/18Date Analyzed:11/01/18Date Reported:11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80633 - 26a Cust. #: MS-HM-13B Material: Shingle Location: Appearance: black,fibrous,homogenous Layer: 2 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 20% Other - 80%
Lab ID #: 80633 - 26b Cust. #: MS-HM-13B Material: Shingle Location: Appearance: black,fibrous,homogenous Layer: 3 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 20% Other - 80%
Lab ID #: 80633 - 26c Cust. #: MS-HM-13B Material: Tar Paper Location: Appearance: black,fibrous,homogenous Layer: 4 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 20% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2345 Maffett St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80633Date Collected:10/25/18Date Received:10/29/18Date Analyzed:11/01/18Date Reported:11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80633 - 27 Cust. #: MS-HS-01A Material: Grey Fleck Plaster Finish Coat Location: Appearance: green,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80633 - 27a Cust. #: MS-HS-01A Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Vermiculite - 5% Other - 93%
Lab ID #: 80633 - 28 Cust. #: MS-HS-01B Material: Grey Fleck Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2345 Maffett St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80633Date Collected:10/25/18Date Received:10/29/18Date Analyzed:11/01/18Date Reported:11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80633 - 28a Cust. #: MS-HS-01B Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Vermiculite - 5% Other - 93%
Lab ID #: 80633 - 29 Cust. #: MS-HS-01C Material: Grey Fleck Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80633 - 29a Cust. #: MS-HS-01C Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Vermiculite - 5% Other - 93%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2345 Maffett St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80633Date Collected:10/25/18Date Received:10/29/18Date Analyzed:11/01/18Date Reported:11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80633 - 30 Cust. #: MS-HS-01D Material: Grey Fleck Plaster Texture Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80633 - 30a Cust. #: MS-HS-01D Material: Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80633 - 30b Cust. #: MS-HS-01D Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Vermiculite - 5% Other - 93%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2345 Maffett St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80633Date Collected:10/25/18Date Received:10/29/18Date Analyzed:11/01/18Date Reported:11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80633 - 31 Cust. #: MS-HS-01E Material: Grey Fleck Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80633 - 31a Cust. #: MS-HS-01E Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Vermiculite - 5% Other - 93%
Lab ID #: 80633 - 32 Cust. #: MS-HS-02A Material: Sand Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2345 Maffett St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80633Date Collected:10/25/18Date Received:10/29/18Date Analyzed:11/01/18Date Reported:11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80633 - 32a Cust. #: MS-HS-02A Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Other - 98%
Lab ID #: 80633 - 33 Cust. #: MS-HS-02B Material: Sand PlasterTexture Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80633 - 33a Cust. #: MS-HS-02B Material: Plaster Finish Coat Location: Appearance: grey,nonfibrous,homogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method, Polarized Light Microscopy (PLM)

Project : 2345 Maffett St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80633         Date Collected:       10/25/18         Date Received:       10/29/18         Date Analyzed:       11/01/18         Date Reported:       11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80633 - 33b Cust. #: MS-HS-02B Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Other - 98%
Lab ID #: 80633 - 34 Cust. #: MS-HS-02C Material: Sand Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80633 - 34a Cust. #: MS-HS-02C Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Other - 98%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2345 Maffett St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80633Date Collected:10/25/18Date Received:10/29/18Date Analyzed:11/01/18Date Reported:11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80633 - 35 Cust. #: MS-HS-02D Material: Sand Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80633 - 35a Cust. #: MS-HS-02D Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Other - 98%
Lab ID #: 80633 - 36 Cust. #: MS-HS-02E Material: Sand Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

### **Certificate of Laboratory Analysis** Test Method, Polarized Light Microscopy (PLM)

Project : 2345 Maffett St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80633Date Collected:10/25/18Date Received:10/29/18Date Analyzed:11/01/18Date Reported:11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80633 - 36a Cust. #: MS-HS-02E Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Other - 98%
Lab ID #: Cust. #: Material: Location: Appearance: Layer: of	Asbestos Present:	
Lab ID #: Cust. #: Material: Location: Appearance: Layer: of	Asbestos Present:	

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



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APEX Research, Inc. 11054 Hi Tech Drive, Whitmore Lake, MI 48189 Phone: 734-449-9990	Phone: 734-449-9990
E-mail: apexresearch@chartermi.net	Fax: 734-449-9991
Client Name: Red Cedar Consulting Date of Survey :	10.25+10.26.18 Lab Use Only Log-In
PO Box 13216	praffect At
Zip: Lansing, MI 48901	
149-4566 Fax: (888) 448-8739 Contact	Aaron Paguet
Around Times: (Circle One) PLM EPA 600, PC all	apaquet@redcedarconsulting.net samples with a detection of <5% ACM.
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Client Name: Red Cedar Consulting Date of Survey : /0.25x/0-24-	کم	ul-5
Address: PO BOX 13216 Project : $2345M_{\odot}$	ellet It Report	oort
City, St., Zip: Lansing, MI 48901 Project #:	10	
449-4566 Fax: (888) 448-8739	Aaron Paquet	
Turn Around Times: (Circle One) PLM EPA 600, PC all samples with a detection of <5% ACM.	<pre>let@redcedarconsulting.i detection of &lt;5% ACM.</pre>	.net
Asbestos: Bulk X Wipe Point Count	PCM	
Kush 24 hour Lead: Bulk Wipe Air Air Paint	nt Soil	
48 hour (72 hour) Mold: Bulk Tane BioSIS	Other Viable	
AHERA 7400 Bulk/NOB		
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Red Cedar Consulting       Date of Survey : 1234         PO Box 13216       Project : 2345 Michael         Po Box 13216       Project : 2345 Michael         Lansing, MI 48901       Project : 2345 Michael         49-4566       Fax : (888) 448-8739       Project # :         49-4566       Fax : (888) 448-8739       Project # :         Ashestos: Bulk       Wipe       Point Comt       PCM         Ashestos: Bulk       Wipe       Point Comt       PCM         Modd: Bulk       Wipe       Air       Paint       Soil         Mold: Bulk       Tape       BioSIS       Other       Viable         TIP       It samples       Tape       BioSIS       Other       Viable         MS-HS-O2       Material/Location       Volume       Area       Re	Red Cedar Consulting       Date of Survey :	Red Cedar Consulting       Date of Survey :	Red Cedar Consulting     Date of Survey : 25.0.2.0.4       Problem     Project : 23.45       Imaning, MI 49901     Project : 23.45       Imaning, MI 48901     Promoter PCM       Imaning, MI 48901     Promoter PCM       Imaning, MI 48901     Paint       Imaning, MI 48901     Paint <th>Research, Inc. 11054 Hi Tech Drive, Whim B-mail: apexresearch</th> <th>ore Lake, MI 48189 Phone: 73 Ochartermi.net Fax: 734</th> <th>•</th> <th>APEX ESEARCH</th>	Research, Inc. 11054 Hi Tech Drive, Whim B-mail: apexresearch	ore Lake, MI 48189 Phone: 73 Ochartermi.net Fax: 734	•	APEX ESEARCH
Lansing, MI 48901         49-4566       Fax: (888) 448-8739         49-4566       Fax: (888) 448-8739         und TimeS: (Circle One)       PLM EPA         Asbestos: Bulk       x         Asbestos <td>Iansing, MI 48901         49-4566       Fax: (888) 448-8739         49-4566       Fax: (888) 448-8739         und Times: (Circle One)       PLM EPA         Asbestos: Bulk       x         Asbestos<td>Lansing, MI 48901         49-4566       Fax: (888) 448-8739         49-4566       Fax: (888) 448-8739         und Times: (Circle One)       PLM EPA         Asbestos: Bulk       x         Asbestos: Bulk       x         Itend:       Bulk         Mold:       Bulk</td><td>idamaling, MI 48901     Project # :       49-456     Fax : (868) 440-8739     Contact Person: Aaron Faquet       49-456     Fax : (868) 440-8739     Contact Person: Aaron Faquet       100     Pill mest; (Cricle One)     PIM Paint     Project # :       101     Times; (Cricle One)     PIM Paint     Point Count     PCM       101     Lead: Bulk     Wipe     Air     Paint     Soil       101     Bulk     Tape     Bulk     Pint Count     PCM       101     Bulk     Tape     Bulk     Note     Viable       101     Bulk     Tape     BulkNOB     EPA Level II       101     Mode:     Bulk     Viable     Viable       101     Mode:     Bulk     Dime     Area       101     Mode:     Bulk     Viable     Viable       101     Mode:     Bulk     Dime     Area       101     Mode:     Dime     Area     Mode:       102     Do     Dime     Area     Mode:     Mode:       102     Do     Dime     Area     Mode:     Mode:       102     Dime     Dime     Area     Mode:     Mode:       102     Dime     Dime     Dime     Area     Mo</td><td>Red Cedar Consulting PO Box 13216</td><td>te of Survey : <u>^-2</u> oject : <u>2345 Ma</u></td><td><i>H</i></td><td>Lab Use Only Log-In Report</td></td>	Iansing, MI 48901         49-4566       Fax: (888) 448-8739         49-4566       Fax: (888) 448-8739         und Times: (Circle One)       PLM EPA         Asbestos: Bulk       x         Asbestos <td>Lansing, MI 48901         49-4566       Fax: (888) 448-8739         49-4566       Fax: (888) 448-8739         und Times: (Circle One)       PLM EPA         Asbestos: Bulk       x         Asbestos: Bulk       x         Itend:       Bulk         Mold:       Bulk</td> <td>idamaling, MI 48901     Project # :       49-456     Fax : (868) 440-8739     Contact Person: Aaron Faquet       49-456     Fax : (868) 440-8739     Contact Person: Aaron Faquet       100     Pill mest; (Cricle One)     PIM Paint     Project # :       101     Times; (Cricle One)     PIM Paint     Point Count     PCM       101     Lead: Bulk     Wipe     Air     Paint     Soil       101     Bulk     Tape     Bulk     Pint Count     PCM       101     Bulk     Tape     Bulk     Note     Viable       101     Bulk     Tape     BulkNOB     EPA Level II       101     Mode:     Bulk     Viable     Viable       101     Mode:     Bulk     Dime     Area       101     Mode:     Bulk     Viable     Viable       101     Mode:     Bulk     Dime     Area       101     Mode:     Dime     Area     Mode:       102     Do     Dime     Area     Mode:     Mode:       102     Do     Dime     Area     Mode:     Mode:       102     Dime     Dime     Area     Mode:     Mode:       102     Dime     Dime     Dime     Area     Mo</td> <td>Red Cedar Consulting PO Box 13216</td> <td>te of Survey : <u>^-2</u> oject : <u>2345 Ma</u></td> <td><i>H</i></td> <td>Lab Use Only Log-In Report</td>	Lansing, MI 48901         49-4566       Fax: (888) 448-8739         49-4566       Fax: (888) 448-8739         und Times: (Circle One)       PLM EPA         Asbestos: Bulk       x         Asbestos: Bulk       x         Itend:       Bulk         Mold:       Bulk	idamaling, MI 48901     Project # :       49-456     Fax : (868) 440-8739     Contact Person: Aaron Faquet       49-456     Fax : (868) 440-8739     Contact Person: Aaron Faquet       100     Pill mest; (Cricle One)     PIM Paint     Project # :       101     Times; (Cricle One)     PIM Paint     Point Count     PCM       101     Lead: Bulk     Wipe     Air     Paint     Soil       101     Bulk     Tape     Bulk     Pint Count     PCM       101     Bulk     Tape     Bulk     Note     Viable       101     Bulk     Tape     BulkNOB     EPA Level II       101     Mode:     Bulk     Viable     Viable       101     Mode:     Bulk     Dime     Area       101     Mode:     Bulk     Viable     Viable       101     Mode:     Bulk     Dime     Area       101     Mode:     Dime     Area     Mode:       102     Do     Dime     Area     Mode:     Mode:       102     Do     Dime     Area     Mode:     Mode:       102     Dime     Dime     Area     Mode:     Mode:       102     Dime     Dime     Dime     Area     Mo	Red Cedar Consulting PO Box 13216	te of Survey : <u>^-2</u> oject : <u>2345 Ma</u>	<i>H</i>	Lab Use Only Log-In Report
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Red Cedar Consulting

Tables

#### Table 1 - Summary of Hazardous Materials, 2345 Maffett St., Muskegon Heights, Michigan

Hazardous Materials Description and Location					
Location Material Description					
Front Porch	Automobile Tire				
2 <sup>nd</sup> Floor Hallway	llway Thermostat				
2 <sup>nd</sup> Floor Hallway	Smoke Detector				
2 <sup>nd</sup> Floor W Bedroom	2 <sup>nd</sup> Floor W Bedroom Smoke Detector				

Table 2 - Summary of Sample Descriptions and Asbestos Laboratory Results, 2345 Maffett St., Muskegon Heights, Michigan

Sample Number	Sample Description	Friable	Material Type	Material Classification	% Asbestos Laboratory Result	Sample Location	Approx. Material Quantity
MS-HM-01A	Red Shingle	No	М	Category I	ND/ND/ND	House Roof	NA
MS-HM-01B	Red Shingle	No	М	Category I	ND/ND/ND	House Roof	NA
MS-HM-02A	Black Shingle	No	М	Category I	ND/ND/ND	House Roof	NA
MS-HM-02B	Black Shingle	No	М	Category I	ND/ND/ND	House Roof	NA
MS-HM-03A	Vapor Barrier	Yes	М	Category II	ND	House Exterior	NA
MS-HM-03B	Vapor Barrier	Yes	М	Category II	ND	House Exterior	NA
MS-HM-04A	Brown 2" Square Linoleum	No	М	Category I	ND	Kitchen	NA
MS-HM-04B	Brown 2" Square Linoleum	No	М	Category I	ND	Kitchen	NA
MS-HM-05A	12x12 Burgundy VFT	No	М	Category I	ND/ND	Bathroom	NA
MS-HM-05B	12x12 Burgundy VFT	No	М	Category I	ND/ND	Bathroom	NA
MS-HM-06A	Drywall and Joint Compound	No	М	Category II	ND/ND	Living Room Wall	NA
MS-HM-06B	Drywall and Joint Compound	No	М	Category II	ND/ND	W Bedroom Wall	NA
MS-HM-07A	1x1 White Smooth Ceiling Tile	Yes	М	Category II	ND	Living Room	NA
MS-HM-07B	1x1 White Smooth Ceiling Tile	Yes	М	Category II	ND	Living Room	NA
MS-HM-08A	Front Porch Window Glazing	Yes	М	Category II	ND	Front Porch Window	NA
MS-HM-08B	Front Porch Window Glazing	Yes	М	Category II	ND	Front Porch Window	NA
MS-HM-09A	Basement Window Glazing	Yes	М	Category II	5%CH	Basement Window	6 Windows
MS-HM-09B	Basement Window Glazing	Yes	М	Category II	NA	Basement Window	NA
MS-HM-10A	12x12 Blue/White Layered VFT	No	М	Category I	ND/ND/ND/ND	2 <sup>nd</sup> Floor Kitchen	NA
MS-HM-10B	12x12 Blue/White Layered VFT	No	М	Category I	ND/ND/ND/ND	2 <sup>nd</sup> Floor Kitchen	NA
MS-HM-11A	12x12 Burgundy Layered VFT	No	М	Category I	ND/30%CH/ND	2 <sup>nd</sup> Floor Bathroom	35 sq. ft.
MS-HM-11B	12x12 Burgundy Layered VFT	No	М	Category I	ND/NA/ND	2 <sup>nd</sup> Floor Bathroom	NA
MS-HM-12A	House Window Glazing	Yes	М	Category II	ND	W Bedroom Window	NA
MS-HM-12B	House Window Glazing	Yes	М	Category II	ND	Kitchen Window	NA
MS-HM-13A	Rolled Roofing	No	М	Category I	ND/ND/ND/ND	House Roof	NA
MS-HM-13B	Rolled Roofing	No	М	Category I	ND/ND/ND/ND	House Roof	NA
MS-HS-01A	Grey Fleck Plaster	No	S	Category II	ND/ND	Living Room Ceiling	NA

Table 2 - Summary of Sample Descriptions and Asbestos Laboratory Results, 2345 Maffett St., Muskegon Heights, Michigan

Sample Number	Sample Description	Friable	Material Type	Material Classification	% Asbestos Laboratory Result	Sample Location	Approx. Material Quantity
MS-HS-01B	Grey Fleck Plaster	No	S	Category II	ND/ND	N Bedroom Ceiling	NA
MS-HS-01C	Grey Fleck Plaster	No	S	Category II	ND/ND	Living Room Wall	NA
MS-HS-01D	Grey Fleck Plaster	No	S	Category II	ND/ND/ND	2 <sup>nd</sup> Floor Stairwell Ceiling	NA
MS-HS-01E	Grey Fleck Plaster	No	S	Category II	ND/ND	2 <sup>nd</sup> Floor Hallway Wall	NA
MS-HS-02A	Sand Plaster	No	S	Category II	ND/ND	Kitchen Wall	NA
MS-HS-02B	Sand Plaster	No	S	Category II	ND/ND/ND	N Bedroom Wall	NA
MS-HS-02C	Sand Plaster	No	S	Category II	ND/ND	2 <sup>nd</sup> Floor Kitchen Ceiling	NA
MS-HS-02D	Sand Plaster	No	S	Category II	ND/ND	2 <sup>nd</sup> Floor E Bedroom Ceiling	NA
MS-HS-02E	Sand Plaster	No	S	Category II	ND/ND	2 <sup>nd</sup> Floor Kitchen Wall	NA

#### Notes:

Material Types

M = Miscellaneous building material

TSI = Thermal System Insulation

S = Surfacing Material

PC = Point Count Analysis

CH = Chrysotile Asbestos

#### Abbreviations

NQ	= Not quantified
ΣΥΥ.	- Not quantificu

NA = Not applicable

ND = Not detected. Laboratory result is less than 1 % asbestos

lin. ft. = linear feet

sq. ft. = square feet

Asbestos Containing Material (ACM) is defined as any material containing more than 1 percent asbestos as determined utilizing Polarized Light Microscopy.

#### Table 3 - Summary of Presumed Asbestos Containing Materials, 2345 Maffett St., Muskegon Heights, Michigan

Asbestos Containing Material Description and Location						
Location	Material Description	Friable	Condition	Material Type	Approx. Quantity	
No Presumed Asbestos Containing Materials Identified						

Notes:

Material Types		Abbrev	<u>iations</u>
TSI	<ul><li>= Miscellaneous building material</li><li>= Thermal System Insulation</li><li>= Surfacing Material</li></ul>		= linear feet = square feet

#### Table 4 - Summary of All Asbestos Containing Materials, 2345 Maffett St., Muskegon Heights, Michigan

Interior - Asbestos Containing Materials				
Location	<b>Material Description</b>		Friable	Approx. Quantity
2 <sup>nd</sup> Floor Bathroom	12x12 Burgundy Layered VFT		No	35 sq. ft.
		Total		35 sq. ft.
Interior - Asbestos Containing Materials				
Location	<b>Material Description</b>		Friable	Approx. Quantity
Basement (6 windows 32" wide x 14" tall)	Glazing		Yes	6 Windows
		Total		6 Windows

### Notes:

Abbreviations

#### lin. ft. = linear feet sq. ft. = square feet

**Shaded/Bolded** = Friable ACM and any Category I and Category II non-friable ACM that has a high probability of becoming crumbled, pulverized, or reduced to powder by the demolition or renovation activities that must be properly abated prior to commencement of any demolition/renovation activities.

Demolition/renovation activities completed with intact Category I non-friable ACM are regulated by OSHA and must be completed following the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

Please note that a Negative Pressure Enclosure must be utilized during abatement when Site Conditions Warrant. Examples of these conditions include the abatement of Plaster and Vermiculite insulation, HVAC Duct Wrap in Poor Condition, and Air-O-Cell/Mag Pipe Wrap. Conditions outside of these should be assessed on a case by case basis during the Asbestos Abatement Contractors site walk and Work Plan Preparation.



P.O. Box 13216 Lansing, MI 48901 Phone: 888.449.4566 Fax: 888.448.8739 www.redcedarconsulting.net

November 1, 2018

Mr. Tim Burgess Muskegon County Land Bank Land Bank Coordinator 173 E. Apple Avenue, Suite 104 Muskegon, MI 49442

#### RE: Asbestos Containing Material and Hazardous Materials Inspection 2412 Wood St., Muskegon Heights, MI 49444 Parcel ID: 61-26-185-112-0021-00

Dear Mr. Burgess:

Red Cedar Consulting has completed an asbestos-containing material (ACM) and hazardous materials inspection at 2412 Wood St., Muskegon Heights, Michigan (Subject Property). This inspection was completed at the request of the Muskegon County Land Bank to comply with the United States Environmental Protection Agency (USEPA) requirements for demolition and renovation set forth under the National Emissions Standards for Hazardous Air Pollutants (NESHAP, 40 CFR Part 61). This inspection was also completed to comply with the Occupational Safety and Health Administration (OSHA) Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

#### **SUBJECT PROPERTY**

The Subject Property is comprised of a .14 acre residential parcel which contains an approximate 768 square foot residential building (the Building) constructed in 1953. The Building was constructed on a concrete block basement with one aboveground floor. The exterior walls of the Building were finished with aluminum lap over wood lap while the roof was sealed with asphalt shingles. The Building can be further divided into a front entry, living room, dining room, kitchen, bath, rear entry and three bedrooms on the first floor.

#### VISUAL INSPECTION AND SAMPLING

#### **Asbestos Containing Materials Inspection**

Mr. Aaron Paquet of Red Cedar Consulting (Red Cedar), an accredited State of Michigan/EPA Asbestos Building Inspector (Accreditation Number A30955) whom completed training per the Michigan Asbestos Workers Accreditation Act 440 completed an inspection of the Subject Property on October 23, 2018 for suspected asbestos containing building materials.

This inspection, and subsequent sample collection was completed in accordance with the USEPA Asbestos Hazard Emergency Response Act (AHERA) (40 CFR Part 763) assessment and sampling protocol.

During the completion of the inspection, each area of the Subject Property was visually inspected for asbestos containing building materials (ACBM). Following the completion of the visual inspection, Red Cedar staff identified each suspect area of friable and non-friable ACBM and sorted them into one of three homogenous categories for sampling purposes. AHERA defines friable as a material that when dry, may be crumbled, pulverized, or reduced to powder by hand pressure. A homogenous area is defined by OSHA as an area of surfacing, thermal system insulation (TSI) or miscellaneous material that is uniform in color and texture. Surfacing materials are most commonly found in sprayed-on, troweled-on or otherwise applied to surfaces, such as acoustical plaster on ceilings and fireproofing materials on structural members. TSI refers to materials applied to pipes, fittings, boilers, ductwork, or other components to prevent heat loss or gain, or condensation. Any material that does not fall under the surfacing or TSI category, such as floor tile, drywall, and acoustical ceiling tile are placed into the miscellaneous materials category.

Following the completion of the visual inspection, Red Cedar staff identified the following materials as suspect ACBM:

- Vapor Barrier
- Shingle Roof
- Linoleum
- Vinyl Floor Tile
- Drywall and Joint Compound
- Gypsum
- Window Glazing
- Black Pipe Wrap

Red Cedar staff collected twenty samples of suspect ACBM separated into ten distinct homogenous groups for laboratory analysis. Samples were collected and submitted to APEX Research Inc. Laboratories (APEX) (Accreditation Number 102118-0) for laboratory analysis. Analysis was completed utilizing polarized light microscopy (PLM) which is the Environmental Protection Agency (EPA) approved method for analysis of bulk materials for asbestos. PLM analysis completed pursuant to method (EPA 600/M4-82-020) identifies asbestos fiber bundles by the visual properties displayed when the sample is treated with various dispersion staining liquids. The laboratory report completed following the sample analysis indicates if asbestos is present, and at what percentage along with a description and percentage of other fibrous and non-fibrous materials and sample color. Chain-of-custody documentation was followed from sample collection through shipping and receiving of the samples at the designated laboratory. The documentation assures that samples will meet the quality assurance/quality control measures defined by AHERA. The laboratory analytical report prepared by APEX for the twenty samples is included as Attachment A.

#### **Hazardous Materials Inspection**

On October 23, 2018 the Subject Property was also inspected for the presence of hazardous materials which include but are not limited to polychlorinated biphenyls (PCBs) and potential mercury containing equipment and any items or containers that may contain or be classified as a hazardous or regulated material. Each material, if identified, was documented along with the approximate location. Any materials identified as hazardous are included in Table 1.

#### **INSPECTION RESULTS AND RECOMMENDATIONS**

During the completion of the asbestos inspection, twenty samples of suspect ACM were collected and are documented in Table 2 along with the Red Cedar sample number, description, friability, material type, ACM classification, sample location, material quantity and laboratory analytical results.

ACM, as defined by the USEPA NESHAP is "any material containing more than 1 percent asbestos as determined using the method specified in appendix E, subpart E, 40 CFR part 763 Section 1, Polarized Light Microscopy".

Friable ACM is defined by NESHAP as any material containing more than 1 percent asbestos that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. Friable ACM is a concern due the ease of unintentionally disturbing the ACM which may result in "visible emissions" which is known as a Fiber Release Episode.

Non-friable asbestos-containing material is defined as "material containing more than 1 percent asbestos that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. Non-friable ACM's are separated into Category I and Category II ACM. Category I ACM is any asbestos containing packing's, gaskets, resilient floor coverings (vinyl floor tile and linoleum are examples of these) and asphalt roofing products. Category II ACM is stated by NESHAP as any material excluding Category I non-friable ACM such as drywall, plaster or fiberboard insulation.

#### **Presumed Asbestos Containing Material**

Presumed Asbestos Containing Materials (PACM) are suspect surfacing, TSI and miscellaneous materials found in buildings constructed prior to 1980 which are classified as and due to the age of the structure, are assumed to be ACM and do not require sample collection and analysis. OSHA dictates that PACM may be "rebutted" following a complete inspection pursuant to AHERA protocol.

No PACM was identified during the completion of this inspection. All suspect materials identified were sampled and analyzed for ACM.

Table 3 lists the location, material description, friability, condition, material type (surfacing, thermal or miscellaneous) and approximate quantity of all PACM documented at the Subject Property.

Table 4 provides a summary all ACM documented at the Subject Property which includes the material location, description, and approximate quantity.

#### Friable ACM's

No friable ACM's were identified during the completion of this inspection.

#### **Category I ACM**

One type of resilient floor covering (Cream Linoleum) located within the SE Bedroom was found to contain up to 35% Chrysotile asbestos. The assessment to quantify the extent of this material identified approximately 150 sq. ft. of this material within the Building.

#### **Category II ACM**

Drywall Compound samples, collected from the Living Room and Kitchen were found to contain up to 1.75% asbestos following analysis. The assessment to quantify the extent of this material identified approximately 3,209 sq. ft. of drywall compound within the Building.

Gypsum samples, collected from the Living Room and Kitchen were found to contain up to 20% asbestos following analysis. The assessment to quantify the extent of this material identified approximately 3,239 sq. ft. of gypsum within the Building.

Black Pipe Wrap samples collected from a basement water line was found to contain up to 15% asbestos following analysis. The assessment to quantify the extent of this material identified approximately 10 lin. ft. of Pipe Wrap within the Building.

#### **RECOMMENDATIONS**

#### **Asbestos Containing Materials**

Drywall Compound identified on the interior of the Building must be abated prior to completion of any renovation/demolition activities at the Subject Property. Any Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of renovation or demolition operations must be properly abated.

Gypsum identified on the interior of the Building must be abated prior to completion of any renovation/demolition activities at the Subject Property. Any Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of renovation or demolition operations must be properly abated.

Black Pipe Wrap identified on the interior of the Building must be abated prior to completion of any renovation/demolition activities at the Subject Property. Any Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of renovation or demolition operations must be properly abated.

The Category I resilient floor covering (Cream Linoleum) is a non-friable ACM that may be left in place as long as the demolition/renovation activities are completed following the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

Please note: The location of samples obtained during this inspection were in a random fashion and areas that were not identified during this inspection may be damaged or have become damaged since the inspection was completed. If Category I or Category II friable materials are discovered prior to or during the demolition/renovation process, these materials must be abated prior to commencement of any demolition/renovation activities at the Subject Property.

#### **Hazardous Materials**

Hazardous Materials identified at the Subject Property and documented in Table 1 which require proper removal and disposal consist of the following items:

- Automobile Tire (6)
- Smoke Detector (1)
- Gallon Container Misc. (4)
- 5-Gallon Container Misc. (1)

#### **REGULATORY REQUIREMENTS**

A Notification of Intent to Renovate/Demolish form must be filed with the Michigan Department of Environmental Quality- Air Quality Division at least 10 working days prior to any renovation or demolition activities at a site.

The Notification of Intent to Renovate/Demolish form must also be completed and submitted to the MIOSHA-Asbestos Program whenever demolition, encapsulation and/or renovation activities at a site involving greater than ten lineal feet and/or fifteen square feet of ACM will be completed.

Regulated asbestos containing materials per NESHAP (40 CFR Part 61) which falls into any of the following categories are ACM's that must be removed prior to any renovation/demolition activities at the Subject Property.

- Friable asbestos material.
- Category I non-friable ACM that has become friable.
- Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading.
- Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of renovation or demolition operations.

Asbestos abatement should only be performed by a certified asbestos abatement contractor licensed to complete abatement work. The contractor must also follow the standards and requirements set forth per the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) and the USEPA NESHAP (40 CFR Part 61).

Additional information regarding the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) and the USEPA NESHAP (40 CFR Part 61) can be obtained by contacting the associated agency below.

NESHAP Asbestos Program Department of Environmental Quality Phone: 517-284-6777 MIOSHA-CSHD-Asbestos Program State of Michigan Phone: 517-284-7680 Email: asbestos@michigan.gov

#### **DISCLAIMER**

Red Cedar Consulting performed destructive testing methods in an attempt to access and inspect all areas of the Building. Unfortunately, due to the age of construction along with multiple additions/renovations that may have been completed on the Building, additional inspections may be required if suspect ACM material not documented within this report is encountered during renovation/demolition activities.

This report was prepared at the request and for exclusive use by the Muskegon County Land Bank and may not be reproduced or sold without written permission from Red Cedar Consulting.

We appreciate the opportunity to provide the requested services. Please contact us at (888) 449-4566 with any questions or concerns.

Sincerely, Red Cedar Consulting

arm Paquet

Aaron Paquet Michigan/EPA Certified Asbestos Building Inspector (A30955)

Red Cedar Consulting

# Attachment 1

APEX Research Laboratory Analytical Results

Test Method, Polarized Light Microscopy (PLM)

Project : 2412 Wood St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80562Date Collected:10/23/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80562 - 01 Cust. #: WS-HM-01A Material: Vapor Barrier Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 95% Other - 5%
Lab ID #: 80562 - 02 Cust. #: WS-HM-01B Material: Vapor Barrier Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 95% Other - 5%
Lab ID #: 80562 - 03 Cust. #: WS-HM-02A Material: Shingle Roof Location: Appearance: black,fibrous,homogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 20% Other - 80%
Location: Appearance: black,fibrous,homogenous		

For Layered Samples, each component will be analyzed and reported separately.

Kut Joh

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2412 Wood St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80562Date Collected:10/23/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80562 - 03a Cust. #: WS-HM-02A Material: Shingle Location: Appearance: black,fibrous,homogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 20% Other - 80%
Lab ID #: 80562 - 03b Cust. #: WS-HM-02A Material: Tar Paper Location: Appearance: black,fibrous,homogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 35% Other - 65%
Lab ID #: 80562 - 04 Cust. #: WS-HM-02B Material: Shingle Roof Location: Appearance: black,fibrous,homogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 20% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

Kent Jet

Robert T. Letarte Jr., Laboratory Director

Test Method, Polarized Light Microscopy (PLM)

Project : 2412 Wood St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80562Date Collected:10/23/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80562 - 04a Cust. #: WS-HM-02B Material: Shingle Location: Appearance: black,fibrous,homogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 20% Other - 80%
Lab ID #: 80562 - 04b Cust. #: WS-HM-02B Material: Tar Paper Location: Appearance: black,fibrous,nonhomogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 20% Other - 80%
Lab ID #: 80562 - 05 Cust. #: WS-HM-03A Material: Lite Brown 12" Squared Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Fiberglass - 10% Other - 70%

For Layered Samples, each component will be analyzed and reported separately.

Kant Jot

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2412 Wood St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901 Sample Information	Asbestos Type/Percent	ARI Report # 18-80562 Date Collected: 10/23/18 Date Received: 10/24/18 Date Analyzed: 10/29/18 Date Reported: 10/29/18 Non-Asbestos Material
Sumple Information	Association Type Tereent	
Lab ID #: 80562 - 06 Cust. #: WS-HM-03B Material: Lite Brown 12" Squared Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Fiberglass - 10% Other - 70%
Lab ID #: 80562 - 07 Cust. #: WS-HM-04A Material: Lite Brown 9" Squared Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Fiberglass - 10% Other - 70%
Lab ID #: 80562 - 08 Cust. #: WS-HM-04B Material: Lite Brown 9" Squared Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Fiberglass - 10% Other - 70%

For Layered Samples, each component will be analyzed and reported separately.

Kant

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.



APEX Research Inc., 11054 Hi Tech Drive, Whitmore Lake, MI 48189 (734) 449-9990, Fax (734) 449-9991

Test Method, Polarized Light Microscopy (PLM)

Project : 2412 Wood St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80562         Date Collected:       10/23/18         Date Received:       10/24/18         Date Analyzed:       10/29/18         Date Reported:       10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80562 - 09 Cust. #: WS-HM-05A Material: 12x12 Layered Parkay VFT Location: Appearance: brown,nonfibrous,homogenous Layer: 1 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80562 - 09a Cust. #: WS-HM-05A Material: Mastic Location: Appearance: clear,nonfibrous,homogenous Layer: 2 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80562 - 09b Cust. #: WS-HM-05A Material: Felt Location: Appearance: beige,fibrous,homogenous Layer: 3 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 80% Fiberglass - 15% Other - 5%

For Layered Samples, each component will be analyzed and reported separately.

Kut Joh

Robert T. Letarte Jr., Laboratory Director



For Layered Samples, each component will be analyzed and reported separately.

NVLAP Lab Code 102118-0

**Report To:** 

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. APEX Research Inc. is not

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18-80562

ARI Report #

## **Certificate of Laboratory Analysis**

Test Method, Polarized Light Microscopy (PLM)

Project : 2412 Wood St.

Date Collected: Mr. Aaron Paquet 10/23/18 Red Cedar Consulting Date Received: 10/24/18 P.O. Box 13216 Date Analyzed: 10/29/18 Lansing, MI 48901 Date Reported: 10/29/18 Sample Information Asbestos Type/Percent Non-Asbestos Material Lab ID #: 80562 - 09c Asbestos Present: NO Cellulose - 20% Cust. #: WS-HM-05A No Asbestos Observed Fiberglass - 10% Material: Linoleum Other - 70% Location: Appearance: beige, fibrous, nonhomogenous Layer: 4 of 4 Asbestos Present: NO Other - 100% 80562 - 10 Lab ID #: Cust. #: WS-HM-05B No Asbestos Observed Material: 12x12 Layered Parkay VFT Location: Appearance: brown, nonfibrous, homogenous of Layer: 1 4 Lab ID #: 80562 - 10a Asbestos Present: NO Other - 100% WS-HM-05B No Asbestos Observed Cust. #: Material: Mastic Location: Appearance: clear, nonfibrous, homogenous Layer: 2 of 4

Robert T. Letarte Jr., Laboratory Director

Test Method, Polarized Light Microscopy (PLM)

Project : 2412 Wood St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80562Date Collected:10/23/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80562 - 10b Cust. #: WS-HM-05B Material: Felt Location: Appearance: beige,fibrous,homogenous Layer: 3 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 80% Fiberglass - 15% Other - 5%
Lab ID #: 80562 - 10c Cust. #: WS-HM-05B Material: Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 4 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Fiberglass - 10% Other - 70%
Lab ID #: 80562 - 11 Cust. #: WS-HM-06A Material: Drywall Location: Appearance: white,fibrous,nonhomogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 15% Fiberglass - 5% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

Kut Joh

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2412 Wood St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80562Date Collected:10/23/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80562 - 11a Cust. #: WS-HM-06A Material: Joint Compound Location: Appearance: white,nonfibrous,homogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80562 - 11b Cust. #: WS-HM-06A Material: Joint Compound Location: Appearance: beige,fibrous,homogenous Layer: 3 of 3	Asbestos Present: <b>YES</b> Chrysotile - 1.75% POINT COUNT RESULT	Other - 98.25%
Lab ID #: 80562 - 12 Cust. #: WS-HM-06B Material: Drywall Location: Appearance: white,fibrous,nonhomogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 15% Fiberglass - 5% Other - 80%
For Layered Samples, each component will be analyzed and report	ed separately.	

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. APEX Research Inc. is not

responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.

Test Method, Polarized Light Microscopy (PLM)

Project : 2412 Wood St.



Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ART Report #18-80562Date Collected:10/23/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80562 - 12a Cust. #: WS-HM-06B Material: Joint Compound Location: Appearance: white,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80562 - 13 Cust. #: WS-HM-07A Material: Crème Linoleum Location: Appearance: beige,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>YES</b> Chrysotile - 35%	Other - 65%
Lab ID #: 80562 - 14 Cust. #: WS-HM-07B Material: Crème Linoleum	Asbestos Present:	
Location: Appearance: Layer: of	NOT ANALYZED	
For Layered Samples, each component will be analyzed and report	rted separately.	

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2412 Wood St.



Report 10:Mr. Aaron PaquetRed Cedar ConsultingP.O. Box 13216Lansing, MI 48901		ARI Report #18-80562Date Collected:10/23/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80562 - 15 Cust. #: WS-HM-08A Material: Gypsum Board Location: Appearance: grey,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>YES</b> Chrysotile - 20%	Cellulose - 10% Other - 70%
Lab ID #: 80562 - 16 Cust. #: WS-HM-08B Material: Gypsum Board Location: Appearance: Layer: of	Asbestos Present: NOT ANALYZED	
Lab ID #: 80562 - 17 Cust. #: WS-HM-09A Material: Window Glazing Location: Appearance: beige,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> Chrysotile - Trace POINT COUNT RESULT	Other - 100%
For Layered Samples, each component will be analyzed and repo	orted separately.	

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2412 Wood St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80562Date Collected:10/23/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80562 - 18 Cust. #: WS-HM-09B Material: Window Glazing Location:	Asbestos Present: <b>NO</b> Chrysotile - Trace	Other - 100%
Appearance: beige,fibrous,homogenous Layer: 1 of 1	POINT COUNT RESULT	
Lab ID #: 80562 - 19 Cust. #: WS-HT-01A Material: Black Pipe Wrap Location: Appearance: black,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>YES</b> Chrysotile - 15%	Other - 85%
Lab ID #: 80562 - 20 Cust. #: WS-HT-01B Material: Black Pipe Wrap	Asbestos Present:	
Location: Appearance: Layer: of	NOT ANALYZED	
For Layered Samples, each component will be analyzed and repo	nted separately	

Kant Jeff

Robert T. Letarte Jr., Laboratory Director



Apex # 80562	10/2	
Drive, Whitmore Lake, MI 48189 apexresearch@chartermi.net	Phone: 734-449-9990	
Client Name: Red Cedar Consulting Date of Survey : 10	-23-78 Lab Us Log-In.	Lab Use Only Log-In
PO Box 13216	ted At Report	ut
., Zip: Lansing, MI 48901 Project # :		
Thrn Aronnel Times (200, PC all samples with a c	PCTSON: Aaron kaquet apaquet@redcedarconsulting.net samples with a detection of <5% ACM.	net
Asbestos: Bulk X Wipe	PCM	
Ĺ	nt Soil	
72 hour	Other Viable	
Other: (TTP) All Samples TEM: AHERA 7400 Bulk/NOB EPA I	EPA Level II	
Lab ID #     Client ID #     Material/Location     Volume	Area Results	lts
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3 / D2A Shingle Roof		
4 / / 02B / 1.1		
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Rev: 12/03 Work Forms: COC	APEX RESEARCH	FARCE

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APEX RESEARCH	Lab Use Only Log-in Report S% ACM. net	Results	
: 734-449-9990 734-449-9991	<pre>&gt;&gt;23-/8 Word M Aaron Paquet apaquet@redcedarconsu th a detection of &lt;5% tf PCM Paint Soil Other Viable</pre>	Area	
<b>30562</b> 1005 <b>1</b> 89 Phone: 7. 20 Chartermi.net Fax: 73		B EPALevel II Volume	
م <b>805</b> ( <b>105</b> Hi Tech Drive, Whitmore Lake, MI E-mail: apexresearch@chartermi.net	Date of         Date of         Project         Pluk         Mipe         Bulk         Tape	TEM: AHERA 7400 BulkNOB Material/Location	23 LA
APEX Research, Inc. 11054 Hi Tech Drive, Whitmore Lake, MI 48189 Phone: 734-449-9990 E-mail: apexresearch@chartermi.net Fax: 734-449-9991	Client Name: Red Cedar Consulting Address: PO Box 13216 City, St., Zip: Lansing, MI 48901 Phone: (888) 449-4566 Fax: (888) 4 Turn Around TimeS: (Circle One) Rush 24 hour Asbest Rush 24 hour Asbest Asbest Asbest Asbest Citre One) Asbest Asbest Asbest Asbest Asbest Asbest	Lab ID # Client ID #	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$

Red Cedar Consulting

Tables

### Table 1 - Summary of Hazardous Materials, 2412 Wood St., Muskegon Heights, Michigan

Hazardous Materials Description and Location			
Location	Material Description	Quantity	
Rear Entry	Automobile Tire	4	
Kitchen	Automobile Tire	2	
Basement Stairwell	Smoke Detector	1	
Basement	Gallon Container Misc.	4	
Basement	5-Gallon Container Misc.	1	

Table 2 - Summary of Sample Descriptions and Asbestos Laboratory Results, 2412 Wood St., Muskegon Heights, Michigan

Sample Number	Sample Description	Friable	Material Type	Material Classification	% Asbestos Laboratory Result	Sample Location	Approx. Material Quantity
WS-HM-01A	Vapor Barrier	Yes	М	Category II	ND	House Exterior	NA
WS-HM-01B	Vapor Barrier	Yes	М	Category II	ND	House Exterior	NA
WS-HM-02A	Shingle Roof	No	М	Category I	ND/ND/ND	House Roof	NA
WS-HM-02B	Shingle Roof	No	М	Category I	ND/ND/ND	House Roof	NA
WS-HM-03A	Light Brown 12" Linoleum	No	М	Category I	ND	Front Entry	NA
WS-HM-03B	Light Brown 12" Linoleum	No	М	Category I	ND	Front Entry	NA
WS-HM-04A	9" Light Brown Linoleum	No	М	Category I	ND	Rear Entry	NA
WS-HM-04B	9" Light Brown Linoleum	No	М	Category I	ND	Rear Entry	NA
WS-HM-05A	12x12 Parkay Layered VFT	No	М	Category I	ND/ND/ND/ ND	Kitchen	NA
WS-HM-05B	12x12 Parkay Layered VFT	No	М	Category I	ND/ND/ND/ ND	Kitchen	NA
WS-HM-06A	Drywall and Joint Compound	No	М	Category II	ND/ND/1.75% CH	Living Ceiling	3,209 sq. ft.
WS-HM-06B	Drywall and Joint Compound	No	М	Category II	ND/ND	NE Bedroom Wall	NA
WS-HM-07A	Cream Linoleum	No	М	Category I	35% CH	SE Bedroom	150 sq. ft.
WS-HM-07B	Cream Linoleum	No	М	Category I	NA	SE Bedroom	NA
WS-HM-08A	Gypsum	No	М	Category II	20% CH	Kitchen Ceiling	3,239 sq. ft.
WS-HM-08B	Gypsum	No	М	Category II	NA	SW Bedroom Wall	NA
WS-HM-09A	Window Glazing	Yes	М	Category II	ND	Living Room Window	NA
WS-HM-09B	Window Glazing	Yes	М	Category II	ND	Living Room Window	NA
WS-HT-01A	Black Pipe Wrap	No	Т	Category II	15% CH	Basement Waterline	10 lin. ft.
WS-HT-01B	Black Pipe Wrap	No	Т	Category II	NA	Basement Waterline	NA

Notes:

#### Material Types

M = Miscellaneous building material

- TSI = Thermal System Insulation
- S = Surfacing Material
- PC = Point Count Analysis
- CH = Chrysotile Asbestos

### Abbreviations

NQ = Not quantified

- NA = Not applicable
- ND = Not detected. Laboratory result is less than 1 % asbestos
- lin. ft. = linear feet
- sq. ft. = square feet

Asbestos Containing Material (ACM) is defined as any material containing more than 1 percent asbestos as determined utilizing Polarized Light Microscopy.

### Table 3 - Summary of Presumed Asbestos Containing Materials, 2412 Wood St., Muskegon Heights, Michigan

Asbestos Containing Material Description and Location					
Location	Material Description	Friable	Condition	Material Type	Approx. Quantity
No Presumed Asbestos Containing Materials Identified					

Notes:

Material Types		Abbrev	<u>iations</u>
TSI	= Miscellaneous building material = Thermal System Insulation = Surfacing Material		= linear feet = square feet

Interior - Asbestos Containing Materials				
Location	Material Description		Friable	Approx. Quantity
SE Bedroom	Cream Linoleum		No	150 sq. ft.
		Total		150 sq. ft.
Interior - Asbestos Containing Materials				
Location	Material Description		Friable	Approx. Quantity
Basement Water Line	Black Pipe Wrap		No	10 lin. ft.
		Total		10 lin. ft.
Interior - Asbestos Containing Materials				
Location	Material Description		Friable	Approx. Quantity
Building Interior	Drywall Compound		No	3,209 sq. ft.
		Total		3,209 sq. ft.
Interior - Asbestos Containing Materials				
Location	<b>Material Description</b>		Friable	Approx. Quantity
Building Interior	Gypsum		No	3,209 sq. ft.
Building Exterior	Exterior Gypsum Debris Pile		No	30 sq. ft.
	Total			3,239 sq. ft.

#### Table 4 - Summary of All Asbestos Containing Materials, 2412 Wood St., Muskegon Heights, Michigan

Notes:

Abbreviations

lin. ft. = linear feet sq. ft. = square feet

**Shaded/Bolded** = Friable ACM and any Category I and Category II non-friable ACM that has a high probability of becoming crumbled, pulverized, or reduced to powder by the demolition or renovation activities that must be properly abated prior to commencement of any demolition/renovation activities.

Demolition/renovation activities completed with intact Category I non-friable ACM are regulated by OSHA and must be completed following the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

Please note that a Negative Pressure Enclosure must be utilized during abatement when Site Conditions Warrant. Examples of these conditions include the abatement of Plaster and Vermiculite insulation, HVAC Duct Wrap in Poor Condition, and Air-O-Cell/Mag Pipe Wrap. Conditions outside of these should be assessed on a case by case basis during the Asbestos Abatement Contractors site walk and Work Plan Preparation.



P.O. Box 13216 Lansing, MI 48901 Phone: 888.449.4566 Fax: 888.448.8739 www.redcedarconsulting.net

November 2, 2018

Mr. Tim Burgess Muskegon County Land Bank Land Bank Coordinator 173 E. Apple Avenue, Suite 104 Muskegon, MI 49442

### RE: Asbestos Containing Material and Hazardous Materials Inspection 2420 Manz St., Muskegon Heights, MI 49444 Parcel ID: 61-26-185-111-0019-00

Dear Mr. Burgess:

Red Cedar Consulting has completed an asbestos-containing material (ACM) and hazardous materials inspection at 2420 Manz St., Muskegon Heights, Michigan (Subject Property). This inspection was completed at the request of the Muskegon County Land Bank to comply with the United States Environmental Protection Agency (USEPA) requirements for demolition and renovation set forth under the National Emissions Standards for Hazardous Air Pollutants (NESHAP, 40 CFR Part 61). This inspection was also completed to comply with the Occupational Safety and Health Administration (OSHA) Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

#### **SUBJECT PROPERTY**

The Subject Property is comprised of a .29 acre residential parcel which contains a 576 sq. ft. detached garage and approximate 864 square foot residential building (the Building) constructed in 1923. The Building was constructed on a concrete block basement with one aboveground floor. The exterior walls of the Building were finished with vinyl siding while the roof was sealed with asphalt shingles. The Building can be further divided into a living room, dining room, kitchen, bath and three bedrooms.

### VISUAL INSPECTION AND SAMPLING

#### **Asbestos Containing Materials Inspection**

Mr. Aaron Paquet of Red Cedar Consulting (Red Cedar), an accredited State of Michigan/EPA Asbestos Building Inspector (Accreditation Number A30955) whom completed training per the Michigan Asbestos Workers Accreditation Act 440 completed an inspection of the Subject Property on October 25, 2018 for suspected asbestos containing building materials.

This inspection, and subsequent sample collection was completed in accordance with the USEPA Asbestos Hazard Emergency Response Act (AHERA) (40 CFR Part 763) assessment and sampling protocol.

During the completion of the inspection, each area of the Subject Property was visually inspected for asbestos containing building materials (ACBM). Following the completion of the visual inspection, Red Cedar staff identified each suspect area of friable and non-friable ACBM and sorted them into one of three homogenous categories for sampling purposes. AHERA defines friable as a material that when dry, may be crumbled, pulverized, or reduced to powder by hand pressure. A homogenous area is defined by OSHA as an area of surfacing, thermal system insulation (TSI) or miscellaneous material that is uniform in color and texture. Surfacing materials are most commonly found in sprayed-on, troweled-on or otherwise applied to surfaces, such as acoustical plaster on ceilings and fireproofing materials on structural members. TSI refers to materials applied to pipes, fittings, boilers, ductwork, or other components to prevent heat loss or gain, or condensation. Any material that does not fall under the surfacing or TSI category, such as floor tile, drywall, and acoustical ceiling tile are placed into the miscellaneous materials category.

Following the completion of the visual inspection, Red Cedar staff identified the following materials as suspect ACBM:

- Shingle Roof
- Vapor Barrier
- Roof Flashing
- Linoleum
- 12x12 Vinyl Floor Tile
- 1x1 Ceiling Tile
- Window Glazing
- Plaster

Red Cedar staff collected thirty three samples of suspect ACBM separated into fifteen distinct homogenous groups for laboratory analysis. Samples were collected and submitted to APEX Research Inc. Laboratories (APEX) (Accreditation Number 102118-0) for laboratory analysis. Analysis was completed utilizing polarized light microscopy (PLM) which is the Environmental Protection Agency (EPA) approved method for analysis of bulk materials for asbestos. PLM analysis completed pursuant to method (EPA 600/M4-82-020) identifies asbestos fiber bundles by the visual properties displayed when the sample is treated with various dispersion staining liquids. The laboratory report completed following the sample analysis indicates if asbestos is present, and at what percentage along with a description and percentage of other fibrous and non-fibrous materials and sample color. Chain-of-custody documentation was followed from sample collection through shipping and receiving of the samples at the designated laboratory. The documentation assures that samples will meet the quality assurance/quality control measures defined by AHERA. The laboratory analytical report prepared by APEX for the thirty three samples is included as Attachment A.

#### **Hazardous Materials Inspection**

On October 25, 2018 the Subject Property was also inspected for the presence of hazardous materials which include but are not limited to polychlorinated biphenyls (PCBs) and potential mercury containing equipment and any items or containers that may contain or be classified as a hazardous or regulated material. Each material, if identified, was documented along with the approximate location. Any materials identified as hazardous are included in Table 1.

### **INSPECTION RESULTS AND RECOMMENDATIONS**

During the completion of the asbestos inspection, thirty three samples of suspect ACM were collected and are documented in Table 2 along with the Red Cedar sample number, description, friability, material type, ACM classification, sample location, material quantity and laboratory analytical results.

ACM, as defined by the USEPA NESHAP is "any material containing more than 1 percent asbestos as determined using the method specified in appendix E, subpart E, 40 CFR part 763 Section 1, Polarized Light Microscopy".

Friable ACM is defined by NESHAP as any material containing more than 1 percent asbestos that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. Friable ACM is a concern due the ease of unintentionally disturbing the ACM which may result in "visible emissions" which is known as a Fiber Release Episode.

Non-friable asbestos-containing material is defined as "material containing more than 1 percent asbestos that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. Non-friable ACM's are separated into Category I and Category II ACM. Category I ACM is any asbestos containing packing's, gaskets, resilient floor coverings (vinyl floor tile and linoleum are examples of these) and asphalt roofing products. Category II ACM is stated by NESHAP as any material excluding Category I non-friable ACM such as drywall, plaster or fiberboard insulation.

### **Presumed Asbestos Containing Material**

Presumed Asbestos Containing Materials (PACM) are suspect surfacing, TSI and miscellaneous materials found in buildings constructed prior to 1980 which are classified as and due to the age of the structure, are assumed to be ACM and do not require sample collection and analysis. OSHA dictates that PACM may be "rebutted" following a complete inspection pursuant to AHERA protocol.

No PACM was identified during the completion of this inspection. All suspect materials identified were sampled and analyzed for ACM.

Table 3 lists the location, material description, friability, condition, material type (surfacing, thermal or miscellaneous) and approximate quantity of all PACM documented at the Subject Property.

Table 4 provides a summary all ACM documented at the Subject Property which includes the material location, description, and approximate quantity.

### Friable ACM's

A window glazing sample collected from a window in the Dining room was found to contain up to 1.75% asbestos following analysis. The assessment to quantify the extent of this material identified eleven windows at the following locations that would fall into the same homogenous group. The locations of the windows are listed below:

- (1 window 22" wide x 33" tall)
- (5 windows 32" wide x 64" tall)
- (1 window 34" wide x 24" tall)
- (3 windows 24" wide x 48" tall)
- (1 window 52" wide x 54" tall)

### **Category I ACM**

One type of resilient floor covering (Layered 12"x12" White Vinyl Floor Tile) located within the kitchen was found to contain up to 1.5% Chrysotile asbestos. The assessment to quantify the extent of this material identified approximately 140 sq. ft. of this material within the Building.

### **Category II ACM**

Plaster samples, collected from the Dining Room, NE Bedroom, Living Room, NW Bedroom, and Bathroom were each found to contain up to 2.25% asbestos following analysis. The assessment to quantify the extent of this material identified approximately 3,173 sq. ft. of plaster within the Building.

Roof Flashing samples collected during the completion of the inspection were found to contain up to 10% Chrysotile asbestos. The assessment to quantify the extent of this material identified 10 sq. ft. of roof flashing materials on the Building.

### **RECOMMENDATIONS**

#### **Asbestos Containing Materials**

Friable asbestos containing window glazing was identified on eleven windows throughout the Building. The locations of these windows that should be abated prior to demolition/renovation activities are listed below:

- (1 window 22" wide x 33" tall)
- (5 windows 32" wide x 64" tall)
- (1 window 34" wide x 24" tall)
- (3 windows 24" wide x 48" tall)
- (1 window 52" wide x 54" tall)

Please note: Other different sized windows are located throughout the Building but these windows were assessed and found to be constructed either without window glazing or were sampled and found to not contain asbestos and therefore are not required to be removed.

Plaster identified on the interior of the Building must be abated prior to completion of any renovation/demolition activities at the Subject Property. Any Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of renovation or demolition operations must be properly abated.

Roof Flashing identified on the exterior of the Building must be abated prior to completion of any renovation/demolition activities at the Subject Property. Any Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of renovation or demolition operations must be properly abated.

The Category I resilient floor coverings (Layered 12"x12" White Vinyl Floor Tile) are non-friable ACM's that may be left in place as long as the demolition/renovation activities are completed following the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

Please note: The location of samples obtained during this inspection were in a random fashion and areas that were not identified during this inspection may be damaged or have become damaged since the inspection was completed. If Category I or Category II friable materials are discovered prior to or during the demolition/renovation process, these materials must be abated prior to commencement of any demolition/renovation activities at the Subject Property.

#### **Hazardous Materials**

Hazardous Materials identified at the Subject Property and documented in Table 1 which require proper removal and disposal consist of the following items:

- Automobile Tire (10)
- 1-Gallon Container Misc. (2)
- Television (1)
- 5-Gallon Container Misc. (1)

### **REGULATORY REQUIREMENTS**

A Notification of Intent to Renovate/Demolish form must be filed with the Michigan Department of Environmental Quality- Air Quality Division at least 10 working days prior to any renovation or demolition activities at a site.

The Notification of Intent to Renovate/Demolish form must also be completed and submitted to the MIOSHA-Asbestos Program whenever demolition, encapsulation and/or renovation activities at a site involving greater than ten lineal feet and/or fifteen square feet of ACM will be completed.

Regulated asbestos containing materials per NESHAP (40 CFR Part 61) which falls into any of the following categories are ACM's that must be removed prior to any renovation/demolition activities at the Subject Property.

- Friable asbestos material.
- Category I non-friable ACM that has become friable.
- Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading.
- Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of renovation or demolition operations.

Asbestos abatement should only be performed by a certified asbestos abatement contractor licensed to complete abatement work. The contractor must also follow the standards and requirements set forth per the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) and the USEPA NESHAP (40 CFR Part 61).

Additional information regarding the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) and the USEPA NESHAP (40 CFR Part 61) can be obtained by contacting the associated agency below.

NESHAP Asbestos Program Department of Environmental Quality Phone: 517-284-6777 MIOSHA-CSHD-Asbestos Program State of Michigan Phone: 517-284-7680 Email: asbestos@michigan.gov

### **DISCLAIMER**

Red Cedar Consulting performed destructive testing methods in an attempt to access and inspect all areas of the Building. Unfortunately, due to the age of construction along with multiple additions/renovations that may have been completed on the Building, additional inspections may be required if suspect ACM material not documented within this report is encountered during renovation/demolition activities.

This report was prepared at the request and for exclusive use by the Muskegon County Land Bank and may not be reproduced or sold without written permission from Red Cedar Consulting.

We appreciate the opportunity to provide the requested services. Please contact us at (888) 449-4566 with any questions or concerns.

Sincerely, Red Cedar Consulting

ann Poquet

Aaron Paquet Michigan/EPA Certified Asbestos Building Inspector (A30955)

Red Cedar Consulting

# Attachment 1

APEX Research Laboratory Analytical Results

Test Method, Polarized Light Microscopy (PLM)

Project : 2420 Manz St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80609Date Collected:10/25/18Date Received:10/26/18Date Analyzed:10/31/18Date Reported:10/31/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80609 - 01 Cust. #: MS-HM-01A Material: Shingle Roof Location: Appearance: black,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Fiberglass - 10% Other - 80%
Lab ID #: 80609 - 02 Cust. #: MS-HM-01B Material: Shingle Roof Location: Appearance: black,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Fiberglass - 10% Other - 80%
Lab ID #: 80609 - 03 Cust. #: MS-HM-02A Material: Vapor Barrier Location: Appearance: black,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 50% Other - 50%

For Layered Samples, each component will be analyzed and reported separately.

Kut Joh

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2420 Manz St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80609Date Collected:10/25/18Date Received:10/26/18Date Analyzed:10/31/18Date Reported:10/31/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80609 - 04 Cust. #: MS-HM-02B Material: Vapor Barrier Location: Appearance: black,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 50% Other - 50%
Lab ID #: 80609 - 05 Cust. #: MS-HM-03A Material: Roof Flashing Location: Appearance: black,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>YES</b> Chrysotile - 10%	Other - 90%
Lab ID #: 80609 - 06 Cust. #: MS-HM-03B Material: Roof Flashing	Asbestos Present:	
Location: Appearance: Layer: of	NOT ANALYZED	
For Layered Samples, each component will be analyzed and reporte	ed separately.	

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2420 Manz St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80609Date Collected:10/25/18Date Received:10/26/18Date Analyzed:10/31/18Date Reported:10/31/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80609 - 07 Cust. #: MS-HM-04A Material: Cream Stone Linoleum Location: Appearance: black,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80609 - 08 Cust. #: MS-HM-04B Material: Cream Stone Linoleum Location: Appearance: black,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80609 - 09 Cust. #: MS-HM-05A Material: Red Floral Linoleum Layered Location: Appearance: red,fibrous,nonhomogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

Kut Joh

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2420 Manz St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80609Date Collected:10/25/18Date Received:10/26/18Date Analyzed:10/31/18Date Reported:10/31/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80609 - 09a Cust. #: MS-HM-05A Material: Linoleum Location: Appearance: green,fibrous,nonhomogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80609 - 10 Cust. #: MS-HM-05B Material: Red Floral Linoleum Layered Location: Appearance: red,fibrous,nonhomogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80609 - 10a Cust. #: MS-HM-05B Material: Linoleum Location: Appearance: green,fibrous,nonhomogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

Kut Joh

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2420 Manz St.



	Date Collected:10/25/18Date Received:10/26/18Date Analyzed:10/31/18Date Reported:10/31/18
sbestos Type/Percent	Non-Asbestos Material
Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Asbestos Present: <b>YES</b> Chrysotile - 1.50% POINT COUNT RESULT	Other - 98.50%
Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
	sbestos Type/Percent Asbestos Present: NO No Asbestos Observed Asbestos Present: YES Chrysotile - 1.50% POINT COUNT RESULT

For Layered Samples, each component will be analyzed and reported separately.

Kant Jot

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2420 Manz St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80609Date Collected:10/25/18Date Received:10/26/18Date Analyzed:10/31/18Date Reported:10/31/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80609 - 11c Cust. #: MS-HM-06A Material: Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 4 of 6	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80609 - 11d Cust. #: MS-HM-06A Material: Linoleum Location: Appearance: black,fibrous,nonhomogenous Layer: 5 of 6	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80609 - 11e Cust. #: MS-HM-06A Material: Linoleum Location: Appearance: black,fibrous,homogenous Layer: 6 of 6	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

Kut Joh

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2420 Manz St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80609Date Collected:10/25/18Date Received:10/26/18Date Analyzed:10/31/18Date Reported:10/31/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80609 - 12 Cust. #: MS-HM-06B Material: Layered 12x12 White VFT Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 6	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80609 - 12a Cust. #: MS-HM-06B Material: Tile Location: Appearance: Layer: 2 of 6	Asbestos Present: NOT ANALYZED	
Lab ID #: 80609 - 12b Cust. #: MS-HM-06B Material: Mastic Location: Appearance: yellow,nonfibrous,homogenous Layer: 3 of 6	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
For I avered Samples each component will be analyzed and reporte	ad senerately.	

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2420 Manz St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80609Date Collected:10/25/18Date Received:10/26/18Date Analyzed:10/31/18Date Reported:10/31/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80609 - 12c Cust. #: MS-HM-06B Material: Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 4 of 6	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80609 - 12d Cust. #: MS-HM-06B Material: Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 5 of 6	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80609 - 12e Cust. #: MS-HM-06B Material: Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 6 of 6	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

Kut Joh

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2420 Manz St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80609Date Collected:10/25/18Date Received:10/26/18Date Analyzed:10/31/18Date Reported:10/31/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80609 - 13 Cust. #: MS-HM-07A Material: Green Linoleum Layered Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Fiberglass - 10% Other - 80%
Lab ID #: 80609 - 14 Cust. #: MS-HM-07B Material: Green Linoleum Layered Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Fiberglass - 10% Other - 80%
Lab ID #: 80609 - 15 Cust. #: MS-HM-08A Material: Grey Pebble Layered Linoleum Location: Appearance: red,fibrous,nonhomogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

Kent Jor

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.



APEX Research Inc., 11054 Hi Tech Drive, Whitmore Lake, MI 48189 (734) 449-9990, Fax (734) 449-9991

Test Method, Polarized Light Microscopy (PLM)

Project : 2420 Manz St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80609Date Collected:10/25/18Date Received:10/26/18Date Analyzed:10/31/18Date Reported:10/31/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80609 - 15a Cust. #: MS-HM-08A Material: Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80609 - 16 Cust. #: MS-HM-08B Material: Grey Pebble Layered Linoleum Location: Appearance: red,fibrous,nonhomogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80609 - 16a Cust. #: MS-HM-08B Material: Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

Kant Jot

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2420 Manz St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80609Date Collected:10/25/18Date Received:10/26/18Date Analyzed:10/31/18Date Reported:10/31/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80609 - 17 Cust. #: MS-HM-09A Material: Red Floral Linoleum Location: Appearance: brown,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80609 - 18 Cust. #: MS-HM-09B Material: Red Floral Linoleum Location: Appearance: brown,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80609 - 19 Cust. #: MS-HM-10A Material: 1x1 White Smooth Ceiling Tile Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 90% Other - 10%

For Layered Samples, each component will be analyzed and reported separately.

Kant Jot

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2420 Manz St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80609         Date Collected:       10/25/18         Date Received:       10/26/18         Date Analyzed:       10/31/18         Date Reported:       10/31/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80609 - 20 Cust. #: MS-HM-10B Material: 1x1 White Smooth Ceiling Tile Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 90% Other - 10%
Lab ID #: 80609 - 21 Cust. #: MS-HM-11A Material: 1x1 White Ceiling Tile w/ Pinholes Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 90% Other - 10%
Lab ID #: 80609 - 22 Cust. #: MS-HM-11B Material: 1x1 White Ceiling Tile w/ Pinholes Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 90% Other - 10%

For Layered Samples, each component will be analyzed and reported separately.

Kent Jot

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2420 Manz St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80609Date Collected:10/25/18Date Received:10/26/18Date Analyzed:10/31/18Date Reported:10/31/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80609 - 23 Cust. #: MS-HM-12A Material: Window Glazing Location:	Asbestos Present: <b>YES</b> Chrysotile - 1.75%	Other - 98.25%
Appearance: beige,fibrous,homogenous Layer: 1 of 1	POINT COUNT RESULT	
Lab ID #: 80609 - 24 Cust. #: MS-HM-12B Material: Window Glazing	Asbestos Present:	
Location: Appearance: Layer: of	NOT ANALYZED	
Lab ID #: 80609 - 25 Cust. #: MS-HM-13A Material: Cream Flagstone Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 15% Synthetic - 5% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2420 Manz St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80609         Date Collected:       10/25/18         Date Received:       10/26/18         Date Analyzed:       10/31/18         Date Reported:       10/31/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80609 - 26 Cust. #: MS-HM-13B Material: Cream Flagstone Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 15% Synthetic - 5% Other - 80%
Lab ID #: 80609 - 27 Cust. #: MS-HM-14A Material: Tan Multilayer Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80609 - 27a Cust. #: MS-HM-14A Material: Linoleum Location: Appearance: white,fibrous,nonhomogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2420 Manz St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80609Date Collected:10/25/18Date Received:10/26/18Date Analyzed:10/31/18Date Reported:10/31/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80609 - 27b Cust. #: MS-HM-14A Material: Linoleum Location: Appearance: red,fibrous,nonhomogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80609 - 28 Cust. #: MS-HM-14B Material: Tan Multilayer Linoleum Location: Appearance: white,fibrous,nonhomogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80609 - 28a Cust. #: MS-HM-14B Material: Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

Kent Jor

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2420 Manz St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80609         Date Collected:       10/25/18         Date Received:       10/26/18         Date Analyzed:       10/31/18         Date Reported:       10/31/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80609 - 28b Cust. #: MS-HM-14B Material: Linoleum Location: Appearance: red,fibrous,nonhomogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80609 - 29 Cust. #: MS-HS-01A Material: Plaster Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80609 - 29a Cust. #: MS-HS-01A Material: Mortar Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Hair - 2% Other - 96%

For Layered Samples, each component will be analyzed and reported separately.

Kent Jot

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2420 Manz St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80609Date Collected:10/25/18Date Received:10/26/18Date Analyzed:10/31/18Date Reported:10/31/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80609 - 30 Cust. #: MS-HS-01B Material: Plaster Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80609 - 30a Cust. #: MS-HS-01B Material: Mortar Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Hair - 2% Other - 96%
Lab ID #: 80609 - 31 Cust. #: MS-HS-01C Material: Plaster Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Kant Jot

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2420 Manz St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80609Date Collected:10/25/18Date Received:10/26/18Date Analyzed:10/31/18Date Reported:10/31/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80609 - 31a Cust. #: MS-HS-01C Material: Mortar Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Hair - 2% Other - 96%
Lab ID #: 80609 - 32 Cust. #: MS-HS-01D Material: Plaster Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80609 - 32a Cust. #: MS-HS-01D Material: Mortar Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Hair - 2% Other - 96%

For Layered Samples, each component will be analyzed and reported separately.

Kant Jot

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2420 Manz St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80609Date Collected:10/25/18Date Received:10/26/18Date Analyzed:10/31/18Date Reported:10/31/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80609 - 33 Cust. #: MS-HS-01E Material: Stucco Location:	Asbestos Present: <b>YES</b> Chrysotile - 2.25%	Other - 98.75%
Appearance: beige,fibrous,homogenous Layer: 1 of 3	POINT COUNT RESULT	
Lab ID #: 80609 - 33a Cust. #: MS-HS-01E Material: Plaster Location: Appearance: white,nonfibrous,homogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80609 - 33b Cust. #: MS-HS-01E Material: Mortar Location: Appearance: grey,fibrous,homogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Hair - 2% Other - 96%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



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APEX Research, Inc. 11054 Hi Tech Drive, Whitmore Lake, MI 48189 Phone: 734-449-9990 E-mail: apexresearch@chartermi.net Fax: 734-449-9991	90 APEX Research
Client Name: Red Cedar Consulting Date of Survey : 10 -25-1	Lab Use Only Log-In
	L Report
City, St., Zip: Lansing, MI 48901 Project #: Project #: Project #: Contact Person: Aaron Paguet	
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(72 hour) Mold: Bulk	Viable
Other: (TTP) All Samples TEM: AHERA 7400 Bulk/NOB EPA Level II	
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	h, Inc. 11054 Hi Tech Drive, V E-mail: apexres	Consulting 216	148-8739 PLM EPA tos: Bulk x	Lead: Bulk Mold: Bulk TEM: AHERA 7400	# Material/Location		07B . Heen Denoleum	08A Grey Felble Sarried	Red flored Senale	10 A 1 X 1 White smooth	10B	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	UPS .	10-25-18	
	$APEX \ Research, Inc. {}^{11054\mathrm{Hi}\mathrm{TechDrive,WhitmoreLake,MI}}_{\mathrm{E-mail:\ apexresearch@chartermi.net}} \ \mathrm{Fax:\ 734-449-9991}$	Red Cedar PO Box 132	7, St., LIP: Lansing, MI ne: (888) 449-4566 Irn Around Tim	Rush 24 hour 48 hour 72 hour Other : TTP All Samples	Lab ID # Client ID #	B MS-HM-1						1 1 1 Cl	214 witere	Date : /o - 25 - / 8 Date :	Rev: 12/03 Work Forms: COC

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APEX Research, Inc. 11054 Hi Tech Drive, Whitmore Lake, MI 48189 Phone: 734-449-9990 E-mail: apexresearch@chartermi.net Fax: 734-449-9991	Phone: 734-449-9990 Fax: 734-449-9991	
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PO Box 13216 Project: 7420 /	$\mathbf{v} \mathbf{v}$	
Zip: Lansing, MI 48901 Project #:		
449-4566 F <b>ax</b> : (888) 448-8739	Aaron Paquet	
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24 hour 7.24 hour 7.000 Lead: Bulk Wipe Air	Paint Soil	
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Red Cedar Consulting

Tables

### Table 1 - Summary of Hazardous Materials, 2420 Manz St., Muskegon Heights, Michigan

Hazardous Materials Description and Location				
Location	Material Description	Quantity		
Exterior	Automobile Tire	4		
Detached Garage	Automobile Tire	6		
Detached Garage	1-Gallon Container Misc.	2		
Living Room	Television	1		
Basement	5-Gallon Container Misc.	1		

Table 2 - Summary of Sample Descriptions and Asbestos Laboratory Results, 2420 Manz St., Muskegon Heights, Michigan

Sample Number	Sample Description	Friable	Material Type	Material Classification	% Asbestos Laboratory Result	Sample Location	Approx. Material Quantity
MS-HM-01A	Shingle Roof	No	М	Category I	ND	House Roof	NA
MS-HM-01B	Shingle Roof	No	М	Category I	ND	Garage Roof	NA
MS-HM-02A	Vapor Barrier	Yes	М	Category II	ND	House Exterior	NA
MS-HM-02B	Vapor Barrier	Yes	М	Category II	ND	House Exterior	NA
MS-HM-03A	Roof Flashing	No	М	Category II	10%CH	House Roof	10 sq. ft.
MS-HM-03B	Roof Flashing	No	М	Category II	NA	House Roof	NA
MS-HM-04A	Cream Stone Linoleum	No	М	Category I	ND	Living Room	NA
MS-HM-04B	Cream Stone Linoleum	No	М	Category I	ND	Living Room	NA
MS-HM-05A	Red Floral Linoleum Layered	No	М	Category II	ND/ND	Dining Room	NA
MS-HM-05B	Red Floral Linoleum Layered	No	М	Category II	ND/ND	Dining Room	NA
MS-HM-06A	Layered 12x12 White VFT	No	М	Category II	ND/1.50%CH- PC/ND/ND/ND/ND	Kitchen	140 sq. ft.
MS-HM-06B	Layered 12x12 White VFT	No	М	Category II	ND/NA/ND/ ND/ND/ND	Kitchen	NA
MS-HM-07A	Green Linoleum Layered	No	М	Category II	ND	Bathroom	NA
MS-HM-07B	Green Linoleum Layered	No	М	Category II	ND	Bathroom	NA
MS-HM-08A	Grey Pebble Layered Linoleum	No	М	Category II	ND/ND	NW Bedroom	NA
MS-HM-08B	Grey Pebble Layered Linoleum	No	М	Category II	ND/ND	NW Bedroom	NA
MS-HM-09A	Red Floral Linoleum	No	М	Category II	ND	Office	NA
MS-HM-09B	Red Floral Linoleum	No	М	Category II	ND	Office	NA
MS-HM-10A	1x1 White Smooth Ceiling Tile	Yes	М	Category II	ND	Living	NA
MS-HM-10B	1x1 White Smooth Ceiling Tile	Yes	М	Category II	ND	Kitchen	NA
MS-HM-11A	1x1 White Ceiling Tile w/ Pinholes	Yes	М	Category II	ND	NW Bedroom	NA
MS-HM-11B	1x1 White Ceiling Tile w/ Pinholes	Yes	М	Category II	ND	NE Bedroom	NA
MS-HM-12A	Window Glazing	Yes	М	Category II	1.75%CH-PC	Dining Room Window	11 Windows
MS-HM-12B	Window Glazing	Yes	М	Category II	NA	Living Room Window	NA
MS-HM-13A	Cream Flagstone Linoleum	No	М	Category II	ND	Crawl Space	NA

Table 2 - Summary of Sample Descriptions and Asbestos Laboratory Results, 2420 Manz St., Muskegon Heights, Michigan

Sample Number	Sample Description	Friable	Material Type	Material Classification	% Asbestos Laboratory Result	Sample Location	Approx. Material Quantity
MS-HM-13B	Cream Flagstone Linoleum	No	М	Category II	ND	Crawl Space	NA
MS-HM-14A	Tan Multilayer Linoleum	No	М	Category II	ND/ND/ND	Basement	NA
MS-HM-14B	Tan Multilayer Linoleum	No	М	Category II	ND/ND/ND	Basement	NA
MS-HS-01A	Plaster	No	S	Category II	ND/ND	Dining Room Ceiling	NA
MS-HS-01B	Plaster	No	S	Category II	ND/ND	NE Bedroom Ceiling	NA
MS-HS-01C	Plaster	No	S	Category II	ND/ND	Living Room Wall	NA
MS-HS-01D	Plaster	No	S	Category II	ND/ND	NW Bedroom Wall	NA
MS-HS-01E	Plaster	No	S	Category II	2.25%CH- PC/ND/ND	Bathroom Wall	3,173 sq. ft.

#### Notes:

#### Material Types

M = Miscellaneous building material

- TSI = Thermal System Insulation
- S = Surfacing Material
- PC = Point Count Analysis
- CH = Chrysotile Asbestos

### Abbreviations

NQ = Not quantified

- NA = Not applicable
- ND = Not detected. Laboratory result is less than 1 % asbestos

lin. ft. = linear feet

sq. ft. = square feet

Asbestos Containing Material (ACM) is defined as any material containing more than 1 percent asbestos as determined utilizing Polarized Light Microscopy.

### Table 3 - Summary of Presumed Asbestos Containing Materials, 2420 Manz St., Muskegon Heights, Michigan

Asbestos Containing Material Description and Location					
LocationMaterial DescriptionFriableConditionMaterial TypeApprox. Quantion				Approx. Quantity	
No Presumed Asbestos Containing Materials Identified					

Notes:

<u>Material Types</u>		Abbrev	<u>iations</u>
TSI	= Miscellaneous building material = Thermal System Insulation		= linear feet = square feet
S	= Surfacing Material		

Exterior - Asbestos Containing Materials				
Location	Material Description		Friable	Approx. Quantity
Building Roof	Roof Flashing		No	10 sq. ft.
		Total		10 sq. ft.
Interior - Asbestos Containing Materials				
Location	Material Description		Friable	Approx. Quantity
Kitchen	Layered 12x12 White Vinyl Floor Tile		No	140 sq. ft.
		Total		140 sq. ft.
Interior - Asbestos Containing Materials				
Location	<b>Material Description</b>		Friable	Approx. Quantity
(1 window 22" wide x 33" tall)	Glazing		Yes	1 Window
(5 windows 32" wide x 64" tall)	Glazing		Yes	5 Windows
(1 window 34" wide x 24" tall)	Glazing		Yes	1 Window
(3 windows 24" wide x 48" tall)	Glazing		Yes	3 Windows
(1 window 52" wide x 54" tall)	Glazing		Yes	1 Window
		Total		11 Windows
Interior - Asbestos Containing Materials				
Location	<b>Material Description</b>		Friable	Approx. Quantity
1 <sup>st</sup> Floor	Wall Plaster		No	2,384 sq. ft.
1 <sup>st</sup> Floor	Ceiling Plaster		No	828 sq. ft.
		Total		3,212 sq. ft.

### Table 4 - Summary of All Asbestos Containing Materials, 2420 Manz St., Muskegon Heights, Michigan

#### Notes:

Abbreviations

lin. ft. = linear feet sq. ft. = square feet

**Shaded/Bolded** = Friable ACM and any Category I and Category II non-friable ACM that has a high probability of becoming crumbled, pulverized, or reduced to powder by the demolition or renovation activities that must be properly abated prior to commencement of any demolition/renovation activities.

#### Table 4 - Summary of All Asbestos Containing Materials, 2420 Manz St., Muskegon Heights, Michigan

Demolition/renovation activities completed with intact Category I non-friable ACM are regulated by OSHA and must be completed following the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

Please note that a Negative Pressure Enclosure must be utilized during abatement when Site Conditions Warrant. Examples of these conditions include the abatement of Plaster and Vermiculite insulation, HVAC Duct Wrap in Poor Condition, and Air-O-Cell/Mag Pipe Wrap. Conditions outside of these should be assessed on a case by case basis during the Asbestos Abatement Contractors site walk and Work Plan Preparation.



P.O. Box 13216 Lansing, MI 48901 Phone: 888.449.4566 Fax: 888.448.8739 www.redcedarconsulting.net

November 2, 2018

Mr. Tim Burgess Muskegon County Land Bank Land Bank Coordinator 173 E. Apple Avenue, Suite 104 Muskegon, MI 49442

### RE: Asbestos Containing Material and Hazardous Materials Inspection 2425 Manz St., Muskegon Heights, MI 49444 Parcel ID: 61-26-185-112-0007-00

Dear Mr. Burgess:

Red Cedar Consulting has completed an asbestos-containing material (ACM) and hazardous materials inspection at 2425 Manz St., Muskegon Heights, Michigan (Subject Property). This inspection was completed at the request of the Muskegon County Land Bank to comply with the United States Environmental Protection Agency (USEPA) requirements for demolition and renovation set forth under the National Emissions Standards for Hazardous Air Pollutants (NESHAP, 40 CFR Part 61). This inspection was also completed to comply with the Occupational Safety and Health Administration (OSHA) Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

#### **SUBJECT PROPERTY**

The Subject Property is comprised of a .29 acre residential parcel which contains an approximate 1,222 square foot residential building with attached garage (the Building) constructed in 1955. The Building was constructed on a concrete block basement with one aboveground floor. The exterior walls of the Building were finished with wood lap while the roof was sealed with asphalt shingles. The Building can be further divided into a living room, dining room, kitchen, bath, three bedrooms, a laundry room and rear entry.

### VISUAL INSPECTION AND SAMPLING

#### **Asbestos Containing Materials Inspection**

Mr. Aaron Paquet of Red Cedar Consulting (Red Cedar), an accredited State of Michigan/EPA Asbestos Building Inspector (Accreditation Number A30955) whom completed training per the Michigan Asbestos Workers Accreditation Act 440 completed an inspection of the Subject Property on October 25, 2018 for suspected asbestos containing building materials.

This inspection, and subsequent sample collection was completed in accordance with the USEPA Asbestos Hazard Emergency Response Act (AHERA) (40 CFR Part 763) assessment and sampling protocol.

During the completion of the inspection, each area of the Subject Property was visually inspected for asbestos containing building materials (ACBM). Following the completion of the visual inspection, Red Cedar staff identified each suspect area of friable and non-friable ACBM and sorted them into one of three homogenous categories for sampling purposes. AHERA defines friable as a material that when dry, may be crumbled, pulverized, or reduced to powder by hand pressure. A homogenous area is defined by OSHA as an area of surfacing, thermal system insulation (TSI) or miscellaneous material that is uniform in color and texture. Surfacing materials are most commonly found in sprayed-on, troweled-on or otherwise applied to surfaces, such as acoustical plaster on ceilings and fireproofing materials on structural members. TSI refers to materials applied to pipes, fittings, boilers, ductwork, or other components to prevent heat loss or gain, or condensation. Any material that does not fall under the surfacing or TSI category, such as floor tile, drywall, and acoustical ceiling tile are placed into the miscellaneous materials category.

Following the completion of the visual inspection, Red Cedar staff identified the following materials as suspect ACBM:

- Shingle Roofing
- Vapor Barrier
- Roof Flashing
- Linoleum
- 1x1 Ceiling Tile
- Drywall and Joint Compound
- Window Glazing
- Textured Surfacing

Red Cedar staff collected twenty five samples of suspect ACBM separated into twelve distinct homogenous groups for laboratory analysis. Samples were collected and submitted to APEX Research Inc. Laboratories (APEX) (Accreditation Number 102118-0) for laboratory analysis. Analysis was completed utilizing polarized light microscopy (PLM) which is the Environmental Protection Agency (EPA) approved method for analysis of bulk materials for asbestos. PLM analysis completed pursuant to method (EPA 600/M4-82-020) identifies asbestos fiber bundles by the visual properties displayed when the sample is treated with various dispersion staining liquids. The laboratory report completed following the sample analysis indicates if asbestos is present, and at what percentage along with a description and percentage of other fibrous and non-fibrous materials and sample color. Chain-of-custody documentation was followed from sample collection through shipping and receiving of the samples at the designated laboratory. The documentation assures that samples will meet the quality assurance/quality control measures defined by AHERA. The laboratory analytical report prepared by APEX for the twenty five samples is included as Attachment A.

#### **Hazardous Materials Inspection**

On October 25, 2018 the Subject Property was also inspected for the presence of hazardous materials which include but are not limited to polychlorinated biphenyls (PCBs) and potential mercury containing equipment and any items or containers that may contain or be classified as a hazardous or regulated material. Each material, if identified, was documented along with the approximate location. Any materials identified as hazardous are included in Table 1.

### **INSPECTION RESULTS AND RECOMMENDATIONS**

During the completion of the asbestos inspection, twenty five samples of suspect ACM were collected and are documented in Table 2 along with the Red Cedar sample number, description, friability, material type, ACM classification, sample location, material quantity and laboratory analytical results.

ACM, as defined by the USEPA NESHAP is "any material containing more than 1 percent asbestos as determined using the method specified in appendix E, subpart E, 40 CFR part 763 Section 1, Polarized Light Microscopy".

Friable ACM is defined by NESHAP as any material containing more than 1 percent asbestos that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. Friable ACM is a concern due the ease of unintentionally disturbing the ACM which may result in "visible emissions" which is known as a Fiber Release Episode.

Non-friable asbestos-containing material is defined as "material containing more than 1 percent asbestos that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. Non-friable ACM's are separated into Category I and Category II ACM. Category I ACM is any asbestos containing packing's, gaskets, resilient floor coverings (vinyl floor tile and linoleum are examples of these) and asphalt roofing products. Category II ACM is stated by NESHAP as any material excluding Category I non-friable ACM such as drywall, plaster or fiberboard insulation.

### **Presumed Asbestos Containing Material**

Presumed Asbestos Containing Materials (PACM) are suspect surfacing, TSI and miscellaneous materials found in buildings constructed prior to 1980 which are classified as and due to the age of the structure, are assumed to be ACM and do not require sample collection and analysis. OSHA dictates that PACM may be "rebutted" following a complete inspection pursuant to AHERA protocol.

The HVAC Duct Wrap located in the Building was classified as PACM due to the age of the structure and samples were not collected.

Table 3 lists the location, material description, friability, condition, material type (surfacing, thermal or miscellaneous) and approximate quantity of all PACM documented at the Subject Property.

Table 4 provides a summary all ACM documented at the Subject Property which includes the material location, description, and approximate quantity.

### Friable ACM's

Textured Surfacing samples, collected from the N Bedroom, and NW Bedroom were found to contain up to 5% asbestos following analysis. The assessment to quantify the extent of this material identified approximately 932 sq. ft. of textured surfacing within the Building.

A window glazing sample collected from a window in the NE Bedroom and Basement were found to contain up to 2.25% asbestos following analysis. The assessment to quantify the extent of this material identified twenty three windows at the following locations that would fall into the same homogenous group. The locations of the windows are listed below:

- (10 windows 28" wide x 54" tall)
- (2 windows 28" wide x 36" tall)
- (1 window 31" wide x 26" tall)
- (1 window 27" wide x 39" tall)
- (2 windows 18" wide x 54" tall)
- (1 window 46" wide x 54" tall)
- (1 window 60" wide x 54" tall)
- (1 window 24" wide x 46" tall)
- Basement (4 windows 32" wide x 14" tall)

Duct Wrap identified in the building in conjunction with the forced air heating system is classified as friable ACM. The visual assessment to quantify the extent of this material identified HVAC Duct Wrap at the following locations within the basement.

• Basement (misc. HVAC wrap on Basement Beam, 5 sq. ft.)

### **Category I ACM**

Two types of resilient floor covering (Layered Yellow Stone Linoleum & Leveling Compound and Yellow and Gold Linoleum) located within the kitchen were found to contain up to 25% Chrysotile asbestos. The assessment to quantify the extent of this material identified approximately 129 sq. ft. of this material within the Building.

#### **Category II ACM**

Drywall Compound samples, collected from the N Bedroom and Kitchen were found to contain up to 2% asbestos following analysis. The assessment to quantify the extent of this material identified approximately 4,379 sq. ft. of drywall compound within the Building.

Roof Flashing samples collected during the completion of the inspection were found to contain up to 15% Chrysotile asbestos. The assessment to quantify the extent of this material identified 20 sq. ft. of roof flashing materials on the Building.

### **RECOMMENDATIONS**

#### **Asbestos Containing Materials**

HVAC material identified in the Building system and listed below is classified as friable ACM and should be removed prior to any renovation/demolition activities.

• Basement (misc. HVAC wrap on Basement Beam, 5 sq. ft.)

Friable asbestos containing window glazing was identified on twenty three windows throughout the Building. The locations of these windows that should be abated prior to demolition/renovation activities are listed below:

- (10 windows 28" wide x 54" tall)
- (2 windows 28" wide x 36" tall)
- (1 window 31" wide x 26" tall)
- (1 window 27" wide x 39" tall)
- (2 windows 18" wide x 54" tall)
- (1 window 46" wide x 54" tall)
- (1 window 60" wide x 54" tall)
- (1 window 24" wide x 46" tall)
- Basement (4 windows 32" wide x 14" tall)

Please note: Other different sized windows are located throughout the Building but these windows were assessed and found to be constructed either without window glazing or were sampled and found to not contain asbestos and therefore are not required to be removed.

Drywall Compound identified on the interior of the Building must be abated prior to completion of any renovation/demolition activities at the Subject Property. Any Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of renovation or demolition operations must be properly abated.

Roof Flashing identified on the exterior of the Building must be abated prior to completion of any renovation/demolition activities at the Subject Property. Any Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of renovation or demolition operations must be properly abated.

The Category I resilient floor coverings (Layered Yellow Stone Linoleum and Yellow and Gold Linoleum) are non-friable ACM's that should be abated to mitigate any future exposure.

Please note: The location of samples obtained during this inspection were in a random fashion and areas that were not identified during this inspection may be damaged or have become damaged since the inspection was completed. If Category I or Category II friable materials are discovered prior to or during the demolition/renovation process, these materials must be abated prior to commencement of any demolition/renovation activities at the Subject Property.

### **Hazardous Materials**

Hazardous Materials identified at the Subject Property and documented in Table 1 which require proper removal and disposal consist of the following items:

- Smoke Detector (1)
- 1-Gallon Container Misc. (10)

### **REGULATORY REQUIREMENTS**

A Notification of Intent to Renovate/Demolish form must be filed with the Michigan Department of Environmental Quality- Air Quality Division at least 10 working days prior to any renovation or demolition activities at a site.

The Notification of Intent to Renovate/Demolish form must also be completed and submitted to the MIOSHA-Asbestos Program whenever demolition, encapsulation and/or renovation activities at a site involving greater than ten lineal feet and/or fifteen square feet of ACM will be completed.

Regulated asbestos containing materials per NESHAP (40 CFR Part 61) which falls into any of the following categories are ACM's that must be removed prior to any renovation/demolition activities at the Subject Property.

- Friable asbestos material.
- Category I non-friable ACM that has become friable.
- Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading.
- Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of renovation or demolition operations.

Asbestos abatement should only be performed by a certified asbestos abatement contractor licensed to complete abatement work. The contractor must also follow the standards and requirements set forth per the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) and the USEPA NESHAP (40 CFR Part 61).

Additional information regarding the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) and the USEPA NESHAP (40 CFR Part 61) can be obtained by contacting the associated agency below.

NESHAP Asbestos Program Department of Environmental Quality Phone: 517-284-6777 MIOSHA-CSHD-Asbestos Program State of Michigan Phone: 517-284-7680 Email: asbestos@michigan.gov

### **DISCLAIMER**

Red Cedar Consulting performed destructive testing methods in an attempt to access and inspect all areas of the Building. Unfortunately, due to the age of construction along with multiple additions/renovations that may have been completed on the Building, additional inspections may be required if suspect ACM material not documented within this report is encountered during renovation/demolition activities.

This report was prepared at the request and for exclusive use by the Muskegon County Land Bank and may not be reproduced or sold without written permission from Red Cedar Consulting.

We appreciate the opportunity to provide the requested services. Please contact us at (888) 449-4566 with any questions or concerns.

Sincerely, Red Cedar Consulting

Raion Poquet

Aaron Paquet Michigan/EPA Certified Asbestos Building Inspector (A30955)

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Red Cedar Consulting

# Attachment 1

APEX Research Laboratory Analytical Results

Test Method, Polarized Light Microscopy (PLM)

Project : 2425 Manz St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80607Date Collected:10/25/18Date Received:10/26/18Date Analyzed:10/31/18Date Reported:10/31/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80607 - 01 Cust. #: MA-HM-01A Material: Shingle Roofing Location: Appearance: black,fibrous,homogenous Layer: 1 of 5	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 15% Other - 85%
Lab ID #: 80607 - 01a Cust. #: MA-HM-01A Material: Shingle Location: Appearance: black,fibrous,homogenous Layer: 2 of 5	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 15% Other - 85%
Lab ID #: 80607 - 01b Cust. #: MA-HM-01A Material: Shingle Location: Appearance: black,fibrous,homogenous Layer: 3 of 5	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 25% Other - 75%

For Layered Samples, each component will be analyzed and reported separately.

Kut Joh

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2425 Manz St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80607Date Collected:10/25/18Date Received:10/26/18Date Analyzed:10/31/18Date Reported:10/31/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80607 - 01c Cust. #: MA-HM-01A Material: Shingle Location: Appearance: black,fibrous,homogenous Layer: 4 of 5	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 25% Other - 75%
Lab ID #: 80607 - 01d Cust. #: MA-HM-01A Material: Shingle Location: Appearance: black,fibrous,homogenous Layer: 5 of 5	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 25% Other - 75%
Lab ID #: 80607 - 02 Cust. #: MA-HM-01B Material: Shingle Roofing Location: Appearance: black,fibrous,homogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 15% Other - 85%

For Layered Samples, each component will be analyzed and reported separately.

Kent Jet

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2425 Manz St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80607Date Collected:10/25/18Date Received:10/26/18Date Analyzed:10/31/18Date Reported:10/31/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80607 - 02a Cust. #: MA-HM-01B Material: Shingle Location: Appearance: black,fibrous,homogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 15% Other - 85%
Lab ID #: 80607 - 02b Cust. #: MA-HM-01B Material: Shingle Location: Appearance: black,fibrous,homogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80607 - 03 Cust. #: MA-HM-02A Material: Vapor Barrier Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 95% Other - 5%

For Layered Samples, each component will be analyzed and reported separately.

Kut Joh

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2425 Manz St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80607Date Collected:10/25/18Date Received:10/26/18Date Analyzed:10/31/18Date Reported:10/31/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80607 - 04 Cust. #: MA-HM-02B Material: Vapor Barrier Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 95% Other - 5%
Lab ID #: 80607 - 05 Cust. #: MA-HM-03A Material: Roof Flashing Location: Appearance: black,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>YES</b> Chrysotile - 10%	Other - 90%
Lab ID #: 80607 - 06 Cust. #: MA-HM-03B Material: Roof Flashing	Asbestos Present:	
Location: Appearance: Layer: of	NOT ANALYZED	
For Layered Samples, each component will be analyzed and report	ted separately.	

Kant Jett

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2425 Manz St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80607Date Collected:10/25/18Date Received:10/26/18Date Analyzed:10/31/18Date Reported:10/31/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80607 - 07 Cust. #: MA-HM-04A Material: Black/White Square Linoleum Location: Appearance: black,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 50% Other - 50%
Lab ID #: 80607 - 08 Cust. #: MA-HM-04B Material: Black/White Square Linoleum Location: Appearance: black,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 50% Other - 50%
Lab ID #: 80607 - 09 Cust. #: MA-HM-05A Material: Tan Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Fiberglass - 5% Other - 75%

For Layered Samples, each component will be analyzed and reported separately.

Kut Joh

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2425 Manz St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80607Date Collected:10/25/18Date Received:10/26/18Date Analyzed:10/31/18Date Reported:10/31/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80607 - 10 Cust. #: MA-HM-05B Material: Tan Linoleum Location: Appearance: beige,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Fiberglass - 5% Other - 75%
Lab ID #: 80607 - 11 Cust. #: MA-HM-06A Material: Layered Yellow Stone Linoleum Location: Appearance: green,fibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>YES</b> Chrysotile - 25%	Other - 75%
Lab ID #: 80607 - 11a Cust. #: MA-HM-06A Material: Leveling Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>YES</b> Chrysotile - 10%	Other - 90%
For Layered Samples, each component will be analyzed and report	ted separately.	

Kant Jett

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2425 Manz St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80607         Date Collected:       10/25/18         Date Received:       10/26/18         Date Analyzed:       10/31/18         Date Reported:       10/31/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80607 - 12 Cust. #: MA-HM-06B	Asbestos Present:	
Material: Layered Yellow Stone Linoleum Location: Appearance: Layer: of	NOT ANALYZED	
Lab ID #: 80607 - 13 Cust. #: MA-HM-07A Material: Yellow/Gold Linoleum Location: Appearance: green,fibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>YES</b> Chrysotile - 25%	Other - 75%
Lab ID #: 80607 - 13a Cust. #: MA-HM-07A Material: Linoleum Location: Appearance: brown,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 50% Other - 50%
For Lavered Samples, each component will be analyzed and report	red senarately	

Robert T. Letarte Jr., Laboratory Director

the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor t

Test Method, Polarized Light Microscopy (PLM)

Project : 2425 Manz St.



Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80607Date Collected:10/25/18Date Received:10/26/18Date Analyzed:10/31/18Date Reported:10/31/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80607 - 14 Cust. #: MA-HM-07B Material: Yellow/Gold Linoleum	Asbestos Present:	
Location: Appearance: Layer: 1 of 2	NOT ANALYZED	
Lab ID #: 80607 - 14a Cust. #: MA-HM-07B Material: Linoleum Location: Appearance: brown,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 50% Other - 50%
Lab ID #: 80607 - 15 Cust. #: MA-HM-08A Material: 1x1 White Smooth Ceiling Tile Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 95% Other - 5%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.



APEX Research Inc., 11054 Hi Tech Drive, Whitmore Lake, MI 48189 (734) 449-9990, Fax (734) 449-9991

Test Method, Polarized Light Microscopy (PLM)

Project : 2425 Manz St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80607Date Collected:10/25/18Date Received:10/26/18Date Analyzed:10/31/18Date Reported:10/31/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80607 - 16 Cust. #: MA-HM-08B Material: 1x1 White Smooth Ceiling Tile Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 95% Other - 5%
Lab ID #: 80607 - 17 Cust. #: MA-HM-09A Material: Drywall Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80607 - 17a Cust. #: MA-HM-09A Material: Joint Compound Location: Appearance: beige,fibrous,nonhomogenous Layer: 2 of 2	Asbestos Present: <b>YES</b> Chrysotile - 2.00% POINT COUNT RESULT	Other - 98.00%

For Layered Samples, each component will be analyzed and reported separately.

Sout

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2425 Manz St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80607Date Collected:10/25/18Date Received:10/26/18Date Analyzed:10/31/18Date Reported:10/31/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80607 - 18 Cust. #: MA-HM-09B Material: Drywall Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80607 - 18a Cust. #: MA-HM-09B Material: Joint Compound Location: Appearance: Layer: 2 of 2	Asbestos Present: NOT ANALYZED	
Lab ID #: 80607 - 19 Cust. #: MA-HM-10A Material: House Window Glazing Location: Appearance: beige,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>YES</b> Chrysotile - 1.25% POINT COUNT RESULT	Wollastonite - 3% Other - 95.75%
For I avered Samples, each component will be analyzed and renor	ted senarately	

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2425 Manz St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80607         Date Collected:       10/25/18         Date Received:       10/26/18         Date Analyzed:       10/31/18         Date Reported:       10/31/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80607 - 20 Cust. #: MA-HM-10B	Asbestos Present:	
Material: House Window Glazing Location: Appearance: Layer: of	NOT ANALYZED	
Lab ID #: 80607 - 21 Cust. #: MA-HM-11A Material: Basement Window Glazing Location:	Asbestos Present: <b>YES</b> Chrysotile - 2.25%	Wollastonite - 2% Other - 95.75%
Appearance: beige,fibrous,homogenous Layer: 1 of 1	POINT COUNT RESULT	
Lab ID #: 80607 - 22 Cust. #: MA-HM-11B Material: Basement Window Glazing	Asbestos Present:	
Material: Basement Window Glazing Location: Appearance: Layer: of	NOT ANALYZED	
For Lavered Samples, each component will be analyzed and report		

Kent Jett

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2425 Manz St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80607         Date Collected:       10/25/18         Date Received:       10/26/18         Date Analyzed:       10/31/18         Date Reported:       10/31/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80607 - 23 Cust. #: MA-HS-01A Material: Textured Surfacing Location: Appearance: beige,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>YES</b> Chrysotile - 5%	Other - 95%
Lab ID #: 80607 - 24 Cust. #: MA-HS-01B Material: Textured Surfacing Location: Appearance: Layer: of	Asbestos Present: NOT ANALYZED	
Lab ID #: 80607 - 25 Cust. #: MA-HS-01C Material: Textured Surfacing Location: Appearance: Layer: of	Asbestos Present: NOT ANALYZED	
For Layered Samples, each component will be analyzed and repo	orted separately	

Kant Jett

Robert T. Letarte Jr., Laboratory Director



743	Phone: 734-449-9990 Fax: 734-449-9991	10 - 25 - 18 Lab Use Only Log-In	Manz 4 Report	Person: Aaron Paquet apaquet@redcedarconsulting.net samples with a detection of <5% ACM.	PCM	Paint Soil	Other Viable	EPA Level II	ie Area Results											RECEIVED	0CT 2 6 2018	Date: 10/00110 V	エンエくリクリートくリンマ
# XadA	<b>IDC.</b> 11054 Hi Tech Drive, Whitmore Lake, MI 48189 Phone: 734-449-9990 E-mail: apexresearch@chartermi.net Fax: 734-449-9991	Date of Survey : 10 - 25-	Project : 2425	BBB) 448-8739 Contact	Asbestos: Bulk X Wipe	Lead: Bulk Wipe Air	Mold: Bulk Tape BioSIS	TEM: AHERA 7400 Bulk/NOB	Material/Location Volume	Chingle Rosting		Vapor Bassiel		Zad Flashing		Elsek + White Square Sindam		Are & molling	Consultations from Sund Prince		Ī	-25-/8 Date:	
	APEX Research, ]	Client Name: Red Cedar Consulting	Address: PO Box 13216 City St Zin: Lansing, MI 48901	149-4566 1111 Time		\	Inou 7/	Other:	Lab ID # Client ID #	1 MA-H7-014	3 / / DIE	3 020	4 028	5 034	V 03B	44	8		490 1 1		the life tates Received by	Date : /0 - 25 - /8 Date : /0	

2473 48189 Phone: 734-449-9990 к Fax: 734-449-9991	Survey:lab Use Onlyt:2425 Mang MLab Use Onlyt:2425 Mang MReportt #:ReportReportt Person:Aaron Paquetsamples with a detection of <5% ACM.Point CountPCM	Air Paint Soil BioSIS Other Viable EPA Level II	Volume     Area     Results       Results     Area     Results       Received by:     Area     Area       Date:     OCT 2     6
APEX Research, Inc. 11054 Hi Tech Drive, Whitmore Lake, MI 48189 Phone: 734-449-9990 E-mail: apexresearch@chartermi.net Fax: 734-449-9991	Int Name: Red Cedar Consulting Date of Date of Project V, St., Zip: Lansing, MI 48901 Project Project Project (888) 449-4566 Fax: (888) 448-8739 Contac Urn Around Times: (Circle One) PLM EPA 600, PC all Asbestos: Bulk X Wipe Wipe Wipe Project Provided Pro	Rush     24 hour     Lead:     Bulk     Wipe     Air       48 hour     72 hour     Mold:     Bulk     Tape     Biol       0ther:     Other:     TEM:     AHERA 7400     Bulk/NOB	Lab ID #Client ID #Material/Location $P$ $MA-HPI - DLEB$ $Material/Location$ $P$ $P$ $27A$ $P$ $27A$ $Material/Location$ $P$ $P$ $27A$ $P$ $27A$ $Material/LocationPP27AP27AMaterial/LocationP27AMaterial/LocationP27AMaterial/LocationP27AMaterial/LocationP27AMaterial/LocationP27AMaterial/LocationP27AMaterial/LocationP27AMaterial/LocationPP27AP27AMaterial/Point/LocationPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPP$

43	APEX	Lab Use Only Log-In Report		Viable		Results						
3	MI 48189 Phone: 734-449-9990 i.net Fax: 734-449-9991	Date of Survey : <u>A-25-/8</u> Project : <u>2425 Manz</u> A7 Project # :	Contact Person: Aaron Paquet apaquet@redcedarconsulting.net 000, PC all samples with a detection of <5% ACM. Wipe Point Count PCM	Air Paint Soil BioSIS Other Vi	B EPA Level II	Volume Area					Received by: 20	Date :
	<b>IC.</b> 11054 Hi <sup>.</sup> Tech Drive, Whitmore Lake, MI 4 E-mail: apexresearch@chartermi.net	Date of Survey : Project : <u>2425</u> Project # :	48-8739 PLM EPA os: Bulk x	Lead: Bulk Wipe Mold: Bulk Tape	TEM: AHERA 7400 Bulk/NOB	Material/Location	lettured dur facing				UPS Relinquished by:	Date :
	APEX Research, Inc. 11054 Hi Tech Drive, Whitmore Lake, MI 48189 Phone: 734-449-9990 E-mail: apexresearch@chartermi.net Fax: 734-449-9991	Client Name: Red Cedar Consulting Address: PO Box 13216 City. St., Zip: Lansing, MI 48901	ne: (888) 449-4566 Irn Around Tim	24 hour	Other:	Lab ID # Client ID #	NA-45-	34 1 010 35 2 1 01C			Relinquished by A. C. M. M. Leve Received by:	Date : /0 - 25./5     Date : /0 - 25       Rev: 12/03     Work Forms: COC

Red Cedar Consulting

Tables

### Table 1 - Summary of Hazardous Materials, 2425 Manz St., Muskegon Heights, Michigan

	Hazardous Materials Description and Location						
Location	Material Description	Quantity					
N Bedroom	Smoke Detector	1					
Basement	1-Gallon Container Misc.	10					

Table 2 - Summary of Sample Descriptions and Asbestos Laboratory Results, 2425 Manz St., Muskegon Heights, Michigan

Sample Number	Sample Description	Friable	Material Type	Material Classification	% Asbestos Laboratory Result	Sample Location	Approx. Material Quantity
MA-HM-01A	Shingle Roofing	No	М	Category I	ND/ND/ND/ ND/ND	House Roof	NA
MA-HM-01B	Shingle Roofing	No	М	Category I	ND/ND/ND	House Roof	NA
MA-HM-02A	Vapor Barrier	Yes	М	Category II	ND	House Exterior	NA
MA-HM-02B	Vapor Barrier	Yes	М	Category II	ND	House Exterior	NA
MA-HM-03A	Roof Flashing	No	М	Category II	10%CH	House Roof	20 sq. ft.
MA-HM-03B	Roof Flashing	No	М	Category II	NA	House Roof	NA
MA-HM-04A	Black/White Square Linoleum	No	М	Category I	ND	Living Room	NA
MA-HM-04B	Black/White Square Linoleum	No	М	Category I	ND	Living Room	NA
MA-HM-05A	Tan Linoleum	No	М	Category I	ND	Kitchen	NA
MA-HM-05B	Tan Linoleum	No	М	Category I	ND	Kitchen	NA
MA-HM-06A	Layered Yellow Stone Linoleum	No	М	Category I	25%CH/10%CH	Bathroom	63 sq. ft.
MA-HM-06B	Layered Yellow Stone Linoleum	No	М	Category I	NA	Bathroom	NA
MA-HM-07A	Yellow/Gold Linoleum	No	М	Category I	25%CH/ND	NE Bedroom	66 sq. ft.
MA-HM-07B	Yellow/Gold Linoleum	No	М	Category I	NA/ND	NE Bedroom	NA
MA-HM-08A	1x1 White Smooth Ceiling Tile	Yes	М	Category II	ND	Bathroom	NA
MA-HM-08B	1x1 White Smooth Ceiling Tile	Yes	М	Category II	ND	Dining Room	NA
MA-HM-09A	Drywall and Joint Compound	No	М	Category II	ND/2.00%CH- PC	N Bedroom Ceiling	4,409 sq. ft.
MA-HM-09B	Drywall and Joint Compound	No	М	Category II	ND/NA	Kitchen Wall	NA
MA-HM-10A	House Window Glazing	Yes	М	Category II	1.25%CH-PC	NE Bedroom Window	19 Windows
MA-HM-10B	House Window Glazing	Yes	М	Category II	NA	N Bedroom Window	NA
MA-HM-11A	Basement Window Glazing	Yes	М	Category II	2.25%CH-PC	Basement Window	4 Windows
MA-HM-11B	Basement Window Glazing	Yes	М	Category II	NA	Basement Window	NA
MA-HS-01A	Textured Surfacing	Yes	S	Category II	5%CH	N Bedroom Ceiling	932 sq. ft.
MA-HS-01B	Textured Surfacing	Yes	S	Category II	NA	NW Bedroom Ceiling	NA
MA-HS-01C	Textured Surfacing	Yes	S	Category II	NA	NW Bedroom Ceiling	NA

### Table 2 - Summary of Sample Descriptions and Asbestos Laboratory Results, 2425 Manz St., Muskegon Heights, Michigan

#### Notes:

Material Types	Abbreviations
M = Miscellaneous building material	NQ = Not quantified
TSI = Thermal System Insulation	NA = Not applicable
S = Surfacing Material	ND = Not detected. Laboratory result is less than 1 % asbestos
PC = Point Count Analysis	lin. ft. $=$ linear feet
CH = Chrysotile Asbestos	sq. ft. $=$ square feet

Asbestos Containing Material (ACM) is defined as any material containing more than 1 percent asbestos as determined utilizing Polarized Light Microscopy.

### Table 3 - Summary of Presumed Asbestos Containing Materials, 2425 Manz St., Muskegon Heights, Michigan

Asbestos Containing Material Description and Location							
Location	Material Description	Friable	Condition	Material Type	Approx. Quantity		
Basement (misc. HVAC wrap on Basement Beam, 5 sq. ft.)	HVAC Duct Wrap	Yes	Fair	TSI	5 sq. ft.		

Notes:

Material Types

### Abbreviations

M = Miscellaneous building material

TSI = Thermal System Insulation

S = Surfacing Material

lin. ft. = linear feet sq. ft. = square feet

Exterior - Asbestos Containing Materials			
Location	Material Description	Friable	Approx. Quantity
Building Roof	Roof Flashing	No	20 sq. ft.
	Total		20 sq. ft.
Interior - Asbestos Containing Materials			
Location	Material Description	Friable	Approx. Quantity
Kitchen	Layered Yellow Stone Linoleum & Leveling Compound	No	63 sq. ft.
Bathroom	Yellow and Gold Linoleum	No	66 sq. ft.
	Total		129 sq. ft.
Interior - Asbestos Containing Materials			
Location	Material Description	Friable	Approx. Quantity
Basement (misc. HVAC wrap on Basement Beam, 5 sq. ft.)	HVAC Duct Wrap	Yes	5 sq. ft.
	Total		5 sq. ft.
Interior - Asbestos Containing Materials			
Location	Material Description	Friable	Approx. Quantity
(10 windows 28" wide x 54" tall)	Glazing	Yes	10 Windows
(2 windows 28" wide x 36" tall)	Glazing	Yes	2 Windows
(1 window 31" wide x 26" tall)	Glazing	Yes	1 Windows
(1 window 27" wide x 39" tall)	Glazing	Yes	1 Windows
(2 windows 18" wide x 54" tall)	Glazing	Yes	2 Windows
(1 window 46" wide x 54" tall)	Glazing	Yes	1 Windows
(1 window 60" wide x 54" tall)	Glazing	Yes	1 Windows
(1 window 24" wide x 46" tall)	Glazing	Yes	1 Windows
Basement (4 windows 32" wide x 14" tall)	Glazing	Yes	4 Windows
	Total		23 Windows
Interior - Asbestos Containing Materials			
Location	Material Description	Friable	Approx. Quantity
1 <sup>st</sup> Fl. Walls	Drywall Compound	No	3,296 sq. ft.

### Table 4 - Summary of All Asbestos Containing Materials, 2425 Manz St., Muskegon Heights, Michigan

Exterior - Asbestos Containing Materials				
Location	<b>Material Description</b>		Friable	Approx. Quantity
1 <sup>st</sup> Fl. Ceiling	Drywall Compound		No	1,113 sq. ft.
		Total		4,409 sq. ft.
Interior - Asbestos Containing Materials				
Location	<b>Material Description</b>		Friable	Approx. Quantity
Living Room Ceiling	Textured Surfacing		Yes	224 sq. ft.
N Bedroom Ceiling	Textured Surfacing		Yes	154 sq. ft.
NW Bedroom Ceiling	Textured Surfacing		Yes	154 sq. ft.
NW Bedroom Wall	Textured Surfacing		Yes	400 sq. ft.
		Total		932 sq. ft.

#### Table 4 - Summary of All Asbestos Containing Materials, 2425 Manz St., Muskegon Heights, Michigan

Notes: Abbreviations

lin. ft. = linear feet sq. ft. = square feet

**Shaded/Bolded** = Friable ACM and any Category I and Category II non-friable ACM that has a high probability of becoming crumbled, pulverized, or reduced to powder by the demolition or renovation activities that must be properly abated prior to commencement of any demolition/renovation activities.

Demolition/renovation activities completed with intact Category I non-friable ACM are regulated by OSHA and must be completed following the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

Please note that a Negative Pressure Enclosure must be utilized during abatement when Site Conditions Warrant. Examples of these conditions include the abatement of Plaster and Vermiculite insulation, HVAC Duct Wrap in Poor Condition, and Air-O-Cell/Mag Pipe Wrap. Conditions outside of these should be assessed on a case by case basis during the Asbestos Abatement Contractors site walk and Work Plan Preparation.



P.O. Box 13216 Lansing, MI 48901 Phone: 888.449.4566 Fax: 888.448.8739 www.redcedarconsulting.net

November 1, 2018

Mr. Tim Burgess Muskegon County Land Bank Land Bank Coordinator 173 E. Apple Avenue, Suite 104 Muskegon, MI 49442

### RE: Asbestos Containing Material and Hazardous Materials Inspection 2501 Wood St., Muskegon Heights, MI 49444 Parcel ID: 61-26-185-152-0001-00

Dear Mr. Burgess:

Red Cedar Consulting has completed an asbestos-containing material (ACM) and hazardous materials inspection at 2501 Wood St., Muskegon Heights, Michigan (Subject Property). This inspection was completed at the request of the Muskegon County Land Bank to comply with the United States Environmental Protection Agency (USEPA) requirements for demolition and renovation set forth under the National Emissions Standards for Hazardous Air Pollutants (NESHAP, 40 CFR Part 61). This inspection was also completed to comply with the Occupational Safety and Health Administration (OSHA) Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

#### **SUBJECT PROPERTY**

The Subject Property is comprised of a .14 acre residential parcel which contains a 528 sq. ft. attached garage and approximate 842 square foot residential building (the Building) constructed in 1930. The Building was constructed on a concrete block basement with one aboveground floor. The exterior walls of the Building were finished with vinyl siding over wood lap while the roof was sealed with asphalt shingles. The Building can be further divided into a front entry, living room, dining room, kitchen, bath, two bedrooms and a rear entry.

### VISUAL INSPECTION AND SAMPLING

#### **Asbestos Containing Materials Inspection**

Mr. Aaron Paquet of Red Cedar Consulting (Red Cedar), an accredited State of Michigan/EPA Asbestos Building Inspector (Accreditation Number A30955) whom completed training per the Michigan Asbestos Workers Accreditation Act 440 completed an inspection of the Subject Property on October 23, 2018 for suspected asbestos containing building materials.

This inspection, and subsequent sample collection was completed in accordance with the USEPA Asbestos Hazard Emergency Response Act (AHERA) (40 CFR Part 763) assessment and sampling protocol.

During the completion of the inspection, each area of the Subject Property was visually inspected for asbestos containing building materials (ACBM). Following the completion of the visual inspection, Red Cedar staff identified each suspect area of friable and non-friable ACBM and sorted them into one of three homogenous categories for sampling purposes. AHERA defines friable as a material that when dry, may be crumbled, pulverized, or reduced to powder by hand pressure. A homogenous area is defined by OSHA as an area of surfacing, thermal system insulation (TSI) or miscellaneous material that is uniform in color and texture. Surfacing materials are most commonly found in sprayed-on, troweled-on or otherwise applied to surfaces, such as acoustical plaster on ceilings and fireproofing materials on structural members. TSI refers to materials applied to pipes, fittings, boilers, ductwork, or other components to prevent heat loss or gain, or condensation. Any material that does not fall under the surfacing or TSI category, such as floor tile, drywall, and acoustical ceiling tile are placed into the miscellaneous materials category.

Following the completion of the visual inspection, Red Cedar staff identified the following materials as suspect ACBM:

- Vapor Barrier
- Shingle Roof
- 12"x12" Vinyl Floor Tile
- Linoleum
- 1'x1' Ceiling Tile
- Glazing
- Plaster

Red Cedar staff collected twenty nine samples of suspect ACBM separated into thirteen distinct homogenous groups for laboratory analysis. Samples were collected and submitted to APEX Research Inc. Laboratories (APEX) (Accreditation Number 102118-0) for laboratory analysis. Analysis was completed utilizing polarized light microscopy (PLM) which is the Environmental Protection Agency (EPA) approved method for analysis of bulk materials for asbestos. PLM analysis completed pursuant to method (EPA 600/M4-82-020) identifies asbestos fiber bundles by the visual properties displayed when the sample is treated with various dispersion staining liquids. The laboratory report completed following the sample analysis indicates if asbestos is present, and at what percentage along with a description and percentage of other fibrous and non-fibrous materials and sample color. Chain-of-custody documentation was followed from sample collection through shipping and receiving of the samples at the designated laboratory. The documentation assures that samples will meet the quality assurance/quality control measures defined by AHERA. The laboratory analytical report prepared by APEX for the twenty nine samples is included as Attachment A.

#### **Hazardous Materials Inspection**

On October 23, 2018 the Subject Property was also inspected for the presence of hazardous materials which include but are not limited to polychlorinated biphenyls (PCBs) and potential mercury containing equipment and any items or containers that may contain or be classified as a hazardous or regulated material. Each material, if identified, was documented along with the approximate location. Any materials identified as hazardous are included in Table 1.

### **INSPECTION RESULTS AND RECOMMENDATIONS**

During the completion of the asbestos inspection, twenty nine samples of suspect ACM were collected and are documented in Table 2 along with the Red Cedar sample number, description, friability, material type, ACM classification, sample location, material quantity and laboratory analytical results.

ACM, as defined by the USEPA NESHAP is "any material containing more than 1 percent asbestos as determined using the method specified in appendix E, subpart E, 40 CFR part 763 Section 1, Polarized Light Microscopy".

Friable ACM is defined by NESHAP as any material containing more than 1 percent asbestos that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. Friable ACM is a concern due the ease of unintentionally disturbing the ACM which may result in "visible emissions" which is known as a Fiber Release Episode.

Non-friable asbestos-containing material is defined as "material containing more than 1 percent asbestos that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. Non-friable ACM's are separated into Category I and Category II ACM. Category I ACM is any asbestos containing packing's, gaskets, resilient floor coverings (vinyl floor tile and linoleum are examples of these) and asphalt roofing products. Category II ACM is stated by NESHAP as any material excluding Category I non-friable ACM such as drywall, plaster or fiberboard insulation.

### **Presumed Asbestos Containing Material**

Presumed Asbestos Containing Materials (PACM) are suspect surfacing, TSI and miscellaneous materials found in buildings constructed prior to 1980 which are classified as and due to the age of the structure, are assumed to be ACM and do not require sample collection and analysis. OSHA dictates that PACM may be "rebutted" following a complete inspection pursuant to AHERA protocol.

The HVAC Duct Wrap located in the Building was classified as PACM due to the age of the structure and samples were not collected.

Table 3 lists the location, material description, friability, condition, material type (surfacing, thermal or miscellaneous) and approximate quantity of all PACM documented at the Subject Property.

Table 4 provides a summary all ACM documented at the Subject Property which includes the material location, description, and approximate quantity.

### Friable ACM's

A window glazing sample collected from a window in the basement was found to contain up to 1.5% asbestos following analysis. The assessment to quantify the extent of this material identified five windows at the following locations that would fall into the same homogenous group. The locations of the windows are listed below:

• Basement (5 windows 30" wide x 14" tall)

Duct Wrap identified in the building in conjunction with the forced air heating system is classified as friable ACM. The visual assessment to quantify the extent of this material identified HVAC Duct Wrap at the following locations within the basement and first floor:

- Living (1 register, 10 sq. ft.)
- NE Bedroom (1 register, 10 sq. ft.)
- NW Bedroom (1 register, 10 sq. ft.)

### Category I ACM

One type of resilient floor covering (Tan Marbled Linoleum) located within the bathroom was found to contain up to 30% Chrysotile asbestos. The assessment to quantify the extent of this material identified approximately 42 sq. ft. of this material within the Building.

#### **Category II ACM**

No Category II non-friable ACM was identified during the completion of this inspection.

#### **RECOMMENDATIONS**

#### **Asbestos Containing Materials**

HVAC material identified in the Building system and listed below is classified as friable ACM and should be removed prior to any renovation/demolition activities.

- Living (1 register, 10 sq. ft.)
- NE Bedroom (1 register, 10 sq. ft.)
- NW Bedroom (1 register, 10 sq. ft.)

Friable asbestos containing window glazing was identified on five windows throughout the Building. The locations of these windows that should be abated prior to demolition/renovation activities are listed below:

• Basement (5 windows 30" wide x 14" tall)

Please note: Other different sized windows are located throughout the Building but these windows were assessed and found to be constructed either without window glazing or were sampled and found to not contain asbestos and therefore are not required to be removed.

The Category I resilient floor covering (Tan Marbled Linoleum) is a non-friable ACM that may be left in place as long as the demolition/renovation activities are completed following the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

Please note: The location of samples obtained during this inspection were in a random fashion and areas that were not identified during this inspection may be damaged or have become damaged since the inspection was completed. If Category I or Category II friable materials are discovered prior to or during the demolition/renovation process, these materials must be abated prior to commencement of any demolition/renovation activities at the Subject Property.

### **Hazardous Materials**

Hazardous Materials identified at the Subject Property and documented in Table 1 which require proper removal and disposal consist of the following items:

- Smoke Detector (1)
- Thermostat (1)
- 1-Gallon Container Misc. Roof Cement (12)
- Television (1)
- Spray Can Misc. (14)
- Automobile Tire (2)
- 1-Quart Container Misc. (10)
- 1-Pint Container Misc. (8)

### **REGULATORY REQUIREMENTS**

A Notification of Intent to Renovate/Demolish form must be filed with the Michigan Department of Environmental Quality- Air Quality Division at least 10 working days prior to any renovation or demolition activities at a site.

The Notification of Intent to Renovate/Demolish form must also be completed and submitted to the MIOSHA-Asbestos Program whenever demolition, encapsulation and/or renovation activities at a site involving greater than ten lineal feet and/or fifteen square feet of ACM will be completed.

Regulated asbestos containing materials per NESHAP (40 CFR Part 61) which falls into any of the following categories are ACM's that must be removed prior to any renovation/demolition activities at the Subject Property.

- Friable asbestos material.
- Category I non-friable ACM that has become friable.
- Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading.
- Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of renovation or demolition operations.

Asbestos abatement should only be performed by a certified asbestos abatement contractor licensed to complete abatement work. The contractor must also follow the standards and requirements set forth per the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) and the USEPA NESHAP (40 CFR Part 61).

Additional information regarding the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) and the USEPA NESHAP (40 CFR Part 61) can be obtained by contacting the associated agency below.

NESHAP Asbestos Program Department of Environmental Quality Phone: 517-284-6777 MIOSHA-CSHD-Asbestos Program State of Michigan Phone: 517-284-7680 Email: asbestos@michigan.gov

#### **DISCLAIMER**

Red Cedar Consulting performed destructive testing methods in an attempt to access and inspect all areas of the Building. Unfortunately, due to the age of construction along with multiple additions/renovations that may have been completed on the Building, additional inspections may be required if suspect ACM material not documented within this report is encountered during renovation/demolition activities.

This report was prepared at the request and for exclusive use by the Muskegon County Land Bank and may not be reproduced or sold without written permission from Red Cedar Consulting.

We appreciate the opportunity to provide the requested services. Please contact us at (888) 449-4566 with any questions or concerns.

Sincerely, Red Cedar Consulting

Raion Poquet

Aaron Paquet Michigan/EPA Certified Asbestos Building Inspector (A30955)

Red Cedar Consulting

# Attachment 1

APEX Research Laboratory Analytical Results

Test Method, Polarized Light Microscopy (PLM)

Project : 2501 Wood St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80561Date Collected:10/23/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80561 - 01 Cust. #: WT-HM-01A Material: Black Vapor Barrier Location: Appearance: black,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 35% Other - 65%
Lab ID #: 80561 - 02 Cust. #: WT-HM-01B Material: Black Vapor Barrier Location: Appearance: black,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 35% Other - 65%
Lab ID #: 80561 - 03 Cust. #: WT-HM-02A Material: Brown Vapor Barrier Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 95% Other - 5%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2501 Wood St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80561Date Collected:10/23/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80561 - 04 Cust. #: WT-HM-02B Material: Brown Vapor Barrier Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 95% Other - 5%
Lab ID #: 80561 - 05 Cust. #: WT-HM-03A Material: Roofing Materials Location: Appearance: black,fibrous,homogenous Layer: 1 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%
Lab ID #: 80561 - 05a Cust. #: WT-HM-03A Material: Shingle Location: Appearance: black,fibrous,homogenous Layer: 2 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2501 Wood St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80561Date Collected:10/23/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80561 - 05b Cust. #: WT-HM-03A Material: Shingle Location: Appearance: black,fibrous,homogenous Layer: 3 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%
Lab ID #: 80561 - 05c Cust. #: WT-HM-03A Material: Shingle Location: Appearance: black,fibrous,homogenous Layer: 4 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%
Lab ID #: 80561 - 06 Cust. #: WT-HM-03B Material: Roofing Materials Location: Appearance: black,fibrous,homogenous Layer: 1 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2501 Wood St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80561Date Collected:10/23/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80561 - 06a Cust. #: WT-HM-03B Material: Shingle Location: Appearance: black,fibrous,homogenous Layer: 2 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%
Lab ID #: 80561 - 06b Cust. #: WT-HM-03B Material: Shingle Location: Appearance: black,fibrous,homogenous Layer: 3 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%
Lab ID #: 80561 - 06c Cust. #: WT-HM-03B Material: Shingle Location: Appearance: black,fibrous,homogenous Layer: 4 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2501 Wood St.



Keport 10: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80561Date Collected:10/23/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80561 - 07 Cust. #: WT-HM-04A Material: Beige 12x12 VFT Location: Appearance: beige,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80561 - 07a Cust. #: WT-HM-04A Material: Mastic Location: Appearance: clear,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80561 - 08 Cust. #: WT-HM-04B Material: Beige 12x12 VFT Location: Appearance: beige,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2501 Wood St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80561Date Collected:10/23/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80561 - 08a Cust. #: WT-HM-04B Material: Mastic Location: Appearance: clear,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80561 - 09 Cust. #: WT-HM-05A Material: 12x12 Blue Layered VFT Location: Appearance: blue,nonfibrous,homogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80561 - 09a Cust. #: WT-HM-05A Material: Mastic Location: Appearance: clear,nonfibrous,homogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2501 Wood St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80561Date Collected:10/23/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80561 - 09b Cust. #: WT-HM-05A Material: Flooring Location: Appearance: beige,fibrous,nonhomogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 35% Other - 65%
Lab ID #: 80561 - 10 Cust. #: WT-HM-05B Material: 12x12 Blue Layered VFT Location: Appearance: black,nonfibrous,homogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80561 - 10a Cust. #: WT-HM-05B Material: Mastic Location: Appearance: clear,nonfibrous,homogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2501 Wood St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80561Date Collected:10/23/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80561 - 10b Cust. #: WT-HM-05B Material: Flooring Location: Appearance: beige,fibrous,nonhomogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 35% Other - 65%
Lab ID #: 80561 - 11 Cust. #: WT-HM-06A Material: Tan Marble Linoleum Location: Appearance: yellow,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: YES Chrysotile - 30%	Other - 70%
Lab ID #: 80561 - 12 Cust. #: WT-HM-06B Material: Tan Marble Linoleum Location: Appearance: Layer: of	Asbestos Present: NOT ANALYZED	
For Lavered Samples, each component will be analyzed and report	ed senarately	

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2501 Wood St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80561Date Collected:10/23/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80561 - 13 Cust. #: WT-HM-07A Material: Brown/Yellow Mottled Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 35% Other - 65%
Lab ID #: 80561 - 14 Cust. #: WT-HM-07B Material: Brown/Yellow Mottled Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 35% Other - 65%
Lab ID #: 80561 - 15 Cust. #: WT-HM-08A Material: 1x1 White Textured Ceiling Tile Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 90% Other - 10%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2501 Wood St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80561Date Collected:10/23/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80561 - 16 Cust. #: WT-HM-08B Material: 1x1 White Textured Ceiling Tile Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 90% Other - 10%
Lab ID #: 80561 - 17 Cust. #: WT-HM-09A Material: 1x1 White Smooth Ceiling Tile Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 95% Other - 5%
Lab ID #: 80561 - 18 Cust. #: WT-HM-09B Material: 1x1 White Smooth Ceiling Tile Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 95% Other - 5%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2501 Wood St.



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For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the US Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.



APEX Research Inc., 11054 Hi Tech Drive, Whitmore Lake, MI 48189 (734) 449-9990, Fax (734) 449-9991

Test Method, Polarized Light Microscopy (PLM)

Project : 2501 Wood St.



Report 10:Mr. Aaron PaquetRed Cedar ConsultingP.O. Box 13216Lansing, MI 48901		ARI Report #18-80561Date Collected:10/23/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80561 - 22 Cust. #: WT-HM-11B Material: House Window Glazing "B" Location: Appearance: beige,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80561 - 23 Cust. #: WT-HM-12A Material: Basement Window Glazing Location: Appearance: beige,fibrous,homogenous	Asbestos Present: <b>YES</b> Chrysotile - 1.50% POINT COUNT RESULT	Other - 98.50%
Layer: 1 of 1		
Lab ID #: 80561 - 24 Cust. #: WT-HM-12B Material: Basement Window Glazing	Asbestos Present:	
Location: Appearance: Layer: of	NOT ANALYZED	
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For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2501 Wood St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80561Date Collected:10/23/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80561 - 25 Cust. #: WT-HS-01A Material: Plaster Finish Coat Location: Appearance: beige,nonfibrous,homogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80561 - 25a Cust. #: WT-HS-01A Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Other - 98%
Lab ID #: 80561 - 25b Cust. #: WT-HS-01A Material: Drywall Location: Appearance: white,fibrous,nonhomogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

Kut Joh

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2501 Wood St.



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Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80561 - 26 Cust. #: WT-HS-01B Material: Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80561 - 26a Cust. #: WT-HS-01B Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Other - 98%
Lab ID #: 80561 - 27 Cust. #: WT-HS-01C Material: Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Kut Joh

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2501 Wood St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80561Date Collected:10/23/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80561 - 27a Cust. #: WT-HS-01C Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Other - 98%
Lab ID #: 80561 - 28 Cust. #: WT-HS-01D Material: Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80561 - 28a Cust. #: WT-HS-01D Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Other - 98%

For Layered Samples, each component will be analyzed and reported separately.

Kut Joh

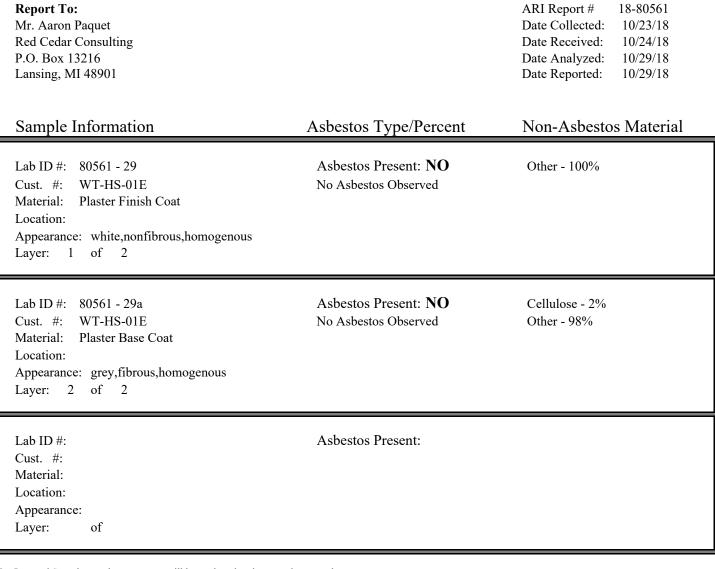
Robert T. Letarte Jr., Laboratory Director



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Test Method, Polarized Light Microscopy (PLM)

Project : 2501 Wood St.



For Layered Samples, each component will be analyzed and reported separately.

Kant Jos

Robert T. Letarte Jr., Laboratory Director



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APEX Research, Inc. 11054 Hi Tech Drive, Whitmore Lake, MI 48189 Phone: 734-449-9990	rive, Whitmore Lake, M	II 48189 Phone: 73	4-449-9990	APEX RESEARCH
	E-mail: apexresearch@chartermi.net	net Fax: 73 <sup>,</sup>	Fax: 734-449-9991	
	i			Lah Use Only
Client Name: Red Cedar Consulting	Date of Survey :	2	23-18	Log-In
Address: PO BOX 13216	Project : 250	250/ W 000	al di	Report
City, St., Zip: Lansing, MI 48901	Project # :			
44	Contact Person:	Crson: Aaron	Aaron Paquet	
Around Time	600, PC all	nples with a d	apaquet@redcedarconsulting.net samples with a detection of <5% ACM.	lting.net ACM.
Asbestos: Bulk x	Wipe	Point Count	PCM	
Rush 24 hour Lead: Bulk	Wipe	Air Paint	tt Soil	
				1
	Tape	BioSIS	Other Viable	
Other: C (TTP) All Samples TEM: AHERA 7400	00 Bulk/NOB	EPA Level II	vel II	
Lab ID #     Client ID #     Material/Location	cation	Volume	Area	Results
1 WT- HN- 014 Rech Van 5	Barner			
. 8/0 / /	•			
3 1 024 Elenen Varon E	Bellier			
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Rev: 12/03 Work Forms: COC		APEX RESEARCH	<b>EARCH</b>	

4

Red Cedar Consulting

Tables

Hazardous Materials Description and Location						
Location	Material Description	Quantity				
Living Room	Thermostat	1				
Bathroom	1-Gallon Container Misc.	2				
Basement Stairwell	Smoke Detector	1				
Basement	Television	1				
Basement	Spray Can Misc.	8				
Basement	1-Gallon Container Misc.	10				
Garage	Automobile Tire	2				
Garage	1-Quart Container Misc.	10				
Garage	1-Pint Container Misc.	8				
Garage	Spray Can Misc.	6				

Table 2 - Summary of Sample Descriptions and Asbestos Laboratory Results, 2501 Wood St., Muskegon Heights, Michigan

Sample Number	Sample Description	Friable	Material Type	Material Classification	% Asbestos Laboratory Result	Sample Location	Approx. Material Quantity
WT-HM-01A	Black Vapor Barrier	Yes	М	Category II	ND	House Exterior	NA
WT-HM-01B	Black Vapor Barrier	Yes	М	Category II	ND	House Exterior	NA
WT-HM-02A	Brown Vapor Barrier	Yes	М	Category II	ND	House Exterior	NA
WT-HM-02B	Brown Vapor Barrier	Yes	М	Category II	ND	House Exterior	NA
WT-HM-03A	Shingle Roof	No	М	Category I	ND/ND/ND/ ND	House Roof	NA
WT-HM-03B	Shingle Roof	No	М	Category I	ND/ND/ND/ ND	House Roof	NA
WT-HM-04A	12x12 Beige VFT	No	М	Category I	ND/ND	Front Entry	NA
WT-HM-04B	12x12 Beige VFT	No	М	Category I	ND/ND	Front Entry	NA
WT-HM-05A	12x12 Blue Layered VFT	No	М	Category I	ND/ND/ND	Kitchen	NA
WT-HM-05B	12x12 Blue Layered VFT	No	М	Category I	ND/ND/ND	Kitchen	NA
WT-HM-06A	Tan Marbled Linoleum	No	М	Category I	30% CH	Bathroom	42 sq. ft.
WT-HM-06B	Tan Marbled Linoleum	No	М	Category I	NA	Bathroom	NA
WT-HM-07A	Brown and Yellow Mottled Linoleum	No	М	Category I	ND	Rear Entry	NA
WT-HM-07B	Brown and Yellow Mottled Linoleum	No	М	Category I	ND	Rear Entry	NA
WT-HM-08A	1x1 White Textured CT	Yes	М	Category II	ND	Front Entry Ceiling	NA
WT-HM-08B	1x1 White Textured CT	Yes	М	Category II	ND	Front Entry Ceiling	NA
WT-HM-09A	1x1 White Smooth CT	Yes	М	Category II	ND	Rear Entry Ceiling	NA
WT-HM-09B	1x1 White Smooth CT	Yes	М	Category II	ND	Rear Entry Ceiling	NA
WT-HM-10A	Glazing "A"	Yes	М	Category II	ND	Front Porch Window	NA
WT-HM-10B	Glazing "A"	Yes	М	Category II	ND	Kitchen Window	NA
WT-HM-11A	Glazing "B"	Yes	М	Category II	ND	Living Room Window	NA
WT-HM-11B	Glazing "B"	Yes	М	Category II	ND	Front Porch Window	NA
WT-HM-12A	Basement Window Glazing	Yes	М	Category II	1.5% CH	Basement Window	5 Windows
WT-HM-12B	Basement Window Glazing	Yes	М	Category II	NA	Basement Window	NA
WT-HS-01A	Plaster	No	S	Category II	ND/ND/ND	Kitchen Ceiling	NA
WT-HS-01B	Plaster	No	S	Category II	ND/ND	Rear Entry Ceiling	NA

Table 2 - Summary of Sample Descriptions and Asbestos Laboratory Results, 2501 Wood St., Muskegon Heights, Michigan

Sample Number	Sample Description	Friable	Material Type	Material Classification	% Asbestos Laboratory Result	Sample Location	Approx. Material Quantity
WT-HS-01C	Plaster	No	S	Category II	ND/ND	NE Bedroom Wall	NA
WT-HS-01D	Plaster	No	S	Category II	ND/ND	NW Bedroom Wall	NA
WT-HS-01E	Plaster	No	S	Category II	ND/ND	Living Room Wall	NA

Notes:

Material Types

M = Miscellaneous building material

TSI = Thermal System Insulation

S = Surfacing Material

PC = Point Count Analysis

CH = Chrysotile Asbestos

### Abbreviations

NQ = Not quantified
NA = Not applicable
ND = Not detected. Laboratory result is less than 1 % asbestos
lin. ft. = linear feet
sq. ft. = square feet

Asbestos Containing Material (ACM) is defined as any material containing more than 1 percent asbestos as determined utilizing Polarized Light Microscopy.

### Table 3 - Summary of Presumed Asbestos Containing Materials, 2501 Wood St., Muskegon Heights, Michigan

Asbestos Containing Material Description and Location						
Location	Material Description	Friable	Condition	Material Type	Approx. Quantity	
Living (1 register, 10 sq. ft.) NE Bedroom (1 register, 10 sq. ft.) NW Bedroom (1 register, 10 sq. ft.)	HVAC Duct Wrap	Yes	Fair	TSI	30 sq. ft.	

Notes:

Material Types

### Abbreviations

M = Miscellaneous building material

TSI = Thermal System Insulation

S = Surfacing Material

lin. ft. = linear feet sq. ft. = square feet

Interior - Asbestos Containing Materials				
Location	<b>Material Description</b>		Friable	Approx. Quantity
Bathroom	Tan Marbled Linoleum		No	42 sq. ft.
		Total		42 sq. ft.
Interior - Asbestos Containing Materials				
Location	<b>Material Description</b>		Friable	Approx. Quantity
Living (1 register, 10 sq. ft.) NE Bedroom (1 register, 10 sq. ft.) NW Bedroom (1 register, 10 sq. ft.)	HVAC Duct Wrap		Yes	30 sq. ft.
		Total		30 sq. ft.
Interior - Asbestos Containing Materials				
Location	<b>Material Description</b>		Friable	Approx. Quantity
Basement (5 windows 30" wide x 14" tall)	Glazing		Yes	5 Windows
		Total		5 Windows

#### Table 4 - Summary of All Asbestos Containing Materials, 2501 Wood St., Muskegon Heights, Michigan

#### Notes:

Abbreviations

lin. ft. = linear feet sq. ft. = square feet

**Shaded/Bolded** = Friable ACM and any Category I and Category II non-friable ACM that has a high probability of becoming crumbled, pulverized, or reduced to powder by the demolition or renovation activities that must be properly abated prior to commencement of any demolition/renovation activities.

Demolition/renovation activities completed with intact Category I non-friable ACM are regulated by OSHA and must be completed following the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

Please note that a Negative Pressure Enclosure must be utilized during abatement when Site Conditions Warrant. Examples of these conditions include the abatement of Plaster and Vermiculite insulation, HVAC Duct Wrap in Poor Condition, and Air-O-Cell/Mag Pipe Wrap. Conditions outside of these should be assessed on a case by case basis during the Asbestos Abatement Contractors site walk and Work Plan Preparation.



P.O. Box 13216 Lansing, MI 48901 Phone: 888.449.4566 Fax: 888.448.8739 www.redcedarconsulting.net

October 29, 2018

Mr. Tim Burgess Muskegon County Land Bank Land Bank Coordinator 173 E. Apple Avenue, Suite 104 Muskegon, MI 49442

### RE: Asbestos Containing Material and Hazardous Materials Inspection 2531 James Ave., Muskegon, MI 49442 Parcel ID: 61-10-764-002-0029-00

Dear Mr. Burgess:

Red Cedar Consulting has completed an asbestos-containing material (ACM) and hazardous materials inspection at 2531 James Ave., Muskegon, Michigan (Subject Property). This inspection was completed at the request of the Muskegon County Land Bank to comply with the United States Environmental Protection Agency (USEPA) requirements for demolition and renovation set forth under the National Emissions Standards for Hazardous Air Pollutants (NESHAP, 40 CFR Part 61). This inspection was also completed to comply with the Occupational Safety and Health Administration (OSHA) Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

### **SUBJECT PROPERTY**

The Subject Property is comprised of a .45 acre residential parcel which contains an approximate 710 square foot residential building (the Building) with an unknown construction date. The Building was constructed on a concrete block foundation with one aboveground floor. The exterior walls of the Building were finished with vinyl siding over a vapor barrier while the roof was sealed with asphalt shingles. The Building can be further divided into a living room, dining room, kitchen, bath, two bedrooms and a rear entry.

### VISUAL INSPECTION AND SAMPLING

### **Asbestos Containing Materials Inspection**

Mr. Aaron Paquet of Red Cedar Consulting (Red Cedar), an accredited State of Michigan/EPA Asbestos Building Inspector (Accreditation Number A30955) whom completed training per the Michigan Asbestos Workers Accreditation Act 440 completed an inspection of the Subject Property on October 10, 2018 for suspected asbestos containing building materials.

This inspection, and subsequent sample collection was completed in accordance with the USEPA Asbestos Hazard Emergency Response Act (AHERA) (40 CFR Part 763) assessment and sampling protocol.

During the completion of the inspection, each area of the Subject Property was visually inspected for asbestos containing building materials (ACBM). Following the completion of the visual inspection, Red Cedar staff identified each suspect area of friable and non-friable ACBM and sorted them into one of three homogenous categories for sampling purposes. AHERA defines friable as a material that when dry, may be crumbled, pulverized, or reduced to powder by hand pressure. A homogenous area is defined by OSHA as an area of surfacing, thermal system insulation (TSI) or miscellaneous material that is uniform in color and texture. Surfacing materials are most commonly found in sprayed-on, troweled-on or otherwise applied to surfaces, such as acoustical plaster on ceilings and fireproofing materials on structural members. TSI refers to materials applied to pipes, fittings, boilers, ductwork, or other components to prevent heat loss or gain, or condensation. Any material that does not fall under the surfacing or TSI category, such as floor tile, drywall, and acoustical ceiling tile are placed into the miscellaneous materials category.

Following the completion of the visual inspection, Red Cedar staff identified the following materials as suspect ACBM:

- Asphalt Shingle
- Vapor Barrier
- Underlayment
- Linoleum
- 9"x9" Vinyl Floor Tile
- Drywall and Joint Compound

Red Cedar staff collected eighteen samples of suspect ACBM separated into nine distinct homogenous groups for laboratory analysis. Samples were collected and submitted to APEX Research Inc. Laboratories (APEX) (Accreditation Number 102118-0) for laboratory analysis. Analysis was completed utilizing polarized light microscopy (PLM) which is the Environmental Protection Agency (EPA) approved method for analysis of bulk materials for asbestos. PLM analysis completed pursuant to method (EPA 600/M4-82-020) identifies asbestos fiber bundles by the visual properties displayed when the sample is treated with various dispersion staining liquids. The laboratory report completed following the sample analysis indicates if asbestos is present, and at what percentage along with a description and percentage of other fibrous and non-fibrous materials and sample color. Chain-of-custody documentation was followed from sample collection through shipping and receiving of the samples at the designated laboratory. The documentation assures that samples will meet the quality assurance/quality control measures defined by AHERA. The laboratory analytical report prepared by APEX for the eighteen samples is included as Attachment A.

### **Hazardous Materials Inspection**

On October 10, 2018 the Subject Property was also inspected for the presence of hazardous materials which include but are not limited to polychlorinated biphenyls (PCBs) and potential mercury containing equipment and any items or containers that may contain or be classified as a hazardous or regulated material. Each material, if identified, was documented along with the approximate location. Any materials identified as hazardous are included in Table 1.

### **INSPECTION RESULTS AND RECOMMENDATIONS**

During the completion of the asbestos inspection, eighteen samples of suspect ACM were collected and are documented in Table 2 along with the Red Cedar sample number, description, friability, material type, ACM classification, sample location, material quantity and laboratory analytical results.

ACM, as defined by the USEPA NESHAP is "any material containing more than 1 percent asbestos as determined using the method specified in appendix E, subpart E, 40 CFR part 763 Section 1, Polarized Light Microscopy".

Friable ACM is defined by NESHAP as any material containing more than 1 percent asbestos that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. Friable ACM is a concern due the ease of unintentionally disturbing the ACM which may result in "visible emissions" which is known as a Fiber Release Episode.

Non-friable asbestos-containing material is defined as "material containing more than 1 percent asbestos that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. Non-friable ACM's are separated into Category I and Category II ACM. Category I ACM is any asbestos containing packing's, gaskets, resilient floor coverings (vinyl floor tile and linoleum are examples of these) and asphalt roofing products. Category II ACM is stated by NESHAP as any material excluding Category I non-friable ACM such as drywall, plaster or fiberboard insulation.

### **Presumed Asbestos Containing Material**

Presumed Asbestos Containing Materials (PACM) are suspect surfacing, TSI and miscellaneous materials found in buildings constructed prior to 1980 which are classified as and due to the age of the structure, are assumed to be ACM and do not require sample collection and analysis. OSHA dictates that PACM may be "rebutted" following a complete inspection pursuant to AHERA protocol.

No PACM was identified during the completion of this inspection. All suspect materials identified were sampled and analyzed for ACM.

Table 3 lists the location, material description, friability, condition, material type (surfacing, thermal or miscellaneous) and approximate quantity of all PACM documented at the Subject Property.

Table 4 provides a summary all ACM documented at the Subject Property which includes the material location, description, and approximate quantity.

### Friable ACM's

No friable ACM's were identified during the completion of this inspection.

### **Category I ACM**

One type of resilient floor covering (Beige/Brown 9"x9" Vinyl Tile) located within the N Bedroom was found to contain up to 2.25% Chrysotile asbestos. The assessment to quantify the extent of this material identified approximately 121 sq. ft. of this material within the Building.

### **Category II ACM**

No Category II non-friable ACM was identified during the completion of this inspection.

### **RECOMMENDATIONS**

### **Asbestos Containing Materials**

The Category I resilient floor covering (Beige/Brown 9"x9" Vinyl Tile) is a non-friable ACM that may be left in place as long as the demolition/renovation activities are completed following the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

Please note: The location of samples obtained during this inspection were in a random fashion and areas that were not identified during this inspection may be damaged or have become damaged since the inspection was completed. If Category I or Category II friable materials are discovered prior to or during the demolition/renovation process, these materials must be abated prior to commencement of any demolition/renovation activities at the Subject Property.

### **Hazardous Materials**

Hazardous Materials identified at the Subject Property and documented in Table 1 which require proper removal and disposal consist of the following items:

- Automobile Tires (2)
- 5 Gallon Container Misc. Paint (1)
- Quart Container Misc. Paint (5)
- Gallon Container Misc. Paint (1)
- Quart Container Bleach (2)
- Quart Container Mineral Spirits (1)

### **REGULATORY REQUIREMENTS**

A Notification of Intent to Renovate/Demolish form must be filed with the Michigan Department of Environmental Quality- Air Quality Division at least 10 working days prior to any renovation or demolition activities at a site.

The Notification of Intent to Renovate/Demolish form must also be completed and submitted to the MIOSHA-Asbestos Program whenever demolition, encapsulation and/or renovation activities at a site involving greater than ten lineal feet and/or fifteen square feet of ACM will be completed.

Regulated asbestos containing materials per NESHAP (40 CFR Part 61) which falls into any of the following categories are ACM's that must be removed prior to any renovation/demolition activities at the Subject Property.

- Friable asbestos material.
- Category I non-friable ACM that has become friable.
- Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading.
- Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of renovation or demolition operations.

Asbestos abatement should only be performed by a certified asbestos abatement contractor licensed to complete abatement work. The contractor must also follow the standards and requirements set forth per the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) and the USEPA NESHAP (40 CFR Part 61).

Additional information regarding the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) and the USEPA NESHAP (40 CFR Part 61) can be obtained by contacting the associated agency below.

NESHAP Asbestos Program Department of Environmental Quality Phone: 517-284-6777 MIOSHA-CSHD-Asbestos Program State of Michigan Phone: 517-284-7680 Email: asbestos@michigan.gov

### **DISCLAIMER**

Red Cedar Consulting performed destructive testing methods in an attempt to access and inspect all areas of the Building. Unfortunately, due to the age of construction along with multiple additions/renovations that may have been completed on the Building, additional inspections may be required if suspect ACM material not documented within this report is encountered during renovation/demolition activities.

This report was prepared at the request and for exclusive use by the Muskegon County Land Bank and may not be reproduced or sold without written permission from Red Cedar Consulting.

We appreciate the opportunity to provide the requested services. Please contact us at (888) 449-4566 with any questions or concerns.

Sincerely, Red Cedar Consulting

Raion Poquet

Aaron Paquet Michigan/EPA Certified Asbestos Building Inspector (A30955)

Red Cedar Consulting

### Attachment 1

APEX Research Laboratory Analytical Results

Test Method, Polarized Light Microscopy (PLM)

Project : 2531 James Ave.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80287         Date Collected:       10/10/18         Date Received:       10/12/18         Date Analyzed:       10/17/18         Date Reported:       10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80287 - 01 Cust. #: JA-HM-01A Material: Brown Shingle Location: Appearance: black,fibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 10% Other - 90%
Lab ID #: 80287 - 01a Cust. #: JA-HM-01A Material: Tar Paper Location: Appearance: black,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 50% Other - 50%
Lab ID #: 80287 - 02 Cust. #: JA-HM-01B Material: Brown Shingle Location: Appearance: black,fibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 10% Other - 90%

For Layered Samples, each component will be analyzed and reported separately.

Kut Joh

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2531 James Ave.



Sample InformationAsbestos Type/PercentNon-Asbestos MaterialLab ID #:80287 - 02aAsbestos Present: NOCellulose - 50%Cust. #:JA-HM-01BNo Asbestos ObservedOther - 50%Material:Tar PaperCellulose - 50%Other - 50%Location:Appearance: black,fibrous,homogenousAsbestos Present: NOCellulose - 50%Layer:2of2Cellulose - 50%Lab ID #:80287 - 03Asbestos Present: NOCellulose - 50%Cust. #:JA-HM-02ANo Asbestos ObservedOther - 50%Material:Vapor BarrierNo Asbestos ObservedOther - 50%Lab ID #:80287 - 04Asbestos Present: NOCellulose - 50%Lab ID #:80287 - 04Asbestos Present: NOCellulose - 50%Layer:1of1No Asbestos ObservedOther - 50%Layer:1of1Sector Present: NOCellulose - 50%Layer:1of1Sector Present: NOCellulose - 50%Layer:1of1Sector Present: NOCellulose - 50%Material:Vapor BarrierNo Asbestos ObservedOther - 50%Location:Appearance:black,fibrous,homogenousCellulose - 50%Layer:1of1Sector Present: NOMaterial:Vapor BarrierNo Asbestos ObservedOther - 50%Location:Appearance:black,fibrous,homogenousCellulose - 50%Layer:1of1Sector	Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80287         Date Collected:       10/10/18         Date Received:       10/12/18         Date Analyzed:       10/17/18         Date Reported:       10/19/18
Cust. #:JA-HM-01BNo Asbestos ObservedOther - 50%Material:Tar PaperLocation:Appearance:black,fibrous,homogenousLayer:Layer:2ofLab ID #:80287 - 03Asbestos Present:NOCust. #:JA-HM-02ANo Asbestos ObservedOther - 50%Material:Vapor BarrierVapor BarrierOther - 50%Location:Appearance:black,fibrous,homogenousDifferenceLayer:1of1Lab ID #:80287 - 04Asbestos Present:NOCust. #:JA-HM-02BNo Asbestos ObservedOther - 50%Material:Vapor BarrierCellulose - 50%Other - 50%Location:Asbestos Present:NOCellulose - 50%Appearance:black,fibrous,homogenousNo Asbestos ObservedOther - 50%Lab ID #:80287 - 04Asbestos Present:NOLocation:Appearance:black,fibrous,homogenousOther - 50%Material:Vapor BarrierNo Asbestos ObservedOther - 50%Location:Appearance:black,fibrous,homogenousOther - 50%	Sample Information As	sbestos Type/Percent	Non-Asbestos Material
Cust. #: JA-HM-02A       No Asbestos Observed       Other - 50%         Material: Vapor Barrier       Location:       Appearance: black,fibrous,homogenous         Layer: 1 of 1       Asbestos Present: NO       Cellulose - 50%         Cust. #: JA-HM-02B       No Asbestos Observed       Other - 50%         Material: Vapor Barrier       Location:       Asbestos Present: NO       Cellulose - 50%         Location:       Appearance: black,fibrous,homogenous       No Asbestos Observed       Other - 50%	Cust. #: JA-HM-01B N Material: Tar Paper Location: Appearance: black,fibrous,homogenous		
Cust. #:JA-HM-02BNo Asbestos ObservedOther - 50%Material:Vapor BarrierLocation:Appearance:black,fibrous,homogenous	Cust. #: JA-HM-02A N Material: Vapor Barrier Location: Appearance: black,fibrous,homogenous	. –	
	Cust. #: JA-HM-02B N Material: Vapor Barrier Location: Appearance: black,fibrous,homogenous	. –	

For Layered Samples, each component will be analyzed and reported separately.

Kut Jet

Robert T. Letarte Jr., Laboratory Director

Test Method, Polarized Light Microscopy (PLM)

Project : 2531 James Ave.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80287Date Collected:10/10/18Date Received:10/12/18Date Analyzed:10/17/18Date Reported:10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80287 - 05 Cust. #: JA-HM-03A Material: Black Shingle Location: Appearance: black,fibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 10% Other - 90%
Lab ID #: 80287 - 05a Cust. #: JA-HM-03A Material: Felt Location: Appearance: black,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 15% Other - 85%
Lab ID #: 80287 - 06 Cust. #: JA-HM-03B Material: Black Shingle Location: Appearance: black,fibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 10% Other - 90%

For Layered Samples, each component will be analyzed and reported separately.

Sant

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2531 James Ave.



Report 10: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80287Date Collected:10/10/18Date Received:10/12/18Date Analyzed:10/17/18Date Reported:10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80287 - 06a Cust. #: JA-HM-03B Material: Felt Location: Appearance: black,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 15% Other - 85%
Lab ID #: 80287 - 07 Cust. #: JA-HM-04A Material: Underlayment Location: Appearance: black,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 50% Other - 50%
Lab ID #: 80287 - 08 Cust. #: JA-HM-04B Material: Underlayment Location: Appearance: black,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 50% Other - 50%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director



Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. APEX Research Inc. is not

responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.

Lab ID #: 80287 - 09 Asbestos Present: NO Cellulose - 15% No Asbestos Observed Cust. #: JA-HM-05A Fiberglass - 10% Material: Beige Linoleum Other - 75% Location: Appearance: beige, fibrous, nonhomogenous Layer: of 1 1 Asbestos Present: NO 80287 - 10 Cellulose - 15% Lab ID #: Cust. #: JA-HM-05B No Asbestos Observed Fiberglass - 10% Material: Beige Linoleum Other - 75% Location: Appearance: beige, fibrous, nonhomogenous of Layer: 1 1 Lab ID #: 80287 - 11 Asbestos Present: NO Cellulose - 10% JA-HM-06A Cust. #: No Asbestos Observed Fiberglass - 10% Other - 80% Material: Rose Linoleum Location:

**Report To:** Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901

Sample Information

ARI Report # 18-80287 Date Collected: 10/10/18 Date Received: 10/12/18 Date Analyzed: 10/17/18 10/19/18 Date Reported:

Non-Asbestos Material

Certificate	of Laboratory	y Analysis
	$\mathbf{U}$	Allaly 313

Asbestos Type/Percent

Test Method, Polarized Light Microscopy (PLM)

Project : 2531 James Ave.

NVLAP Lab Code 102118-0

Appearance: white, fibrous, nonhomogenous

For Layered Samples, each component will be analyzed and reported separately.

Layer:

1

of 3

Robert T. Letarte Jr., Laboratory Director



For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.

NVLAP Lab Code 102118-0

### **Certificate of Laboratory Analysis**

Test Method, Polarized Light Microscopy (PLM)

Project : 2531 James Ave.

Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80287         Date Collected:       10/10/18         Date Received:       10/12/18         Date Analyzed:       10/17/18         Date Reported:       10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80287 - 11a Cust. #: JA-HM-06A Material: Linoleum Location: Appearance: red,fibrous,nonhomogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Fiberglass - 10% Other - 80%
Lab ID #: 80287 - 11b Cust. #: JA-HM-06A Material: Mastic Location: Appearance: beige,nonfibrous,homogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80287 - 12 Cust. #: JA-HM-06B Material: Rose Linoleum Location: Appearance: white,fibrous,nonhomogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Fiberglass - 10% Other - 80%



Test Method, Polarized Light Microscopy (PLM)

Project : 2531 James Ave.



Report 10: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80287Date Collected:10/10/18Date Received:10/12/18Date Analyzed:10/17/18Date Reported:10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80287 - 12a Cust. #: JA-HM-06B Material: Linoleum Location: Appearance: red,fibrous,nonhomogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Fiberglass - 10% Other - 80%
Lab ID #: 80287 - 12b Cust. #: JA-HM-06B Material: Mastic Location: Appearance: beige,nonfibrous,homogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80287 - 13 Cust. #: JA-HM-07A Material: Beige/Brown 9x9 VFT Location: Appearance: beige,fibrous,homogenous	Asbestos Present: <b>YES</b> Chrysotile - 2.25% POINT COUNT RESULT	Other - 97.75%
Layer: 1 of 1		

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2531 James Ave.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80287Date Collected:10/10/18Date Received:10/12/18Date Analyzed:10/17/18Date Reported:10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80287 - 14 Cust. #: JA-HM-07B Material: Beige/Brown 9x9 VFT	Asbestos Present:	
Location: Appearance: Layer: 1 of 2	NOT ANALYZED	
Lab ID #: 80287 - 14a Cust. #: JA-HM-07B Material: Mastic Location: Appearance: beige,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80287 - 15 Cust. #: JA-HM-08A Material: Tan Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Fiberglass - 10% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director



Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles

#### Sample Information Asbestos Type/Percent Non-Asbestos Material Lab ID #: 80287 - 16 Asbestos Present: NO Cellulose - 10% Cust. #: JA-HM-08B No Asbestos Observed Fiberglass - 10% Material: Tan Linoleum Other - 80% Location: Appearance: beige, fibrous, nonhomogenous Layer: 1 of 1 Asbestos Present: NO Cellulose - 10% Lab ID #: 80287 - 17 Cust. #: JA-HM-09A No Asbestos Observed Fiberglass - 10% Material: Drywall Other - 80% Location: Appearance: white, fibrous, nonhomogenous Layer: of 1 2 Lab ID #: 80287 - 17a Asbestos Present: NO Other - 100% Cust. #: JA-HM-09A No Asbestos Observed Material: Joint Compound Location: Appearance: white, nonfibrous, homogenous Layer: of 2 2

For Layered Samples, each component will be analyzed and reported separately.

 ARI Report #
 18-80287

 Date Collected:
 10/10/18

 Date Received:
 10/12/18

 Date Analyzed:
 10/17/18

 Date Reported:
 10/19/18

Certificate	of Laboratory	Analysis
 		/

Test Method, Polarized Light Microscopy (PLM)

Project : 2531 James Ave.

containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.

**Report To:** 

Mr. Aaron Paquet

P.O. Box 13216

Lansing, MI 48901

Red Cedar Consulting



Robert T. Letarte Jr., Laboratory Director

Test Method, Polarized Light Microscopy (PLM)

Project : 2531 James Ave.

**Certificate of Laboratory Analysis** 

Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80287Date Collected:10/10/18Date Received:10/12/18Date Analyzed:10/17/18Date Reported:10/19/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80287 - 18 Cust. #: JA-HM-09B Material: Drywall Location: Appearance: white,fibrous,nonhomogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Fiberglass - 10% Other - 80%
Lab ID #: 80287 - 18a Cust. #: JA-HM-09B Material: Joint Compound Location: Appearance: white,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: Cust. #: Material: Location: Appearance: Layer: of	Asbestos Present:	

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



1-7 Cd	-449-9990 APEXACH 449-9991	b - log Lab Use Only Log-In	Auc.		Paquet	apaquet@redcedarconsulting.net	PCM	Soil	Other Viable		Area Results										DEDEWED	Received by: J. W. OCT 1 2 2018	82/1 >	
* X90287	APEX Research, Inc. 11054 Hi Tech Drive, Whitmore Lake, MI 48189 Phone: 734-449-9990 E-mail: apexresearch@chartermi.net Fax: 734-449-9991	Date of Survey : Lo -lo -l	Project: 253/ James		448-8739 Contact Person: Aaron		Asbestos: Bulk Wipe Point Count	Lead: Bulk Wipe Air X	Mold: Bulk Tape BioSIS O	AHERA 7400	Material/Location Volume	Brown Shitzle	>.	ar Barrier	 it shiple	)	Der laymont	1 · 1 · c	te Lihaleun		se Lineleun	S Relinquished by:		
	APEX Research, Inc	Client Name: Red Cedar Consulting	Address: PO Box 13216	City, St., Zip: Lansing, MI 48901	Phone: (888) 449-4566 Fax: (888)	Turn Around Times: (Circle One)		24 nour		Other: 50mg (T) AU Samples. TH	Lab ID # Client ID #	1 279-4m-014 BJu	2 079-14m -215 "	3 54-14m-02A Vapor	 5 JA-Hm-OSA Black	6 JA-MM-032 11	- 3A-4m-24A Under	2 CTA-HM-OUS	9 JA HM- 35B Beise	JA-HM-058	11 JU-HM-DEH Rase	: م	(1-13)	

39 2 of 2 REEXANCH	Lab Use Only Log-In Repor Repor consulting.net	Viable	Results				PECEIVED 0CT 1 2 2018 APEX RESEARCH
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Inc. 11054 Hi Tech Drive, Whitmore Lake, MI 48189 Phone: 734-449-9990 E-mail: apexresearch@chartermi.net Fax: 734-449-9991	Date of       Date of       Project       Prove       Prove	Mold: Bulk Tape TEM: AHERA 7400 Bulk/NOB	Material/Location	Rate Lineleun Beiget Svam ang UFT	Ten Lindleum 11 i.	Dupwerk Compared	$\mathcal{W}$ Relinquished by:
APEX Research, Inc.	It Name: Red Cedar Const ess: PO Box 13216 St., Zip: Lansing, MI 48 e: (888) 449-4566 rn Around Time. 24 hour	lour –	Lab ID # Client ID #	Aro-mh-Mr 21 Aro-mh-Mr 21	011-2-11-11-11-11-11-11-11-11-11-11-11-11	PRO-MH-PD FI	Relinquished by: $C$ Received by: $C$ Received by: $C$ Date : $12/3$ Date : $12/3$ Date : $12/3$ Work Forms: COC

Red Cedar Consulting

Tables

Hazardous Materials Description and Location								
Location	Location Material Description							
Exterior	Automobile Tires	2						
Exterior	5 Gallon Container Misc. Paint	1						
Exterior	Quart Container Misc. Paint	1						
Bathroom	Quart Container Misc. Paint	4						
W Bedroom	Gallon Container Misc. Paint	1						
Utility Room	Quart Container Bleach	2						
Utility Room	Quart Container Mineral Spirits	1						

Table 2 - Summary of Sample Descriptions and Asbestos Laboratory Results, 2531 James Ave., Muskegon, Michigan

Sample Number	Sample Description	Friable	Material Type	Material Classification	% Asbestos Laboratory Result	Sample Location	Approx. Material Quantity
JA-HM-01A	Brown Shingle	No	М	Category I	ND/ND	Exterior	NA
JA-HM-01B	Brown Shingle	No	М	Category I	ND/ND	Exterior	NA
JA-HM-02A	Vapor Barrier	Yes	М	Category II	ND	Exterior	NA
JA-HM-02B	Vapor Barrier	Yes	М	Category II	ND	Exterior	NA
JA-HM-03A	Black Shingle	No	М	Category I	ND/ND	Exterior	NA
JA-HM-03B	Black Shingle	No	М	Category I	ND/ND	Exterior	NA
JA-HM-04A	Underlayment	No	М	Category I	ND	Living	NA
JA-HM-04B	Underlayment	No	М	Category I	ND	Living	NA
JA-HM-05A	Beige Linoleum	No	М	Category I	ND	Kitchen/Dining	NA
JA-HM-05B	Beige Linoleum	No	М	Category I	ND	Kitchen/Dining	NA
JA-HM-06A	Rose Linoleum	No	М	Category I	ND/ND/ND	Bathroom	NA
JA-HM-06B	Rose Linoleum	No	М	Category I	ND/ND/ND	Bathroom	NA
JA-HM-07A	Beige/Brown 9"x9" Vinyl Tile	No	М	Category I	2.25%CH-PC	N Bedroom	121 sq. ft.
JA-HM-07B	Beige/Brown 9"x9" Vinyl Tile	No	М	Category I	NA/ND	N Bedroom	NA
JA-HM-08A	Tan Linoleum	No	М	Category I	ND	Rear Entry/Utility	NA
JA-HM-08B	Tan Linoleum	No	М	Category I	ND	Rear Entry/Utility	NA
JA-HM-09A	Drywall and Joint Compound	No	М	Category II	ND/ND	Living Ceiling	NA
JA-HM-09B	Drywall and Joint Compound	No	М	Category II	ND/ND	Kitchen Wall	NA

#### Notes:

Material Types

- M = Miscellaneous building material
- TSI = Thermal System Insulation
- S = Surfacing Material
- PC = Point Count Analysis
- CH = Chrysotile Asbestos

### Abbreviations

- NQ = Not quantified
- NA = Not applicable
- ND = Not detected. Laboratory result is less than 1 % asbestos
- lin. ft. = linear feet
- sq. ft. = square feet

Asbestos Containing Material (ACM) is defined as any material containing more than 1 percent asbestos as determined utilizing Polarized Light Microscopy.

### Table 3 - Summary of Presumed Asbestos Containing Materials, 2531 James Ave., Muskegon, Michigan

A	sbestos Containing Material Description a	nd Location			
Location	Material Description	Friable	Condition	Material Type	Approx. Quantity
No Presumed Asbestos Containing Materials Identified					

Notes:

Material Types		Abbreviations	
TSI	= Miscellaneous building material = Thermal System Insulation = Surfacing Material		= linear feet = square feet

### Table 4 - Summary of All Asbestos Containing Materials, 2531 James Ave., Muskegon, Michigan

Interior - Asbestos Containing Mat	terials			
Location	<b>Material Description</b>		Friable	Approx. Quantity
N Bedroom	Beige/Brown 9"x9" Vinyl Tile		No	121 sq. ft.
		Total		121 sq. ft.

Notes: Abbreviations

lin. ft. = linear feet sq. ft. = square feet

**Shaded/Bolded** = Friable ACM and any Category I and Category II non-friable ACM that has a high probability of becoming crumbled, pulverized, or reduced to powder by the demolition or renovation activities that must be properly abated prior to commencement of any demolition/renovation activities.

Demolition/renovation activities completed with intact Category I non-friable ACM are regulated by OSHA and must be completed following the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

Please note that a Negative Pressure Enclosure must be utilized during abatement when Site Conditions Warrant. Examples of these conditions include the abatement of Plaster and Vermiculite insulation, HVAC Duct Wrap in Poor Condition, and Air-O-Cell/Mag Pipe Wrap. Conditions outside of these should be assessed on a case by case basis during the Asbestos Abatement Contractors site walk and Work Plan Preparation.



P.O. Box 13216 Lansing, MI 48901 Phone: 888.449.4566 Fax: 888.448.8739 www.redcedarconsulting.net

November 2, 2018

Mr. Tim Burgess Muskegon County Land Bank Land Bank Coordinator 173 E. Apple Avenue, Suite 104 Muskegon, MI 49442

### RE: Asbestos Containing Material and Hazardous Materials Inspection 2545 Baker St., Muskegon Heights, MI 49444 Parcel ID: 61-26-185-146-0012-00

Dear Mr. Burgess:

Red Cedar Consulting has completed an asbestos-containing material (ACM) and hazardous materials inspection at 2545 Baker St., Muskegon Heights, Michigan (Subject Property). This inspection was completed at the request of the Muskegon County Land Bank to comply with the United States Environmental Protection Agency (USEPA) requirements for demolition and renovation set forth under the National Emissions Standards for Hazardous Air Pollutants (NESHAP, 40 CFR Part 61). This inspection was also completed to comply with the Occupational Safety and Health Administration (OSHA) Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

### **SUBJECT PROPERTY**

The Subject Property is comprised of a .14 acre residential parcel which contains an approximate 759 square foot residential building (the Building) constructed in 1915. The Building was constructed on a concrete block basement with two aboveground floors. The exterior walls of the Building were finished with Fiberlap and Asphalt siding over wood lap while the roof was sealed with asphalt shingles. The Building can be further divided into two apartments for inspection purposes.

### VISUAL INSPECTION AND SAMPLING

### **Asbestos Containing Materials Inspection**

Mr. Aaron Paquet of Red Cedar Consulting (Red Cedar), an accredited State of Michigan/EPA Asbestos Building Inspector (Accreditation Number A30955) whom completed training per the Michigan Asbestos Workers Accreditation Act 440 completed an inspection of the Subject Property on October 26, 2018 for suspected asbestos containing building materials. Project No.: 18-1124 Muskegon County Land Bank Parcel ID: 61-26-185-146-0012-00

This inspection, and subsequent sample collection was completed in accordance with the USEPA Asbestos Hazard Emergency Response Act (AHERA) (40 CFR Part 763) assessment and sampling protocol.

During the completion of the inspection, each area of the Subject Property was visually inspected for asbestos containing building materials (ACBM). Following the completion of the visual inspection, Red Cedar staff identified each suspect area of friable and non-friable ACBM and sorted them into one of three homogenous categories for sampling purposes. AHERA defines friable as a material that when dry, may be crumbled, pulverized, or reduced to powder by hand pressure. A homogenous area is defined by OSHA as an area of surfacing, thermal system insulation (TSI) or miscellaneous material that is uniform in color and texture. Surfacing materials are most commonly found in sprayed-on, troweled-on or otherwise applied to surfaces, such as acoustical plaster on ceilings and fireproofing materials on structural members. TSI refers to materials applied to pipes, fittings, boilers, ductwork, or other components to prevent heat loss or gain, or condensation. Any material that does not fall under the surfacing or TSI category, such as floor tile, drywall, and acoustical ceiling tile are placed into the miscellaneous materials category.

Following the completion of the visual inspection, Red Cedar staff identified the following materials as suspect ACBM:

- Roofing Shingle
- Asphalt Siding
- Flashing
- Vinyl Flooring
- Linoleum
- 2x4 Ceiling Tile
- Window Glazing
- Drywall and Joint Compound
- 12x12 Vinyl Floor Tile
- 1x1 Ceiling Tile
- Plaster
- Textured Surfacing

Red Cedar staff collected forty eight samples of suspect ACBM separated into twenty one distinct homogenous groups for laboratory analysis. Samples were collected and submitted to APEX Research Inc. Laboratories (APEX) (Accreditation Number 102118-0) for laboratory analysis. Analysis was completed utilizing polarized light microscopy (PLM) which is the Environmental Protection Agency (EPA) approved method for analysis of bulk materials for asbestos. PLM analysis completed pursuant to method (EPA 600/M4-82-020) identifies asbestos fiber bundles by the visual properties displayed when the sample is treated with various dispersion staining liquids. The laboratory report completed following the sample analysis indicates if asbestos is present, and at what percentage along with a description and percentage of other fibrous and non-fibrous materials and sample color. Chain-of-custody documentation was followed from sample collection through shipping and receiving of the samples at the designated laboratory. The documentation assures that samples will meet the quality assurance/quality control measures defined by AHERA. The laboratory analytical report prepared by APEX for the forty eight samples is included as Attachment A.

#### **Hazardous Materials Inspection**

On October 26, 2018 the Subject Property was also inspected for the presence of hazardous materials which include but are not limited to polychlorinated biphenyls (PCBs) and potential mercury containing equipment and any items or containers that may contain or be classified as a hazardous or regulated material. Each material, if identified, was documented along with the approximate location. Any materials identified as hazardous are included in Table 1.

#### **INSPECTION RESULTS AND RECOMMENDATIONS**

During the completion of the asbestos inspection, forty eight samples of suspect ACM were collected and are documented in Table 2 along with the Red Cedar sample number, description, friability, material type, ACM classification, sample location, material quantity and laboratory analytical results.

ACM, as defined by the USEPA NESHAP is "any material containing more than 1 percent asbestos as determined using the method specified in appendix E, subpart E, 40 CFR part 763 Section 1, Polarized Light Microscopy".

Friable ACM is defined by NESHAP as any material containing more than 1 percent asbestos that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. Friable ACM is a concern due the ease of unintentionally disturbing the ACM which may result in "visible emissions" which is known as a Fiber Release Episode.

Non-friable asbestos-containing material is defined as "material containing more than 1 percent asbestos that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. Non-friable ACM's are separated into Category I and Category II ACM. Category I ACM is any asbestos containing packing's, gaskets, resilient floor coverings (vinyl floor tile and linoleum are examples of these) and asphalt roofing products. Category II ACM is stated by NESHAP as any material excluding Category I non-friable ACM such as drywall, plaster or fiberboard insulation.

#### **Presumed Asbestos Containing Material**

Presumed Asbestos Containing Materials (PACM) are suspect surfacing, TSI and miscellaneous materials found in buildings constructed prior to 1980 which are classified as and due to the age of the structure, are assumed to be ACM and do not require sample collection and analysis. OSHA dictates that PACM may be "rebutted" following a complete inspection pursuant to AHERA protocol.

The HVAC Duct Wrap located in the Building was classified as PACM due to the age of the structure and samples were not collected.

Table 3 lists the location, material description, friability, condition, material type (surfacing, thermal or miscellaneous) and approximate quantity of all PACM documented at the Subject Property.

Table 4 provides a summary all ACM documented at the Subject Property which includes the material location, description, and approximate quantity.

#### Friable ACM's

Duct Wrap identified in the building in conjunction with the forced air heating system is classified as friable ACM. The visual assessment to quantify the extent of this material identified HVAC Duct Wrap at the following locations within the basement, first and second floors:

- Kitchen (1 register, 15 sq. ft.)
- NE Bedroom (1 register, 15 sq. ft.)
- NW Bedroom (1 register, 15 sq. ft.)
- Living (1 register, 15 sq. ft.)
- 2<sup>nd</sup> Floor (1 register, 10 sq. ft. and vertical chase to basement, 25 sq. ft.)
- Basement (misc. HVAC wrap on Cold Air Ductwork, 5 sq. ft.)
- Basement (misc. HVAC wrap on Beam, 5 sq. ft.)
- Basement (misc. HVAC wrap debris on floor, 10 sq. ft.)

#### **Category I ACM**

Two types of resilient floor covering (Green Layered Linoleum and Tile) located within the NE Bedroom and 2<sup>nd</sup> Floor Stairwell were found to contain up to 15% Chrysotile asbestos. The assessment to quantify the extent of this material identified approximately 153 sq. ft. of this material within the Building.

#### **Category II ACM**

Plaster samples, collected from the Living Room, NW Bedroom, and Kitchen were each found to contain up to 1.75% asbestos following analysis. The assessment to quantify the extent of this material identified approximately 5,648 sq. ft. of plaster within the Building.

Roof Flashing samples collected during the completion of the inspection were found to contain up to 10% Chrysotile asbestos. The assessment to quantify the extent of this material identified 30 sq. ft. of roof flashing materials on the Building.

#### **RECOMMENDATIONS**

#### **Asbestos Containing Materials**

HVAC material identified in the Building system and listed below is classified as friable ACM and should be removed prior to any renovation/demolition activities.

- Kitchen (1 register, 15 sq. ft.)
- NE Bedroom (1 register, 15 sq. ft.)
- NW Bedroom (1 register, 15 sq. ft.)
- Living (1 register, 15 sq. ft.)
- 2<sup>nd</sup> Floor (1 register, 10 sq. ft. and vertical chase to basement, 25 sq. ft.)
- Basement (misc. HVAC wrap on Cold Air Ductwork, 5 sq. ft.)
- Basement (misc. HVAC wrap on Beam, 5 sq. ft.)
- Basement (misc. HVAC wrap debris on floor, 10 sq. ft.)

Plaster identified on the interior of the Building must be abated prior to completion of any renovation/demolition activities at the Subject Property. Any Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of renovation or demolition operations must be properly abated.

Roof Flashing identified on the exterior of the Building must be abated prior to completion of any renovation/demolition activities at the Subject Property. Any Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of renovation or demolition operations must be properly abated.

The Category I resilient floor coverings (Green Layered Linoleum and Tile) are non-friable ACM's that may be left in place as long as the demolition/renovation activities are completed following the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

Please note: The location of samples obtained during this inspection were in a random fashion and areas that were not identified during this inspection may be damaged or have become damaged since the inspection was completed. If Category I or Category II friable materials are discovered prior to or during the demolition/renovation process, these materials must be abated prior to commencement of any demolition/renovation activities at the Subject Property.

#### **Hazardous Materials**

Hazardous Materials identified at the Subject Property and documented in Table 1 which require proper removal and disposal consist of the following items:

- Thermostat (1)
- 4' Fluorescent Light (Fixture and Ballast Only) (4)
- 4' Fluorescent Light Bulb (16)
- Smoke Detector (2)
- Television (8)
- Automobile Tire (1)

#### **REGULATORY REQUIREMENTS**

A Notification of Intent to Renovate/Demolish form must be filed with the Michigan Department of Environmental Quality- Air Quality Division at least 10 working days prior to any renovation or demolition activities at a site.

The Notification of Intent to Renovate/Demolish form must also be completed and submitted to the MIOSHA-Asbestos Program whenever demolition, encapsulation and/or renovation activities at a site involving greater than ten lineal feet and/or fifteen square feet of ACM will be completed.

Regulated asbestos containing materials per NESHAP (40 CFR Part 61) which falls into any of the following categories are ACM's that must be removed prior to any renovation/demolition activities at the Subject Property.

- Friable asbestos material.
- Category I non-friable ACM that has become friable.
- Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading.
- Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of renovation or demolition operations.

Asbestos abatement should only be performed by a certified asbestos abatement contractor licensed to complete abatement work. The contractor must also follow the standards and requirements set forth per the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) and the USEPA NESHAP (40 CFR Part 61).

Additional information regarding the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) and the USEPA NESHAP (40 CFR Part 61) can be obtained by contacting the associated agency below.

NESHAP Asbestos Program Department of Environmental Quality Phone: 517-284-6777 MIOSHA-CSHD-Asbestos Program State of Michigan Phone: 517-284-7680 Email: asbestos@michigan.gov

#### **DISCLAIMER**

Red Cedar Consulting performed destructive testing methods in an attempt to access and inspect all areas of the Building. Unfortunately, due to the age of construction along with multiple additions/renovations that may have been completed on the Building, additional inspections may be required if suspect ACM material not documented within this report is encountered during renovation/demolition activities.

This report was prepared at the request and for exclusive use by the Muskegon County Land Bank and may not be reproduced or sold without written permission from Red Cedar Consulting.

We appreciate the opportunity to provide the requested services. Please contact us at (888) 449-4566 with any questions or concerns.

Sincerely, Red Cedar Consulting

ann Poquet

Aaron Paquet Michigan/EPA Certified Asbestos Building Inspector (A30955)

Red Cedar Consulting

# Attachment 1

APEX Research Laboratory Analytical Results

Test Method, Polarized Light Microscopy (PLM)

Project : 2545 Baker St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80635Date Collected:10/26/18Date Received:10/29/18Date Analyzed:10/31/18Date Reported:11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80635 - 01 Cust. #: BS-HM-01A Material: Green Shingle Location: Appearance: black,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80635 - 02 Cust. #: BS-HM-01B Material: Green Shingle Location: Appearance: black,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80635 - 03 Cust. #: BS-HM-02A Material: Brown Shingle Location: Appearance: black,fibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 10% Other - 90%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2545 Baker St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80635         Date Collected:       10/26/18         Date Received:       10/29/18         Date Analyzed:       10/31/18         Date Reported:       11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80635 - 03a Cust. #: BS-HM-02A Material: Tar Paper Location: Appearance: black,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 50% Other - 50%
Lab ID #: 80635 - 04 Cust. #: BS-HM-02B Material: Brown Shingle Location: Appearance: black,fibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 10% Other - 90%
Lab ID #: 80635 - 04a Cust. #: BS-HM-02B Material: Tar Paper Location: Appearance: black,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 50% Other - 50%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2545 Baker St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80635Date Collected:10/26/18Date Received:10/29/18Date Analyzed:10/31/18Date Reported:11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80635 - 05 Cust. #: BS-HM-03A Material: Asphalt Siding Location: Appearance: black,fibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Other - 90%
Lab ID #: 80635 - 05a Cust. #: BS-HM-03A Material: Vapor Barrier Location: Appearance: brown,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 75% Other - 25%
Lab ID #: 80635 - 06 Cust. #: BS-HM-03B Material: Asphalt Siding Location: Appearance: black,fibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Other - 90%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method, Polarized Light Microscopy (PLM)

Project : 2545 Baker St.



Report 10: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80635Date Collected:10/26/18Date Received:10/29/18Date Analyzed:10/31/18Date Reported:11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80635 - 06a Cust. #: BS-HM-03B Material: Vapor Barrier Location: Appearance: brown,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 75% Other - 25%
Lab ID #: 80635 - 07 Cust. #: BS-HM-04A Material: Flashing Location: Appearance: black,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>YES</b> Chrysotile - 10%	Other - 90%
Lab ID #: 80635 - 08 Cust. #: BS-HM-04B Material: Flashing Location: Appearance: Layer: of	Asbestos Present: NOT ANALYZED	

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method, Polarized Light Microscopy (PLM)

Project : 2545 Baker St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80635Date Collected:10/26/18Date Received:10/29/18Date Analyzed:10/31/18Date Reported:11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80635 - 09 Cust. #: BS-HM-05A Material: Tan Vinyl Location: Appearance: beige,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 10% Other - 90%
Lab ID #: 80635 - 10 Cust. #: BS-HM-05B Material: Tan Vinyl Location: Appearance: beige,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 10% Other - 90%
Lab ID #: 80635 - 11 Cust. #: BS-HM-06A Material: Green Layered Linoleum/Tile Location:	Asbestos Present: <b>YES</b> Chrysotile - 1.50%	Other - 98.50%
Appearance: green,fibrous,homogenous Layer: 1 of 4	POINT COUNT RESULT	

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method, Polarized Light Microscopy (PLM)

Project : 2545 Baker St.



Report 10:Mr. Aaron PaquetRed Cedar ConsultingP.O. Box 13216Lansing, MI 48901		ARI Report #18-80635Date Collected:10/26/18Date Received:10/29/18Date Analyzed:10/31/18Date Reported:11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80635 - 11a Cust. #: BS-HM-06A Material: Mastic Location: Appearance: black,nonfibrous,homogenous Layer: 2 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80635 - 11b Cust. #: BS-HM-06A Material: Mastic Location: Appearance: yellow,nonfibrous,homogenous Layer: 3 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80635 - 11c Cust. #: BS-HM-06A Material: Felt Location: Appearance: black,fibrous,nonhomogenous Layer: 4 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2545 Baker St.



Report 10: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80635Date Collected:10/26/18Date Received:10/29/18Date Analyzed:10/31/18Date Reported:11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80635 - 12 Cust. #: BS-HM-06B	Asbestos Present:	
Material: Green Layered Linoleum/Tile Location: Appearance: Layer: 1 of 4	NOT ANALYZED	
Lab ID #: 80635 - 12a Cust. #: BS-HM-06B Material: Mastic Location: Appearance: black,nonfibrous,homogenous Layer: 2 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method, Polarized Light Microscopy (PLM)

Project : 2545 Baker St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80635Date Collected:10/26/18Date Received:10/29/18Date Analyzed:10/31/18Date Reported:11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80635 - 12c Cust. #: BS-HM-06B Material: Felt Location: Appearance: black,fibrous,nonhomogenous Layer: 4 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80635 - 13 Cust. #: BS-HM-07A Material: Grey Layered Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 10% Other - 90%
Lab ID #: 80635 - 13a Cust. #: BS-HM-07A Material: Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method, Polarized Light Microscopy (PLM)

Project : 2545 Baker St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80635Date Collected:10/26/18Date Received:10/29/18Date Analyzed:10/31/18Date Reported:11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80635 - 14 Cust. #: BS-HM-07B Material: Grey Layered Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 10% Other - 90%
Lab ID #: 80635 - 14a Cust. #: BS-HM-07B Material: Linoleum Location: Appearance: beige,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80635 - 15 Cust. #: BS-HM-08A Material: 2x4 White CT w/ Pinhole/Gouges Location: Appearance: beige,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 15% Fiberglass - 10% Other - 75%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method, Polarized Light Microscopy (PLM)

Project : 2545 Baker St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80635Date Collected:10/26/18Date Received:10/29/18Date Analyzed:10/31/18Date Reported:11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80635 - 16 Cust. #: BS-HM-08B Material: 2x4 White CT w/ Pinhole/Gouges Location: Appearance: beige,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 15% Fiberglass - 10% Other - 75%
Lab ID #: 80635 - 17 Cust. #: BS-HM-09A Material: 2x4 White Ceiling Tile w/ Pinholes Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 90% Other - 10%
Lab ID #: 80635 - 18 Cust. #: BS-HM-09B Material: 2x4 White Ceiling Tile w/ Pinholes Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 90% Other - 10%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2545 Baker St.



Report 10:Mr. Aaron PaquetRed Cedar ConsultingP.O. Box 13216Lansing, MI 48901		ARI Report #18-80635Date Collected:10/26/18Date Received:10/29/18Date Analyzed:10/31/18Date Reported:11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80635 - 19 Cust. #: BS-HM-10A Material: Window Glazing Location: House Appearance: beige,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80635 - 20 Cust. #: BS-HM-10B Material: Window Glazing Location: House Appearance: beige,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80635 - 21 Cust. #: BS-HM-11A Material: Drywall Location: Appearance: white,fibrous,nonhomogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Fiberglass - 5% Other - 85%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2545 Baker St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80635Date Collected:10/26/18Date Received:10/29/18Date Analyzed:10/31/18Date Reported:11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80635 - 21a Cust. #: BS-HM-11A Material: Joint Compound Location: Appearance: white,fibrous,nonhomogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 10% Other - 90%
Lab ID #: 80635 - 22 Cust. #: BS-HM-11B Material: Drywall Location: Appearance: white,fibrous,nonhomogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Fiberglass - 5% Other - 85%
Lab ID #: 80635 - 22a Cust. #: BS-HM-11B Material: Joint Compound Location: Appearance: white,fibrous,nonhomogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 10% Other - 90%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2545 Baker St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80635Date Collected:10/26/18Date Received:10/29/18Date Analyzed:10/31/18Date Reported:11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80635 - 23 Cust. #: BS-HM-12A Material: Tan Layered Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 15% Fiberglass - 10% Other - 75%
Lab ID #: 80635 - 23a Cust. #: BS-HM-12A Material: Tile Location: Appearance: green,fibrous,homogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80635 - 23b Cust. #: BS-HM-12A Material: Mastic Location: Appearance: yellow,fibrous,nonhomogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 15% Other - 85%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method, Polarized Light Microscopy (PLM)

Project : 2545 Baker St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80635Date Collected:10/26/18Date Received:10/29/18Date Analyzed:10/31/18Date Reported:11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80635 - 24 Cust. #: BS-HM-12B Material: Tan Layered Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 15% Fiberglass - 10% Other - 75%
Lab ID #: 80635 - 24a Cust. #: BS-HM-12B Material: Tile Location: Appearance: green,fibrous,homogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80635 - 24b Cust. #: BS-HM-12B Material: Mastic Location: Appearance: yellow,fibrous,nonhomogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 15% Other - 85%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method, Polarized Light Microscopy (PLM)

Project : 2545 Baker St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report # 18-80635 Date Collected: 10/26/18 Date Received: 10/29/18 Date Analyzed: 10/31/18 Date Reported: 11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80635 - 25 Cust. #: BS-HM-13A Material: Red/Tan Linoleum Location: Appearance: red,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80635 - 26 Cust. #: BS-HM-13B Material: Red/Tan Linoleum Location: Appearance: red,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80635 - 27 Cust. #: BS-HM-14A Material: Gold Pebble Linoleum Location: Appearance: yellow,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method, Polarized Light Microscopy (PLM)

Project : 2545 Baker St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80635Date Collected:10/26/18Date Received:10/29/18Date Analyzed:10/31/18Date Reported:11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80635 - 28 Cust. #: BS-HM-14B Material: Gold Pebble Linoleum Location: Appearance: yellow,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80635 - 29 Cust. #: BS-HM-15A Material: 12x12 Dark Grey VFT Location: Appearance: white,nonfibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80635 - 30 Cust. #: BS-HM-15B Material: 12x12 Dark Grey VFT Location: Appearance: white,nonfibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method, Polarized Light Microscopy (PLM)

Project : 2545 Baker St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80635Date Collected:10/26/18Date Received:10/29/18Date Analyzed:10/31/18Date Reported:11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80635 - 31 Cust. #: BS-HM-16A Material: White Linoleum Location: Appearance: white,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 15% Fiberglass - 10% Other - 75%
Lab ID #: 80635 - 32 Cust. #: BS-HM-16B Material: White Linoleum Location: Appearance: white,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 15% Fiberglass - 10% Other - 75%
Lab ID #: 80635 - 33 Cust. #: BS-HM-17A Material: 12x12 Lite Grey VFT Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2545 Baker St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80635Date Collected:10/26/18Date Received:10/29/18Date Analyzed:10/31/18Date Reported:11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80635 - 33a Cust. #: BS-HM-17A Material: Glue Location: Appearance: clear,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80635 - 34 Cust. #: BS-HM-17B Material: 12x12 Lite Grey VFT Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80635 - 34a Cust. #: BS-HM-17B Material: Glue Location: Appearance: clear,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method, Polarized Light Microscopy (PLM)

Project : 2545 Baker St.



Report 10:Mr. Aaron PaquetRed Cedar ConsultingP.O. Box 13216Lansing, MI 48901		ART Report #18-80635Date Collected:10/26/18Date Received:10/29/18Date Analyzed:10/31/18Date Reported:11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80635 - 35 Cust. #: BS-HM-18A Material: Tile Location: Appearance: brown,nonfibrous,homogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80635 - 35a Cust. #: BS-HM-18A Material: Glue Location: Appearance: clear,nonfibrous,homogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80635 - 35b Cust. #: BS-HM-18A Material: Linoleum Location: Appearance: green,fibrous,nonhomogenous Layer: 3 of 3	Asbestos Present: <b>YES</b> Chrysotile - 15%	Cellulose - 10% Other - 75%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method, Polarized Light Microscopy (PLM)

Project : 2545 Baker St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80635Date Collected:10/26/18Date Received:10/29/18Date Analyzed:10/31/18Date Reported:11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80635 - 36 Cust. #: BS-HM-18B Material: Tile Location: Appearance: brown,nonfibrous,homogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80635 - 36a Cust. #: BS-HM-18B Material: Glue Location: Appearance: clear,nonfibrous,homogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80635 - 36b Cust. #: BS-HM-18B Material: Linoleum Location: Appearance: Layer: 3 of 3	Asbestos Present: NOT ANALYZED	

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method, Polarized Light Microscopy (PLM)

Project : 2545 Baker St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80635Date Collected:10/26/18Date Received:10/29/18Date Analyzed:10/31/18Date Reported:11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80635 - 37 Cust. #: BS-HM-19A Material: 1x1 White Smooth Ceiling Tile Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 90% Other - 10%
Lab ID #: 80635 - 38 Cust. #: BS-HM-19B Material: 1x1 White Smooth Ceiling Tile Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 90% Other - 10%
Lab ID #: 80635 - 39 Cust. #: BS-HS-01A Material: Plaster Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method, Polarized Light Microscopy (PLM)

Project : 2545 Baker St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80635Date Collected:10/26/18Date Received:10/29/18Date Analyzed:10/31/18Date Reported:11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80635 - 39a Cust. #: BS-HS-01A Material: Mortar Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Hair - 2% Other - 98%
Lab ID #: 80635 - 40 Cust. #: BS-HS-01B Material: Plaster Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80635 - 40a Cust. #: BS-HS-01B Material: Mortar Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Hair - 2% Other - 98%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method, Polarized Light Microscopy (PLM)

Project : 2545 Baker St.



Report 10:Mr. Aaron PaquetRed Cedar ConsultingP.O. Box 13216Lansing, MI 48901		ARI Report #18-80635Date Collected:10/26/18Date Received:10/29/18Date Analyzed:10/31/18Date Reported:11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80635 - 41 Cust. #: BS-HS-01C Material: Plaster Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80635 - 41a Cust. #: BS-HS-01C Material: Mortar Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>YES</b> Chrysotile - 1.75% POINT COUNT RESULT	Hair - 2% Other - 96.25%
Lab ID #: 80635 - 42 Cust. #: BS-HS-01D Material: Plaster Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2545 Baker St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80635Date Collected:10/26/18Date Received:10/29/18Date Analyzed:10/31/18Date Reported:11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80635 - 42a Cust. #: BS-HS-01D Material: Mortar	Asbestos Present:	
Location: Appearance: Layer: 2 of 2	NOT ANALYZED	
Lab ID #: 80635 - 43 Cust. #: BS-HS-01E Material: Plaster Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80635 - 43a Cust. #: BS-HS-01E Material: Mortar Location: Appearance: Layer: 2 of 2	Asbestos Present: NOT ANALYZED	

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2545 Baker St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80635Date Collected:10/26/18Date Received:10/29/18Date Analyzed:10/31/18Date Reported:11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80635 - 44 Cust. #: BS-HS-01F Material: Plaster Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80635 - 44a Cust. #: BS-HS-01F Material: Mortar Location: Appearance: Layer: 2 of 2	Asbestos Present: NOT ANALYZED	
Lab ID #: 80635 - 45 Cust. #: BS-HS-01G Material: Plaster Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method, Polarized Light Microscopy (PLM)

Project : 2545 Baker St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80635Date Collected:10/26/18Date Received:10/29/18Date Analyzed:10/31/18Date Reported:11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80635 - 45a Cust. #: BS-HS-01G Material: Mortar	Asbestos Present:	
Location: Appearance: Layer: 2 of 2	NOT ANALYZED	
Lab ID #: 80635 - 46 Cust. #: BS-HS-02A Material: Textured Surfacing Location: Appearance: white,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Wollastonite - 2% Other - 98%
Lab ID #: 80635 - 47 Cust. #: BS-HS-02B Material: Textured Surfacing Location: Appearance: white,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Wollastonite - 2% Other - 98%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method, Polarized Light Microscopy (PLM)

Project : 2545 Baker St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80635Date Collected:10/26/18Date Received:10/29/18Date Analyzed:10/31/18Date Reported:11/01/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80635 - 48 Cust. #: BS-HS-02C Material: Textured Surfacing Location: Appearance: white,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Wollastonite - 2% Other - 98%
Lab ID #: Cust. #: Material: Location: Appearance: Layer: of	Asbestos Present:	
Lab ID #: Cust. #: Material: Location: Appearance: Layer: of	Asbestos Present:	

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



APEX RESEARCH	Lab Use Only Log-In Report consulting.net	Area     Results       Area     Results       Received by:     2.7.       Date :     I/I/2/1/8/69%_01       Date :     I/I/2/1/8/69%_01
Phone: 734-449-9990 Fax: 734-449-9991	26-18 Paquet Paquet Paquet PCM PCM t Soil t Soil vel II	Arca Received by: $\frac{4.7}{Date}$
<b>355</b> MI 48189 Phone: 73 Linet Fax: 734	Survey : 10.26.18       Lab Uset         #:       Log-In         #:       Report         Person: Aaron Paquet       Report         samples with a detection of <5% ACM.	Volume
APEX Research, Inc. 11054 Hi Tech Drive, Whitmore Lake, MI 48189 B-mail: apexresearch@chartermi.net	Client Name:       Red Cedar Consulting       Date of Survey :         Address:       PO Box 13216       Project : 254/5         Address:       PO Box 13216       Project : 254/5         City, St., Zip:       Lansing, MI 48901       Project : 254/5         Phone:       (888) 449-4566       Fax : (888) 448-8739       Project : 254/5         Phone:       (888) 449-4566       Fax : (888) 448-8739       Project : 254/5         Phone:       (888) 449-4566       Fax : (888) 448-8739       Contact Person:         Turn Around Times:       (Circle One)       PLM EPA 600, PC all samples without       Nipe         Ashour       72 hour       Lead:       Bulk       Wipe       Air         Ashour       72 hour       Mold:       Bulk       Tape       BioSIS         Other:       Tameles       TeM:       AHERA 7400       BioSIS	Lab ID #Client ID #Material/Location $1$ $25$ - $Hq$ - $O/A$ $Material/Location$ $3$ $25$ - $Hq$ - $O/A$ $Material/Location$ $4$ $22A$ $Material/Location$ $5$ $0/A$ $Material/Location$ $6$ $0/B$ $Material/Location$ $7$ $0/A$ $Material/Location$ $7$ $0/B$ $Material/Location$ $6$ $0/B$ $Material/Location$ $7$ $0/A$ $Material/Location$ $7$ $0/B$ $Material/Location$ $1$ $1$ $0/A$ $1$ $1$ $1$ $2/A$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $2/A$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $2/A$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $2/A$ $1$ $1$ $1$ $1$ $1$ $2/A$ $1$ $1$ $2/A$ $1$ $1$ $1$ $1$ $1$ $2/A$ $1$ $1$ $2/A$ $1$ $1$

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	, MI 48189 Phon ni.net Fax:	Date of Survey :Project : 2545 5 Project # :	
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80/035	APEX Research, Inc. 110	Client Name: Red Cedar Consulting Address: PO Box 13216 City, St., Zip: Lansing, MI 48901 Phone: (888) 449-4566 Fax: (888) 4 Turn Around Times: (Circle One) Ashert Rush 24 hour 48 hour 72 hour Other:	

345	90 APEX RESEARCH	Lab Use Only Log-In Report	cedarconsulting.net on of <5% ACM. M	Soil	-	Area Results										Received by:	000 2 3 2010	APEX RESEARCH
	Hi Tech Drive, Whitmore Lake, MI 48189 Phone: 734-449-999 E-mail: apexresearch@chartermi.net Fax: 734-449-9991	Date of Survey : <u>D-21-18</u> Project : <u>2545 Baker</u>	Froject # :Contact Person: Aaron PaquetEPA 600, PC all samples with a detection of <5% ACM.	Wipe Air Paint Other Other	Bulk/NOB EPA Level II	Volume	augred Timsleum		eolenes	C. elmo		·	erere		ing VF7	Relinquished by:	Date : Date :	
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SCOOL	APEX R	Client Name: Address:	City, St., Zip: Phone: (888) 44 <b>Turn Aro</b> l	Rush 24 hour 48 hour $72$ hour	Other :	Lab ID #	50	It of	L 2	tt	32	J 87	31	25	33	Relinquished by:	Date: 10-27-18	Rev: 12/03 • Work Forms: COC

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	C. 11054 Hi Tech Drive, Whitmore Lake, MI 48189 Phone: 734-449-9990 E-mail: apexresearch@chartermi.net Fax: 734-449-9991	Date of Survey : <u>28-26</u> Project : <u>2545 Beken</u> Project # :	148-8739       Contact Person:         PLM EPA 600, PC all samples wi         tos: Bulk       X         Wipe       Air	: Bulk Tape BioSIS Otherstanding Contraction Duther A 7400 Bulk/NOB EPA Level II		x/2 Tile thay VFI	white senseth cr	iter .			S Relinquished by:	/8 Date :	
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Red Cedar Consulting

Tables

Hazardous Materials Description and Location				
Location	Material Description	Quantity		
Living Room	Thermostat	1		
Living Room	4' Fluorescent Light (Fixture and Ballast Only)	1		
Living Room	4' Fluorescent Light Bulb	4		
Living Room	Smoke Detector	1		
NW Bedroom	4' Fluorescent Light (Fixture and Ballast Only)	2		
NW Bedroom	4' Fluorescent Light Bulb	8		
NE Bedroom	4' Fluorescent Light (Fixture and Ballast Only)	1		
NE Bedroom	4' Fluorescent Light Bulb	4		
2 <sup>nd</sup> Floor	Television	4		
2 <sup>nd</sup> Floor	Thermostat	1		
Basement	Television	4		
Basement	Automobile Tire	1		
Basement	Smoke Detector	1		

Table 2 - Summary of Sample Descriptions and Asbestos Laboratory Results, 2545 Baker St., Muskegon Heights, Michigan

Sample Number	Sample Description	Friable	Material Type	Material Classification	% Asbestos Laboratory Result	Sample Location	Approx. Material Quantity
BS-HM-01A	Green Shingle	No	М	Category I	ND	House Roof	NA
BS-HM-01B	Green Shingle	No	М	Category I	ND	House Roof	NA
BS-HM-02A	Brown Shingle	No	М	Category I	ND/ND	House Roof	NA
BS-HM-02B	Brown Shingle	No	М	Category I	ND/ND	House Roof	NA
BS-HM-03A	Asphalt Siding	No	М	Category I	ND/ND	House Exterior	NA
BS-HM-03B	Asphalt Siding	No	М	Category I	ND/ND	House Exterior	NA
BS-HM-04A	Flashing	No	М	Category II	10%CH	House Roof	30 sq. ft.
BS-HM-04B	Flashing	No	М	Category II	NA	House Roof	NA
BS-HM-05A	Tan Vinyl	No	М	Category I	ND	Kitchen	NA
BS-HM-05B	Tan Vinyl	No	М	Category I	ND	Kitchen	NA
BS-HM-06A	Green Layered Linoleum/Tile	No	М	Category I	ND/1.50%CH- PC/ND/ND/ND	NE Bedroom	121 sq. ft.
BS-HM-06B	Green Layered Linoleum/Tile	No	М	Category I	NA/ND/ND/ND	NE Bedroom	NA
BS-HM-07A	Grey Layered Linoleum	No	М	Category I	ND/ND	Bathroom	NA
BS-HM-07B	Grey Layered Linoleum	No	М	Category I	ND/ND	Bathroom	NA
BS-HM-08A	2x4 White CT w/ Pinhole/Gouges	Yes	М	Category II	ND	Living Room	NA
BS-HM-08B	2x4 White CT w/ Pinhole/Gouges	Yes	М	Category II	ND	Kitchen	NA
BS-HM-09A	2x4 White Ceiling Tile w/ Pinholes	Yes	М	Category II	ND	Dining Room	NA
BS-HM-09B	2x4 White Ceiling Tile w/ Pinholes	Yes	М	Category II	ND	NE Bedroom	NA
BS-HM-10A	Window Glazing	Yes	М	Category II	ND	Living Room Window	NA
BS-HM-10B	Window Glazing	Yes	М	Category II	ND	2 <sup>nd</sup> Floor SE Bedroom Window	NA
BS-HM-11A	Drywall and Joint Compound	No	М	Category II	ND/ND	Front Entry	NA
BS-HM-11B	Drywall and Joint Compound	No	М	Category II	ND/ND	Front Entry	NA
BS-HM-12A	Tan Layered Linoleum	No	М	Category I	ND/ND/ND	Rear Entry Steps	NA
BS-HM-12B	Tan Layered Linoleum	No	М	Category I	ND/ND/ND	Rear Entry Steps	NA
BS-HM-13A	Red/Tan Linoleum	No	М	Category I	ND	Basement Stairs	NA
BS-HM-13B	Red/Tan Linoleum	No	М	Category I	ND	Basement Stairs	NA

Sample Number	Sample Description	Friable	Material Type	Material Classification	% Asbestos Laboratory Result	Sample Location	Approx. Material Quantity
BS-HM-14A	Gold Pebble Linoleum	No	М	Category I	ND	2 <sup>nd</sup> Floor Living Room	NA
BS-HM-14B	Gold Pebble Linoleum	No	М	Category I	ND	2 <sup>nd</sup> Floor Living Room	NA
BS-HM-15A	12x12 Dark Grey VFT	No	М	Category I	ND	2 <sup>nd</sup> Floor Kitchen	NA
BS-HM-15B	12x12 Dark Grey VFT	No	М	Category I	ND	2 <sup>nd</sup> Floor Kitchen	NA
BS-HM-16A	White Linoleum	No	М	Category I	ND	2 <sup>nd</sup> Floor Bathroom	NA
BS-HM-16B	White Linoleum	No	М	Category I	ND	2 <sup>nd</sup> Floor Bathroom	NA
BS-HM-17A	12x12 Lite Grey VFT	No	М	Category I	ND/ND	2 <sup>nd</sup> Floor Hallway	NA
BS-HM-17B	12x12 Lite Grey VFT	No	М	Category I	ND/ND	2 <sup>nd</sup> Floor Hallway	NA
BS-HM-18A	Woodgrain Layered Linoleum	No	М	Category I	ND/ND/15%CH	2 <sup>nd</sup> Floor Stairwell	32 sq. ft.
BS-HM-18B	Woodgrain Layered Linoleum	No	М	Category I	ND/ND/NA	2 <sup>nd</sup> Floor Stairwell	NA
BS-HM-19A	1x1 White Smooth Ceiling Tile	Yes	М	Category II	ND	2 <sup>nd</sup> Floor Kitchen	NA
BS-HM-19B	1x1 White Smooth Ceiling Tile	Yes	М	Category II	ND	2 <sup>nd</sup> Floor Kitchen	NA
BS-HS-01A	Plaster	No	S	Category II	ND/ND	Living Room Ceiling	NA
BS-HS-01B	Plaster	No	S	Category II	ND/ND	NE Bedroom Ceiling	NA
BS-HS-01C	Plaster	No	S	Category II	ND/1.75%CH	Kitchen Wall	5,648 sq. ft.
BS-HS-01D	Plaster	No	S	Category II	ND/NA	NW Bedroom Wall	NA
BS-HS-01E	Plaster	No	S	Category II	ND/NA	2 <sup>nd</sup> Floor Kitchen Ceiling	NA
BS-HS-01F	Plaster	No	S	Category II	ND/NA	2 <sup>nd</sup> Floor SE Bedroom Wall	NA
BS-HS-01G	Plaster	No	S	Category II	ND/NA	2 <sup>nd</sup> Floor NE Bedroom Wall	NA
BS-HS-02A	Textured Surfacing	No	S	Category II	ND	2 <sup>nd</sup> Floor NE Bedroom Ceiling	NA
BS-HS-02B	Textured Surfacing	No	S	Category II	ND	2 <sup>nd</sup> Floor Living Room Ceiling	NA
BS-HS-02C	Textured Surfacing	No	S	Category II	ND	2 <sup>nd</sup> Floor SE Bedroom Ceiling	NA

Table 2 - Summary of Sample Descriptions and Asbestos Laboratory Results, 2545 Baker St., Muskegon Heights, Michigan

Notes:

Material Types

Abbreviations

M = Miscellaneous building material

NQ = Not quantified

### Table 2 - Summary of Sample Descriptions and Asbestos Laboratory Results, 2545 Baker St., Muskegon Heights, Michigan

TSI	= Thermal System Insulation	NA	= Not applicable
S	= Surfacing Material	ND	= Not detected. Laboratory result is less than 1 % asbestos
PC	= Point Count Analysis	lin. ft.	= linear feet
CH	= Chrysotile Asbestos	sq. ft.	= square feet

Asbestos Containing Material (ACM) is defined as any material containing more than 1 percent asbestos as determined utilizing Polarized Light Microscopy.

Asbestos Containing Material Description and Location					
Location	Material Description	Friable	Condition	Material Type	Approx. Quantity
Kitchen (1 register, 15 sq. ft.) NE Bedroom (1 register, 15 sq. ft.) NW Bedroom (1 register, 15 sq. ft.) Living (1 register, 15 sq. ft.) 2 <sup>nd</sup> Fl. (1 register, 10 sq. ft. and vertical chase to basement, 25 sq. ft.) Basement (misc. HVAC wrap on Cold Air Ductwork, 5 sq. ft.) Basement (misc. HVAC wrap on Beam, 5 sq. ft.) Basement (misc. HVAC wrap debris on floor, 10 sq. ft.)	HVAC Duct Wrap	Yes	Fair	TSI	115 sq. ft.

### Table 3 - Summary of Presumed Asbestos Containing Materials, 2545 Baker St., Muskegon Heights, Michigan

#### Notes:

Material Types

### Abbreviations

M= Miscellaneous building materialTSI= Thermal System Insulation

S = Surfacing Material

lin. ft. = linear feet sq. ft. = square feet

Exterior - Asbestos Containing Materials				
Location	Material Description		Friable	Approx. Quantity
Building Roof	Roof Flashing		No	30 sq. ft.
		Total		30 sq. ft.
Interior - Asbestos Containing Materials				
Location	Material Description		Friable	Approx. Quantity
NE Bedroom	Green Layered Linoleum/Tile		No	121 sq. ft.
2 <sup>nd</sup> Floor Stairwell	Woodgrain Layered Linoleum		No	32 sq. ft.
		Total		153 sq. ft.
Interior - Asbestos Containing Materials				
Location	<b>Material Description</b>		Friable	Approx. Quantity
Kitchen (1 register, 15 sq. ft.) NE Bedroom (1 register, 15 sq. ft.) NW Bedroom (1 register, 15 sq. ft.) Living (1 register, 15 sq. ft.)				
<ul> <li><sup>2nd</sup> Fl. (1 register, 10 sq. ft.)</li> <li><sup>2nd</sup> Fl. (1 register, 10 sq. ft. and vertical chase to basement, 25 sq. ft.)</li> <li>Basement (misc. HVAC wrap on Cold Air Ductwork, 5 sq. ft.)</li> <li>Basement (misc. HVAC wrap on Beam, 5 sq. ft.)</li> <li>Basement (misc. HVAC wrap debris on floor, 10 sq. ft.)</li> </ul>	HVAC Duct Wrap		Yes	115 sq. ft.
		Total		115 sq. ft.
Interior - Asbestos Containing Materials				
Location	Material Description		Friable	Approx. Quantity
1 <sup>st</sup> Floor	Wall Plaster		No	2,124 sq. ft.
1 <sup>st</sup> Floor	Ceiling Plaster		No	697 sq. ft.
2 <sup>nd</sup> Floor	Wall Plaster		No	2,106 sq. ft.
2 <sup>nd</sup> Floor	Ceiling Plaster		No	721 sq. ft.
		Total		5,648 sq. ft.

### Table 4 - Summary of All Asbestos Containing Materials, 2545 Baker St., Muskegon Heights, Michigan

Notes:

Abbreviations

lin. ft. = linear feet

#### Table 4 - Summary of All Asbestos Containing Materials, 2545 Baker St., Muskegon Heights, Michigan

#### sq. ft. = square feet

**Shaded/Bolded** = Friable ACM and any Category I and Category II non-friable ACM that has a high probability of becoming crumbled, pulverized, or reduced to powder by the demolition or renovation activities that must be properly abated prior to commencement of any demolition/renovation activities.

Demolition/renovation activities completed with intact Category I non-friable ACM are regulated by OSHA and must be completed following the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

Please note that a Negative Pressure Enclosure must be utilized during abatement when Site Conditions Warrant. Examples of these conditions include the abatement of Plaster and Vermiculite insulation, HVAC Duct Wrap in Poor Condition, and Air-O-Cell/Mag Pipe Wrap. Conditions outside of these should be assessed on a case by case basis during the Asbestos Abatement Contractors site walk and Work Plan Preparation.



P.O. Box 13216 Lansing, MI 48901 Phone: 888.449.4566 Fax: 888.448.8739 www.redcedarconsulting.net

November 2, 2018

Mr. Tim Burgess Muskegon County Land Bank Land Bank Coordinator 173 E. Apple Avenue, Suite 104 Muskegon, MI 49442

#### RE: Asbestos Containing Material and Hazardous Materials Inspection 2611 Hoyt St., Muskegon Heights, MI 49444 Parcel ID: 61-26-542-002-0002-00

Dear Mr. Burgess:

Red Cedar Consulting has completed an asbestos-containing material (ACM) and hazardous materials inspection at 2611 Hoyt St., Muskegon Heights, Michigan (Subject Property). This inspection was completed at the request of the Muskegon County Land Bank to comply with the United States Environmental Protection Agency (USEPA) requirements for demolition and renovation set forth under the National Emissions Standards for Hazardous Air Pollutants (NESHAP, 40 CFR Part 61). This inspection was also completed to comply with the Occupational Safety and Health Administration (OSHA) Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

#### **SUBJECT PROPERTY**

The Subject Property is comprised of a .14 acre residential parcel which contains an approximate 1,260 square foot residential building (the Building) constructed in 1925. The Building was constructed on a concrete block basement with two aboveground floors. The exterior walls of the Building were finished with wood lap while the roof was sealed with asphalt shingles. The Building can be further divided into a front entry, living room, dining room, kitchen, bath, three bedrooms and rear entry on the first floor while the second floor contains three bedrooms.

### VISUAL INSPECTION AND SAMPLING

#### **Asbestos Containing Materials Inspection**

Mr. Aaron Paquet of Red Cedar Consulting (Red Cedar), an accredited State of Michigan/EPA Asbestos Building Inspector (Accreditation Number A30955) whom completed training per the Michigan Asbestos Workers Accreditation Act 440 completed an inspection of the Subject Property on October 25, 2018 for suspected asbestos containing building materials.

This inspection, and subsequent sample collection was completed in accordance with the USEPA Asbestos Hazard Emergency Response Act (AHERA) (40 CFR Part 763) assessment and sampling protocol.

During the completion of the inspection, each area of the Subject Property was visually inspected for asbestos containing building materials (ACBM). Following the completion of the visual inspection, Red Cedar staff identified each suspect area of friable and non-friable ACBM and sorted them into one of three homogenous categories for sampling purposes. AHERA defines friable as a material that when dry, may be crumbled, pulverized, or reduced to powder by hand pressure. A homogenous area is defined by OSHA as an area of surfacing, thermal system insulation (TSI) or miscellaneous material that is uniform in color and texture. Surfacing materials are most commonly found in sprayed-on, troweled-on or otherwise applied to surfaces, such as acoustical plaster on ceilings and fireproofing materials on structural members. TSI refers to materials applied to pipes, fittings, boilers, ductwork, or other components to prevent heat loss or gain, or condensation. Any material that does not fall under the surfacing or TSI category, such as floor tile, drywall, and acoustical ceiling tile are placed into the miscellaneous materials category.

Following the completion of the visual inspection, Red Cedar staff identified the following materials as suspect ACBM:

- Vapor Barrier
- Roofing Shingle
- Roof Flashing
- Vinyl Floor Tile
- Linoleum
- 1x1 Ceiling Tile
- Drywall and Joint Compound
- Fiberboard
- Window Glazing
- Plaster

Red Cedar staff collected thirty three samples of suspect ACBM separated into fourteen distinct homogenous groups for laboratory analysis. Samples were collected and submitted to APEX Research Inc. Laboratories (APEX) (Accreditation Number 102118-0) for laboratory analysis. Analysis was completed utilizing polarized light microscopy (PLM) which is the Environmental Protection Agency (EPA) approved method for analysis of bulk materials for asbestos. PLM analysis completed pursuant to method (EPA 600/M4-82-020) identifies asbestos fiber bundles by the visual properties displayed when the sample is treated with various dispersion staining liquids. The laboratory report completed following the sample analysis indicates if asbestos is present, and at what percentage along with a description and percentage of other fibrous and non-fibrous materials and sample color. Chain-of-custody documentation was followed from sample collection through shipping and receiving of the samples at the designated laboratory. The documentation assures that samples will meet the quality assurance/quality control measures defined by AHERA. The laboratory analytical report prepared by APEX for the thirty three samples is included as Attachment A.

#### **Hazardous Materials Inspection**

On October 25, 2018 the Subject Property was also inspected for the presence of hazardous materials which include but are not limited to polychlorinated biphenyls (PCBs) and potential mercury containing equipment and any items or containers that may contain or be classified as a hazardous or regulated material. Each material, if identified, was documented along with the approximate location. Any materials identified as hazardous are included in Table 1.

### **INSPECTION RESULTS AND RECOMMENDATIONS**

During the completion of the asbestos inspection, thirty three samples of suspect ACM were collected and are documented in Table 2 along with the Red Cedar sample number, description, friability, material type, ACM classification, sample location, material quantity and laboratory analytical results.

ACM, as defined by the USEPA NESHAP is "any material containing more than 1 percent asbestos as determined using the method specified in appendix E, subpart E, 40 CFR part 763 Section 1, Polarized Light Microscopy".

Friable ACM is defined by NESHAP as any material containing more than 1 percent asbestos that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. Friable ACM is a concern due the ease of unintentionally disturbing the ACM which may result in "visible emissions" which is known as a Fiber Release Episode.

Non-friable asbestos-containing material is defined as "material containing more than 1 percent asbestos that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. Non-friable ACM's are separated into Category I and Category II ACM. Category I ACM is any asbestos containing packing's, gaskets, resilient floor coverings (vinyl floor tile and linoleum are examples of these) and asphalt roofing products. Category II ACM is stated by NESHAP as any material excluding Category I non-friable ACM such as drywall, plaster or fiberboard insulation.

### **Presumed Asbestos Containing Material**

Presumed Asbestos Containing Materials (PACM) are suspect surfacing, TSI and miscellaneous materials found in buildings constructed prior to 1980 which are classified as and due to the age of the structure, are assumed to be ACM and do not require sample collection and analysis. OSHA dictates that PACM may be "rebutted" following a complete inspection pursuant to AHERA protocol.

The HVAC Duct Wrap located in the Building was classified as PACM due to the age of the structure and samples were not collected.

Table 3 lists the location, material description, friability, condition, material type (surfacing, thermal or miscellaneous) and approximate quantity of all PACM documented at the Subject Property.

Table 4 provides a summary all ACM documented at the Subject Property which includes the material location, description, and approximate quantity.

### Friable ACM's

A window glazing sample collected from a window in the bathroom was found to contain up to 2% asbestos following analysis. The assessment to quantify the extent of this material identified 21 windows that would fall into the same homogenous group. The locations of the windows are listed below:

- (6 windows 24" wide x 58" tall)
- (1 window 36" wide x 58" tall)
- (1 window 24" wide x 44" tall)
- (2 windows 28" wide x 32" tall)
- (1 window 24" wide x 28" tall)
- (4 windows 31" wide x 31" tall)
- (3 windows 36" wide x 61" tall)
- (2 windows 27" wide x 61" tall)
- (1 window 33" wide x 61" tall)

Duct Wrap identified in the building in conjunction with the forced air heating system is classified as friable ACM. The visual assessment to quantify the extent of this material identified HVAC Duct Wrap at the following locations within the basement, first and second floors:

- Dining (1 register, 10 sq. ft.)
- Bathroom (1 register, 10 sq. ft.)
- 2<sup>nd</sup> Floor W Bedroom (1 register, 10 sq. ft. and vertical chase to basement, 15 sq. ft.)
- 2<sup>nd</sup> Floor S Bedroom (1 register, 10 sq. ft. and vertical chase to basement, 15 sq. ft.)

#### **Category I ACM**

Three types of resilient floor covering (12x12 Grey/White Layered VFT, Cream Linoleum Layered, and Blue Layered Linoleum) located within the kitchen, bathroom, and rear entry closet/hallway were found to contain up to 15% Chrysotile asbestos. The assessment to quantify the extent of this material identified approximately 355 sq. ft. of this material within the Building.

#### **Category II ACM**

A plaster sample collected from the Living Room was found to contain up to 2% asbestos following analysis. The assessment to quantify the extent of this material identified approximately 6,809 sq. ft. of plaster within the Building.

Roof Flashing samples collected during the completion of the inspection were found to contain up to 2.5% Chrysotile asbestos. The assessment to quantify the extent of this material identified 10 sq. ft. of roof flashing materials on the Building.

### **RECOMMENDATIONS**

#### **Asbestos Containing Materials**

HVAC material identified in the Building system and listed below is classified as friable ACM and should be removed prior to any renovation/demolition activities.

- Dining (1 register, 10 sq. ft.)
- Bathroom (1 register, 10 sq. ft.)
- 2<sup>nd</sup> Floor W Bedroom (1 register, 10 sq. ft. and vertical chase to basement, 15 sq. ft.)
- 2<sup>nd</sup> Floor S Bedroom (1 register, 10 sq. ft. and vertical chase to basement, 15 sq. ft.)

Friable asbestos containing window glazing was identified on twenty one windows throughout the Building. The locations of these windows that should be abated prior to demolition/renovation activities are listed below:

- (6 windows 24" wide x 58" tall)
- (1 window 36" wide x 58" tall)
- (1 window 24" wide x 44" tall)
- (2 windows 28" wide x 32" tall)
- (1 window 24" wide x 28" tall)
- (4 windows 31" wide x 31" tall)
- (3 windows 36" wide x 61" tall)
- (2 windows 27" wide x 61" tall)
- (1 window 33" wide x 61" tall)

Please note: Other different sized windows are located throughout the Building but these windows were assessed and found to be constructed either without window glazing or were sampled and found to not contain asbestos and therefore are not required to be removed.

Plaster identified on the interior of the Building must be abated prior to completion of any renovation/demolition activities at the Subject Property. Any Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of renovation or demolition operations must be properly abated.

Roof Flashing identified on the interior of the Building must be abated prior to completion of any renovation/demolition activities at the Subject Property. Any Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of renovation or demolition operations must be properly abated.

The Category I resilient floor coverings (12x12 Grey/White Layered VFT, Cream Linoleum Layered, and Blue Layered Linoleum) are non-friable ACM's that may be left in place as long as the demolition/renovation activities are completed following the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

Please note: The location of samples obtained during this inspection were in a random fashion and areas that were not identified during this inspection may be damaged or have become damaged since the inspection was completed. If Category I or Category II friable materials are discovered prior to or during the demolition/renovation process, these materials must be abated prior to commencement of any demolition/renovation activities at the Subject Property.

#### **Hazardous Materials**

No Hazardous Materials were identified at the Subject Property.

### **REGULATORY REQUIREMENTS**

A Notification of Intent to Renovate/Demolish form must be filed with the Michigan Department of Environmental Quality- Air Quality Division at least 10 working days prior to any renovation or demolition activities at a site.

The Notification of Intent to Renovate/Demolish form must also be completed and submitted to the MIOSHA-Asbestos Program whenever demolition, encapsulation and/or renovation activities at a site involving greater than ten lineal feet and/or fifteen square feet of ACM will be completed.

Regulated asbestos containing materials per NESHAP (40 CFR Part 61) which falls into any of the following categories are ACM's that must be removed prior to any renovation/demolition activities at the Subject Property.

- Friable asbestos material.
- Category I non-friable ACM that has become friable.
- Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading.
- Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of renovation or demolition operations.

Asbestos abatement should only be performed by a certified asbestos abatement contractor licensed to complete abatement work. The contractor must also follow the standards and requirements set forth per the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) and the USEPA NESHAP (40 CFR Part 61).

Additional information regarding the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) and the USEPA NESHAP (40 CFR Part 61) can be obtained by contacting the associated agency below.

NESHAP Asbestos Program Department of Environmental Quality Phone: 517-284-6777

MIOSHA-CSHD-Asbestos Program State of Michigan Phone: 517-284-7680 Email: asbestos@michigan.gov

### **DISCLAIMER**

Red Cedar Consulting performed destructive testing methods in an attempt to access and inspect all areas of the Building. Unfortunately, due to the age of construction along with multiple additions/renovations that may have been completed on the Building, additional inspections may be required if suspect ACM material not documented within this report is encountered during renovation/demolition activities.

This report was prepared at the request and for exclusive use by the Muskegon County Land Bank and may not be reproduced or sold without written permission from Red Cedar Consulting.

We appreciate the opportunity to provide the requested services. Please contact us at (888) 449-4566 with any questions or concerns.

Sincerely, Red Cedar Consulting

Raion Poquet

Aaron Paquet Michigan/EPA Certified Asbestos Building Inspector (A30955)

Red Cedar Consulting

### Attachment 1

APEX Research Laboratory Analytical Results

Test Method, Polarized Light Microscopy (PLM)

Project : 2611 Hoyt St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80610         Date Collected:       10/25/18         Date Received:       10/26/18         Date Analyzed:       10/31/18         Date Reported:       10/31/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80610 - 01 Cust. #: HS-HM-01A Material: Vapor Barrier Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 50% Other - 50%
Lab ID #: 80610 - 02 Cust. #: HS-HM-01B Material: Vapor Barrier Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 50% Other - 50%
Lab ID #: 80610 - 03 Cust. #: HS-HM-02A Material: Roofing Shingle Location: Appearance: black,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Fiberglass - 10% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.



APEX Research Inc., 11054 Hi Tech Drive, Whitmore Lake, MI 48189 (734) 449-9990, Fax (734) 449-9991

### Project : 2611 Hoyt St.

**Certificate of Laboratory Analysis** Test Method, Polarized Light Microscopy (PLM)



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80610Date Collected:10/25/18Date Received:10/26/18Date Analyzed:10/31/18Date Reported:10/31/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80610 - 04 Cust. #: HS-HM-02B Material: Roofing Shingle Location: Appearance: black,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Fiberglass - 10% Other - 80%
Lab ID #: 80610 - 05 Cust. #: HS-HM-03A Material: Roof Flashing Location: Appearance: black,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>YES</b> Chrysotile - 2.50% POINT COUNT RESULT	Cellulose - 10% Other - 87.50%
Lab ID #: 80610 - 06 Cust. #: HS-HM-03B Material: Roof Flashing Location: Appearance: Layer: of	Asbestos Present: NOT ANALYZED	
For Lavered Samples, each component will be analyzed and repor	ted separately.	

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2611 Hoyt St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80610Date Collected:10/25/18Date Received:10/26/18Date Analyzed:10/31/18Date Reported:10/31/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80610 - 07 Cust. #: HS-HM-04A Material: 12x12 Grey/White Layered VFT Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80610 - 07a Cust. #: HS-HM-04A Material: Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 2 of 2	Asbestos Present: <b>YES</b> Chrysotile - 15%	Cellulose - 10% Other - 75%
Lab ID #: 80610 - 08 Cust. #: HS-HM-04B Material: 12x12 Grey/White Layered VFT Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2611 Hoyt St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80610         Date Collected:       10/25/18         Date Received:       10/26/18         Date Analyzed:       10/31/18         Date Reported:       10/31/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80610 - 08a Cust. #: HS-HM-04B Material: Linoleum	Asbestos Present:	
Location: Appearance: Layer: 2 of 2	NOT ANALYZED	
Lab ID #: 80610 - 09 Cust. #: HS-HM-05A Material: Cream Linoleum Layered Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80610 - 09a Cust. #: HS-HM-05A Material: Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 2 of 3	Asbestos Present: <b>YES</b> Chrysotile - 15%	Cellulose - 10% Other - 75%
For Layered Samples, each component will be analyzed and repor	ted separately.	

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2611 Hoyt St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80610Date Collected:10/25/18Date Received:10/26/18Date Analyzed:10/31/18Date Reported:10/31/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80610 - 09b Cust. #: HS-HM-05A Material: Mastic Location: Appearance: yellow,nonfibrous,homogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80610 - 10 Cust. #: HS-HM-05B Material: Cream Linoleum Layered Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80610 - 10a Cust. #: HS-HM-05B Material: Linoleum	Asbestos Present:	
Location: Appearance: Layer: 2 of 3	NOT ANALYZED	
For Layered Samples, each component will be analyzed and reporte	ed separately.	

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2611 Hoyt St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80610Date Collected:10/25/18Date Received:10/26/18Date Analyzed:10/31/18Date Reported:10/31/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80610 - 10b Cust. #: HS-HM-05B Material: Mastic Location: Appearance: yellow,nonfibrous,homogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80610 - 11 Cust. #: HS-HM-06A Material: 12x12 Tan Marble VFT Layered Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80610 - 11a Cust. #: HS-HM-06A Material: Glue Location: Appearance: clear,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2611 Hoyt St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80610Date Collected:10/25/18Date Received:10/26/18Date Analyzed:10/31/18Date Reported:10/31/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80610 - 12 Cust. #: HS-HM-06B Material: 12x12 Tan Marble VFT Layered Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80610 - 12a Cust. #: HS-HM-06B Material: Glue Location: Appearance: clear,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80610 - 13 Cust. #: HS-HM-07A Material: Tile Location: Appearance: grey,nonfibrous,homogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2611 Hoyt St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80610Date Collected:10/25/18Date Received:10/26/18Date Analyzed:10/31/18Date Reported:10/31/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80610 - 13a Cust. #: HS-HM-07A Material: Mastic Location: Appearance: black,nonfibrous,homogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80610 - 13b Cust. #: HS-HM-07A Material: Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 3 of 3	Asbestos Present: <b>YES</b> Chrysotile - 15%	Cellulose - 10% Other - 75%
Lab ID #: 80610 - 14 Cust. #: HS-HM-07B Material: Tile Location: Appearance: grey,nonfibrous,homogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
For Lovered Samples, each component will be analyzed and report	- 1	

or Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



### **Certificate of Laboratory Analysis** Test Method, Polarized Light Microscopy (PLM)

Project : 2611 Hoyt St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80610Date Collected:10/25/18Date Received:10/26/18Date Analyzed:10/31/18Date Reported:10/31/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80610 - 14a Cust. #: HS-HM-07B Material: Mastic Location: Appearance: black,nonfibrous,homogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80610 - 14b Cust. #: HS-HM-07B Material: Linoleum Location: Appearance: Layer: 3 of 3	Asbestos Present: NOT ANALYZED	
Lab ID #: 80610 - 15 Cust. #: HS-HM-08A Material: Texture Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
For Lavered Samples, each component will be analyzed and repor	tad separately	

Kent Jett

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2611 Hoyt St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80610Date Collected:10/25/18Date Received:10/26/18Date Analyzed:10/31/18Date Reported:10/31/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80610 - 15a Cust. #: HS-HM-08A Material: 1x1 White Textured Ceiling Tile Location: Appearance: brown,fibrous,nonhomogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 90% Other - 10%
Lab ID #: 80610 - 15b Cust. #: HS-HM-08A Material: Glue Pods Location: Appearance: beige,nonfibrous,homogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80610 - 16 Cust. #: HS-HM-08B Material: Texture Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2611 Hoyt St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80610Date Collected:10/25/18Date Received:10/26/18Date Analyzed:10/31/18Date Reported:10/31/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80610 - 16a Cust. #: HS-HM-08B Material: 1x1 White Textured Ceiling Tile Location: Appearance: brown,fibrous,nonhomogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 90% Other - 10%
Lab ID #: 80610 - 16b Cust. #: HS-HM-08B Material: Glue Pods Location: Appearance: beige,nonfibrous,homogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80610 - 17 Cust. #: HS-HM-09A Material: Drywall Location: Appearance: white,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Fiberglass - 5% Other - 85%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2611 Hoyt St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80610         Date Collected:       10/25/18         Date Received:       10/26/18         Date Analyzed:       10/31/18         Date Reported:       10/31/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80610 - 18 Cust. #: HS-HM-09B Material: Drywall Location: Appearance: white,fibrous,nonhomogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 15% Other - 85%
Lab ID #: 80610 - 18a Cust. #: HS-HM-09B Material: Joint Compound Location: Appearance: white,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80610 - 19 Cust. #: HS-HM-10A Material: Fiberboard Location: Appearance: brown,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 90% Other - 10%

For Layered Samples, each component will be analyzed and reported separately.

Kent Jor

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2611 Hoyt St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80610Date Collected:10/25/18Date Received:10/26/18Date Analyzed:10/31/18Date Reported:10/31/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80610 - 20 Cust. #: HS-HM-10B Material: Fiberboard Location: Appearance: brown,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 90% Other - 10%
Lab ID #: 80610 - 21 Cust. #: HS-HM-11A Material: Brown Window Glazing Location: Appearance: beige,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>YES</b> Chrysotile - 2.00% POINT COUNT RESULT	Other - 98.00%
Lab ID #: 80610 - 22 Cust. #: HS-HM-11B Material: Brown Window Glazing Location: Appearance: Layer: of	Asbestos Present: NOT ANALYZED	
For Lowerd Samples, each common ant will be analyzed and more		

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2611 Hoyt St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80610Date Collected:10/25/18Date Received:10/26/18Date Analyzed:10/31/18Date Reported:10/31/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80610 - 23 Cust. #: HS-HM-12A Material: Grey Window Glazing Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80610 - 24 Cust. #: HS-HM-12B Material: Grey Window Glazing Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80610 - 25 Cust. #: HS-HM-13A Material: Basement Window Glazing Location: Appearance: beige,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the US Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.



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Test Method, Polarized Light Microscopy (PLM)

Project : 2611 Hoyt St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80610         Date Collected:       10/25/18         Date Received:       10/26/18         Date Analyzed:       10/31/18         Date Reported:       10/31/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80610 - 26 Cust. #: HS-HM-13B Material: Basement Window Glazing Location: Appearance: beige,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80610 - 27 Cust. #: HS-HS-01A Material: Plaster Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80610 - 27a Cust. #: HS-HS-01A Material: Mortar Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>YES</b> Chrysotile - 2.25% POINT COUNT RESULT	Cellulose - 2% Hair - 2% Other - 93.75%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director

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Test Method, Polarized Light Microscopy (PLM)

Project : 2611 Hoyt St.



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Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80610 - 28 Cust. #: HS-HS-01B Material: Plaster Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80610 - 28a Cust. #: HS-HS-01B Material: Mortar Location: Appearance: Layer: 2 of 2	Asbestos Present: NOT ANALYZED	
Lab ID #: 80610 - 29 Cust. #: HS-HS-01C Material: Plaster Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
For Layered Samples, each component will be analyzed and report	ted separately.	

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2611 Hoyt St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80610Date Collected:10/25/18Date Received:10/26/18Date Analyzed:10/31/18Date Reported:10/31/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80610 - 29a Cust. #: HS-HS-01C Material: Mortar	Asbestos Present:	
Location: Appearance: Layer: 2 of 2	NOT ANALYZED	
Lab ID #: 80610 - 30 Cust. #: HS-HS-01D Material: Plaster Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80610 - 30a Cust. #: HS-HS-01D Material: Mortar	Asbestos Present:	
Location: Appearance: Layer: 2 of 2	NOT ANALYZED	
For I avered Samples, each component will be analyzed and report	red separately	

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2611 Hoyt St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80610Date Collected:10/25/18Date Received:10/26/18Date Analyzed:10/31/18Date Reported:10/31/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80610 - 31 Cust. #: HS-HS-01E Material: Plaster Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80610 - 31a Cust. #: HS-HS-01E Material: Mortar Location: Appearance: Layer: 2 of 2	Asbestos Present: NOT ANALYZED	
Lab ID #: 80610 - 32 Cust. #: HS-HS-01F Material: Plaster Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
For Layered Samples, each component will be analyzed and report	red separately.	

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2611 Hoyt St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80610Date Collected:10/25/18Date Received:10/26/18Date Analyzed:10/31/18Date Reported:10/31/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80610 - 32a Cust. #: HS-HS-01F Material: Mortar	Asbestos Present:	
Location: Appearance: Layer: 2 of 3	NOT ANALYZED	
Lab ID #: 80610 - 32b Cust. #: HS-HS-01F Material: Texture Location: Appearance: white,nonfibrous,homogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80610 - 33 Cust. #: HS-HS-01G Material: Plaster Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the US Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.



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### **Certificate of Laboratory Analysis** Test Method, Polarized Light Microscopy (PLM)

Project : 2611 Hoyt St.



18-80610

ARI Report #

Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		Date Collected:10/25/18Date Received:10/26/18Date Analyzed:10/31/18Date Reported:10/31/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80610 - 33a Cust. #: HS-HS-01G Material: Mortar	Asbestos Present:	
Location: Appearance: Layer: 2 of 2	NOT ANALYZED	
Lab ID #: Cust. #: Material: Location: Appearance: Layer: of	Asbestos Present:	
Lab ID #: Cust. #: Material: Location: Appearance:	Asbestos Present:	

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

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Layer:

of

**Report To:** 

APEX Research, Inc. 11054 Hi Tech Drive, Whitmore Lake, MI 48189 Phone: 734-449-9990 E-mail: apexresearch@chartermi.net Fax: 734-449-9991	Date of Survey : /2 - 25 - /8     Lab Use Only Log-in       Project : 26/1 //n/ 4     Report       Project # :	148-8739 PLM EPA 600, ios: BulkWi BulkWi	Mold:     Bulk     Tape     BioSIS     Other     Viable       EM:     AHERA 7400     Bulk/NOB     EPA Level II	Material/Location Volume Area Results	ner Zeuer	fing Mingle	of Flecking	Frey tolkite Sequed VFT	2 ten Martle VET Reyred RECENE	PS     Relinquished by:     Received by!     Dil     2018       S-18     Date :     Date :     Date :     Date :     Date :
APEX Research, Inc. 11054 Hill	Client Name: Red Cedar Consulting Address: PO Box 13216 City, St., Zip: Lansing, MI 48901	449-4566 Fax: (888) 448-8 und Times: (Circle One) Asbestos: Bi	48 hour 72 hour Mold: Bulk Other: 3 deep (TTP) All Samples TEM: AHE	Lab ID # Client ID # Materia	1 HS-HM-014 Vener Zee			7 048 · · · · · · · · · · · · · · · · · · ·	1 V OGAZNZEn Mar.	Relinquished by ALLALAL Received by: UFS Date : 10-25-18 Date : 10-25-18

#

Rev: 12/03 Work Forms: COC<sup>.</sup>

2043	APEX RESEARCH	Lab Use Only Log-In	Report	- asulting.net 5% ACM.		Viable		Results							•		ADCI 2 6 2018	APEX RESEARCH
	Phone: 734-449-9990 Fax: 734-449-9991	0-25-18	T AT	Paquet tt@redcedarco etection of • PCM	1 I	Other Vi	vel II	Area									Received by:	Date :
	MI 48189 Phone: 73 i.net Fax: 734		26/1 Hoy	t Person: Aaron Paquet apaquet@redcedarconsulting.net samples with a detection of <5% ACM. Point Count PCM	Air Paint	BioSIS	DB EPA Level II	Volume										
	nc. 11054 Hi Tech Drive, Whitmore Lake, MI 48189 E-mail: apexresearch@chartermi.net		Project # :	PLM EPA 600, PC all		Mold: Bulk Tape	TEM: AHERA 7400 Bulk/NOB	Material/Location	12×12 ten Marble VFT Begens	Blue Seyered Peroleure	1x1/2/ lettered of al guero	·· · · · · · · · · · · · · · · · · · ·	hypertof frint longauged	Filesbord		Dune blindow Waying	الحالي المحافظ المراجع ا	10-25-18 Date:
	APEX Research, In	ame: Red Ced	Address: PO Box 13216 City Ct 7in: Lansing MT 48901	Around Tim	24 hour		5 dey (TTP) All Samples	D # Client ID #	12 HS-1-14-063	1 074	172 / 51	16 1 287	D9A	[40/ 104 .	201	3-1 V V 1/B	Relinquished by: Received by:	Date :
	[AP]	Client	Address:	Phone: Turn	Rush	48 hour	Other:	Lab									Relinquish	Date : <u>/</u>

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· Work Forms: COC

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Рыопе: 734-449-9990 Fax: 734-449-9991	Date of Survey :      <.2.5-/5     Iab Use Only logen       Project :     <.4./14.14.4        Project # :         Contact Person:     Aaron Paquet       Solo, PC all samples with a detection of \$2\$ ACM.     Report       Wipe     Nine     PCM       Wipe     Air     Paint       Solo     Point Count     PCM       Wipe     Air     Paint       Distis     Other     Viable       Mipe     Bulk/NOB     EPA Level I       Atting     Volume     Area       Reput     Ninble     Area	<b>d</b> b
APEX Research, Inc. 11054 Hi Tech Drive, Whitmore Lake, MI 48189 Phone: 734-449-9990 $_{\rm E-mail:\ apexresearch@chartermi.net}$ Fax: 734-449-9991	148-8739 PLM EPA bos: Bulk x Bulk x Bulk x AHERA 7400 AHERA 7400 AHERA 7400	1. 2 2.5 - 1.8 Date:
APEX Research, 1	Cedar Consultin Box 13216 Box 13216 Box 13216 Stef MI 48901 Stef Fax <b>d Times:</b> (c Client ID # S-H5-0/A S-H5-0/A S-H5-0/A 0/C 0/C	Date: /o-25-/{ Date: /o

Red Cedar Consulting

Tables

Hazardous Materials Description and Location				
Location         Material Description         Quantity				
No Hazardous Materials Identified.				

Table 2 - Summary of Sample Descriptions and Asbestos Laboratory Results, 2611 Hoyt St., Muskegon Heights, Michigan

Sample Number	Sample Description	Friable	Material Type	Material Classification	% Asbestos Laboratory Result	Sample Location	Approx. Material Quantity
HS-HM-01A	Vapor Barrier	Yes	М	Category II	ND	House Exterior	NA
HS-HM-01B	Vapor Barrier	Yes	М	Category II	ND	House Exterior	NA
HS-HM-02A	Roofing Shingle	No	М	Category I	ND	House Roof	NA
HS-HM-02B	Roofing Shingle	No	М	Category I	ND	House Roof	NA
HS-HM-03A	Roof Flashing	No	М	Category II	2.50%CH-PC	House Roof	10 sq. ft.
HS-HM-03B	Roof Flashing	No	М	Category II	NA	House Roof	NA
HS-HM-04A	12x12 Grey/White Layered VFT	No	М	Category I	ND/15%CH	Kitchen	263 sq. ft.
HS-HM-04B	12x12 Grey/White Layered VFT	No	М	Category I	ND/NA	Kitchen	NA
HS-HM-05A	Cream Linoleum Layered	No	М	Category I	ND/15%CH/ND	Bathroom	64 sq. ft.
HS-HM-05B	Cream Linoleum Layered	No	М	Category I	ND/NA/ND	Bathroom	NA
HS-HM-06A	12x12 Tan Marble VFT Layered	No	М	Category I	ND/ND	Rear Entry	NA
HS-HM-06B	12x12 Tan Marble VFT Layered	No	М	Category I	ND/ND	Rear Entry	NA
HS-HM-07A	Blue Layered Linoleum	No	М	Category I	ND/ND/15%CH	Rear Entry Closet/Hallway	28 sq. ft.
HS-HM-07B	Blue Layered Linoleum	No	М	Category I	ND/ND/NA	Rear Entry Closet/Hallway	NA
HS-HM-08A	1x1 White Textured Ceiling Tile	Yes	М	Category II	ND/ND/ND	Living	NA
HS-HM-08B	1x1 White Textured Ceiling Tile	Yes	М	Category II	ND/ND/ND	SE Bedroom	NA
HS-HM-09A	Drywall and Joint Compound	No	М	Category II	ND	SE Bedroom Wall	NA
HS-HM-09B	Drywall and Joint Compound	No	М	Category II	ND/ND	2 <sup>nd</sup> Fl. SW Bedroom Closet Wall	NA
HS-HM-10A	Fiberboard	Yes	М	Category II	ND	Living Room Ceiling	NA
HS-HM-10B	Fiberboard	Yes	М	Category II	ND	Dining Room Ceiling	NA
HS-HM-11A	Brown Window Glazing	Yes	М	Category II	ND/2.00%CH-PC	Bathroom Window	21 Windows
HS-HM-11B	Brown Window Glazing	Yes	М	Category II	NA	Hallway Window	NA
HS-HM-12A	Grey Window Glazing	Yes	М	Category II	ND	SE Bedroom Window	NA
HS-HM-12B	Grey Window Glazing	Yes	М	Category II	ND	Dining Room Window	NA
HS-HM-13A	Basement Window Glazing	Yes	М	Category II	ND	Basement Window	NA
HS-HM-13B	Basement Window Glazing	Yes	М	Category II	ND	Basement Window	NA

Table 2 - Summary of Sample Descriptions and Asbestos Laboratory Results, 2611 Hoyt St., Muskegon Heights, Michigan

Sample Number	Sample Description	Friable	Material Type	Material Classification	% Asbestos Laboratory Result	Sample Location	Approx. Material Quantity
HS-HS-01A	Plaster	No	S	Category II	ND/2.25%CH-PC	Living Room Ceiling	6,809 sq. ft.
HS-HS-01B	Plaster	No	S	Category II	ND/NA	Kitchen Ceiling	NA
HS-HS-01C	Plaster	No	S	Category II	ND/NA	Living Room Wall	NA
HS-HS-01D	Plaster	No	S	Category II	ND/NA	SE Bedroom Wall	NA
HS-HS-01E	Plaster	No	S	Category II	ND/NA	2 <sup>nd</sup> Fl. SE Bedroom Closet Ceiling	NA
HS-HS-01F	Plaster	No	S	Category II	ND/NA/ND	2 <sup>nd</sup> Fl. E Bedroom Wall	NA
HS-HS-01G	Plaster	No	S	Category II	ND/NA	2 <sup>nd</sup> Fl. Hall Wall	NA

Notes:

Material Types

M = Miscellaneous building material

TSI = Thermal System Insulation

S = Surfacing Material

PC = Point Count Analysis

CH = Chrysotile Asbestos

#### Abbreviations

NQ = Not quantified

NA = Not applicable

ND = Not detected. Laboratory result is less than 1 % asbestos

lin. ft. = linear feet

sq. ft. = square feet

Asbestos Containing Material (ACM) is defined as any material containing more than 1 percent asbestos as determined utilizing Polarized Light Microscopy.

Asbestos Containing Material Description and Location						
Location	Material Description	Friable	Condition	Material Type	Approx. Quantity	
Dining (1 register, 10 sq. ft.) Bathroom (1 register, 10 sq. ft.) 2 <sup>nd</sup> Floor W Bedroom (1 register, 10 sq. ft. and vertical chase to basement, 15 sq. ft.) 2 <sup>nd</sup> Floor S Bedroom (1 register, 10 sq. ft. and vertical chase to basement, 15 sq. ft.)	HVAC Duct Wrap	Yes	Fair	TSI	70 sq. ft.	

#### Notes:

#### Material Types

- = Miscellaneous building material Μ
- TSI = Thermal System Insulation S = Surfacing Material

Abbreviations

lin. ft. = linear feet sq. ft. = square feet

Exterior - Asbestos Containing Materials				
Location	Material Description		Friable	Approx. Quantity
Building Roof	Roof Flashing		No	10 sq. ft.
		Total		10 sq. ft.
Interior - Asbestos Containing Materials				
Location	Material Description		Friable	Approx. Quantity
Kitchen	12x12 Grey/White Layered VFT		No	263 sq. ft.
Bathroom	Cream Linoleum Layered		No	64 sq. ft.
Rear Entry	Blue Layered Linoleum		No	28 sq. ft.
		Total		355 sq. ft.
Interior - Asbestos Containing Materials				
Location	<b>Material Description</b>		Friable	Approx. Quantity
Dining (1 register, 10 sq. ft.)				
Bathroom (1 register, 10 sq. ft.)				
2 <sup>nd</sup> Floor W Bedroom (1 register, 10 sq. ft. and vertical chase to basement, 15 sq. ft.) 2 <sup>nd</sup> Floor S Bedroom (1 register, 10 sq. ft. and vertical	HVAC Duct Wrap		Yes	70 sq. ft.
chase to basement, 15 sq. ft.)				
		Total		70 sq. ft.
Interior - Asbestos Containing Materials				
Location	<b>Material Description</b>		Friable	Approx. Quantity
(6 windows 24" wide x 58" tall)	Glazing		Yes	6 Windows
(1 window 36" wide x 58" tall)	Glazing		Yes	1 Window
(1 window 24" wide x 44" tall)	Glazing		Yes	1 Window
(2 windows 28" wide x 32" tall)	Glazing		Yes	2 Windows
(1 window 24" wide x 28" tall)	Glazing		Yes	1 Window
(4 windows 31" wide x 31" tall)	Glazing		Yes	4 Windows
(3 windows 36" wide x 61" tall)	Glazing		Yes	3 Windows
(2 windows 27" wide x 61" tall)	Glazing		Yes	2 Windows
(1 window 33" wide x 61" tall)	Glazing		Yes	1 Window
		Total		21 Windows

### Table 4 - Summary of All Asbestos Containing Materials, 2611 Hoyt St., Muskegon Heights, Michigan

Exterior - Asbestos Containing Materials				
Location	<b>Material Description</b>		Friable	Approx. Quantity
Interior - Asbestos Containing Materials				
Location	<b>Material Description</b>		Friable	Approx. Quantity
1 <sup>st</sup> Floor	Wall Plaster		No	2,646 sq. ft.
1 <sup>st</sup> Floor	Ceiling Plaster		No	836 sq. ft.
2 <sup>nd</sup> Floor	Wall Plaster		No	2,646 sq. ft.
2 <sup>nd</sup> Floor	Ceiling Plaster		No	681 sq. ft.
		Total		6,809 sq. ft.

#### Table 4 - Summary of All Asbestos Containing Materials, 2611 Hoyt St., Muskegon Heights, Michigan

#### Notes: Abbreviations

### lin. ft. = linear feet

sq. ft. = square feet

**Shaded/Bolded** = Friable ACM and any Category I and Category II non-friable ACM that has a high probability of becoming crumbled, pulverized, or reduced to powder by the demolition or renovation activities that must be properly abated prior to commencement of any demolition/renovation activities.

Demolition/renovation activities completed with intact Category I non-friable ACM are regulated by OSHA and must be completed following the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

Please note that a Negative Pressure Enclosure must be utilized during abatement when Site Conditions Warrant. Examples of these conditions include the abatement of Plaster and Vermiculite insulation, HVAC Duct Wrap in Poor Condition, and Air-O-Cell/Mag Pipe Wrap. Conditions outside of these should be assessed on a case by case basis during the Asbestos Abatement Contractors site walk and Work Plan Preparation.



P.O. Box 13216 Lansing, MI 48901 Phone: 888.449.4566 Fax: 888.448.8739 www.redcedarconsulting.net

November 1, 2018

Mr. Tim Burgess Muskegon County Land Bank Land Bank Coordinator 173 E. Apple Avenue, Suite 104 Muskegon, MI 49442

#### RE: Asbestos Containing Material and Hazardous Materials Inspection 2736 8th St., Muskegon Heights, MI 49444 Parcel ID: 61-26-185-190-0015-00

Dear Mr. Burgess:

Red Cedar Consulting has completed an asbestos-containing material (ACM) and hazardous materials inspection at 2736 8th St., Muskegon Heights, Michigan (Subject Property). This inspection was completed at the request of the Muskegon County Land Bank to comply with the United States Environmental Protection Agency (USEPA) requirements for demolition and renovation set forth under the National Emissions Standards for Hazardous Air Pollutants (NESHAP, 40 CFR Part 61). This inspection was also completed to comply with the Occupational Safety and Health Administration (OSHA) Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

#### **SUBJECT PROPERTY**

The Subject Property is comprised of a .14 acre residential parcel which contains an approximate 488 square foot residential building (the Building) constructed in 1920. The Building was constructed on a concrete block basement with two aboveground floors. The exterior walls of the Building were finished with vinyl siding and wood lap while the roof was sealed with asphalt shingles. The Building can be further divided into three Apartments for inspection purposes.

#### VISUAL INSPECTION AND SAMPLING

#### **Asbestos Containing Materials Inspection**

Mr. Aaron Paquet of Red Cedar Consulting (Red Cedar), an accredited State of Michigan/EPA Asbestos Building Inspector (Accreditation Number A30955) whom completed training per the Michigan Asbestos Workers Accreditation Act 440 completed an inspection of the Subject Property on October 22, 2018 for suspected asbestos containing building materials.

This inspection, and subsequent sample collection was completed in accordance with the USEPA Asbestos Hazard Emergency Response Act (AHERA) (40 CFR Part 763) assessment and sampling protocol.

During the completion of the inspection, each area of the Subject Property was visually inspected for asbestos containing building materials (ACBM). Following the completion of the visual inspection, Red Cedar staff identified each suspect area of friable and non-friable ACBM and sorted them into one of three homogenous categories for sampling purposes. AHERA defines friable as a material that when dry, may be crumbled, pulverized, or reduced to powder by hand pressure. A homogenous area is defined by OSHA as an area of surfacing, thermal system insulation (TSI) or miscellaneous material that is uniform in color and texture. Surfacing materials are most commonly found in sprayed-on, troweled-on or otherwise applied to surfaces, such as acoustical plaster on ceilings and fireproofing materials on structural members. TSI refers to materials applied to pipes, fittings, boilers, ductwork, or other components to prevent heat loss or gain, or condensation. Any material that does not fall under the surfacing or TSI category, such as floor tile, drywall, and acoustical ceiling tile are placed into the miscellaneous materials category.

Following the completion of the visual inspection, Red Cedar staff identified the following materials as suspect ACBM:

- Asphalt Shingle
- Asphalt Siding
- Vapor Barrier
- Multi Layered Flooring
- 9"x9" Vinyl Floor Tile
- 2'x2' Ceiling Tile
- Drywall and Joint Compound
- 1x1 Ceiling Tile
- 12"x12" Vinyl Floor Tile
- Linoleum
- Window Caulk
- Window Glazing
- Rolled Roofing
- Sand Plaster
- Plaster

Red Cedar staff collected forty four samples of suspect ACBM separated into twenty distinct homogenous groups for laboratory analysis. Samples were collected and submitted to APEX Research Inc. Laboratories (APEX) (Accreditation Number 102118-0) for laboratory analysis. Analysis was completed utilizing polarized light microscopy (PLM) which is the Environmental Protection Agency (EPA) approved method for analysis of bulk materials for asbestos. PLM analysis completed pursuant to method (EPA 600/M4-82-020) identifies asbestos fiber bundles by the visual properties displayed when the sample is treated with various dispersion staining liquids. The laboratory report completed following the sample analysis indicates if asbestos is present, and at what percentage along with a description and percentage of other fibrous and non-fibrous materials and sample color. Chain-of-custody documentation was followed from sample collection through shipping and receiving of the samples at the designated laboratory. The documentation assures that samples will meet the quality assurance/quality control

measures defined by AHERA. The laboratory analytical report prepared by APEX for the forty four samples is included as Attachment A.

#### **Hazardous Materials Inspection**

On October 22, 2018 the Subject Property was also inspected for the presence of hazardous materials which include but are not limited to polychlorinated biphenyls (PCBs) and potential mercury containing equipment and any items or containers that may contain or be classified as a hazardous or regulated material. Each material, if identified, was documented along with the approximate location. Any materials identified as hazardous are included in Table 1.

#### **INSPECTION RESULTS AND RECOMMENDATIONS**

During the completion of the asbestos inspection, forty four samples of suspect ACM were collected and are documented in Table 2 along with the Red Cedar sample number, description, friability, material type, ACM classification, sample location, material quantity and laboratory analytical results.

ACM, as defined by the USEPA NESHAP is "any material containing more than 1 percent asbestos as determined using the method specified in appendix E, subpart E, 40 CFR part 763 Section 1, Polarized Light Microscopy".

Friable ACM is defined by NESHAP as any material containing more than 1 percent asbestos that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. Friable ACM is a concern due the ease of unintentionally disturbing the ACM which may result in "visible emissions" which is known as a Fiber Release Episode.

Non-friable asbestos-containing material is defined as "material containing more than 1 percent asbestos that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. Non-friable ACM's are separated into Category I and Category II ACM. Category I ACM is any asbestos containing packing's, gaskets, resilient floor coverings (vinyl floor tile and linoleum are examples of these) and asphalt roofing products. Category II ACM is stated by NESHAP as any material excluding Category I non-friable ACM such as drywall, plaster or fiberboard insulation.

#### **Presumed Asbestos Containing Material**

Presumed Asbestos Containing Materials (PACM) are suspect surfacing, TSI and miscellaneous materials found in buildings constructed prior to 1980 which are classified as and due to the age of the structure, are assumed to be ACM and do not require sample collection and analysis. OSHA dictates that PACM may be "rebutted" following a complete inspection pursuant to AHERA protocol.

The HVAC Duct Wrap located in the Building was classified as PACM due to the age of the structure and samples were not collected.

Table 3 lists the location, material description, friability, condition, material type (surfacing, thermal or miscellaneous) and approximate quantity of all PACM documented at the Subject Property.

Table 4 provides a summary all ACM documented at the Subject Property which includes the material location, description, and approximate quantity.

#### Friable ACM's

A window glazing sample collected from a window in the East Apartment Kitchen window was found to contain up to 1.5% asbestos following analysis. The assessment to quantify the extent of this material identified fifteen windows at the following locations that would fall into the same homogenous group. The locations of the windows are listed below:

- (5 windows 28" wide x 40" tall)
- (2 windows 20" wide x 24" tall)
- (3 windows 28" wide x 64" tall)
- (2 windows 24" wide x 24" tall)
- (1 window 62" wide x 48" tall)
- (1 window 28" wide x 54" tall)
- (1 window 34" wide x 54" tall)

Duct Wrap identified in the building in conjunction with the forced air heating system is classified as friable ACM. The visual assessment to quantify the extent of this material identified HVAC Duct Wrap at the following locations within the basement, first and second floors:

- E Apartment S Bedroom (1 register, 10 sq. ft.)
- 2<sup>nd</sup> Floor (1 vertical chase to basement, 30 sq. ft.)
- Basement (misc. HVAC wrap on Ductwork, 40 sq. ft.)
- Basement (misc. HVAC wrap on Cold Air Ductwork, 20 sq. ft.)

#### Category I ACM

One type of resilient floor covering (9"x9" Red Vinyl Floor Tile) located outside of the house near the front entry was found to contain up to 1.5% Chrysotile asbestos. The assessment to quantify the extent of this material identified approximately 16 sq. ft. of this material within the Building.

#### **Category II ACM**

No Category II non-friable ACM was identified during the completion of this inspection.

#### **RECOMMENDATIONS**

#### **Asbestos Containing Materials**

HVAC material identified in the Building system and listed below is classified as friable ACM and should be removed prior to any renovation/demolition activities.

- E Apartment S Bedroom (1 register, 10 sq. ft.)
- $2^{nd}$  Fl. (1 vertical chase to basement, 30 sq. ft.)
- Basement (misc. HVAC wrap on Ductwork, 40 sq. ft.)

• Basement (misc. HVAC wrap on Cold Air Ductwork, 20 sq. ft.)

Friable asbestos containing window glazing was identified on fifteen windows throughout the Building. The locations of these windows that should be abated prior to demolition/renovation activities are listed below:

- (5 windows 28" wide x 40" tall)
- (2 windows 20" wide x 24" tall)
- (3 windows 28" wide x 64" tall)
- (2 windows 24" wide x 24" tall)
- (1 window 62" wide x 48" tall)
- (1 window 28" wide x 54" tall)
- (1 window 34" wide x 54" tall)

Please note: Other different sized windows are located throughout the Building but these windows were assessed and found to be constructed either without window glazing or were sampled and found to not contain asbestos and therefore are not required to be removed.

The Category I resilient floor covering (9"x9" Red Vinyl Floor Tile) is a non-friable ACM that may be left in place as long as the demolition/renovation activities are completed following the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

Please note: The location of samples obtained during this inspection were in a random fashion and areas that were not identified during this inspection may be damaged or have become damaged since the inspection was completed. If Category I or Category II friable materials are discovered prior to or during the demolition/renovation process, these materials must be abated prior to commencement of any demolition/renovation activities at the Subject Property.

#### **Hazardous Materials**

Hazardous Materials identified at the Subject Property and documented in Table 1 which require proper removal and disposal consist of the following items:

- Smoke Detector (6)
- Television (3)
- Automobile Tire (5)
- Spray Can Misc. (9)
- 1-Quart Container Misc. (4)
- 1-Gallon Container Misc. (5)
- 5-Gallon Container Misc. (1)

### **REGULATORY REQUIREMENTS**

A Notification of Intent to Renovate/Demolish form must be filed with the Michigan Department of Environmental Quality- Air Quality Division at least 10 working days prior to any renovation or demolition activities at a site.

The Notification of Intent to Renovate/Demolish form must also be completed and submitted to the MIOSHA-Asbestos Program whenever demolition, encapsulation and/or renovation activities at a site involving greater than ten lineal feet and/or fifteen square feet of ACM will be completed.

Regulated asbestos containing materials per NESHAP (40 CFR Part 61) which falls into any of the following categories are ACM's that must be removed prior to any renovation/demolition activities at the Subject Property.

- Friable asbestos material.
- Category I non-friable ACM that has become friable.
- Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading.
- Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of renovation or demolition operations.

Asbestos abatement should only be performed by a certified asbestos abatement contractor licensed to complete abatement work. The contractor must also follow the standards and requirements set forth per the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) and the USEPA NESHAP (40 CFR Part 61).

Additional information regarding the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) and the USEPA NESHAP (40 CFR Part 61) can be obtained by contacting the associated agency below.

NESHAP Asbestos Program Department of Environmental Quality Phone: 517-284-6777 MIOSHA-CSHD-Asbestos Program State of Michigan Phone: 517-284-7680 Email: asbestos@michigan.gov

#### **DISCLAIMER**

Red Cedar Consulting performed destructive testing methods in an attempt to access and inspect all areas of the Building. Unfortunately, due to the age of construction along with multiple additions/renovations that may have been completed on the Building, additional inspections may be required if suspect ACM material not documented within this report is encountered during renovation/demolition activities.

This report was prepared at the request and for exclusive use by the Muskegon County Land Bank and may not be reproduced or sold without written permission from Red Cedar Consulting.

We appreciate the opportunity to provide the requested services. Please contact us at (888) 449-4566 with any questions or concerns.

Sincerely, Red Cedar Consulting

Raion Poquet

Aaron Paquet Michigan/EPA Certified Asbestos Building Inspector (A30955)

Red Cedar Consulting

# Attachment 1

APEX Research Laboratory Analytical Results

Test Method, Polarized Light Microscopy (PLM)

Project : 2736 8th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80564Date Collected:10/22/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80564 - 01 Cust. #: ES-HM-01A Material: Shingle Roofing Location: Appearance: black,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 15% Other - 85%
Lab ID #: 80564 - 02 Cust. #: ES-HM-01B Material: Shingle Roofing Location: Appearance: black,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 15% Other - 85%
Lab ID #: 80564 - 03 Cust. #: ES-HM-02A Material: Asphalt Siding Location: Appearance: black,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 75% Other - 25%

For Layered Samples, each component will be analyzed and reported separately.

Sout

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2736 8th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80564Date Collected:10/22/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80564 - 04 Cust. #: ES-HM-02B Material: Asphalt Siding Location: Appearance: black,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 75% Other - 25%
Lab ID #: 80564 - 05 Cust. #: ES-HM-03A Material: Gold Fleck Vapor Barrier Location: Appearance: black,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 50% Other - 50%
Lab ID #: 80564 - 06 Cust. #: ES-HM-03B Material: Gold Fleck Vapor Barrier Location: Appearance: black,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 50% Other - 50%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2736 8th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80564Date Collected:10/22/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80564 - 07 Cust. #: ES-HM-04A Material: Grey Multilayer Flooring Location: Appearance: beige,fibrous,homogenous Layer: 1 of 6	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Fiberglass - 10% Other - 80%
Lab ID #: 80564 - 07a Cust. #: ES-HM-04A Material: Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 2 of 6	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Fiberglass - 10% Other - 80%
Lab ID #: 80564 - 07b Cust. #: ES-HM-04A Material: Tile Location: Appearance: white,nonfibrous,homogenous Layer: 3 of 6	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2736 8th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80564Date Collected:10/22/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80564 - 07c Cust. #: ES-HM-04A Material: Glue Location: Appearance: clear,nonfibrous,homogenous Layer: 4 of 6	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80564 - 07d Cust. #: ES-HM-04A Material: Tile Location: Appearance: black,nonfibrous,homogenous Layer: 5 of 6	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80564 - 07e Cust. #: ES-HM-04A Material: Glue Location: Appearance: clear,nonfibrous,homogenous Layer: 6 of 6	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2736 8th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80564Date Collected:10/22/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80564 - 08 Cust. #: ES-HM-04B Material: Grey Multilayer Flooring Location: Appearance: beige,fibrous,homogenous Layer: 1 of 6	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Fiberglass - 10% Other - 80%
Lab ID #: 80564 - 08a Cust. #: ES-HM-04B Material: Linoleum Location: Appearance: beige,fibrous,homogenous Layer: 2 of 6	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Fiberglass - 10% Other - 80%
Lab ID #: 80564 - 08b Cust. #: ES-HM-04B Material: Tile Location: Appearance: white,nonfibrous,homogenous Layer: 3 of 6	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Sout

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.



APEX Research Inc., 11054 Hi Tech Drive, Whitmore Lake, MI 48189 (734) 449-9990, Fax (734) 449-9991

Test Method, Polarized Light Microscopy (PLM)

Project : 2736 8th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80564Date Collected:10/22/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80564 - 08c Cust. #: ES-HM-04B Material: Glue Location: Appearance: clear,nonfibrous,homogenous Layer: 4 of 6	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80564 - 08d Cust. #: ES-HM-04B Material: Tile Location: Appearance: black,nonfibrous,homogenous Layer: 5 of 6	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80564 - 08e Cust. #: ES-HM-04B Material: Glue Location: Appearance: clear,nonfibrous,homogenous Layer: 6 of 6	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2736 8th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80564Date Collected:10/22/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80564 - 09 Cust. #: ES-HM-05A Material: 9x9 Brown VFT Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%
Lab ID #: 80564 - 10 Cust. #: ES-HM-05B Material: 9x9 Brown VFT Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%
Lab ID #: 80564 - 11 Cust. #: ES-HM-06A Material: 2x2 Blue Ceiling Tile Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Fiberglass - 10% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

Sout

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2736 8th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80564Date Collected:10/22/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80564 - 12 Cust. #: ES-HM-06B Material: 2x2 Blue Ceiling Tile Location: Appearance: beige,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Fiberglass - 10% Other - 80%
Lab ID #: 80564 - 13 Cust. #: ES-HM-07A Material: Drywall Location: Appearance: white,fibrous,nonhomogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 15% Other - 85%
Lab ID #: 80564 - 13a Cust. #: ES-HM-07A Material: Joint Compound Location: Appearance: white,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Kut Joh

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2736 8th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80564Date Collected:10/22/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80564 - 14 Cust. #: ES-HM-07B Material: Drywall Location: Appearance: white,fibrous,nonhomogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 15% Other - 85%
Lab ID #: 80564 - 14a Cust. #: ES-HM-07B Material: Joint Compound Location: Appearance: white,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80564 - 15 Cust. #: ES-HM-08A Material: Tan Multilayer Flooring Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Fiberglass - 10% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

Sout

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2736 8th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80564Date Collected:10/22/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80564 - 15a Cust. #: ES-HM-08A Material: Tile Location: Appearance: beige,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80564 - 16 Cust. #: ES-HM-08B Material: Tan Multilayer Flooring Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Fiberglass - 10% Other - 80%
Lab ID #: 80564 - 16a Cust. #: ES-HM-08B Material: Tile Location: Appearance: beige,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2736 8th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80564Date Collected:10/22/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80564 - 17 Cust. #: ES-HM-09A Material: Grey Multilayer VFT Location: Appearance: black,nonfibrous,homogenous Layer: 1 of 6	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80564 - 17a Cust. #: ES-HM-09A Material: Tile Location: Appearance: black,nonfibrous,homogenous Layer: 2 of 6	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80564 - 17b Cust. #: ES-HM-09A Material: Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 3 of 6	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Fiberglass - 10% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2736 8th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80564Date Collected:10/22/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80564 - 17c Cust. #: ES-HM-09A Material: Linoleum Location: Appearance: white,fibrous,nonhomogenous Layer: 4 of 6	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 10% Other - 90%
Lab ID #: 80564 - 17d Cust. #: ES-HM-09A Material: Tile Location: Appearance: black,nonfibrous,homogenous Layer: 5 of 6	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80564 - 17e Cust. #: ES-HM-09A Material: Underlayment Location: Appearance: brown,fibrous,nonhomogenous Layer: 6 of 6	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 50% Other - 50%

For Layered Samples, each component will be analyzed and reported separately.

Kut Joh

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2736 8th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80564Date Collected:10/22/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80564 - 18 Cust. #: ES-HM-09B Material: Grey Multilayer VFT Location: Appearance: black,nonfibrous,homogenous Layer: 1 of 6	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80564 - 18a Cust. #: ES-HM-09B Material: Tile Location: Appearance: black,nonfibrous,homogenous Layer: 2 of 6	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80564 - 18b Cust. #: ES-HM-09B Material: Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 3 of 6	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Fiberglass - 10% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

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Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80564Date Collected:10/22/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80564 - 18c Cust. #: ES-HM-09B Material: Linoleum Location: Appearance: white,fibrous,nonhomogenous Layer: 4 of 6	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 10% Other - 90%
Lab ID #: 80564 - 18d Cust. #: ES-HM-09B Material: Tile Location: Appearance: black,nonfibrous,homogenous Layer: 5 of 6	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80564 - 18e Cust. #: ES-HM-09B Material: Underlayment Location: Appearance: brown,fibrous,nonhomogenous Layer: 6 of 6	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 50% Other - 50%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2736 8th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80564Date Collected:10/22/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80564 - 19 Cust. #: ES-HM-10A Material: 12x12 Green/Beige VFT Location: Appearance: green,nonfibrous,homogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80564 - 19a Cust. #: ES-HM-10A Material: Mastic Location: Appearance: yellow,nonfibrous,homogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80564 - 19b Cust. #: ES-HM-10A Material: Linoleum Location: Appearance: blue,fibrous,nonhomogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 15% Synthetic - 5% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2736 8th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80564Date Collected:10/22/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80564 - 20 Cust. #: ES-HM-10B Material: 12x12 Green/Beige VFT Location: Appearance: green,nonfibrous,homogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80564 - 20a Cust. #: ES-HM-10B Material: Mastic Location: Appearance: yellow,nonfibrous,homogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80564 - 20b Cust. #: ES-HM-10B Material: Linoleum Location: Appearance: blue,fibrous,nonhomogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 15% Synthetic - 5% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2736 8th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80564Date Collected:10/22/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80564 - 21 Cust. #: ES-HM-11A Material: 1x1 White Smooth Ceiling Tile Location: Appearance: white,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 75% Other - 25%
Lab ID #: 80564 - 22 Cust. #: ES-HM-11B Material: 1x1 White Smooth Ceiling Tile Location: Appearance: white,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 75% Other - 25%
Lab ID #: 80564 - 23 Cust. #: ES-HM-12A Material: 12x12 Brown Marble VFT Location: Appearance: brown,fibrous,nonhomogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2736 8th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80564Date Collected:10/22/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80564 - 23a Cust. #: ES-HM-12A Material: Felt Location: Appearance: black,fibrous,nonhomogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 35% Other - 65%
Lab ID #: 80564 - 24 Cust. #: ES-HM-12B Material: 12x12 Brown Marble VFT Location: Appearance: brown,fibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80564 - 24a Cust. #: ES-HM-12B Material: Felt Location: Appearance: black,fibrous,nonhomogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 35% Other - 65%
For Layered Samples, each component will be analyzed and report	ted separately.	

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2736 8th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80564Date Collected:10/22/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80564 - 25 Cust. #: ES-HM-13A Material: Grey/Black Linoleum Location: Appearance: grey,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 15% Other - 85%
Lab ID #: 80564 - 26 Cust. #: ES-HM-13B Material: Grey/Black Linoleum Location: Appearance: grey,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 15% Other - 85%
Lab ID #: 80564 - 27 Cust. #: ES-HM-14A Material: Beige Multilayer Flooring Location: Appearance: beige,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2736 8th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80564Date Collected:10/22/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80564 - 27a Cust. #: ES-HM-14A Material: Linoleum Location: Appearance: blue,fibrous,nonhomogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 15% Synthetic - 5% Other - 85%
Lab ID #: 80564 - 28 Cust. #: ES-HM-14B Material: Beige Multilayer Flooring Location: Appearance: beige,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80564 - 28a Cust. #: ES-HM-14B Material: Linoleum Location: Appearance: blue,fibrous,nonhomogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 15% Synthetic - 5% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2736 8th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80564Date Collected:10/22/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80564 - 29 Cust. #: ES-HM-15A Material: Window Caulk Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80564 - 30 Cust. #: ES-HM-15B Material: Window Caulk Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80564 - 31 Cust. #: ES-HM-16A Material: Window Glazing Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2736 8th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80564Date Collected:10/22/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80564 - 32 Cust. #: ES-HM-16B Material: Window Glazing Location:	Asbestos Present: <b>YES</b> Chrysotile - 1.50%	Other - 98.50%
Appearance: beige,fibrous,homogenous Layer: 1 of 1	POINT COUNT RESULT	
Lab ID #: 80564 - 33 Cust. #: ES-HM-17A Material: 9x9 Red VFT Location:	Asbestos Present: <b>YES</b> Chrysotile - 1.50%	Other - 98.50%
Appearance: brown,fibrous,homogenous Layer: 1 of 2	POINT COUNT RESULT	
Lab ID #: 80564 - 33a Cust. #: ES-HM-17A Material: Mastic Location: Appearance: black,fibrous,nonhomogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 15% Other - 85%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2736 8th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80564Date Collected:10/22/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80564 - 34 Cust. #: ES-HM-17B Material: 9x9 Red VFT	Asbestos Present:	
Location: Appearance: Layer: 1 of 2	NOT ANALYZED	
Lab ID #: 80564 - 34a Cust. #: ES-HM-17B Material: Mastic Location: Appearance: black,fibrous,nonhomogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 15% Other - 85%
Lab ID #: 80564 - 35 Cust. #: ES-HM-18A Material: Rolled Roofing Location: Appearance: black,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2736 8th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80564Date Collected:10/22/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80564 - 36 Cust. #: ES-HM-18B Material: Rolled Roofing Location: Appearance: black,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Other - 90%
Lab ID #: 80564 - 37 Cust. #: ES-HS-01A Material: Texture Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80564 - 37a Cust. #: ES-HS-01A Material: Joint Compound Location:	Asbestos Present: <b>NO</b> Chrysotile - Trace	Other - 100%
Appearance: beige,fibrous,homogenous Layer: 2 of 3	POINT COUNT RESULT	

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2736 8th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80564Date Collected:10/22/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80564 - 37b Cust. #: ES-HS-01A Material: Sand Plaster Location: Appearance: white,nonfibrous,homogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80564 - 38 Cust. #: ES-HS-01B Material: Texture Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80564 - 38a Cust. #: ES-HS-01B Material: Joint Compound Location: Appearance: beige,fibrous,homogenous	Asbestos Present: <b>NO</b> Chrysotile - 0.25% POINT COUNT RESULT	Other - 99.75%
Layer: 2 of 3		

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2736 8th St.



Sample InformationAsbestos Type/PercentNon-Asbestos MaterialLab ID #: 80564 - 38b Cust. #: ES-HS-01B Material: Sand Plaster Location: Appearance: white,nonfibrous,homogenous Layer: 3 of 3Asbestos ObservedOther - 100%Lab ID #: 80564 - 39 Cust. #: ES-HS-01C Material: Texture Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 3Asbestos Present: NO No Asbestos ObservedOther - 100%Lab ID #: 80564 - 39 Cust. #: ES-HS-01C Material: Texture Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 3Asbestos Present: NO No Asbestos ObservedOther - 100%Lab ID #: 80564 - 39a Cust. #: ES-HS-01C Material: Joint Compound Location: Appearance: beige,fibrous,homogenous Layer: 2 of 3Asbestos Present: NO Curysotile - 0.25%Other - 99.75%	Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80564Date Collected:10/22/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Cust. #:ES-HS-01BNo Asbestos ObservedMaterial:Sand PlasterLocation:Appearance:white,nonfibrous,homogenousLayer:3 of 3Lab ID #:80564 - 39Cust. #:ES-HS-01CMaterial:TextureLocation:Appearance:white,nonfibrous,homogenousLayer:1 of 3Lab ID #:80564 - 39aCust. #:ES-HS-01CNo Asbestos Observed	Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Cust. #:ES-HS-01CNo Asbestos ObservedMaterial:TextureLocation:Appearance:white,nonfibrous,homogenousLayer:1of3Lab ID #:80564 - 39aCust. #:ES-HS-01CCust. #:ES-HS-01CMaterial:Joint CompoundLocation:Appearance:Appearance:beige,fibrous,homogenousPOINT COUNT RESULT	Cust. #: ES-HS-01B Material: Sand Plaster Location: Appearance: white,nonfibrous,homogenous		Other - 100%
Cust. #:ES-HS-01CChrysotile - 0.25%Material:Joint CompoundLocation:Appearance:beige,fibrous,homogenousPOINT COUNT RESULT	Cust. #: ES-HS-01C Material: Texture Location: Appearance: white,nonfibrous,homogenous		Other - 100%
	Cust. #: ES-HS-01C Material: Joint Compound Location: Appearance: beige,fibrous,homogenous	Chrysotile - 0.25%	Other - 99.75%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2736 8th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80564Date Collected:10/22/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80564 - 39b Cust. #: ES-HS-01C Material: Sand Plaster Location: Appearance: white,nonfibrous,homogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80564 - 40 Cust. #: ES-HS-02A Material: Grey Plaster Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80564 - 40a Cust. #: ES-HS-02A Material: Mortar Location: Appearance: grey,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2736 8th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80564Date Collected:10/22/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80564 - 41 Cust. #: ES-HS-02B Material: Grey Plaster Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80564 - 41a Cust. #: ES-HS-02B Material: Mortar Location: Appearance: grey,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80564 - 42a Cust. #: ES-HS-02C Material: Grey Plaster Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2736 8th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80564Date Collected:10/22/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80564 - 42a Cust. #: ES-HS-02C Material: Mortar Location: Appearance: grey,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80564 - 43 Cust. #: ES-HS-02D Material: Grey Plaster Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80564 - 43a Cust. #: ES-HS-02D Material: Mortar Location: Appearance: grey,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2736 8th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80564Date Collected:10/22/18Date Received:10/24/18Date Analyzed:10/29/18Date Reported:10/29/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80564 - 44 Cust. #: ES-HS-02E Material: Grey Plaster Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80564 - 44a Cust. #: ES-HS-02E Material: Mortar Location: Appearance: grey,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: Cust. #: Material: Location: Appearance: Layer: of	Asbestos Present:	
For Layered Samples, each component will be analyzed and report	ted separately	

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Robert T. Letarte Jr., Laboratory Director



Phone: 734-449-9990 Fax: 734-449-9991	222-8 Lab Use Only Log-In	Contact Person:Aaron Paquet600, PC all samples with a detection of <5% ACM.WipePoint Count	Paint Soil Other Viable EPA Level II	Area Results						RECEIPTING	Batt: 2 4 2018 10/24148 0408	APEX RESEARCH
APEX Research, Inc. 11054 Hi Tech Drive, Whitmore Lake, MI 48189 Phone: E-mail: apexresearch@chartermi.net Fax: 7.	Client Name: Red Cedar Consulting Date of Survey : 12-2 Address: PO Box 13216 Project : 2734 84 City St Zin: Lansing, MI 48901 Project # :	449-4566 Fax: (888) 448-8739 <b>und Times:</b> (Circle One) PLM EPA Asbestos: Bulk x	Kush     Lead:     Bulk     Wipe     Air     Pa       48 hour     72 hour     72 hour     Mold:     Bulk     Tape     BioSIS       Other:     Image     Image     TEM:     AHERA 7400     Bulk/NOB     EPA I	Lab ID #     Client ID #     Material/Location     Volume	a / 018	3 22A lephalt diding	7 048 they Malti Sayar Ilosung	0 058 9×9 Ecura VET	11 1 V OLA ZXZ Blue YFF CT	Relinquished by USAL Matters Received by: UPS Relinquished by:	Date : 12-23-18 Date : 10-25-18 Date :	Rev: 12/03 Work Forms: COC

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Nr, Jup:       Lamsing, MT 48901       Froject # ::       Indication       Lamsing, MT 48901         Th Around Times:       East:       [818]       448-8739       Contact Person:       Aaron Paquet         Th Around Times:       East:       Bulk       Wipe       Point Count       PCM         Ashestors:       Bulk       Wipe       Air       Paint       So         Ashestors:       Bulk       Tape       BioSIS       Other       PCM         Ashestors:       Bulk       Tape       BioSIS       Other       PCM         And       Tape       Bulk       Tape       BioSIS       Other       Intell         And       Alternal Atoo       Bulk       Tape       BioSIS       Other       Intell         And       Alternal Atoo       Bulk       Tape       Bulk       Tape       BioSIS       Other       Intell         And       Client ID #       Material/Location       Volume       Atexa       Volume       Atea         BioSis       Contaction       Volume       Atexa       Volume       Atea       Volume       Atea         BioSis       Contaction       Volume       Atexa       Volume       Atea       Atea	Red Cedar Consulting     Date of Survey :       PO Box 13216     Project : 2736		ub Use Only g-In
24 hour     Lead:     Bulk     Wipe     Air     Paint     So       Mold:     Bulk     Tape     BioSIS     Other	7, St., ZIp: Lansing, MI 48901 ne: (888) 449-4566 Fax: (888) 448-8739 Contact Irn Around Times: (Circle One) PLM EPA 600, PC all Asbestos: Bulk x Wipe	ron Paquet aquet@redcedarconsulting. a detection of <5% ACM. PCM	. net
TEM: AHERA 7400	24 hour 72 hour Mold: Bulk Tape	Soil Other	
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<b>Cesearch, Inc.</b> 11054 Hi Tech Drive, Whitmore Lake, MI 48189 E-mail: apexresearch@chartermi.net	Phone: 734-449-9990
Client Name: Red Cedar Consulting Date of Survey : 0-22 Address: PO Box 13216 Project : 2736 84	Lab Use Only Log-in Report
Zip: Lansing, MI 48901 (888) 449-4566 Fax: (888) 448-8739	Paquet
Around Times: (Circle One) PLM EPA 600, PC all Ashestos: Bulk <sup>x</sup> Wine	apaquet@redcedarconsulting.net samples with a detection of <5% ACM. Point Count PCM
24 hour Lead: Bulk Wipe	
48 hour 72 hour BioSIS Bulk Tape BioSIS	Other Viable
TEM: AHERA 7400 Bulk/NOB	EPA Level II
Lab ID #     Client ID #     Material/Location     Volume	Area Results
23 ES. HM- 12A 12X12 Brown Marle VET	
51 11	
36 / 13B × 0 × × × ×	
36 154 kinden lenk	
15B	
23 J V 174 9×9 Red VFT	
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Date: 10-23-18 Date: 10-23-18 Date:	Date : UUI Z 4 2018
Rev. 12/03 Work Forms: COC	APEX RESEARCH

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APEX Research, Inc. 11054 Hi Tech Drive, Whitmore Lake, MI 48189 Phone: 734-449-9990 E-mail: apexresearch@chartermi.net Fax: 734-449-9991		APEX
ame: Red Cedar Consulting		Lab Use Only Log-In
Address:     PO Box 13216     Project : 2736       City. St Zip:     Lansing, MI 48901     Project # :	e Stands	Report
149-4566 Fax: (888) 448-8739 Contact	Aaron Paquet	
le One) PLM EPA 600, PC all Achaetoce: Pulk X Wine	apaquet@redcedarconsulting.net samples with a detection of <5% ACM. Doint Count	cM.
24 hour who who	Paint	·
72 hour	Other Viable	
Other:UIP)All Samples TEM: AHERA 7400BulkNOB	EPA Level II	
Lab ID #     Client ID #     Material/Location     Volume	Area	Results
34 ES-HM-17B 9×9 hed VFF		
35 ES-HM-18A Rolled Roofing		
36 ES-HM-188 U		
36 ( ( 01B) ( )		
31 V V OIC V V		
40 ES-HS-02A Kley Plaste		
E(1 ( 22B )		
42 / 020		
44 V V OZE V V		
Relinquished by: APA Matters Received by: UTS Relinquished by:	Received by: Received by:	
Date : 10-23-18 Date : 10-23-18 Date :	Date : 0CT 2 4 2018	4 2018
Rev: 12/03 Work Forms: COC	APEX RESEARCH	SEARCH

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Red Cedar Consulting

Tables

Hazardous Materials Description and Location					
Location	Material Description	Quantity			
West Apartment Front Entry	Television	1			
West Apartment Living Room	Television	1			
West Apartment Living Room	Smoke Detector	1			
West Apartment Kitchen	1-Gallon Container Misc.	1			
West Apartment Kitchen	1-Quart Container Misc.	2			
West Apartment Kitchen	Spray Can Misc.	5			
West Apartment North Bedroom	Television	1			
West Apartment North Bedroom	Smoke Detector	1			
East Apartment Living Room	Spray Can Misc.	1			
East Apartment Living Room	1-Gallon Container Misc.	2			
East Apartment Kitchen	Automobile Tire	4			
East Apartment Kitchen	Spray Can Misc.	2			
East Apartment Kitchen	1-Quart Container Misc.	2			
East Apartment South Bedroom	Automobile Tire	1			
East Apartment South Bedroom	Spray Can Misc.	1			
East Apartment South Bedroom	Smoke Detector	1			
2 <sup>nd</sup> Floor Apartment Stairway	Smoke Detector	1			
2 <sup>nd</sup> Floor Apartment Bathroom	1-Gallon Container Misc.	2			
2 <sup>nd</sup> Floor Apartment West Bedroom	Smoke Detector	1			
2 <sup>nd</sup> Floor Apartment Kitchen	5-Gallon Container Misc.	1			
2 <sup>nd</sup> Floor Apartment Kitchen	Smoke Detector	1			

Sample Number	Sample Description	Friable	Material Type	Material Classification	% Asbestos Laboratory Result	Sample Location	Approx. Material Quantity
ES-HM-01A	Asphalt Shingle	No	М	Category I	ND	House Roof	NA
ES-HM-01B	Asphalt Shingle	No	М	Category I	ND	House Roof	NA
ES-HM-02A	Asphalt Siding	No	М	Category I	ND	House Exterior	NA
ES-HM-02B	Asphalt Siding	No	М	Category I	ND	House Exterior	NA
ES-HM-03A	Gold Fleck Vapor Barrier	Yes	М	Category II	ND	House Exterior	NA
ES-HM-03B	Gold Fleck Vapor Barrier	Yes	М	Category II	ND	House Exterior	NA
ES-HM-04A	Gray Multi Layer Flooring	No	М	Category I	ND/ND/ND/ ND/ND/ND	W Apartment Kitchen	NA
ES-HM-04B	Gray Multi Layer Flooring	No	М	Category I	ND/ND/ND/ ND/ND/ND	W Apartment Kitchen	NA
ES-HM-05A	9x9 Brown VFT	No	М	Category I	ND	W Apartment N Bedroom	NA
ES-HM-05B	9x9 Brown VFT	No	М	Category I	ND	W Apartment N Bedroom	NA
ES-HM-06A	2x2 Blue CT	Yes	М	Category II	ND	W Apartment N Bedroom Ceiling	NA
ES-HM-06B	2x2 Blue CT	Yes	М	Category II	ND	W Apartment N Bedroom Ceiling	NA
ES-HM-07A	Drywall	No	М	Category II	ND/ND	Front Entry Ceiling	NA
ES-HM-07B	Drywall	No	М	Category II	ND/ND	2 <sup>nd</sup> Floor Stairwell Wall	NA
ES-HM-08A	Tan Multi Layer VFT	No	М	Category I	ND/ND	E Apartment Kitchen	NA
ES-HM-08B	Tan Multi Layer VFT	No	М	Category I	ND/ND	E Apartment Kitchen	NA
ES-HM-09A	Gray Multi Layer VFT	No	М	Category I	ND/ND/ND/ ND/ND/ND	E Apartment Bathroom	NA
ES-HM-09B	Gray Multi Layer VFT	No	М	Category I	ND/ND/ND/ ND/ND/ND	E Apartment Bathroom	NA
ES-HM-10A	12x12 Brown and Beige VFT/Layered	No	М	Category I	ND/ND/ND	W Apartment Front Entry	NA
ES-HM-10B	12x12 Brown and Beige VFT/Layered	No	М	Category I	ND/ND/ND	W Apartment Front Entry	NA
ES-HM-11A	1x1 White Smooth CT	Yes	М	Category II	ND	W Apartment Front Entry Ceiling	NA
ES-HM-11B	1x1 White Smooth CT	Yes	М	Category II	ND	W Apartment Front Entry Ceiling	NA

Sample Number	Sample Description	Friable	Material Type	Material Classification	% Asbestos Laboratory Result	Sample Location	Approx. Material Quantity
ES-HM-12A	12x12 Brown Marble VFT	No	М	Category I	ND/ND	2 <sup>nd</sup> Floor Kitchen	NA
ES-HM-12B	12x12 Brown Marble VFT	No	М	Category I	ND/ND	2 <sup>nd</sup> Floor Kitchen	NA
ES-HM-13A	Gray and Black Linoleum	No	М	Category I	ND	2 <sup>nd</sup> Floor Bathroom	NA
ES-HM-13B	Gray and Black Linoleum	No	М	Category I	ND	2 <sup>nd</sup> Floor Bathroom	NA
ES-HM-14A	Beige Multi Layer Flooring	No	М	Category I	ND/ND	2 <sup>nd</sup> Floor Stairwell	NA
ES-HM-14B	Beige Multi Layer Flooring	No	М	Category I	ND/ND	2 <sup>nd</sup> Floor Stairwell	NA
ES-HM-15A	Window Caulk	No	М	Category II	ND	W Apartment Living Room Window	NA
ES-HM-15B	Window Caulk	No	М	Category II	ND	W Apartment N Bedroom Window	NA
ES-HM-16A	Window Glazing	Yes	М	Category II	ND	2 <sup>nd</sup> Floor Kitchen Window	NA
ES-HM-16B	Window Glazing	Yes	М	Category II	1.5% CH	E Apartment Kitchen Window	15 Windows
ES-HM-17A	Debris Pile of 9x9 Red VFT	No	М	Category I	1.5% CH/ND	House Exterior (By Front Entry)	16 sq. ft.
ES-HM-17B	Debris Pile of 9x9 Red VFT	No	М	Category I	NA/ND	House Exterior (By Front Entry)	NA
ES-HM-18A	Rolled Roofing	No	М	Category I	ND	House Roof	NA
ES-HM-18B	Rolled Roofing	No	М	Category I	ND	House Roof	NA
ES-HS-01A	Sand Plaster	No	S	Category II	ND/ND/ND	2 <sup>nd</sup> Floor W Bedroom Ceiling	NA
ES-HS-01B	Sand Plaster	No	S	Category II	ND/ND/ND	2 <sup>nd</sup> Floor W Bedroom Wall	NA
ES-HS-01C	Sand Plaster	No	S	Category II	ND/ND/ND	2 <sup>nd</sup> Floor W Bedroom Wall	NA
ES-HS-02A	Plaster	No	S	Category II	ND/ND	W Apartment Kitchen Ceiling	NA
ES-HS-02B	Plaster	No	S	Category II	ND/ND	E Apartment S Bedroom Wall	NA
ES-HS-02C	Plaster	No	S	Category II	ND/ND	E Apartment Living Room Wall	NA
ES-HS-02D	Plaster	No	S	Category II	ND/ND	W Apartment Living Room Ceiling	NA
ES-HS-02E	Plaster	No	S	Category II	ND/ND	2 <sup>nd</sup> Floor Kitchen Ceiling	NA

### Table 2 - Summary of Sample Descriptions and Asbestos Laboratory Results, 2736 8th St. Muskegon, Michigan

#### Notes:

Material Types	Abbreviations
<ul> <li>M = Miscellaneous building material</li> <li>TSI = Thermal System Insulation</li> <li>S = Surfacing Material</li> <li>PC = Point Count Analysis</li> <li>CH = Chrysotile Asbestos</li> </ul>	NQ= Not quantifiedNA= Not applicableND= Not detected. Laboratory result is less than 1 % asbestoslin. ft.= linear feetsq. ft.= square feet

Asbestos Containing Material (ACM) is defined as any material containing more than 1 percent asbestos as determined utilizing Polarized Light Microscopy.

### Table 3 - Summary of Presumed Asbestos Containing Materials, 2736 8th St. Muskegon, Michigan

Asbestos Containing Material Description and Location						
Location	Material Description	Friable	Condition	Material Type	Approx. Quantity	
E Apartment S Bedroom (1 register, 10 sq. ft.) 2 <sup>nd</sup> Fl. (1 vertical chase to basement, 30 sq. ft.) Basement (misc. HVAC wrap on Ductwork, 40 sq. ft.) Basement (misc. HVAC wrap on Cold Air Ductwork, 20 sq. ft.)	HVAC Duct Wrap	Yes	Good	TSI	100 sq. ft.	

### Notes:

#### Material Types

#### Abbreviations

- = Miscellaneous building material М
- TSI = Thermal System Insulation S = Surfacing Material

lin. ft. = linear feet sq. ft. = square feet

Interior - Asbestos Containing Materials				
Location	Material Description		Friable	Approx. Quantity
House Exterior (By Front Entry)	Debris Pile of 9x9 Red VFT		No	16 sq. ft.
		Total		16 sq. ft.
Interior - Asbestos Containing Materials				
Location	Material Description		Friable	Approx. Quantity
E Apartment S Bedroom (1 register, 10 sq. ft.) 2 <sup>nd</sup> Fl. (1 vertical chase to basement, 30 sq. ft.) Basement (misc. HVAC wrap on Ductwork, 40 sq. ft.) Basement (misc. HVAC wrap on Cold Air Ductwork, 20 sq. ft.)	HVAC Duct Wrap		Yes	100 sq. ft.
		Total		100 sq. ft.
Interior - Asbestos Containing Materials				
Location	<b>Material Description</b>		Friable	<b>Approx. Quantity</b>
(5 windows 28" wide x 40" tall)	Glazing		Yes	5 Windows
(2 windows 20" wide x 24" tall)	Glazing		Yes	2 Windows
(3 windows 28" wide x 64" tall)	Glazing		Yes	3 Windows
(2 windows 24" wide x 24" tall)	Glazing		Yes	2 Windows
(1 window 62" wide x 48" tall)	Glazing		Yes	1 Window
(1 window 28" wide x 54" tall)	Glazing		Yes	1 Window
(1 window 34" wide x 54" tall)	Glazing		Yes	1 Window
		Total		<b>15 Windows</b>

### Table 4 - Summary of All Asbestos Containing Materials, 2736 8th St. Muskegon, Michigan

#### Notes:

Abbreviations

lin. ft. = linear feet sq. ft. = square feet

**Shaded/Bolded** = Friable ACM and any Category I and Category II non-friable ACM that has a high probability of becoming crumbled, pulverized, or reduced to powder by the demolition or renovation activities that must be properly abated prior to commencement of any demolition/renovation activities.

### Table 4 - Summary of All Asbestos Containing Materials, 2736 8th St. Muskegon, Michigan

Demolition/renovation activities completed with intact Category I non-friable ACM are regulated by OSHA and must be completed following the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

Please note that a Negative Pressure Enclosure must be utilized during abatement when Site Conditions Warrant. Examples of these conditions include the abatement of Plaster and Vermiculite insulation, HVAC Duct Wrap in Poor Condition, and Air-O-Cell/Mag Pipe Wrap. Conditions outside of these should be assessed on a case by case basis during the Asbestos Abatement Contractors site walk and Work Plan Preparation.



P.O. Box 13216 Lansing, MI 48901 Phone: 888.449.4566 Fax: 888.448.8739 www.redcedarconsulting.net

November 1, 2018

Mr. Tim Burgess Muskegon County Land Bank Land Bank Coordinator 173 E. Apple Avenue, Suite 104 Muskegon, MI 49442

### RE: Asbestos Containing Material and Hazardous Materials Inspection 2809 8th St., Muskegon Heights, MI 49444 Parcel ID: 61-26-185-218-0003-00

Dear Mr. Burgess:

Red Cedar Consulting has completed an asbestos-containing material (ACM) and hazardous materials inspection at 2809 8th St., Muskegon Heights, Michigan (Subject Property). This inspection was completed at the request of the Muskegon County Land Bank to comply with the United States Environmental Protection Agency (USEPA) requirements for demolition and renovation set forth under the National Emissions Standards for Hazardous Air Pollutants (NESHAP, 40 CFR Part 61). This inspection was also completed to comply with the Occupational Safety and Health Administration (OSHA) Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

#### **SUBJECT PROPERTY**

The Subject Property is comprised of a .14 acre residential parcel which contains an approximate 1,488 square foot residential building (the Building) constructed in 1945. The Building was constructed on a concrete foundation with one aboveground floor. The exterior walls of the Building were finished with wood lap over a vapor barrier while the roof was sealed with asphalt shingles. The Building can be further divided into an East and West apartment for inspection purposes.

### VISUAL INSPECTION AND SAMPLING

#### **Asbestos Containing Materials Inspection**

Mr. Aaron Paquet of Red Cedar Consulting (Red Cedar), an accredited State of Michigan/EPA Asbestos Building Inspector (Accreditation Number A30955) whom completed training per the Michigan Asbestos Workers Accreditation Act 440 completed an inspection of the Subject Property on October 22, 2018 for suspected asbestos containing building materials.

This inspection, and subsequent sample collection was completed in accordance with the USEPA Asbestos Hazard Emergency Response Act (AHERA) (40 CFR Part 763) assessment and sampling protocol.

During the completion of the inspection, each area of the Subject Property was visually inspected for asbestos containing building materials (ACBM). Following the completion of the visual inspection, Red Cedar staff identified each suspect area of friable and non-friable ACBM and sorted them into one of three homogenous categories for sampling purposes. AHERA defines friable as a material that when dry, may be crumbled, pulverized, or reduced to powder by hand pressure. A homogenous area is defined by OSHA as an area of surfacing, thermal system insulation (TSI) or miscellaneous material that is uniform in color and texture. Surfacing materials are most commonly found in sprayed-on, troweled-on or otherwise applied to surfaces, such as acoustical plaster on ceilings and fireproofing materials on structural members. TSI refers to materials applied to pipes, fittings, boilers, ductwork, or other components to prevent heat loss or gain, or condensation. Any material that does not fall under the surfacing or TSI category, such as floor tile, drywall, and acoustical ceiling tile are placed into the miscellaneous materials category.

Following the completion of the visual inspection, Red Cedar staff identified the following materials as suspect ACBM:

- Roofing Materials
- Vapor Barrier
- Drywall and Joint Compound
- Linoleum
- 1'x1' Ceiling Tile
- Plaster

Red Cedar staff collected nineteen samples of suspect ACBM separated into eight distinct homogenous groups for laboratory analysis. Samples were collected and submitted to APEX Research Inc. Laboratories (APEX) (Accreditation Number 102118-0) for laboratory analysis. Analysis was completed utilizing polarized light microscopy (PLM) which is the Environmental Protection Agency (EPA) approved method for analysis of bulk materials for asbestos. PLM analysis completed pursuant to method (EPA 600/M4-82-020) identifies asbestos fiber bundles by the visual properties displayed when the sample is treated with various dispersion staining liquids. The laboratory report completed following the sample analysis indicates if asbestos is present, and at what percentage along with a description and percentage of other fibrous and non-fibrous materials and sample color. Chain-of-custody documentation was followed from sample collection through shipping and receiving of the samples at the designated laboratory. The documentation assures that samples will meet the quality assurance/quality control measures defined by AHERA. The laboratory analytical report prepared by APEX for the nineteen samples is included as Attachment A.

#### **Hazardous Materials Inspection**

On October 22, 2018 the Subject Property was also inspected for the presence of hazardous materials which include but are not limited to polychlorinated biphenyls (PCBs) and potential mercury containing equipment and any items or containers that may contain or be classified as a hazardous or regulated material. Each material, if identified, was documented along with the approximate location. Any materials identified as hazardous are included in Table 1.

### **INSPECTION RESULTS AND RECOMMENDATIONS**

During the completion of the asbestos inspection, nineteen samples of suspect ACM were collected and are documented in Table 2 along with the Red Cedar sample number, description, friability, material type, ACM classification, sample location, material quantity and laboratory analytical results.

ACM, as defined by the USEPA NESHAP is "any material containing more than 1 percent asbestos as determined using the method specified in appendix E, subpart E, 40 CFR part 763 Section 1, Polarized Light Microscopy".

Friable ACM is defined by NESHAP as any material containing more than 1 percent asbestos that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. Friable ACM is a concern due the ease of unintentionally disturbing the ACM which may result in "visible emissions" which is known as a Fiber Release Episode.

Non-friable asbestos-containing material is defined as "material containing more than 1 percent asbestos that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. Non-friable ACM's are separated into Category I and Category II ACM. Category I ACM is any asbestos containing packing's, gaskets, resilient floor coverings (vinyl floor tile and linoleum are examples of these) and asphalt roofing products. Category II ACM is stated by NESHAP as any material excluding Category I non-friable ACM such as drywall, plaster or fiberboard insulation.

### **Presumed Asbestos Containing Material**

Presumed Asbestos Containing Materials (PACM) are suspect surfacing, TSI and miscellaneous materials found in buildings constructed prior to 1980 which are classified as and due to the age of the structure, are assumed to be ACM and do not require sample collection and analysis. OSHA dictates that PACM may be "rebutted" following a complete inspection pursuant to AHERA protocol.

No PACM was identified during the completion of this inspection. All suspect materials identified were sampled and analyzed for ACM.

Table 3 lists the location, material description, friability, condition, material type (surfacing, thermal or miscellaneous) and approximate quantity of all PACM documented at the Subject Property.

Table 4 provides a summary all ACM documented at the Subject Property which includes the material location, description, and approximate quantity.

### Friable ACM's

No friable ACM's were identified during the completion of this inspection.

### **Category I ACM**

One type of resilient floor covering (Tan Linoleum) located within the E apartment bathroom was found to contain up to 45% Chrysotile asbestos. The assessment to quantify the extent of this material identified approximately 35 sq. ft. of this material within the Building.

### **Category II ACM**

No Category II non-friable ACM was identified during the completion of this inspection.

### **RECOMMENDATIONS**

### **Asbestos Containing Materials**

The Category I resilient floor covering (Tan Linoleum) is a non-friable ACM that may be left in place as long as the demolition/renovation activities are completed following the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

Please note: The location of samples obtained during this inspection were in a random fashion and areas that were not identified during this inspection may be damaged or have become damaged since the inspection was completed. If Category I or Category II friable materials are discovered prior to or during the demolition/renovation process, these materials must be abated prior to commencement of any demolition/renovation activities at the Subject Property.

#### **Hazardous Materials**

Hazardous Materials identified at the Subject Property and documented in Table 1 which require proper removal and disposal consist of the following items:

• Automobile Tires (50)

### **REGULATORY REQUIREMENTS**

A Notification of Intent to Renovate/Demolish form must be filed with the Michigan Department of Environmental Quality- Air Quality Division at least 10 working days prior to any renovation or demolition activities at a site.

The Notification of Intent to Renovate/Demolish form must also be completed and submitted to the MIOSHA-Asbestos Program whenever demolition, encapsulation and/or renovation activities at a site involving greater than ten lineal feet and/or fifteen square feet of ACM will be completed.

Regulated asbestos containing materials per NESHAP (40 CFR Part 61) which falls into any of the following categories are ACM's that must be removed prior to any renovation/demolition activities at the Subject Property.

- Friable asbestos material.
- Category I non-friable ACM that has become friable.
- Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading.
- Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of renovation or demolition operations.

Asbestos abatement should only be performed by a certified asbestos abatement contractor licensed to complete abatement work. The contractor must also follow the standards and requirements set forth per the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) and the USEPA NESHAP (40 CFR Part 61).

Additional information regarding the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) and the USEPA NESHAP (40 CFR Part 61) can be obtained by contacting the associated agency below.

NESHAP Asbestos Program Department of Environmental Quality Phone: 517-284-6777 MIOSHA-CSHD-Asbestos Program State of Michigan Phone: 517-284-7680 Email: asbestos@michigan.gov

### **DISCLAIMER**

Red Cedar Consulting performed destructive testing methods in an attempt to access and inspect all areas of the Building. Unfortunately, due to the age of construction along with multiple additions/renovations that may have been completed on the Building, additional inspections may be required if suspect ACM material not documented within this report is encountered during renovation/demolition activities.

This report was prepared at the request and for exclusive use by the Muskegon County Land Bank and may not be reproduced or sold without written permission from Red Cedar Consulting.

We appreciate the opportunity to provide the requested services. Please contact us at (888) 449-4566 with any questions or concerns.

Sincerely, Red Cedar Consulting

Raion Poquet

Aaron Paquet Michigan/EPA Certified Asbestos Building Inspector (A30955)

Red Cedar Consulting

# Attachment 1

APEX Research Laboratory Analytical Results

Test Method, Polarized Light Microscopy (PLM)

Project : 2809 8th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80533         Date Collected:       10/22/18         Date Received:       10/23/18         Date Analyzed:       10/24/18         Date Reported:       10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80533 - 01 Cust. #: ES-HM-01A Material: Roofing Materials Location: Appearance: black,fibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 30% Other - 70%
Lab ID #: 80533 - 01a Cust. #: ES-HM-01A Material: Felt Location: Appearance: black,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 60% Other - 40%
Lab ID #: 80533 - 02 Cust. #: ES-HM-01B Material: Roofing Materials Location: Appearance: black,fibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 30% Other - 70%

For Layered Samples, each component will be analyzed and reported separately.

Kut Joh

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2809 8th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80533         Date Collected:       10/22/18         Date Received:       10/23/18         Date Analyzed:       10/24/18         Date Reported:       10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80533 - 02a Cust. #: ES-HM-01B Material: Felt Location: Appearance: black,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 60% Other - 40%
Lab ID #: 80533 - 03 Cust. #: ES-HM-02A Material: Vapor Barrier Location: Appearance: black,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 60% Other - 40%
Lab ID #: 80533 - 04 Cust. #: ES-HM-02B Material: Vapor Barrier Location: Appearance: black,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 60% Other - 40%

For Layered Samples, each component will be analyzed and reported separately.

Kut Jet

Robert T. Letarte Jr., Laboratory Director

Test Method, Polarized Light Microscopy (PLM)

Project : 2809 8th St.



Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80533Date Collected:10/22/18Date Received:10/23/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80533 - 05 Cust. #: ES-HM-03A Material: Tan Linoleum Location: Appearance: grey,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>YES</b> Chrysotile - 45%	Other - 55%
Lab ID #: 80533 - 06 Cust. #: ES-HM-03B Material: Tan Linoleum Location: Appearance: Layer: of	Asbestos Present: NOT ANALYZED	
Lab ID #: 80533 - 07 Cust. #: ES-HM-04A Material: Drywall Location: Appearance: white,fibrous,nonhomogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
For Layered Samples, each component will be analyzed and repor	ted separately.	Rent Sett

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2809 8th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80533Date Collected:10/22/18Date Received:10/23/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80533 - 07a Cust. #: ES-HM-04A Material: Joint Compound Location: Appearance: white,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80533 - 08 Cust. #: ES-HM-04B Material: Drywall Location: Appearance: white,fibrous,nonhomogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80533 - 08a Cust. #: ES-HM-04B Material: Joint Compound Location: Appearance: white,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2809 8th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80533Date Collected:10/22/18Date Received:10/23/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80533 - 09 Cust. #: ES-HM-05A Material: Cream Linoleum Location: Appearance: white,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 10% Other - 90%
Lab ID #: 80533 - 10 Cust. #: ES-HM-05B Material: Cream Linoleum Location: Appearance: white,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 10% Other - 90%
Lab ID #: 80533 - 11 Cust. #: ES-HM-06A Material: Yellow Linoleum Location: Appearance: yellow,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 40% Other - 60%

For Layered Samples, each component will be analyzed and reported separately.

Sout

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.



APEX Research Inc., 11054 Hi Tech Drive, Whitmore Lake, MI 48189 (734) 449-9990, Fax (734) 449-9991

Test Method, Polarized Light Microscopy (PLM)

Project : 2809 8th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80533         Date Collected:       10/22/18         Date Received:       10/23/18         Date Analyzed:       10/24/18         Date Reported:       10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80533 - 12 Cust. #: ES-HM-06B Material: Yellow Linoleum Location: Appearance: yellow,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 50% Other - 50%
Lab ID #: 80533 - 13 Cust. #: ES-HM-07A Material: 1x1 White Smooth Ceiling Tile Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 80% Other - 20%
Lab ID #: 80533 - 14 Cust. #: ES-HM-07B Material: 1x1 White Smooth Ceiling Tile Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 80% Other - 20%

For Layered Samples, each component will be analyzed and reported separately.

Kut Joh

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2809 8th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80533Date Collected:10/22/18Date Received:10/23/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80533 - 15 Cust. #: ES-HS-01A Material: Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80533 - 15a Cust. #: ES-HS-01A Material: Plaster Base Coat Location: Appearance: grey,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 1% Vermiculite - 15% Other - 84%
Lab ID #: 80533 - 16 Cust. #: ES-HS-01B Material: Plaster/Drywall Location: Appearance: white,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2809 8th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80533Date Collected:10/22/18Date Received:10/23/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80533 - 17 Cust. #: ES-HS-01C Material: Plaster Texture Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Wollastonite - 1% Other - 99%
Lab ID #: 80533 - 17a Cust. #: ES-HS-01C Material: Plaster Finish Coat Location: Appearance: green,nonfibrous,homogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Wollastonite - 1% Other - 99%
Lab ID #: 80533 - 17b Cust. #: ES-HS-01C Material: Plaster Base Coat Location: Appearance: grey,nonfibrous,homogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 1% Vermiculite - 20% Other - 79%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2809 8th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80533Date Collected:10/22/18Date Received:10/23/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80533 - 18 Cust. #: ES-HS-01D Material: Plaster Texture Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Wollastonite - 1% Other - 99%
Lab ID #: 80533 - 18a Cust. #: ES-HS-01D Material: Plaster Finish Coat Location: Appearance: green,nonfibrous,homogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Wollastonite - 1% Other - 99%
Lab ID #: 80533 - 18b Cust. #: ES-HS-01D Material: Plaster Base Coat Location: Appearance: grey,nonfibrous,homogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 1% Vermiculite - 20% Other - 79%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.



APEX Research Inc., 11054 Hi Tech Drive, Whitmore Lake, MI 48189 (734) 449-9990, Fax (734) 449-9991 Test Method, Polarized Light Microscopy (PLM)

Project : 2809 8th St.

**Certificate of Laboratory Analysis** 

Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report # Date Collected: Date Received: Date Analyzed: Date Reported:	18-80533 10/22/18 10/23/18 10/24/18 10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbesto	s Material
Lab ID #: 80533 - 19 Cust. #: ES-HS-01E Material: Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%	

Lab ID #: 80533 - 19a Cust. #: ES-HS-01E Plaster Base Coat Material: Location: Appearance: grey, nonfibrous, homogenous of Layer: 2 2

Lab ID #: Cust. #: Material: Location: Appearance:

of

Layer:

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the US Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.

Cellulose - 1% Vermiculite - 20% Other - 79%

Asbestos Present:

Asbestos Present: NO

No Asbestos Observed



# XaqA	142
APEX Research, Inc. 11054 Hi Tech Drive, Whitmore Lake, MI 48189 Phone: 734-449-9990 E-mail: apexresearch@chartermi.net Fax: 734-449-9991	APEX
Client Name: Red Cedar Consulting Date of Survey : ノッ・スン・/省	Lab Use Only Log-In
Address: PO BOX 13216 Project : 2809 876 1	Report
City, St., Zip: Lansing, MI 48901 Project # :	
149-4566 Fax: (888) 448-8739 Contact	
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Other 2 de Martin 11 Samples TEM: AHERA 7400 BulkNOB EPA Level II	
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Address: PO BOX 13216	Project :	2809 84	t5	Report
City, St., Zip: Lansing, MI 48901	Project # :			
.49-4566 Fax:	(888) 448-8739 Contact Person:	Crson: Aaron Paquet	quet	
Turn Around Times: (Circle One)	PLM EPA	apaquet@redcedarconsulting.net 600, PC all samples with a detection of <5% ACM.	redcedarconsult. sction of <5% AC	ing.net M.
Rush 24 hour	Asbestos: Bulk X Wipe	Point Count	PCM	
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Lab ID # Client ID #	Material/Location	Volume	Area R	Results
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15 ES-HS-01A P	Plaster			
16 ES-HS-OIB	-			
17 ES-HS-01C				
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Red Cedar Consulting

Tables

### Table 1 - Summary of Hazardous Materials, 2809 8th St., Muskegon Heights, Michigan

Hazardous Materials Description and Location			
Location Material Description Quan			
W Apt. Kitchen	Automobile Tire	50	

Table 2 - Summary of Sample Descriptions and Asbestos Laboratory Results, 2809 8th St., Muskegon Heights, Michigan

Sample Number	Sample Description	Friable	Material Type	Material Classification	% Asbestos Laboratory Result	Sample Location	Approx. Material Quantity
ES-HM-01A	Shingle Roofing	No	М	Category I	ND/ND	Exterior	NA
ES-HM-01B	Shingle Roofing	No	М	Category I	ND/ND	Exterior	NA
ES-HM-02A	Vapor Barrier	Yes	М	Category II	ND	Exterior	NA
ES-HM-02B	Vapor Barrier	Yes	М	Category II	ND	Exterior	NA
ES-HM-03A	Tan Linoleum	No	М	Category I	45% CH	E Apt. Bathroom	35 sq. ft.
ES-HM-03B	Tan Linoleum	No	М	Category I	NA	E Apt. Bathroom	NA
ES-HM-04A	Drywall	No	М	Category II	ND/ND	Kitchen Ceiling	NA
ES-HM-04B	Drywall	No	М	Category II	ND/ND	Living Wall	NA
ES-HM-05A	Cream Linoleum	No	М	Category I	ND	W Apt. Bathroom	NA
ES-HM-05B	Cream Linoleum	No	М	Category I	ND	W Apt. Bathroom	NA
ES-HM-06A	Yellow Linoleum	No	М	Category I	ND	W Apt. Bathroom	NA
ES-HM-06B	Yellow Linoleum	No	М	Category I	ND	W Apt. Bathroom	NA
ES-HM-07A	1x1 White Smooth CT	Yes	М	Category II	ND	W Apt. SE Bedroom	NA
ES-HM-07B	1x1 White Smooth CT	Yes	М	Category II	ND	W Apt. SE Bedroom	NA
ES-HS-01A	Plaster	No	S	Category II	ND/ND	E Apt. Kitchen Ceiling	NA
ES-HS-01B	Plaster	No	S	Category II	ND	E Apt. Living Ceiling	NA
ES-HS-01C	Plaster	No	S	Category II	ND/ND/ND	E Apt. Living Wall	NA
ES-HS-01D	Plaster	No	S	Category II	ND/ND/ND	E Apt. Living Wall	NA
ES-HS-01E	Plaster	No	S	Category II	ND/ND	E Apt. SE Bedroom Wall	NA

Notes:

Material Types

M = Miscellaneous building material

- TSI = Thermal System Insulation
- S = Surfacing Material

PC = Point Count Analysis

CH = Chrysotile Asbestos

#### Abbreviations

- NQ = Not quantified
- NA = Not applicable
- ND = Not detected. Laboratory result is less than 1 % asbestos
- lin. ft. = linear feet
- sq. ft. = square feet

Asbestos Containing Material (ACM) is defined as any material containing more than 1 percent asbestos as determined utilizing Polarized Light Microscopy.

### Table 3 - Summary of Presumed Asbestos Containing Materials, 2809 8th St., Muskegon Heights, Michigan

Asbestos Containing Material Description and Location					
LocationMaterial DescriptionFriableConditionMaterial TypeApprox. Qu					
No Presumed Asbestos Containing Materials Identified					

Notes:

Material Types		Abbreviations	
TSI	<ul><li>= Miscellaneous building material</li><li>= Thermal System Insulation</li><li>= Surfacing Material</li></ul>		= linear feet = square feet

#### Table 4 - Summary of All Asbestos Containing Materials, 2809 8th St., Muskegon Heights, Michigan

Interior - Asbestos Containing Mate	rials			
Location	<b>Material Description</b>		Friable	Approx. Quantity
E Apt. Bathroom	Tan Linoleum		No	35 sq. ft.
		Total		35 sq. ft.

Notes: Abbreviations

lin. ft. = linear feet sq. ft. = square feet

**Shaded/Bolded** = Friable ACM and any Category I and Category II non-friable ACM that has a high probability of becoming crumbled, pulverized, or reduced to powder by the demolition or renovation activities that must be properly abated prior to commencement of any demolition/renovation activities.

Demolition/renovation activities completed with intact Category I non-friable ACM are regulated by OSHA and must be completed following the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

Please note that a Negative Pressure Enclosure must be utilized during abatement when Site Conditions Warrant. Examples of these conditions include the abatement of Plaster and Vermiculite insulation, HVAC Duct Wrap in Poor Condition, and Air-O-Cell/Mag Pipe Wrap. Conditions outside of these should be assessed on a case by case basis during the Asbestos Abatement Contractors site walk and Work Plan Preparation.



P.O. Box 13216 Lansing, MI 48901 Phone: 888.449.4566 Fax: 888.448.8739 www.redcedarconsulting.net

October 31, 2018

Mr. Tim Burgess Muskegon County Land Bank Land Bank Coordinator 173 E. Apple Avenue, Suite 104 Muskegon, MI 49442

#### RE: Asbestos Containing Material and Hazardous Materials Inspection 2908 7th St., Muskegon Heights, MI 49444 Parcel ID: 61-26-185-223-0018-00

Dear Mr. Burgess:

Red Cedar Consulting has completed an asbestos-containing material (ACM) and hazardous materials inspection at 2908 7th St., Muskegon Heights, Michigan (Subject Property). This inspection was completed at the request of the Muskegon County Land Bank to comply with the United States Environmental Protection Agency (USEPA) requirements for demolition and renovation set forth under the National Emissions Standards for Hazardous Air Pollutants (NESHAP, 40 CFR Part 61). This inspection was also completed to comply with the Occupational Safety and Health Administration (OSHA) Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

#### SUBJECT PROPERTY

The Subject Property is comprised of a .14 acre residential parcel which contains a 432 sq. ft. attached garage and approximate 836 square foot residential building (the Building) constructed in 1925. The Building was constructed on a concrete block basement with two aboveground floors. The exterior walls of the Building were finished with vinyl over wood lap and a vapor barrier while the roof was sealed with asphalt shingles. The Building can be further divided into a front entry, living room, kitchen, bath, two bedrooms and rear entry on the first floor while the second floor contains one bedroom.

#### VISUAL INSPECTION AND SAMPLING

#### **Asbestos Containing Materials Inspection**

Mr. Aaron Paquet of Red Cedar Consulting (Red Cedar), an accredited State of Michigan/EPA Asbestos Building Inspector (Accreditation Number A30955) whom completed training per the Michigan Asbestos Workers Accreditation Act 440 completed an inspection of the Subject Property on October 18, 2018 for suspected asbestos containing building materials.

This inspection, and subsequent sample collection was completed in accordance with the USEPA Asbestos Hazard Emergency Response Act (AHERA) (40 CFR Part 763) assessment and sampling protocol.

During the completion of the inspection, each area of the Subject Property was visually inspected for asbestos containing building materials (ACBM). Following the completion of the visual inspection, Red Cedar staff identified each suspect area of friable and non-friable ACBM and sorted them into one of three homogenous categories for sampling purposes. AHERA defines friable as a material that when dry, may be crumbled, pulverized, or reduced to powder by hand pressure. A homogenous area is defined by OSHA as an area of surfacing, thermal system insulation (TSI) or miscellaneous material that is uniform in color and texture. Surfacing materials are most commonly found in sprayed-on, troweled-on or otherwise applied to surfaces, such as acoustical plaster on ceilings and fireproofing materials on structural members. TSI refers to materials applied to pipes, fittings, boilers, ductwork, or other components to prevent heat loss or gain, or condensation. Any material that does not fall under the surfacing or TSI category, such as floor tile, drywall, and acoustical ceiling tile are placed into the miscellaneous materials category.

Following the completion of the visual inspection, Red Cedar staff identified the following materials as suspect ACBM:

- Vapor Barrier
- Roofing Materials
- Linoleum
- 1'x1' Ceiling Tile
- Drywall and Joint Compound
- Window Glazing
- Plaster

Red Cedar staff collected twenty nine samples of suspect ACBM separated into twelve distinct homogenous groups for laboratory analysis. Samples were collected and submitted to APEX Research Inc. Laboratories (APEX) (Accreditation Number 102118-0) for laboratory analysis. Analysis was completed utilizing polarized light microscopy (PLM) which is the Environmental Protection Agency (EPA) approved method for analysis of bulk materials for asbestos. PLM analysis completed pursuant to method (EPA 600/M4-82-020) identifies asbestos fiber bundles by the visual properties displayed when the sample is treated with various dispersion staining liquids. The laboratory report completed following the sample analysis indicates if asbestos is present, and at what percentage along with a description and percentage of other fibrous and non-fibrous materials and sample color. Chain-of-custody documentation was followed from sample collection through shipping and receiving of the samples at the designated laboratory. The documentation assures that samples will meet the quality assurance/quality control measures defined by AHERA. The laboratory analytical report prepared by APEX for the twenty nine samples is included as Attachment A.

#### **Hazardous Materials Inspection**

On October 18, 2018 the Subject Property was also inspected for the presence of hazardous materials which include but are not limited to polychlorinated biphenyls (PCBs) and potential mercury containing equipment and any items or containers that may contain or be classified as a hazardous or regulated material. Each material, if identified, was documented along with the approximate location. Any materials identified as hazardous are included in Table 1.

### **INSPECTION RESULTS AND RECOMMENDATIONS**

During the completion of the asbestos inspection, twenty nine samples of suspect ACM were collected and are documented in Table 2 along with the Red Cedar sample number, description, friability, material type, ACM classification, sample location, material quantity and laboratory analytical results.

ACM, as defined by the USEPA NESHAP is "any material containing more than 1 percent asbestos as determined using the method specified in appendix E, subpart E, 40 CFR part 763 Section 1, Polarized Light Microscopy".

Friable ACM is defined by NESHAP as any material containing more than 1 percent asbestos that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. Friable ACM is a concern due the ease of unintentionally disturbing the ACM which may result in "visible emissions" which is known as a Fiber Release Episode.

Non-friable asbestos-containing material is defined as "material containing more than 1 percent asbestos that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. Non-friable ACM's are separated into Category I and Category II ACM. Category I ACM is any asbestos containing packing's, gaskets, resilient floor coverings (vinyl floor tile and linoleum are examples of these) and asphalt roofing products. Category II ACM is stated by NESHAP as any material excluding Category I non-friable ACM such as drywall, plaster or fiberboard insulation.

#### **Presumed Asbestos Containing Material**

Presumed Asbestos Containing Materials (PACM) are suspect surfacing, TSI and miscellaneous materials found in buildings constructed prior to 1980 which are classified as and due to the age of the structure, are assumed to be ACM and do not require sample collection and analysis. OSHA dictates that PACM may be "rebutted" following a complete inspection pursuant to AHERA protocol.

No PACM was identified during the completion of this inspection. All suspect materials identified were sampled and analyzed for ACM.

Table 3 lists the location, material description, friability, condition, material type (surfacing, thermal or miscellaneous) and approximate quantity of all PACM documented at the Subject Property.

Table 4 provides a summary all ACM documented at the Subject Property which includes the material location, description, and approximate quantity.

#### Friable ACM's

No friable ACM's were identified during the completion of this inspection.

#### Category I ACM

No Category I ACM was identified during the completion of this inspection.

#### **RECOMMENDATIONS**

#### **Asbestos Containing Materials**

No ACM was identified within the Building that would require abatement prior to demolition/renovation of the structure.

Please note: The location of samples obtained during this inspection were in a random fashion and areas that were not identified during this inspection may be damaged or have become damaged since the inspection was completed. If Category I or Category II friable materials are discovered prior to or during the demolition/renovation process, these materials must be abated prior to commencement of any demolition/renovation activities at the Subject Property.

#### **Hazardous Materials**

Hazardous Materials identified at the Subject Property and documented in Table 1 which require proper removal and disposal consist of the following items:

- Automobile Tires (2)
- Thermostat (1)
- 2' Fluorescent Light (Fixture and Ballast Only) (1)
- 2' Fluorescent Bulb (2)

#### **REGULATORY REQUIREMENTS**

A Notification of Intent to Renovate/Demolish form must be filed with the Michigan Department of Environmental Quality- Air Quality Division at least 10 working days prior to any renovation or demolition activities at a site.

The Notification of Intent to Renovate/Demolish form must also be completed and submitted to the MIOSHA-Asbestos Program whenever demolition, encapsulation and/or renovation activities at a site involving greater than ten lineal feet and/or fifteen square feet of ACM will be completed.

Regulated asbestos containing materials per NESHAP (40 CFR Part 61) which falls into any of the following categories are ACM's that must be removed prior to any renovation/demolition activities at the Subject Property.

- Friable asbestos material.
- Category I non-friable ACM that has become friable.

- Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading.
- Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of renovation or demolition operations.

Asbestos abatement should only be performed by a certified asbestos abatement contractor licensed to complete abatement work. The contractor must also follow the standards and requirements set forth per the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) and the USEPA NESHAP (40 CFR Part 61).

Additional information regarding the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) and the USEPA NESHAP (40 CFR Part 61) can be obtained by contacting the associated agency below.

NESHAP Asbestos Program Department of Environmental Quality Phone: 517-284-6777 MIOSHA-CSHD-Asbestos Program State of Michigan Phone: 517-284-7680 Email: asbestos@michigan.gov

#### **DISCLAIMER**

Red Cedar Consulting performed destructive testing methods in an attempt to access and inspect all areas of the Building. Unfortunately, due to the age of construction along with multiple additions/renovations that may have been completed on the Building, additional inspections may be required if suspect ACM material not documented within this report is encountered during renovation/demolition activities.

This report was prepared at the request and for exclusive use by the Muskegon County Land Bank and may not be reproduced or sold without written permission from Red Cedar Consulting.

We appreciate the opportunity to provide the requested services. Please contact us at (888) 449-4566 with any questions or concerns.

Sincerely, Red Cedar Consulting

Raron Poquet

Aaron Paquet Michigan/EPA Certified Asbestos Building Inspector (A30955)

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Red Cedar Consulting

# Attachment 1

APEX Research Laboratory Analytical Results

Test Method, Polarized Light Microscopy (PLM)

Project : 2908 7th St.



Sample InformationAsbestos Type/PercentNon-Asbestos MaterialLab ID #: 80474 - 01 Cust. #: ES-HM-01A Material: Brown Vapor Barrier Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1Asbestos Present: NO No Asbestos ObservedCellulose - 50% Other - 50%Lab ID #: 80474 - 02 Cust. #: ES-HM-01B Material: Brown Vapor Barrier Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1Asbestos Present: NO No Asbestos ObservedCellulose - 50% Other - 50%Lab ID #: 80474 - 02 Cust. #: ES-HM-01B Material: Brown Vapor Barrier Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1Asbestos Present: NO No Asbestos ObservedCellulose - 50% Other - 50%Lab ID #: 80474 - 03 Cust. #: ES-HM-02A Materials Location: Appearance: black,fibrous,homogenousAsbestos Present: NO No Asbestos ObservedFiberglass - 10% Other - 90%	Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80474Date Collected:10/18/18Date Received:10/19/18Date Analyzed:10/24/18Date Reported:10/26/18
Cust. #:ES-HM-01A Brown Vapor Barrier Location: Appearance: brown,fibrous,homogenous Layer:No Asbestos ObservedOther - 50%Lab ID #:80474 - 02 Cust. #:Asbestos Present: NO No Asbestos ObservedCellulose - 50% Other - 50%Material: Brown Vapor Barrier Location: Appearance: 	Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Cust. #:ES-HM-01BNo Asbestos ObservedOther - 50%Material:Brown Vapor BarrierLocation:Location:Appearance:brown,fibrous,homogenousLayer:1ofLab ID #:80474 - 03Asbestos Present:NOCust. #:ES-HM-02ANo Asbestos ObservedFiberglass - 10%Material:Roofing MaterialsNo Asbestos ObservedOther - 90%Location:Appearance:black,fibrous,homogenousHerein and the second secon	Cust. #: ES-HM-01A Material: Brown Vapor Barrier Location: Appearance: brown,fibrous,homogenous		
Cust. #:ES-HM-02ANo Asbestos ObservedOther - 90%Material:Roofing MaterialsLocation:Appearance:black,fibrous,homogenous	Cust. #: ES-HM-01B Material: Brown Vapor Barrier Location: Appearance: brown,fibrous,homogenous		
Layer: 1 of 4	Cust. #: ES-HM-02A Material: Roofing Materials Location:		•

For Layered Samples, each component will be analyzed and reported separately.

Kut Joh

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.



APEX Research Inc., 11054 Hi Tech Drive, Whitmore Lake, MI 48189 (734) 449-9990, Fax (734) 449-9991

Test Method, Polarized Light Microscopy (PLM)

Project : 2908 7th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80474         Date Collected:       10/18/18         Date Received:       10/19/18         Date Analyzed:       10/24/18         Date Reported:       10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80474 - 03a Cust. #: ES-HM-02A Material: Shingle Location: Appearance: black,fibrous,homogenous Layer: 2 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 10% Other - 90%
Lab ID #: 80474 - 03b Cust. #: ES-HM-02A Material: Shingle Location: Appearance: black,fibrous,homogenous Layer: 3 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Other - 90%
Lab ID #: 80474 - 03c Cust. #: ES-HM-02A Material: Tar Paper Location: Appearance: black,fibrous,homogenous Layer: 4 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 50% Other - 50%

For Layered Samples, each component will be analyzed and reported separately.

Kent Jet

Robert T. Letarte Jr., Laboratory Director

Test Method, Polarized Light Microscopy (PLM)

Project : 2908 7th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80474Date Collected:10/18/18Date Received:10/19/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80474 - 04 Cust. #: ES-HM-02B Material: Roofing Materials Location: Appearance: black,fibrous,homogenous Layer: 1 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 10% Other - 90%
Lab ID #: 80474 - 04a Cust. #: ES-HM-02B Material: Shingle Location: Appearance: black,fibrous,homogenous Layer: 2 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 10% Other - 90%
Lab ID #: 80474 - 04b Cust. #: ES-HM-02B Material: Shingle Location: Appearance: black,fibrous,homogenous Layer: 3 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Other - 90%

For Layered Samples, each component will be analyzed and reported separately.

Kut Joh

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2908 7th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-804/4Date Collected:10/18/18Date Received:10/19/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80474 - 04c Cust. #: ES-HM-02B Material: Tar Paper Location: Appearance: black,fibrous,homogenous Layer: 4 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 50% Other - 50%
Lab ID #: 80474 - 05 Cust. #: ES-HM-03A Material: Not Used Location: Appearance: Layer: of	Asbestos Present: NO SAMPLE RECEIVED	
Lab ID #: 80474 - 06 Cust. #: ES-HM-03B Material: Not Used Location: Appearance: Layer: of	Asbestos Present: NO SAMPLE RECEIVED	
For I overed Samples, each component will be analyzed and repo	rtad separately	

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2908 7th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80474Date Collected:10/18/18Date Received:10/19/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80474 - 07 Cust. #: ES-HM-04A Material: Blue/Grey Layered Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 5	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Fiberglass - 10% Other - 80%
Lab ID #: 80474 - 07a Cust. #: ES-HM-04A Material: Tile Location: Appearance: white,nonfibrous,homogenous Layer: 2 of 5	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80474 - 07b Cust. #: ES-HM-04A Material: Underlayment Location: Appearance: black,fibrous,homogenous Layer: 3 of 5	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2908 7th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80474Date Collected:10/18/18Date Received:10/19/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80474 - 07c Cust. #: ES-HM-04A Material: Mastic Location: Appearance: brown,nonfibrous,homogenous Layer: 4 of 5	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80474 - 07d Cust. #: ES-HM-04A Material: Underlayment Location: Appearance: brown,fibrous,nonhomogenous Layer: 5 of 5	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 70% Other - 30%
Lab ID #: 80474 - 08 Cust. #: ES-HM-04B Material: Blue/Grey Layered Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 5	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 15% Fiberglass - 10% Other - 75%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2908 7th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report # 18-80474 Date Collected: 10/18/18 Date Received: 10/19/18 Date Analyzed: 10/24/18 Date Reported: 10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80474 - 08a Cust. #: ES-HM-04B Material: Tile Location: Appearance: white,nonfibrous,homogenous Layer: 2 of 5	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80474 - 08b Cust. #: ES-HM-04B Material: Underlayment Location: Appearance: black,fibrous,homogenous Layer: 3 of 5	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80474 - 08c Cust. #: ES-HM-04B Material: Mastic Location: Appearance: brown,nonfibrous,homogenous Layer: 4 of 5	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2908 7th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80474Date Collected:10/18/18Date Received:10/19/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80474 - 08d Cust. #: ES-HM-04B Material: Underlayment Location: Appearance: brown,fibrous,homogenous Layer: 5 of 5	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 70% Other - 30%
Lab ID #: 80474 - 09 Cust. #: ES-HM-05A Material: Cream Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 15% Fiberglass - 10% Other - 75%
Lab ID #: 80474 - 10 Cust. #: ES-HM-05B Material: Cream Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 15% Fiberglass - 10% Other - 75%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2908 7th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80474Date Collected:10/18/18Date Received:10/19/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80474 - 11 Cust. #: ES-HM-06A Material: 1x1 White Smooth Ceiling Tile Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 75% Other - 25%
Lab ID #: 80474 - 12 Cust. #: ES-HM-06B Material: 1x1 White Smooth Ceiling Tile Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 75% Other - 25%
Lab ID #: 80474 - 13 Cust. #: ES-HM-07A Material: 1x1 White Textured Ceiling Tile Location: Appearance: grey,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 15% Fiberglass - 10% Other - 75%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2908 7th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80474Date Collected:10/18/18Date Received:10/19/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80474 - 14 Cust. #: ES-HM-07B Material: 1x1 White Textured Ceiling Tile Location: Appearance: grey,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 15% Fiberglass - 10% Other - 75%
Lab ID #: 80474 - 15 Cust. #: ES-HM-08A Material: Drywall Location: Appearance: white,fibrous,nonhomogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 15% Other - 85%
Lab ID #: 80474 - 15a Cust. #: ES-HM-08A Material: Joint Compound Location: Appearance: white,nonfibrous,homogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Kut Joh

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2908 7th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report # 18-804/4 Date Collected: 10/18/18 Date Received: 10/19/18 Date Analyzed: 10/24/18 Date Reported: 10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80474 - 15b Cust. #: ES-HM-08A Material: Joint Compound Location: Appearance: beige,nonfibrous,homogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80474 - 16 Cust. #: ES-HM-08B Material: Drywall Location: Appearance: white,fibrous,nonhomogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 15% Other - 85%
Lab ID #: 80474 - 16a Cust. #: ES-HM-08B Material: Joint Compound Location: Appearance: white,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2908 7th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80474Date Collected:10/18/18Date Received:10/19/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80474 - 17 Cust. #: ES-HM-09A Material: Gold Linoleum Location: Appearance: yellow,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80474 - 18 Cust. #: ES-HM-09B Material: Gold Linoleum Location: Appearance: yellow,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80474 - 19 Cust. #: ES-HM-10A Material: Window Glazing Location: Appearance: beige,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2908 7th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report # 18-80474 Date Collected: 10/18/18 Date Received: 10/19/18 Date Analyzed: 10/24/18 Date Reported: 10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80474 - 20 Cust. #: ES-HM-10B Material: Window Glazing Location: Appearance: grey,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80474 - 21 Cust. #: ES-HM-11A Material: Grey Linoleum Location: Appearance: grey,fibrous,nonhomogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 15% Other - 85%
Lab ID #: 80474 - 21a Cust. #: ES-HM-11A Material: Mastic Location: Appearance: beige,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2908 7th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80474Date Collected:10/18/18Date Received:10/19/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80474 - 22 Cust. #: ES-HM-11B Material: Grey Linoleum Location: Appearance: grey,fibrous,nonhomogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 15% Other - 85%
Lab ID #: 80474 - 22a Cust. #: ES-HM-11B Material: Mastic Location: Appearance: beige,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80474 - 23 Cust. #: ES-HS-01A Material: Plaster Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2908 7th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80474Date Collected:10/18/18Date Received:10/19/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80474 - 23a Cust. #: ES-HS-01A Material: Mortar Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Hair - 2% Other - 98%
Lab ID #: 80474 - 24 Cust. #: ES-HS-01B Material: Plaster Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80474 - 24a Cust. #: ES-HS-01B Material: Mortar Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Hair - 2% Other - 98%

For Layered Samples, each component will be analyzed and reported separately.

Kant Jot

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2908 7th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80474Date Collected:10/18/18Date Received:10/19/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80474 - 25 Cust. #: ES-HS-01C Material: Plaster Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80474 - 25a Cust. #: ES-HS-01C Material: Mortar Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Hair - 2% Other - 98%
Lab ID #: 80474 - 26 Cust. #: ES-HS-01D Material: Plaster Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2908 7th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80474Date Collected:10/18/18Date Received:10/19/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80474 - 26a Cust. #: ES-HS-01D Material: Mortar Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Hair - 2% Other - 98%
Lab ID #: 80474 - 27 Cust. #: ES-HS-01E Material: Plaster Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80474 - 27a Cust. #: ES-HS-01E Material: Mortar Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Hair - 2% Other - 98%

For Layered Samples, each component will be analyzed and reported separately.

Kant Jot

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2908 7th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80474Date Collected:10/18/18Date Received:10/19/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80474 - 28 Cust. #: ES-HS-01F Material: Plaster Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80474 - 28a Cust. #: ES-HS-01F Material: Mortar Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Hair - 2% Other - 98%
Lab ID #: 80474 - 29 Cust. #: ES-HS-01G Material: Plaster Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2908 7th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80474Date Collected:10/18/18Date Received:10/19/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80474 - 29a Cust. #: ES-HS-01G Material: Mortar Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Hair - 2% Other - 98%
Lab ID #: Cust. #: Material: Location: Appearance: Layer: of	Asbestos Present:	
Lab ID #: Cust. #: Material: Location: Appearance: Layer: of	Asbestos Present:	

For Layered Samples, each component will be analyzed and reported separately.

Kant Jot

Robert T. Letarte Jr., Laboratory Director



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APEX Research, Inc. 11054 Hi Tech Drive	e Lake, MI 48189 harterni net	Phone: 734-449-9990	
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Around Times: (Circle One) PLM EPA	c all	apaquet@redcedarconsulting.net samples with a detection of <5% ACM.	g.net
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ū	Tape BioSIS	Other Viable	
Other: They (TTP) All Samples TEM: AHERA 7400	Bulk/NOB	EPA Level II	
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Rev: 12/03 Work Forms: COC		APEX RESEARCH	•

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APEX Research, Inc. 11054 Hi Tech Drive, Whitmore Lake, MI 48189 Phone: 734-449-9990 E-mail: apexresearch@chartermi.net Fax: 734-449-9991	APEX
Client Name:Red Cedar ConsultingDate of Survey : /o-Address:PO Box 13216Project : 2008 744City St Zin:Lansing, MI 48901Project # :	10-18-18 Lab Use Only Log-In Report
449-4566       Fax: (888) 448-8739       Contact Person:         aud Times: (Circle One)       PLM EPA 600, PC all samples wi       Ashestos: Bulk       x       Wipe       Point Count	Aaron Paquet apaquet@redcedarconsulting.net th a detection of <5% ACM. t PCM
Rush     24 hour     Lead:     Bulk     Wipe     Air     Paint       48 hour     72 hour     Mold:     Bulk     Tape     BioSIS     Othe       Other:     5deg     TTP     Ail Samples     TEM:     AHERA 7400     Bulk/NOB     EPA Level II	it Soil Other Viable
Lab ID #Client ID #Material/LocationVolume	Area Results
Q ES-HM-06B 141 white Am	
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2) / 10B ··· 0 0 2) / 1/A Chergoleum	
22 V V //B "	
Relinquished by: A. Martine Received by: UPS Relinquished by:	Received by:
	Date : ULL 9 2018
Rev. 12/03 Work Forms: COC	APEX RESEARCH

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MI 48189 Phone: 734-449-9990 ii.net Fax: 734-449-9991	Survey :	Volume Area	Received by: Date :
Inc. 11054 Hi Tech Drive, Whitmore Lake, MI 4 E-mail: apexresearch@chartermi.net	Date of Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Proj Proj Proj Proj Proj Proj Proj Proj	Material/Location	y: 1)75 Relinquished by:
APEX Research, Inc. 11054 HF Tech Drive, Whitmore Lake, MI 48189 E-mail: apexresearch@chartermi.net	Client Name: Red Cedar Consulting Address: PO Box 13216 City, St., Zip: Lansing, MI 48901 Phone: (888)449-4566 Fax: (888) 4 Phone: (888)449-4566 Fax: (888) 4 Phone: (888)449-4566 Fax: (888) 4 Phone: 24 hour Rush 24 hour Ashest Rush 24 hour Ashest Circle One) Ashest Ashert Ashert Circle One) Ashest Circle One)	Lab ID #Client ID # $25 \text{ cs.} \text{ HS-OIA}$ $24 \text{ cs.} \text{ Client ID #}$ $24 \text{ cs.} \text{ clic}$ $26 \text{ clic}$ <	Relinquished by: Active Manager Received by: Date : 12/07/8-18 Date : 12/03 Rev: 12/03 Work Forms: COC

Red Cedar Consulting

Tables

### Table 1 - Summary of Hazardous Materials, 2908 7th St., Muskegon Heights, Michigan

Hazardous Materials Description and Location				
Location Material Description				
Garage	Automobile Tires	2		
Living Thermostat		1		
Kitchen	2' Fluorescent Light (Fixture and Ballast Only)	1		
Kitchen	2' Fluorescent Bulb	2		

Sample Number	Sample Description	Friable	Material Type	Material Classification	% Asbestos Laboratory Result	Sample Location	Approx. Material Quantity
ES-HM-01A	Brown Vapor Barrier	Yes	М	Category II	ND	Exterior	NA
ES-HM-01B	Brown Vapor Barrier	Yes	М	Category II	ND	Exterior	NA
ES-HM-02A	Roofing Materials	No	М	Category I	ND/ND/ND/ND	Exterior	NA
ES-HM-02B	Roofing Materials	No	М	Category I	ND/ND/ND/ND	Exterior	NA
ES-HM-03A	Not Used						NA
ES-HM-03B	Not Used						NA
ES-HM-04A	Blue/Grey Layered Linoleum	No	М	Category I	ND/ND/ND/ ND/ND	Kitchen	NA
ES-HM-04B	Blue/Grey Layered Linoleum	No	М	Category I	ND/ND/ND/ ND/ND	Kitchen	NA
ES-HM-05A	Cream Linoleum	No	М	Category I	ND	Bathroom	NA
ES-HM-05B	Cream Linoleum	No	М	Category I	ND	Bathroom	NA
ES-HM-06A	1x1 White Smooth Ceiling Tile	Yes	М	Category II	ND	Living	NA
ES-HM-06B	1x1 White Smooth Ceiling Tile	Yes	М	Category II	ND	Living	NA
ES-HM-07A	1x1 White Textured Ceiling Tile	Yes	М	Category II	ND	N Bedroom	NA
ES-HM-07B	1x1 White Textured Ceiling Tile	Yes	М	Category II	ND	Living	NA
ES-HM-08A	Drywall and Joint Compound	No	М	Category II	ND/ND/ND	Bathroom	NA
ES-HM-08B	Drywall and Joint Compound	No	М	Category II	ND/ND/ND	NW Bedroom	NA
ES-HM-09A	Gold Linoleum	No	М	Category II	ND	Living	NA
ES-HM-09B	Gold Linoleum	No	М	Category II	ND	Living	NA
ES-HM-10A	Window Glazing	Yes	М	Category II	ND	NW Bedroom	NA
ES-HM-10B	Window Glazing	Yes	М	Category II	ND	Living	NA
ES-HM-11A	Grey Linoleum	No	М	Category I	ND/ND	Front Entry	NA
ES-HM-11B	Grey Linoleum	No	М	Category I	ND/ND	Front Entry	NA
ES-HS-01A	Plaster	No	S	Category II	ND/ND	Bathroom Ceiling	NA
ES-HS-01B	Plaster	No	S	Category II	ND/ND	Living Ceiling	NA
ES-HS-01C	Plaster	No	S	Category II	ND/ND	N Bedroom Wall	NA
ES-HS-01D	Plaster	No	S	Category II	ND/ND	Basement Stairway Wall	NA

Table 2 - Summary of Sample Descriptions and Asbestos Laboratory Results, 2908 7th St., Muskegon Heights, Michigan

Sample Number	Sample Description	Friable	Material Type	Material Classification	% Asbestos Laboratory Result	Sample Location	Approx. Material Quantity
ES-HS-01E	Plaster	No	S	Category II	ND/ND	2 <sup>nd</sup> Fl. E Bedroom	NA
ES-HS-01F	Plaster	No	S	Category II	ND/ND	2 <sup>nd</sup> Fl. E Bedroom	NA
ES-HS-01G	Plaster	No	S	Category II	ND/ND	2 <sup>nd</sup> Fl. E Bedroom	NA

Notes:

Material Types

M = Miscellaneous building material

TSI = Thermal System Insulation

S = Surfacing Material

PC = Point Count Analysis

CH = Chrysotile Asbestos

### Abbreviations

NQ = Not quantified
NA = Not applicable
ND = Not detected. Laboratory result is less than 1 % asbestos
lin. ft. = linear feet
sq. ft. = square feet

Asbestos Containing Material (ACM) is defined as any material containing more than 1 percent asbestos as determined utilizing Polarized Light Microscopy.

### Table 3 - Summary of Presumed Asbestos Containing Materials, 2908 7th St., Muskegon Heights, Michigan

Asbestos Containing Material Description and Location						
Location	Material Description	Friable	Condition	Material Type	Approx. Quantity	
No Presumed Asbestos Containing Materials Identified						

Notes:

Material Types		Abbrevi	ations
TSI	<ul><li>= Miscellaneous building material</li><li>= Thermal System Insulation</li><li>= Surfacing Material</li></ul>		= linear feet = square feet

#### Table 4 - Summary of All Asbestos Containing Materials, 2908 7th St., Muskegon Heights, Michigan

Exterior - Asbestos Containing Materials			
Location	Material Description	Friable	Approx. Quantity
No Asbestos Containing Materials Identified			

Notes: Abbreviations

lin. ft. = linear feet sq. ft. = square feet

**Shaded/Bolded** = Friable ACM and any Category I and Category II non-friable ACM that has a high probability of becoming crumbled, pulverized, or reduced to powder by the demolition or renovation activities that must be properly abated prior to commencement of any demolition/renovation activities.

Demolition/renovation activities completed with intact Category I non-friable ACM are regulated by OSHA and must be completed following the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

Please note that a Negative Pressure Enclosure must be utilized during abatement when Site Conditions Warrant. Examples of these conditions include the abatement of Plaster and Vermiculite insulation, HVAC Duct Wrap in Poor Condition, and Air-O-Cell/Mag Pipe Wrap. Conditions outside of these should be assessed on a case by case basis during the Asbestos Abatement Contractors site walk and Work Plan Preparation.



P.O. Box 13216 Lansing, MI 48901 Phone: 888.449.4566 Fax: 888.448.8739 www.redcedarconsulting.net

November 1, 2018

Mr. Tim Burgess Muskegon County Land Bank Land Bank Coordinator 173 E. Apple Avenue, Suite 104 Muskegon, MI 49442

#### RE: Asbestos Containing Material and Hazardous Materials Inspection 2929 5th St., Muskegon Heights, MI 49444 Parcel ID: 61-26-185-224-0008-00

Dear Mr. Burgess:

Red Cedar Consulting has completed an asbestos-containing material (ACM) and hazardous materials inspection at 2929 5th St., Muskegon Heights, Michigan (Subject Property). This inspection was completed at the request of the Muskegon County Land Bank to comply with the United States Environmental Protection Agency (USEPA) requirements for demolition and renovation set forth under the National Emissions Standards for Hazardous Air Pollutants (NESHAP, 40 CFR Part 61). This inspection was also completed to comply with the Occupational Safety and Health Administration (OSHA) Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

### SUBJECT PROPERTY

The Subject Property is comprised of a .14 acre residential parcel which contains an approximate 1,144 square foot residential building (the Building) constructed in 1920. The Building was constructed on a concrete block basement with two aboveground floors. The exterior walls of the Building were finished with wood lap over a vapor barrier while the roof was sealed with asphalt shingles. The Building can be further divided into a front entry, living room, kitchen, bath, bedroom and rear entry on the first floor while the second floor contains three bedrooms and a bathroom.

### VISUAL INSPECTION AND SAMPLING

#### **Asbestos Containing Materials Inspection**

Mr. Aaron Paquet of Red Cedar Consulting (Red Cedar), an accredited State of Michigan/EPA Asbestos Building Inspector (Accreditation Number A30955) whom completed training per the Michigan Asbestos Workers Accreditation Act 440 completed an inspection of the Subject Property on October 22, 2018 for suspected asbestos containing building materials.

This inspection, and subsequent sample collection was completed in accordance with the USEPA Asbestos Hazard Emergency Response Act (AHERA) (40 CFR Part 763) assessment and sampling protocol.

During the completion of the inspection, each area of the Subject Property was visually inspected for asbestos containing building materials (ACBM). Following the completion of the visual inspection, Red Cedar staff identified each suspect area of friable and non-friable ACBM and sorted them into one of three homogenous categories for sampling purposes. AHERA defines friable as a material that when dry, may be crumbled, pulverized, or reduced to powder by hand pressure. A homogenous area is defined by OSHA as an area of surfacing, thermal system insulation (TSI) or miscellaneous material that is uniform in color and texture. Surfacing materials are most commonly found in sprayed-on, troweled-on or otherwise applied to surfaces, such as acoustical plaster on ceilings and fireproofing materials on structural members. TSI refers to materials applied to pipes, fittings, boilers, ductwork, or other components to prevent heat loss or gain, or condensation. Any material that does not fall under the surfacing or TSI category, such as floor tile, drywall, and acoustical ceiling tile are placed into the miscellaneous materials category.

Following the completion of the visual inspection, Red Cedar staff identified the following materials as suspect ACBM:

- Roofing Materials
- Linoleum
- Drywall and Joint Compound
- Window Glazing
- 1'x1' Ceiling Tile
- 16"x16" Ceiling Tile
- Plaster

Red Cedar staff collected twenty five samples of suspect ACBM separated into ten distinct homogenous groups for laboratory analysis. Samples were collected and submitted to APEX Research Inc. Laboratories (APEX) (Accreditation Number 102118-0) for laboratory analysis. Analysis was completed utilizing polarized light microscopy (PLM) which is the Environmental Protection Agency (EPA) approved method for analysis of bulk materials for asbestos. PLM analysis completed pursuant to method (EPA 600/M4-82-020) identifies asbestos fiber bundles by the visual properties displayed when the sample is treated with various dispersion staining liquids. The laboratory report completed following the sample analysis indicates if asbestos is present, and at what percentage along with a description and percentage of other fibrous and non-fibrous materials and sample color. Chain-of-custody documentation was followed from sample collection through shipping and receiving of the samples at the designated laboratory. The documentation assures that samples will meet the quality assurance/quality control measures defined by AHERA. The laboratory analytical report prepared by APEX for the twenty five samples is included as Attachment A.

#### **Hazardous Materials Inspection**

On October 22, 2018 the Subject Property was also inspected for the presence of hazardous materials which include but are not limited to polychlorinated biphenyls (PCBs) and potential mercury containing equipment and any items or containers that may contain or be classified as a hazardous or regulated material. Each material, if identified, was documented along with the approximate location. Any materials identified as hazardous are included in Table 1.

### **INSPECTION RESULTS AND RECOMMENDATIONS**

During the completion of the asbestos inspection, twenty five samples of suspect ACM were collected and are documented in Table 2 along with the Red Cedar sample number, description, friability, material type, ACM classification, sample location, material quantity and laboratory analytical results.

ACM, as defined by the USEPA NESHAP is "any material containing more than 1 percent asbestos as determined using the method specified in appendix E, subpart E, 40 CFR part 763 Section 1, Polarized Light Microscopy".

Friable ACM is defined by NESHAP as any material containing more than 1 percent asbestos that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. Friable ACM is a concern due the ease of unintentionally disturbing the ACM which may result in "visible emissions" which is known as a Fiber Release Episode.

Non-friable asbestos-containing material is defined as "material containing more than 1 percent asbestos that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. Non-friable ACM's are separated into Category I and Category II ACM. Category I ACM is any asbestos containing packing's, gaskets, resilient floor coverings (vinyl floor tile and linoleum are examples of these) and asphalt roofing products. Category II ACM is stated by NESHAP as any material excluding Category I non-friable ACM such as drywall, plaster or fiberboard insulation.

### **Presumed Asbestos Containing Material**

Presumed Asbestos Containing Materials (PACM) are suspect surfacing, TSI and miscellaneous materials found in buildings constructed prior to 1980 which are classified as and due to the age of the structure, are assumed to be ACM and do not require sample collection and analysis. OSHA dictates that PACM may be "rebutted" following a complete inspection pursuant to AHERA protocol.

No PACM was identified during the completion of this inspection. All suspect materials identified were sampled and analyzed for ACM.

Table 3 lists the location, material description, friability, condition, material type (surfacing, thermal or miscellaneous) and approximate quantity of all PACM documented at the Subject Property.

Table 4 provides a summary all ACM documented at the Subject Property which includes the material location, description, and approximate quantity.

### Friable ACM's

A window glazing sample collected from a window in the living room was found to contain up to 1.25% asbestos following analysis. The assessment to quantify the extent of this material identified sixteen windows within the Building that would fall into the same homogenous group. The quantity and dimensions of the windows are listed below:

- 4 windows 27" wide x 58" tall
- 3 windows 24" wide x 24" tall
- 2 windows 27" wide x 45" tall
- 5 windows 27" wide x 53" tall
- 1 window 24" wide x 24" tall
- 1 window 20" wide x 44" tall

#### Category I ACM

One type of resilient floor covering (2" Multilayer White Linoleum) located within the kitchen and rear entry (3<sup>rd</sup> Layer is ACM) was found to contain up to 1.25% Chrysotile asbestos. The assessment to quantify the extent of this material identified approximately 189 sq. ft. of this material within the Building.

#### **Category II ACM**

No Category II non-friable ACM was identified during the completion of this inspection.

#### **RECOMMENDATIONS**

#### **Asbestos Containing Materials**

Friable asbestos containing window glazing was identified on sixteen windows throughout the Building. The quantity and dimensions of these windows that should be abated prior to demolition/renovation activities are listed below:

- 4 windows 27" wide x 58" tall
- 3 windows 24" wide x 24" tall
- 2 windows 27" wide x 45" tall
- 5 windows 27" wide x 53" tall
- 1 window 24" wide x 24" tall
- 1 window 20" wide x 44" tall

Please note: Other different sized windows are located throughout the Building but these windows were assessed and found to be constructed either without window glazing or were sampled and found to not contain asbestos and therefore are not required to be removed.

The Category I resilient floor covering (2" Multilayer White Linoleum) is a non-friable ACM's that may be left in place as long as the demolition/renovation activities are completed following the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

Please note: The location of samples obtained during this inspection were in a random fashion and areas that were not identified during this inspection may be damaged or have become damaged since the inspection was completed. If Category I or Category II friable materials are discovered prior to or during the demolition/renovation process, these materials must be abated prior to commencement of any demolition/renovation activities at the Subject Property.

#### **Hazardous Materials**

Hazardous Materials identified at the Subject Property and documented in Table 1 which require proper removal and disposal consist of the following items:

- Smoke Detector (3)
- 4' Fluorescent Light (Fixture and Ballast Only) (5)
- 4' Fluorescent Bulb (2)
- 2' Fluorescent Bulb (2)

### **REGULATORY REQUIREMENTS**

A Notification of Intent to Renovate/Demolish form must be filed with the Michigan Department of Environmental Quality- Air Quality Division at least 10 working days prior to any renovation or demolition activities at a site.

The Notification of Intent to Renovate/Demolish form must also be completed and submitted to the MIOSHA-Asbestos Program whenever demolition, encapsulation and/or renovation activities at a site involving greater than ten lineal feet and/or fifteen square feet of ACM will be completed.

Regulated asbestos containing materials per NESHAP (40 CFR Part 61) which falls into any of the following categories are ACM's that must be removed prior to any renovation/demolition activities at the Subject Property.

- Friable asbestos material.
- Category I non-friable ACM that has become friable.
- Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading.
- Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of renovation or demolition operations.

Asbestos abatement should only be performed by a certified asbestos abatement contractor licensed to complete abatement work. The contractor must also follow the standards and requirements set forth per the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) and the USEPA NESHAP (40 CFR Part 61).

Additional information regarding the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) and the USEPA NESHAP (40 CFR Part 61) can be obtained by contacting the associated agency below.

NESHAP Asbestos Program Department of Environmental Quality Phone: 517-284-6777 MIOSHA-CSHD-Asbestos Program State of Michigan Phone: 517-284-7680 Email: asbestos@michigan.gov

#### **DISCLAIMER**

Red Cedar Consulting performed destructive testing methods in an attempt to access and inspect all areas of the Building. Unfortunately, due to the age of construction along with multiple additions/renovations that may have been completed on the Building, additional inspections may be required if suspect ACM material not documented within this report is encountered during renovation/demolition activities.

This report was prepared at the request and for exclusive use by the Muskegon County Land Bank and may not be reproduced or sold without written permission from Red Cedar Consulting.

We appreciate the opportunity to provide the requested services. Please contact us at (888) 449-4566 with any questions or concerns.

Sincerely, Red Cedar Consulting

arm Paquet

Aaron Paquet Michigan/EPA Certified Asbestos Building Inspector (A30955)

Red Cedar Consulting

# Attachment 1

APEX Research Laboratory Analytical Results

Test Method, Polarized Light Microscopy (PLM)

Project : 2929 5th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80534Date Collected:10/22/18Date Received:10/23/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80534 - 01 Cust. #: FS-HM-01A Material: Roofing Materials Location: Appearance: black,fibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%
Lab ID #: 80534 - 01a Cust. #: FS-HM-01A Material: Tar Paper Location: Appearance: black,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 50% Other - 50%
Lab ID #: 80534 - 02 Cust. #: FS-HM-01B Material: Roofing Materials Location: Appearance: black,fibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2929 5th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80534Date Collected:10/22/18Date Received:10/23/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80534 - 02a Cust. #: FS-HM-01B Material: Tar Paper Location: Appearance: black,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 50% Other - 50%
Lab ID #: 80534 - 03 Cust. #: FS-HM-02A Material: Roofing Materials Location: Appearance: black,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 85% Other - 15%
Lab ID #: 80534 - 04 Cust. #: FS-HM-02B Material: Roofing Materials Location: Appearance: black,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 85% Other - 15%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2929 5th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901 Sample Information	Asbestos Type/Percent	ARI Report # 18-80534 Date Collected: 10/22/18 Date Received: 10/23/18 Date Analyzed: 10/24/18 Date Reported: 10/26/18 Non-Asbestos Material
Lab ID #: 80534 - 05 Cust. #: FS-HM-03A Material: 2" Multi Layer White Square Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 6	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Fiberglass - 10% Other - 70%
Lab ID #: 80534 - 05a Cust. #: FS-HM-03A Material: Linoleum Location: Appearance: brown,fibrous,nonhomogenous Layer: 2 of 6	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Fiberglass - 10% Other - 70%
Lab ID #: 80534 - 05b Cust. #: FS-HM-03A Material: Linoleum Location: Appearance: yellow,fibrous,nonhomogenous Layer: 3 of 6	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Fiberglass - 10% Other - 70%

For Layered Samples, each component will be analyzed and reported separately.

Sent

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2929 5th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80534Date Collected:10/22/18Date Received:10/23/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80534 - 05c Cust. #: FS-HM-03A Material: Floor Tile Location:	Asbestos Present: <b>YES</b> Chrysotile - 1.25%	Other - 98.75%
Appearance: grey,fibrous,homogenous Layer: 4 of 6	POINT COUNT RESULT	
Lab ID #: 80534 - 05d Cust. #: FS-HM-03A Material: Mastic Location: Appearance: yellow,nonfibrous,homogenous Layer: 5 of 6	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80534 - 05e Cust. #: FS-HM-03A Material: Flooring Location: Appearance: beige,fibrous,nonhomogenous Layer: 6 of 6	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 35% Other - 65%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2929 5th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80534Date Collected:10/22/18Date Received:10/23/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80534 - 06 Cust. #: FS-HM-03B Material: 2" Multi Layer White Square Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 6	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Fiberglass - 10% Other - 70%
Lab ID #: 80534 - 06a Cust. #: FS-HM-03B Material: Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 2 of 6	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Fiberglass - 10% Other - 70%
Lab ID #: 80534 - 06b Cust. #: FS-HM-03B Material: Linoleum Location: Appearance: yellow,fibrous,nonhomogenous Layer: 3 of 6	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Fiberglass - 10% Other - 70%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2929 5th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80534Date Collected:10/22/18Date Received:10/23/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80534 - 06c Cust. #: FS-HM-03B Material: Floor Tile	Asbestos Present:	
Location: Appearance: Layer: 4 of 6	NOT ANALYZED	
Lab ID #: 80534 - 06d Cust. #: FS-HM-03B Material: Mastic Location: Appearance: yellow,nonfibrous,homogenous Layer: 5 of 6	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80534 - 06e Cust. #: FS-HM-03B Material: Flooring Location: Appearance: beige,fibrous,nonhomogenous Layer: 6 of 6	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 35% Other - 65%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2929 5th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901	A durate a Tarra (Dama ant	ARI Report # 18-80534 Date Collected: 10/22/18 Date Received: 10/23/18 Date Analyzed: 10/24/18 Date Reported: 10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80534 - 07 Cust. #: FS-HM-04A Material: 4" Squared White Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 15% Fiberglass - 10% Other - 75%
Lab ID #: 80534 - 08 Cust. #: FS-HM-04B Material: 4" Squared White Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 15% Fiberglass - 10% Other - 75%
Lab ID #: 80534 - 09 Cust. #: FS-HM-05A Material: Drywall Location: Appearance: white,fibrous,nonhomogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 15% Fiberglass - 5% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2929 5th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80534Date Collected:10/22/18Date Received:10/23/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80534 - 09a Cust. #: FS-HM-05A Material: Joint Compound Location: Appearance: white,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80534 - 10 Cust. #: FS-HM-05B Material: Drywall Location: Appearance: white,fibrous,nonhomogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 15% Fiberglass - 5% Other - 80%
Lab ID #: 80534 - 10a Cust. #: FS-HM-05B Material: Joint Compound Location: Appearance: white,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2929 5th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80534Date Collected:10/22/18Date Received:10/23/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80534 - 11 Cust. #: FS-HM-06A Material: Window Glazing Location:	Asbestos Present: <b>YES</b> Chrysotile - 1.25%	Other - 98.75%
Appearance: beige,fibrous,homogenous Layer: 1 of 1	POINT COUNT RESULT	
Lab ID #: 80534 - 12 Cust. #: FS-HM-06B Material: Window Glazing	Asbestos Present:	
Location: Appearance: Layer: of	NOT ANALYZED	
Lab ID #: 80534 - 13 Cust. #: FS-HM-07A Material: 1x1 White Smooth Ceiling Tile Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 95% Other - 5%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.



APEX Research Inc., 11054 Hi Tech Drive, Whitmore Lake, MI 48189 (734) 449-9990, Fax (734) 449-9991

Test Method, Polarized Light Microscopy (PLM)

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Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80534 - 14 Cust. #: FS-HM-07B Material: 1x1 White Smooth Ceiling Tile Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 95% Other - 5%
Lab ID #: 80534 - 15 Cust. #: FS-HM-08A Material: 16"x16" White Smooth Ceiling Tile Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 95% Other - 5%
Lab ID #: 80534 - 16 Cust. #: FS-HM-08B Material: 16"x16" White Smooth Ceiling Tile Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 95% Other - 5%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2929 5th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80534Date Collected:10/22/18Date Received:10/23/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80534 - 17 Cust. #: FS-HM-09A Material: Basement Window Glazing Location:	Asbestos Present: <b>NO</b> Chrysotile - 0.50%	Other - 99.50%
Appearance: grey,fibrous,homogenous Layer: 1 of 1	POINT COUNT RESULT	
Lab ID #: 80534 - 18 Cust. #: FS-HM-09B Material: Basement Window Glazing Location: Appearance: beige,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80534 - 19 Cust. #: FS-HS-01A Material: Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2929 5th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80534Date Collected:10/22/18Date Received:10/23/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80534 - 19a Cust. #: FS-HS-01A Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Other - 98%
Lab ID #: 80534 - 20 Cust. #: FS-HS-01B Material: Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80534 - 20a Cust. #: FS-HS-01B Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Other - 98%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2929 5th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80534Date Collected:10/22/18Date Received:10/23/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80534 - 21 Cust. #: FS-HS-01C Material: Plaster Texture Location: Appearance: green,nonfibrous,homogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80534 - 21a Cust. #: FS-HS-01C Material: Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80534 - 21b Cust. #: FS-HS-01C Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Other - 98%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2929 5th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80534Date Collected:10/22/18Date Received:10/23/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80534 - 22 Cust. #: FS-HS-01D Material: Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80534 - 22a Cust. #: FS-HS-01D Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Other - 98%
Lab ID #: 80534 - 23 Cust. #: FS-HS-01E Material: Plaster Texture Location: Appearance: green,nonfibrous,homogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2929 5th St.



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Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80534 - 23a Cust. #: FS-HS-01E Material: Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80534 - 23b Cust. #: FS-HS-01E Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Other - 98%
Lab ID #: 80534 - 24 Cust. #: FS-HS-01F Material: Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 2929 5th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80534Date Collected:10/22/18Date Received:10/23/18Date Analyzed:10/24/18Date Reported:10/26/18	
Sample Information	Asbestos Type/Percent	Non-Asbestos Material	
Lab ID #: 80534 - 24a Cust. #: FS-HS-01F Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Other - 98%	
Lab ID #: 80534 - 25 Cust. #: FS-HS-01G Material: Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%	
Lab ID #: 80534 - 24a Cust. #: FS-HS-01G Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Other - 98%	

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director



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APEX Research, Inc. 11054 Hi Tech Drive, Whitmore Lake, MI 48189 Phone: 734-449-9990 E-mail: apexresearch@chartermi.net Fax: 734-449-9991	3189 Phone: 734-449-9990 Fax: 734-449-9991
Client Name: Red Cedar Consulting Date of Survey :	$\frac{1}{10} - \frac{1}{2} - \frac{1}{3} \frac{1}{2}$
PO Box 13216	29 5th St Report
Zip: Lansing, MI 48901	
49-4566 Fax: (888) 448-8739 Contact	0n: Aaron Paquet
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	<b>1C.</b> 11054 Hi Tech Drive, Whitmore Lake, MI 48189 Phone: 734-449-9990 E-mail: apexresearch@chartermi.net Fax: 734-449-9991	Projec	448-8739 PLM EPA tos: Bulk X Bulk	ld: Bulk Tape M: AHERA 7400 Bulk/NOB Material/Location	dow Manue wite smoth CT white smoth CT wit alindow Meguin iter	S Relinquished by:
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e Lake, MI 48189 Phone chartermi.net Fax:	Date of Survey : //>       Project : 2925 S         Project # :	d by:
Inc. 11054 Hi Tech Drive, Whitmore Lake, MI 48189 Phone: 734-449-9990 E-mail: apexresearch@chartermi.net Fax: 734-449-9991	148-8739 148-8739 PLM EPA 600, tos: Bulk Wi Bulk Ta AHERA 7400 AHERA 7400	Relinquished by: Date:
APEX Research, I	Client Name: Red Cedar Consulting Address: PO Box 13216 City, St., Zip: Lansing, MI 48901 Phone: (888) 449-4566 Fax: (888) 4 Phone: (888) 449-4566 Fax: (888) 4 Rush 24 hour Ashest Rush 24 hour Ashest Rush 24 hour Circle One) Ashest Rush 24 hour Circle One) Ashest Rush 24 hour T2 hour Ashest Ashest Rush 24 hour T2 hour Ashest Ashest Ashest Ashest Ashe	33       FS-H5-01E         24       FS-H5-01E         34       FS-H5-01E         34       FS-H5-01E         35       FS-H5-01E         34       FS-H5-01E         35       FS-H5-01E         34       FS-H5-01E         35       FS-H5-01E         34       FS-H5-01E         35       FS-H5-01E         36       FS-H5-01E         37       FS-H5-01E         36       FS-H5-01E         36       FS-H5-01E         36       FS-H5-01E         36       FS-H5-01E         37       FS-H5-01E         38       FS-H5-01E         38       FS-H5-01E         38       FS-H5-01E         38       FS-H5-01E         38       FS-H5-01E         39       FS-H5-01E         39       FS-H5-01E         30       FS-H5-01E         30       FS-H5-01E         30       FS-H5-01E         30       FS-H5-01E         30       FS-H5-01E         30       FS-FS-01E         30       FS-FS-01E         30       FS-FS-01E

Red Cedar Consulting

Tables

## Table 1 - Summary of Hazardous Materials, 2929 5th St., Muskegon Heights, Michigan

Hazardous Materials Description and Location			
Location	Location Material Description		
Living Room	Smoke Detector	1	
Kitchen	2' Fluorescent Bulb	2	
Kitchen	4' Fluorescent Light (Fixture and Ballast Only)	4	
N Bedroom	Smoke Detector	1	
Basement	Smoke Detector	1	
Basement	4' Fluorescent Light (Fixture and Ballast Only)	1	
Basement	4' Fluorescent Bulb	2	

Sample Number	Sample Description	Friable	Material Type	Material Classification	% Asbestos Laboratory Result	Sample Location	Approx. Material Quantity
FS-HM-01A	Shingle Roof	No	М	Category I	ND/ND	Exterior	NA
FS-HM-01B	Shingle Roof	No	М	Category I	ND/ND	Exterior	NA
FS-HM-02A	Vapor Barrier	Yes	М	Category II	ND	Exterior	NA
FS-HM-02B	Vapor Barrier	Yes	М	Category II	ND	Exterior	NA
FS-HM-03A	2" Multilayer White Linoleum	No	М	Category I	ND/ND/ND/ 1.25% CH/ ND/ND	Kitchen	189 sq. ft.
FS-HM-03B	2" Multilayer White Linoleum	No	М	Category I	ND/ND/ND/ NA/ND/ND	Kitchen	NA
FS-HM-04A	4" White Linoleum	No	М	Category I	ND	Bathroom	NA
FS-HM-04B	4" White Linoleum	No	М	Category I	ND	Bathroom	NA
FS-HM-05A	Drywall	No	М	Category II	ND/ND	Kitchen Ceiling	NA
FS-HM-05B	Drywall	No	М	Category II	ND/ND	Bathroom Wall	NA
FS-HM-06A	Window Glazing	Yes	М	Category II	1.25% CH	Living	16 Windows
FS-HM-06B	Window Glazing	Yes	М	Category II	NA	Kitchen	NA
FS-HM-07A	1x1 White Smooth CT	Yes	М	Category II	ND	2 <sup>nd</sup> Fl. Hallway	NA
FS-HM-07B	1x1 White Smooth CT	Yes	М	Category II	ND	2 <sup>nd</sup> Fl. NE Bedroom	NA
FS-HM-08A	16x16 White Smooth CT	Yes	М	Category II	ND	Basement	NA
FS-HM-08B	16x16 White Smooth CT	Yes	М	Category II	ND	Basement	NA
FS-HM-09A	Basement Window Glazing	Yes	М	Category II	ND	Basement	NA
FS-HM-09B	Basement Window Glazing	Yes	М	Category II	ND	Basement	NA
FS-HS-01A	Plaster	No	S	Category II	ND/ND	Living Ceiling	NA
FS-HS-01B	Plaster	No	S	Category II	ND/ND	Kitchen Ceiling	NA
FS-HS-01C	Plaster	No	S	Category II	ND/ND/ND	Living Wall	NA
FS-HS-01D	Plaster	No	S	Category II	ND/ND	N Bedroom Wall	NA
FS-HS-01E	Plaster	No	S	Category II	ND/ND/ND	2 <sup>nd</sup> Fl. NE Bedroom Ceiling	NA
FS-HS-01F	Plaster	No	S	Category II	ND/ND	2 <sup>nd</sup> Fl. Bathroom Wall	NA
FS-HS-01G	Plaster	No	S	Category II	ND/ND	2 <sup>nd</sup> Fl. SE Bedroom Wall	NA

## Table 2 - Summary of Sample Descriptions and Asbestos Laboratory Results, 2929 5th St., Muskegon Heights, Michigan

Material Types	Abbreviations
M= Miscellaneous building materialTSI= Thermal System InsulationS= Surfacing MaterialPC= Point Count AnalysisCH= Chrysotile Asbestos	NQ= Not quantifiedNA= Not applicableND= Not detected. Laboratory result is less than 1 % asbestoslin. ft.= linear feetsq. ft.= square feet

Asbestos Containing Material (ACM) is defined as any material containing more than 1 percent asbestos as determined utilizing Polarized Light Microscopy.

## Table 3 - Summary of Presumed Asbestos Containing Materials, 2929 5th St., Muskegon Heights, Michigan

Asbestos Containing Material Description and Location					
Location	Material Description	Friable	Condition	Material Type	Approx. Quantity
No Presumed Asbestos Containing Materials Identified					

Notes:

Mater	ial Types	Abbrevi	ations
TSI	<ul><li>= Miscellaneous building material</li><li>= Thermal System Insulation</li><li>= Surfacing Material</li></ul>		= linear feet = square feet

Interior - Asbestos Containing Materials				
Location	Material Description		Friable	Approx. Quantity
Kitchen	2" Multilayer White Linoleum		No	156 sq. ft.
Rear Entry	Yellow Linoleum (3 <sup>rd</sup> Layer is ACM)		No	33 sq. ft.
		Total		189 sq. ft.
Interior - Asbestos Containing Materials				
Location	Material Description		Friable	Approx. Quantity
4 windows 27" wide x 58" tall	Glazing		Yes	4 Windows
3 windows 24" wide x 24" tall	Glazing		Yes	3 Windows
2 windows 27" wide x 45" tall	Glazing		Yes	2 Windows
5 windows 27" wide x 53" tall	Glazing		Yes	5 Windows
1 window 24" wide x 24" tall	Glazing		Yes	1 Window
1 window 20" wide x 44" tall	Glazing		Yes	1 Window
		Total		16 Windows

#### Table 4 - Summary of All Asbestos Containing Materials, 2929 5th St., Muskegon Heights, Michigan

#### Notes:

**Abbreviations** 

## lin. ft. = linear feet

sq. ft. = square feet

**Shaded/Bolded** = Friable ACM and any Category I and Category II non-friable ACM that has a high probability of becoming crumbled, pulverized, or reduced to powder by the demolition or renovation activities that must be properly abated prior to commencement of any demolition/renovation activities.

Demolition/renovation activities completed with intact Category I non-friable ACM are regulated by OSHA and must be completed following the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

Please note that a Negative Pressure Enclosure must be utilized during abatement when Site Conditions Warrant. Examples of these conditions include the abatement of Plaster and Vermiculite insulation, HVAC Duct Wrap in Poor Condition, and Air-O-Cell/Mag Pipe Wrap. Conditions outside of these should be assessed on a case by case basis during the Asbestos Abatement Contractors site walk and Work Plan Preparation.



P.O. Box 13216 Lansing, MI 48901 Phone: 888.449.4566 Fax: 888.448.8739 www.redcedarconsulting.net

November 1, 2018

Mr. Tim Burgess Muskegon County Land Bank Land Bank Coordinator 173 E. Apple Avenue, Suite 104 Muskegon, MI 49442

## RE: Asbestos Containing Material and Hazardous Materials Inspection 3031 Merriam St., Muskegon Heights, MI 49444 Parcel ID: 61-26-635-267-0017-00

Dear Mr. Burgess:

Red Cedar Consulting has completed an asbestos-containing material (ACM) and hazardous materials inspection at 3031 Merriam St., Muskegon Heights, Michigan (Subject Property). This inspection was completed at the request of the Muskegon County Land Bank to comply with the United States Environmental Protection Agency (USEPA) requirements for demolition and renovation set forth under the National Emissions Standards for Hazardous Air Pollutants (NESHAP, 40 CFR Part 61). This inspection was also completed to comply with the Occupational Safety and Health Administration (OSHA) Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

## **SUBJECT PROPERTY**

The Subject Property is comprised of a .30 acre residential parcel which contains a 640 sq. ft. detached garage and approximate 1,431 square foot residential building (the Building) constructed in 1935. The Building was constructed on a concrete block basement with two aboveground floors. The exterior walls of the Building were finished with asphalt siding and wood lap while the roof was sealed with asphalt shingles. The Building can be further divided into a front entry, living room, dining room, kitchen, bath, bedroom and rear entry on the first floor while the second floor contains two bedrooms and a bathroom.

## VISUAL INSPECTION AND SAMPLING

## **Asbestos Containing Materials Inspection**

Mr. Aaron Paquet of Red Cedar Consulting (Red Cedar), an accredited State of Michigan/EPA Asbestos Building Inspector (Accreditation Number A30955) whom completed training per the Michigan Asbestos Workers Accreditation Act 440 completed an inspection of the Subject Property on October 17, 2018 for suspected asbestos containing building materials.

This inspection, and subsequent sample collection was completed in accordance with the USEPA Asbestos Hazard Emergency Response Act (AHERA) (40 CFR Part 763) assessment and sampling protocol.

During the completion of the inspection, each area of the Subject Property was visually inspected for asbestos containing building materials (ACBM). Following the completion of the visual inspection, Red Cedar staff identified each suspect area of friable and non-friable ACBM and sorted them into one of three homogenous categories for sampling purposes. AHERA defines friable as a material that when dry, may be crumbled, pulverized, or reduced to powder by hand pressure. A homogenous area is defined by OSHA as an area of surfacing, thermal system insulation (TSI) or miscellaneous material that is uniform in color and texture. Surfacing materials are most commonly found in sprayed-on, troweled-on or otherwise applied to surfaces, such as acoustical plaster on ceilings and fireproofing materials on structural members. TSI refers to materials applied to pipes, fittings, boilers, ductwork, or other components to prevent heat loss or gain, or condensation. Any material that does not fall under the surfacing or TSI category, such as floor tile, drywall, and acoustical ceiling tile are placed into the miscellaneous materials category.

Following the completion of the visual inspection, Red Cedar staff identified the following materials as suspect ACBM:

- Asphalt Siding
- Roofing Materials
- Linoleum
- Window Glazing
- 9"x9" Vinyl Floor Tile
- 12"x12" Vinyl Floor Tile
- 1'x1' Ceiling Tile
- Glue Pods
- Drywall and Joint Compound
- Fiberboard
- Vapor Barrier
- Soffit Caulk
- Window Caulk
- Flashing
- Plaster
- Textured Surfacing

Red Cedar staff collected forty-four samples of suspect ACBM separated into nineteen distinct homogenous groups for laboratory analysis. Samples were collected and submitted to APEX Research Inc. Laboratories (APEX) (Accreditation Number 102118-0) for laboratory analysis. Analysis was completed utilizing polarized light microscopy (PLM) which is the Environmental Protection Agency (EPA) approved method for analysis of bulk materials for asbestos. PLM analysis completed pursuant to method (EPA 600/M4-82-020) identifies asbestos fiber bundles by the visual properties displayed when the sample is treated with various dispersion staining liquids. The laboratory report completed following the sample analysis indicates if asbestos is present, and at what percentage along with a description and percentage of other fibrous and non-fibrous materials and sample color. Chain-of-custody documentation was followed from sample collection through shipping and receiving of the samples at the designated laboratory. The documentation assures that samples will meet the quality assurance/quality control

measures defined by AHERA. The laboratory analytical report prepared by APEX for the forty-four samples is included as Attachment A.

## **Hazardous Materials Inspection**

On October 17, 2018 the Subject Property was also inspected for the presence of hazardous materials which include but are not limited to polychlorinated biphenyls (PCBs) and potential mercury containing equipment and any items or containers that may contain or be classified as a hazardous or regulated material. Each material, if identified, was documented along with the approximate location. Any materials identified as hazardous are included in Table 1.

## **INSPECTION RESULTS AND RECOMMENDATIONS**

During the completion of the asbestos inspection, forty-four samples of suspect ACM were collected and are documented in Table 2 along with the Red Cedar sample number, description, friability, material type, ACM classification, sample location, material quantity and laboratory analytical results.

ACM, as defined by the USEPA NESHAP is "any material containing more than 1 percent asbestos as determined using the method specified in appendix E, subpart E, 40 CFR part 763 Section 1, Polarized Light Microscopy".

Friable ACM is defined by NESHAP as any material containing more than 1 percent asbestos that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. Friable ACM is a concern due the ease of unintentionally disturbing the ACM which may result in "visible emissions" which is known as a Fiber Release Episode.

Non-friable asbestos-containing material is defined as "material containing more than 1 percent asbestos that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. Non-friable ACM's are separated into Category I and Category II ACM. Category I ACM is any asbestos containing packing's, gaskets, resilient floor coverings (vinyl floor tile and linoleum are examples of these) and asphalt roofing products. Category II ACM is stated by NESHAP as any material excluding Category I non-friable ACM such as drywall, plaster or fiberboard insulation.

## **Presumed Asbestos Containing Material**

Presumed Asbestos Containing Materials (PACM) are suspect surfacing, TSI and miscellaneous materials found in buildings constructed prior to 1980 which are classified as and due to the age of the structure, are assumed to be ACM and do not require sample collection and analysis. OSHA dictates that PACM may be "rebutted" following a complete inspection pursuant to AHERA protocol.

The HVAC Duct Wrap located in the Building was classified as PACM due to the age of the structure and samples were not collected.

Table 3 lists the location, material description, friability, condition, material type (surfacing, thermal or miscellaneous) and approximate quantity of all PACM documented at the Subject Property.

Table 4 provides a summary all ACM documented at the Subject Property which includes the material location, description, and approximate quantity.

## Friable ACM's

Window glazing samples collected from windows in the Garage and Building were found to contain up to 5% asbestos following analysis. The assessment to quantify the extent of this material identified twenty-four windows at the following locations that would fall into the same homogenous group. The locations of the windows are listed below:

- Garage (6 windows 27" wide x 29" tall)
- House (16 windows 27" wide x 53" tall)
- House (1 window 54" wide x 53" tall)
- House (1 window 52" wide x 26" tall)

Duct Wrap identified in the building in conjunction with the forced air heating system is classified as friable ACM. The visual assessment to quantify the extent of this material identified HVAC Duct Wrap at the following locations within the basement, first and second floors:

- Dining (1 register, 10 sq. ft.)
- NW Bedroom (1 register, 10 sq. ft.)
- 2nd Fl. NE Bedroom (1 register, 10 sq. ft. and vertical chase to basement, 25 sq. ft.)
- 2nd Fl. SE Bedroom (1 register, 10 sq. ft.)
- Basement (8"x12" square HVAC Ductwork with 3" Tape, 350 lin. ft.)

## Category I ACM

Two types of resilient floor covering (9"x9" Black Vinyl Floor Tile and 12"x12" Layered Grey Diamond Vinyl Floor Tile) located within the kitchen, front entry and rear entry were found to contain up to 10% Chrysotile asbestos. The assessment to quantify the extent of this material identified approximately 191 sq. ft. of this material within the Building.

## **Category II ACM**

Soffit caulk samples collected from the exterior of the Building were found to contain up to 5% asbestos following analysis. The visual assessment to quantify the extent of this material identified 210 lin. ft. of soffit caulk on the Building.

Window caulk samples collected from the living room were found to contain up to 5% asbestos following analysis. The assessment to quantify the extent of this material identified 18 windows within the Building. The locations of the windows are listed below:

- House (16 windows 27" wide x 53" tall)
- House (1 window 54" wide x 53" tall)
- House (1 window 52" wide x 26" tall)

Glue Pod samples collected from the kitchen and NW bedroom were each found to contain up to 5% asbestos following analysis. The assessment to quantify the extent of this material identified approximately 280 sq. ft. of glue pods within the Building.

## **RECOMMENDATIONS**

## **Asbestos Containing Materials**

HVAC material identified in the Building system and listed below is classified as friable ACM and should be removed prior to any renovation/demolition activities.

- Dining (1 register, 10 sq. ft.)
- NW Bedroom (1 register, 10 sq. ft.)
- 2nd Fl. NE Bedroom (1 register, 10 sq. ft. and vertical chase to basement, 25 sq. ft.)
- 2nd Fl. SE Bedroom (1 register, 10 sq. ft.)
- Basement (8"x12" square HVAC Ductwork with 3" Tape, 350 lin. ft.)

Friable asbestos containing window glazing was identified on twenty-four windows throughout the Building and Garage. The locations of these windows that should be abated prior to demolition/renovation activities are listed below:

- Garage (6 windows 27" wide x 29" tall)
- House (16 windows 27" wide x 53" tall)
- House (1 window 54" wide x 53" tall)
- House (1 window 52" wide x 26" tall)

Please note: Other different sized windows are located throughout the Building but these windows were assessed and found to be constructed either without window glazing or were sampled and found to not contain asbestos and therefore are not required to be removed.

Soffit caulk was identified on the exterior of the Building and must be abated prior to completion of any demolition activities at the Subject Property. Any Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of renovation or demolition operations must be properly abated.

Window caulk identified on the interior of the Building must be abated prior to completion of any renovation/demolition activities at the Subject Property. Any Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of renovation or demolition operations must be properly abated.

Glue Pods identified on the interior of the Building must be abated prior to completion of any renovation/demolition activities at the Subject Property. Any Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of renovation or demolition operations must be properly abated.

The Category I resilient floor coverings (9"x9" Black Vinyl Floor Tile and 12"x12" Layered Grey Diamond Vinyl Floor Tile) are non-friable ACM's that may be left in place as long as the demolition/renovation activities are completed following the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

Please note: The location of samples obtained during this inspection were in a random fashion and areas that were not identified during this inspection may be damaged or have become damaged since the inspection was completed. If Category I or Category II friable materials are discovered prior to or during the demolition/renovation process, these materials must be abated prior to commencement of any demolition/renovation activities at the Subject Property.

## **Hazardous Materials**

Hazardous Materials identified at the Subject Property and documented in Table 1 which require proper removal and disposal consist of the following items:

• Smoke Detector (1)

## **REGULATORY REQUIREMENTS**

A Notification of Intent to Renovate/Demolish form must be filed with the Michigan Department of Environmental Quality- Air Quality Division at least 10 working days prior to any renovation or demolition activities at a site.

The Notification of Intent to Renovate/Demolish form must also be completed and submitted to the MIOSHA-Asbestos Program whenever demolition, encapsulation and/or renovation activities at a site involving greater than ten lineal feet and/or fifteen square feet of ACM will be completed.

Regulated asbestos containing materials per NESHAP (40 CFR Part 61) which falls into any of the following categories are ACM's that must be removed prior to any renovation/demolition activities at the Subject Property.

- Friable asbestos material.
- Category I non-friable ACM that has become friable.
- Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading.
- Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of renovation or demolition operations.

Asbestos abatement should only be performed by a certified asbestos abatement contractor licensed to complete abatement work. The contractor must also follow the standards and requirements set forth per the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) and the USEPA NESHAP (40 CFR Part 61).

Additional information regarding the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) and the USEPA NESHAP (40 CFR Part 61) can be obtained by contacting the associated agency below.

NESHAP Asbestos Program Department of Environmental Quality Phone: 517-284-6777 MIOSHA-CSHD-Asbestos Program State of Michigan Phone: 517-284-7680 Email: asbestos@michigan.gov

#### **DISCLAIMER**

Red Cedar Consulting performed destructive testing methods in an attempt to access and inspect all areas of the Building. Unfortunately, due to the age of construction along with multiple additions/renovations that may have been completed on the Building, additional inspections may be required if suspect ACM material not documented within this report is encountered during renovation/demolition activities.

This report was prepared at the request and for exclusive use by the Muskegon County Land Bank and may not be reproduced or sold without written permission from Red Cedar Consulting.

We appreciate the opportunity to provide the requested services. Please contact us at (888) 449-4566 with any questions or concerns.

Sincerely, Red Cedar Consulting

arm Paquet

Aaron Paquet Michigan/EPA Certified Asbestos Building Inspector (A30955)

Red Cedar Consulting

## Attachment 1

APEX Research Laboratory Analytical Results

# **Certificate of Laboratory Analysis**

Test Method, Polarized Light Microscopy (PLM)

Project : 3031 Merriam St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-804/3Date Collected:10/17/18Date Received:10/19/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80473 - 01 Cust. #: MS-HM-01A Material: Asphalt Siding Location: Appearance: black,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 70% Other - 30%
Lab ID #: 80473 - 02 Cust. #: MS-HM-01B Material: Asphalt Siding Location: Appearance: black,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 70% Other - 30%
Lab ID #: 80473 - 03 Cust. #: MS-HM-02A Material: House Roofing Location: Appearance: black,fibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 15% Other - 85%

For Layered Samples, each component will be analyzed and reported separately.

Sout

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.



## Project : 3031 Merriam St.

**Certificate of Laboratory Analysis** Test Method, Polarized Light Microscopy (PLM)



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80473         Date Collected:       10/17/18         Date Received:       10/19/18         Date Analyzed:       10/24/18         Date Reported:       10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80473 - 03a Cust. #: MS-HM-02A Material: Shingle Location: Appearance: black,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 15% Other - 85%
Lab ID #: 80473 - 04 Cust. #: MS-HM-02B Material: House Roofing Location: Appearance: black,fibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 15% Other - 85%
Lab ID #: 80473 - 04a Cust. #: MS-HM-02B Material: Shingle Location: Appearance: black,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 15% Other - 85%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director

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## **Certificate of Laboratory Analysis** Test Method, Polarized Light Microscopy (PLM)

Project : 3031 Merriam St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80473         Date Collected:       10/17/18         Date Received:       10/19/18         Date Analyzed:       10/24/18         Date Reported:       10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80473 - 05 Cust. #: MS-HM-03A Material: White Layered Pebble Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 25% Fiberglass - 5% Other - 70%
Lab ID #: 80473 - 05a Cust. #: MS-HM-03A Material: Flooring/Backing Location: Appearance: brown,fibrous,nonhomogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 50% Other - 50%
Lab ID #: 80473 - 06 Cust. #: MS-HM-03B Material: White Layered Pebble Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 25% Fiberglass - 5% Other - 70%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director

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# Page 4 of 31

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NOT ANALYZED Location: Garage Appearance: Layer: of

Sample Information Asbestos Type/Percent Non-Asbestos Material Lab ID #: 80473 - 06a Asbestos Present: NO Cellulose - 50% Cust. #: MS-HM-03B No Asbestos Observed Other - 50% Material: Flooring/Backing Location: Appearance: brown,fibrous,nonhomogenous Layer: of 2 2 Asbestos Present: YES 80473 - 07 Other - 95% Lab ID #: Cust. #: MS-HM-04A Chrysotile - 5% Window Glazing Material: Location: Garage Appearance: beige,fibrous,homogenous of Layer: 1 1 Lab ID #: 80473 - 08 Asbestos Present: MS-HM-04B Cust. #: Material: Window Glazing For Layered Samples, each component will be analyzed and reported separately.

**Report To:** Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901

NVLAP Lab Code 102118-0

ARI Report # 18-80473 Date Collected: 10/17/18 Date Received: 10/19/18 Date Analyzed: 10/24/18 Date Reported: 10/26/18

## **Certificate of Laboratory Analysis**

Test Method, Polarized Light Microscopy (PLM)

Project : 3031 Merriam St.



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Robert T. Letarte Jr., Laboratory Director

## Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project : 3031 Merriam St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80473Date Collected:10/17/18Date Received:10/19/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80473 - 09 Cust. #: MS-HM-05A Material: 12x12 Layered Grey Diamond VFT Location: Appearance: beige,nonfibrous,homogenous Layer: 1 of 5	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80473 - 09a Cust. #: MS-HM-05A Material: Mastic Location: Appearance: clear,nonfibrous,homogenous Layer: 2 of 5	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80473 - 09b Cust. #: MS-HM-05A Material: Linoleum/Mastic Location: Appearance: yellow,fibrous,nonhomogenous Layer: 3 of 5	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 25% Fiberglass - 5% Wollastonite - 2% Other - 68%

For Layered Samples, each component will be analyzed and reported separately.

Sout

Robert T. Letarte Jr., Laboratory Director

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APEX Research Inc., 11054 Hi Tech Drive, Whitmore Lake, MI 48189 (734) 449-9990, Fax (734) 449-9991

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## **Certificate of Laboratory Analysis**

Test Method, Polarized Light Microscopy (PLM)

Project : 3031 Merriam St.

Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80473         Date Collected:       10/17/18         Date Received:       10/19/18         Date Analyzed:       10/24/18         Date Reported:       10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80473 - 09c Cust. #: MS-HM-05A Material: Floor Tile Location: Appearance: brown,fibrous,homogenous Layer: 4 of 5	Asbestos Present: YES Chrysotile - 10%	Other - 90%
Lab ID #: 80473 - 09d Cust. #: MS-HM-05A Material: Mastic Location: Appearance: brown,nonfibrous,homogenous Layer: 5 of 5	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80473 - 10 Cust. #: MS-HM-05B Material: 12x12 Layered Grey Diamond VFT Location: Appearance: beige,nonfibrous,homogenous Layer: 1 of 5	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.





# Page 7 of 31

Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		Date Collected:10/17/18Date Received:10/19/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80473 - 10a Cust. #: MS-HM-05B Material: Mastic Location: Appearance: clear,nonfibrous,homogenous Layer: 2 of 5	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80473 - 10b Cust. #: MS-HM-05B Material: Linoleum/Mastic Location: Appearance: yellow,fibrous,nonhomogenous Layer: 3 of 5	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 25% Fiberglass - 5% Wollastonite - 2% Other - 68%
Lab ID #: 80473 - 10c Cust. #: MS-HM-05B Material: Floor Tile	Asbestos Present:	
Location:	NOT ANALYZED	

**Certificate of Laboratory Analysis** 

Test Method, Polarized Light Microscopy (PLM) Project : 3031 Merriam St.

**Report To:** 

ARI Report # 18-80473



Robert T. Letarte Jr., Laboratory Director

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Appearance: Layer:

4

of

5

For Layered Samples, each component will be analyzed and reported separately.

Page 8 of 31

Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		Date Received:10/19/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80473 - 10d Cust. #: MS-HM-05B Material: Mastic Location: Appearance: brown,nonfibrous,homogenous Layer: 5 of 5	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80473 - 11 Cust. #: MS-HM-06A Material: 9x9 Black VFT Location: Appearance: brown,fibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>YES</b> Chrysotile - 10%	Other - 90%
Lab ID #: 80473 - 11a Cust. #: MS-HM-06A Material: Mastic Location: Appearance: black,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

**Report To:** Mr. Aaron Paquet ARI Report # 18-80473 Date Collected: 10/17/18



Test Method, Polarized Light Microscopy (PLM)

Project : 3031 Merriam St.



Robert T. Letarte Jr., Laboratory Director

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For Layered Samples, each component will be analyzed and reported separately.

## Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project : 3031 Merriam St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80473Date Collected:10/17/18Date Received:10/19/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80473 - 12 Cust. #: MS-HM-06B Material: 9x9 Black VFT	Asbestos Present:	
Location: Appearance: Layer: 1 of 2	NOT ANALYZED	
Lab ID #: 80473 - 12a Cust. #: MS-HM-06B Material: Mastic Location: Appearance: black,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80473 - 13 Cust. #: MS-HM-07A Material: 1x1 White Smooth Ceiling Tile Location: Appearance: brown,fibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 95% Other - 5%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director

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Robert T. Letarte Jr., Laboratory Director

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# **Certificate of Laboratory Analysis**

Test Method, Polarized Light Microscopy (PLM)

Project : 3031 Merriam St.

<b>Report To:</b> Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80473         Date Collected:       10/17/18         Date Received:       10/19/18         Date Analyzed:       10/24/18         Date Reported:       10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80473 - 13a Cust. #: MS-HM-07A Material: Glue Pod Location: Appearance: black,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>YES</b> Chrysotile - 5%	Other - 95%
Lab ID #: 80473 - 14 Cust. #: MS-HM-07B Material: 1x1 White Smooth Ceiling Tile Location: Appearance: brown,fibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 95% Other - 5%
Lab ID #: 80473 - 14a Cust. #: MS-HM-07B Material: Glue Pod Location:	Asbestos Present: NOT ANALYZED	
Appearance: Layer: 2 of 2 For Layered Samples, each component will be analyzed and repor		
Tor Layered Samples, each component win be analyzed and repor	icu separatery.	$\sim$



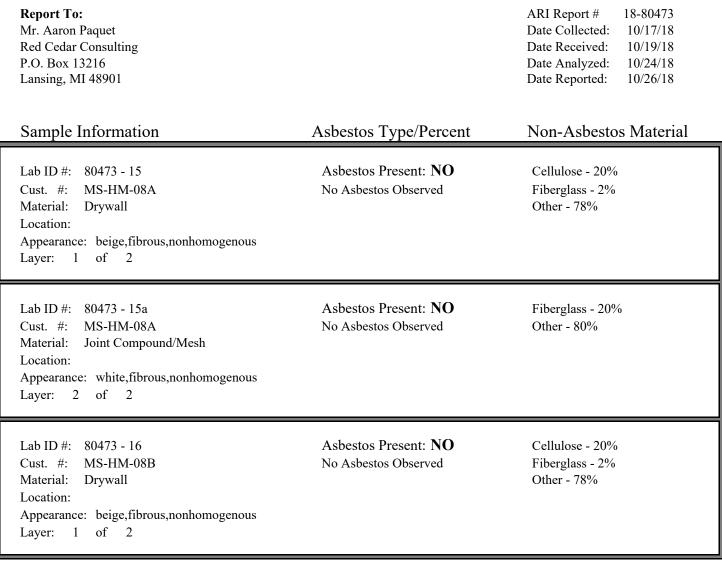
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## **Certificate of Laboratory Analysis**

Test Method, Polarized Light Microscopy (PLM)

Project : 3031 Merriam St.



For Layered Samples, each component will be analyzed and reported separately.



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## **Certificate of Laboratory Analysis**

Test Method, Polarized Light Microscopy (PLM)

Project : 3031 Merriam St.

Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80473         Date Collected:       10/17/18         Date Received:       10/19/18         Date Analyzed:       10/24/18         Date Reported:       10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80473 - 16a Cust. #: MS-HM-08B Material: Joint Compound/Mesh Location: Appearance: white,fibrous,nonhomogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 20% Other - 80%
Lab ID #: 80473 - 17 Cust. #: MS-HM-09A Material: 1x1 White Ceiling Tile w/ Pinholes Location: Appearance: brown,fibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 95% Other - 5%
Lab ID #: 80473 - 17a Cust. #: MS-HM-09A Material: Glue Pod Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>YES</b> Chrysotile - 5%	Other - 95%
or Layered Samples, each component will be analyzed and reporte	d separately.	

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the US Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.



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## Test Method, Polarized Light Microscopy (PLM)

Project : 3031 Merriam St.

**Certificate of Laboratory Analysis** 

**Report To:** Date Collected: Mr. Aaron Paquet 10/17/18 Red Cedar Consulting Date Received: 10/19/18 P.O. Box 13216 Date Analyzed: 10/24/18 Lansing, MI 48901 Date Reported: 10/26/18 Sample Information Asbestos Type/Percent Non-Asbestos Material Lab ID #: 80473 - 18 Asbestos Present: NO Cellulose - 95% Cust. #: MS-HM-09B No Asbestos Observed Other - 5% Material: 1x1 White Ceiling Tile w/ Pinholes Location: Appearance: brown,fibrous,homogenous Layer: of 2 1 Asbestos Present: Lab ID #: 80473 - 18a Cust. #: MS-HM-09B Material: Glue Pod NOT ANALYZED Location: Appearance: Layer: 2 of 2 Lab ID #: 80473 - 19 Asbestos Present: NO Other - 100% No Asbestos Observed Cust. #: MS-HM-10A Material: 12x12 Parkay VFT Location: Appearance: brown,nonfibrous,homogenous Layer: 1 of 2

For Layered Samples, each component will be analyzed and reported separately.

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the US Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.



18-80473

ARI Report #

Material: Mastic Location: Appearance: clear, nonfibrous, homogenous Layer: 2 of 2

For Layered Samples, each component will be analyzed and reported separately.

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APEX Research Inc., 11054 Hi Tech Drive, Whitmore Lake, MI 48189 NVLAP Lab Code 102118-0 (734) 449-9990, Fax (734) 449-9991

#### Date Analyzed: 10/24/18 Lansing, MI 48901 Date Reported: 10/26/18 Sample Information Asbestos Type/Percent Non-Asbestos Material Lab ID #: 80473 - 19a Asbestos Present: NO Other - 100% Cust. #: MS-HM-10A No Asbestos Observed Material: Mastic Location: Appearance: clear, nonfibrous, homogenous Layer: of 2 2 Asbestos Present: NO Other - 100% Lab ID #: 80473 - 20 Cust. #: MS-HM-10B No Asbestos Observed Material: 12x12 Parkay VFT Location: Appearance: brown,nonfibrous,homogenous of Layer: 1 2 Lab ID #: 80473 - 20a Asbestos Present: NO Other - 100% Cust. #: MS-HM-10B No Asbestos Observed

**Report To:** Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216

ARI Report # 18-80473 Date Collected: 10/17/18 Date Received: 10/19/18

**Certificate of Laboratory Analysis** 

Test Method, Polarized Light Microscopy (PLM)

Project : 3031 Merriam St.



#### Date Analyzed: Date Reported:

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80473 - 21 Cust. #: MS-HM-11A Material: Window Glazing	Asbestos Present: <b>YES</b> Chrysotile - 1.50%	Other - 98.50%
Location: Appearance: beige,fibrous,homogenous Layer: 1 of 1	POINT COUNT RESULT	
Lab ID #: 80473 - 22 Cust. #: MS-HM-11B Material: Window Glazing	Asbestos Present:	
Location: Appearance: Layer: of	NOT ANALYZED	
Lab ID #: 80473 - 23 Cust. #: MS-HM-12A Material: Fiberboard Location: Appearance: brown,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 85% Other - 15%
For Lovered Samples, each component will be applyzed and report	ad senarately	

Test Method, Polarized Light Microscopy (PLM)

Project : 3031 Merriam St.

**Certificate of Laboratory Analysis** 

APEX

18-80473

10/17/18

10/19/18

10/24/18

10/26/18

ARI Report #

Date Collected:

Date Received:

Robert T. Letarte Jr., Laboratory Director

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**Report To:** 

Mr. Aaron Paquet

P.O. Box 13216

Lansing, MI 48901

Red Cedar Consulting

## Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project : 3031 Merriam St.



Report 10: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-804/3Date Collected:10/17/18Date Received:10/19/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80473 - 24 Cust. #: MS-HM-12B Material: Fiberboard Location: Appearance: brown,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 85% Other - 15%
Lab ID #: 80473 - 25 Cust. #: MS-HM-13A Material: House Vapor Barrier Location: Appearance: black,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 50% Other - 50%
Lab ID #: 80473 - 26 Cust. #: MS-HM-13B Material: House Vapor Barrier Location: Appearance: black,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 50% Other - 50%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the US Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.



APEX Research Inc., 11054 Hi Tech Drive, Whitmore Lake, MI 48189 (734) 449-9990, Fax (734) 449-9991

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NVLAP Lab Code 102118-0

Cer	tifi	cate	of	Laboratory	Analysis
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Test Method, Polarized Light Microscopy (PLM)

Project : 3031 Merriam St.

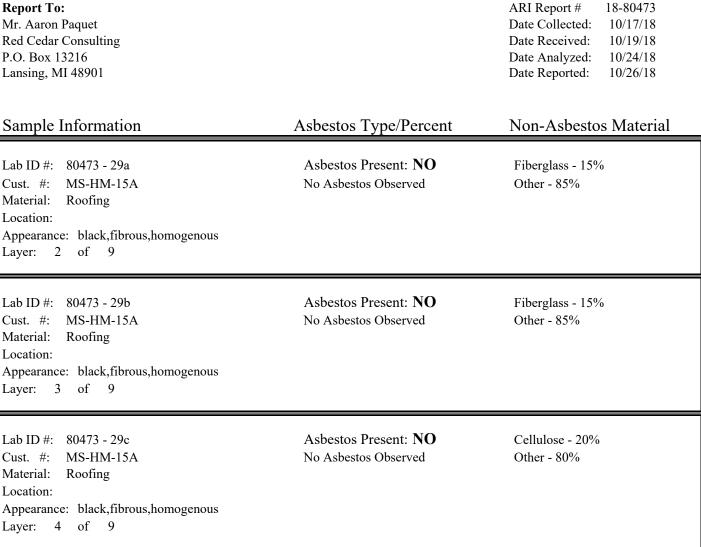
Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80473         Date Collected:       10/17/18         Date Received:       10/19/18         Date Analyzed:       10/24/18         Date Reported:       10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80473 - 27 Cust. #: MS-HM-14A Material: House Window Caulk Location: Appearance: grey,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>YES</b> Chrysotile - 5%	Other - 95%
Lab ID #: 80473 - 28 Cust. #: MS-HM-14B Material: House Window Caulk Location: Appearance: Layer: of	Asbestos Present: NOT ANALYZED	
Lab ID #: 80473 - 29 Cust. #: MS-HM-15A Material: Garage Roofing Location: Appearance: black,fibrous,homogenous Layer: 1 of 9	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 15% Other - 85%
For Layered Samples, each component will be analyzed and repor	ted separately.	



**Certificate of Laboratory Analysis** 

Test Method, Polarized Light Microscopy (PLM)

Project : 3031 Merriam St.



For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

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## Date A

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80473 - 29d Cust. #: MS-HM-15A Material: Roofing Location: Appearance: black,fibrous,homogenous Layer: 5 of 9	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80473 - 29e Cust. #: MS-HM-15A Material: Roofing Location: Appearance: black,fibrous,homogenous Layer: 6 of 9	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80473 - 29f Cust. #: MS-HM-15A Material: Roofing Location: Appearance: black,fibrous,homogenous Layer: 7 of 9	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 25% Other - 75%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

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Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901 
 ARI Report #
 18-80473

 Date Collected:
 10/17/18

 Date Received:
 10/19/18

 Date Analyzed:
 10/24/18

 Date Reported:
 10/26/18

## **Certificate of Laboratory Analysis**

Test Method, Polarized Light Microscopy (PLM)

Project : 3031 Merriam St.

# Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project : 3031 Merriam St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80473Date Collected:10/17/18Date Received:10/19/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80473 - 29g Cust. #: MS-HM-15A Material: Roofing Location: Appearance: black,fibrous,homogenous Layer: 8 of 9	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 25% Other - 75%
Lab ID #: 80473 - 29h Cust. #: MS-HM-15A Material: Roofing Location: Appearance: black,fibrous,homogenous Layer: 9 of 9	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 25% Other - 75%
Lab ID #: 80473 - 30 Cust. #: MS-HM-15B Material: Garage Roofing Location: Appearance: black,fibrous,homogenous Layer: 1 of 10	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 15% Other - 85%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director

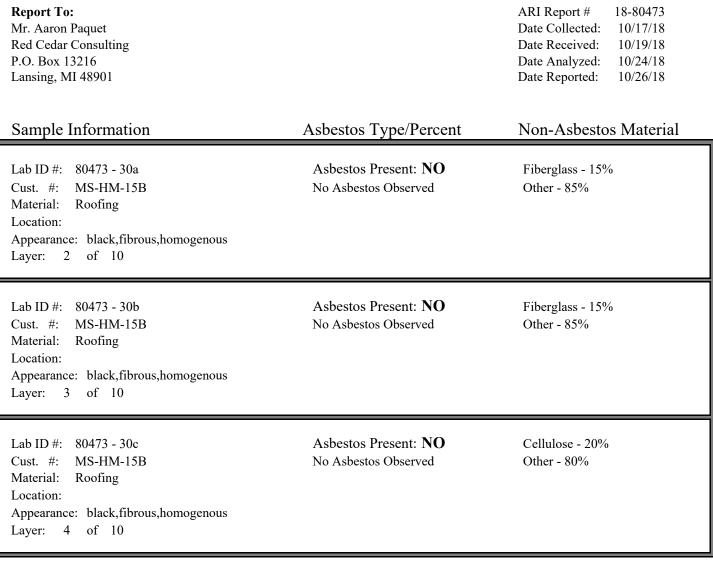
Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the US Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.



Test Method, Polarized Light Microscopy (PLM)

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Project : 3031 Merriam St.



For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

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Lab ID #: 80473 - 30f MS-HM-15B Cust. #: Material: Roofing Location: Appearance: black,fibrous,homogenous Layer: 7 of 10

**Report To:** 

Mr. Aaron Paquet

Red Cedar Consulting

For Layered Samples, each component will be analyzed and reported separately.

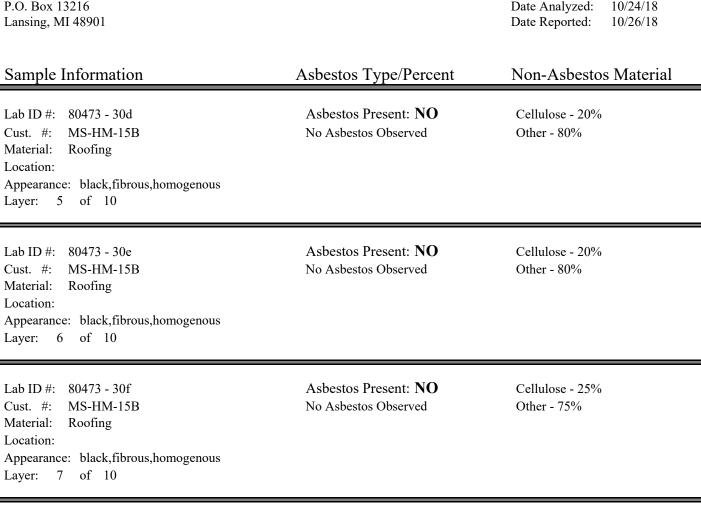
Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles

containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the US Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.

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Test Method, Polarized Light Microscopy (PLM)

Project : 3031 Merriam St.





18-80473

10/17/18

10/19/18

ARI Report #

Date Collected:

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Robert T. Letarte Jr., Laboratory Director

### For Layered Samples, each component will be analyzed and reported separately.

NVLAP Lab Code 102118-0

**Report To:** 

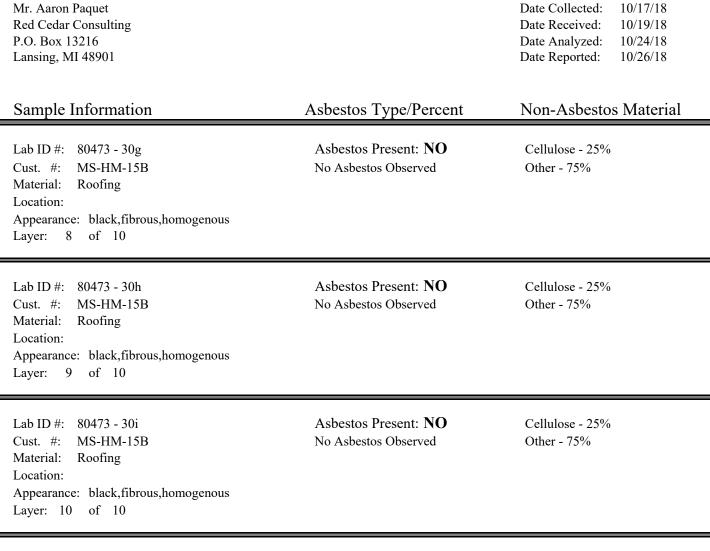
Robert T. Letarte Jr., Laboratory Director

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# **Certificate of Laboratory Analysis**

Test Method, Polarized Light Microscopy (PLM)

Project : 3031 Merriam St.





18-80473

ARI Report #

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NVLAP Lab Code 102118-0

### Page 24 of 31

Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		Date Received:10/19/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80473 - 31 Cust. #: MS-HM-16A Material: Soffit Caulk Location: Appearance: green,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>YES</b> Chrysotile - 5%	Other - 95%
Lab ID #: 80473 - 32 Cust. #: MS-HM-16B Material: Soffit Caulk Location: Appearance: Layer: of	Asbestos Present: NOT ANALYZED	
Lab ID #: 80473 - 33 Cust. #: MS-HM-17A Material: Flashing Location: Appearance: black,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
For Layered Samples, each component will be analyzed and rep	orted separately.	D. Pot

**Certificate of Laboratory Analysis** 

Test Method, Polarized Light Microscopy (PLM)

Project : 3031 Merriam St.



Robert T. Letarte Jr., Laboratory Director

**Report To:** 

Mr. Aaron Paquet

ARI Report # 18-80473 Date Collected: 10/17/18

Test Method, Polarized Light Microscopy (PLM)

Project : 3031 Merriam St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report # 18-804/3 Date Collected: 10/17/18 Date Received: 10/19/18 Date Analyzed: 10/24/18 Date Reported: 10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80473 - 34 Cust. #: MS-HM-17B Material: Flashing Location: Appearance: black,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80473 - 35 Cust. #: MS-HS-01A Material: Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80473 - 35a Cust. #: MS-HS-01A Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Hair - 2% Other - 98%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



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NVLAP Lab Code 102118-0

For Layered Samples, each component will be analyzed and reported separately.

Asbestos Type/Percent	Non-Asbestos Material
Asbestos Present: <b>NO</b> No Asbestos Observed	Vermiculite - 10% Other - 90%
Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Asbestos Present: <b>NO</b> No Asbestos Observed	Hair - 2% Other - 98%
	No Asbestos Observed Asbestos Present: <b>NO</b> No Asbestos Observed Asbestos Present: <b>NO</b>

**Report To:** 

ARI Report # 18-80473 10/17/10

**Certificate of Laboratory Analysis** 

Test Method, Polarized Light Microscopy (PLM)

Project : 3031 Merriam St.



Robert T. Letarte Jr., Laboratory Director

Test Method, Polarized Light Microscopy (PLM)

Project : 3031 Merriam St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-804/3Date Collected:10/17/18Date Received:10/19/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80473 - 37 Cust. #: MS-HS-01C Material: Plaster Texture Location: Appearance: beige,nonfibrous,homogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80473 - 37a Cust. #: MS-HS-01C Material: Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80473 - 37b Cust. #: MS-HS-01C Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Hair - 2% Other - 98%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



### Project : 3031 Merriam St.

**Certificate of Laboratory Analysis** Test Method, Polarized Light Microscopy (PLM)



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80473         Date Collected:       10/17/18         Date Received:       10/19/18         Date Analyzed:       10/24/18         Date Reported:       10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80473 - 38 Cust. #: MS-HS-01D Material: Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80473 - 38a Cust. #: MS-HS-01D Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Hair - 2% Other - 98%
Lab ID #: 80473 - 39 Cust. #: MS-HS-01E Material: Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 3031 Merriam St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80473Date Collected:10/17/18Date Received:10/19/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80473 - 39a Cust. #: MS-HS-01E Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Hair - 2% Other - 98%
Lab ID #: 80473 - 40 Cust. #: MS-HS-01F Material: Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80473 - 40a Cust. #: MS-HS-01F Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Hair - 2% Other - 98%

For Layered Samples, each component will be analyzed and reported separately.

Sent

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 3031 Merriam St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80473Date Collected:10/17/18Date Received:10/19/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80473 - 41 Cust. #: MS-HS-01G Material: Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80473 - 41a Cust. #: MS-HS-01G Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Hair - 2% Other - 98%
Lab ID #: 80473 - 42 Cust. #: MS-HS-02A Material: Textured Surfacing Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>YES</b> Chrysotile - 1.50% POINT COUNT RESULT	Other - 98.50%

For Layered Samples, each component will be analyzed and reported separately.

Sout

Robert T. Letarte Jr., Laboratory Director

**Certificate of Laboratory Analysis** Test Method, Polarized Light Microscopy (PLM)



18 80473

ARI Report #

Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		Date Collected: 10/17/18 Date Received: 10/19/18 Date Analyzed: 10/24/18 Date Reported: 10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80473 - 43 Cust. #: MS-HS-02B Material: Textured Surfacing	Asbestos Present:	
Location: Appearance: Layer: of	NOT ANALYZED	
Lab ID #: 80473 - 44 Cust. #: MS-HS-02C Material: Textured Surfacing	Asbestos Present:	
Location: Appearance: Layer: of	NOT ANALYZED	
Lab ID #: Cust. #: Material: Location: Appearance: Layer: of	Asbestos Present:	

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the US Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.



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APEX Research Inc., 11054 Hi Tech Drive, Whitmore Lake, MI 48189 (734) 449-9990, Fax (734) 449-9991

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Client Name: Red Cedar Consulting	Lab Use Only I on Inde
PO Box 13216	K
Zip: Lansing, MI 48901 Project #	
149-4566 Fax: (888) 448-8739 Contact	Aaron Paguet
Around Times: (Circle One) PLM EPA 600, PC all	apaquet@redcedarconsulting.net samples with a detection of <5% ACM.
	PCM
	Paint Soil
72 hour Ø	Other Viable
Other: 2 deep (TTP) All Samples TEM: AHERA 7400 Bulk/NOB EF	EPA Level II
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APEX Research, Inc. 11054 HF Tech Drive, Whimore Lake, MI 48189       Phone: 734-449-9991         E-mail:       apexresearch@chartermin.net       Fax: 734-449-9991         Client Name:       Red Cedar Consulting       Date of Survey :        Project :          Address:       PO Box 13216       Project :        So 31 Nuteries       Project :        So 31 Nuteries         Address:       PO Box 13216       Project :        So 31 Nuteries       Provinteries       Provinteries <td>Bulk/NOB</td> <td>Iton In CT In CT In CT In CT Price Let Price Let Relinquished by: Date :</td> <td></td>	Bulk/NOB	Iton In CT In CT In CT In CT Price Let Price Let Relinquished by: Date :	
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APEX Research, Inc.         Client Name:       Red Cedar Consulting         Client Name:       Red Cedar Consulting         Address:       PO BOX 13216         City, St., Zip:       Lansing, MI 48901         Phone:       (888) 449-4566       Fax : (888) 4         Phone:       (888) 449-4566       Fax : (Circle One)         Rush       24 hour       Lead:         48 hour       72 hour       Lead:         Mold:       Mout       Mold:		Lab ID #     Client ID #       13     M5-HM-02 B       13     M5-HM-07A       14     078-HM-07A       15     M5-HM-07A       15     M5-HM-07A       16     19       17     94       19     94       19     94       19     94       19     94       19     94       19     94       19     94       19     94       19     94       19     94       19     94       19     94       10     91       10     91       10     91       11     94       11     94       21     10       21     10       22     10       11     11	Rev: 12/03 Work Forms: COC

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APEX Research, Inc. 11054 Hi Tech Drive, Whitmore Lake, MI 48189 Phone: 734-449-9990 E-mail: apexresearch@chartermi.net Fax: 734-449-9991	9 Phone: 734-449-9990 Fax: 734-449-9991	APEX
Client Name: Red Cedar Consulting Date of Survey :	8/-17-01 : 1	Lab Use Only Log-In
PO Box 13216	Merrian St	Report
Olly, Dl., LIP:       Lansing, Ml 48901       F10Ject #:         Phone:       (888) 449-4566       Fax:       (888) 448-8739       Contact Person:	1: Aaron Paquet	
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City, St., Zip: Lane	Lansing, MI 48901				
Phone: (888) 449-4566		Fax: (888) 448-8739	rson:	Aaron Paquet	
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Red Cedar Consulting

Tables

### Table 1 - Summary of Hazardous Materials, 3031 Merriam St., Muskegon Heights, Michigan

Hazardous Materials Description and Location				
Location	Material Description	Quantity		
Rear Entry	Smoke Detector	1		

Table 2 - Summary of Sample Descriptions and Asbestos Laboratory Results, 3031 Merriam St., Muskegon Heights, Michigan

Sample Number	Sample Description	Friable	Material Type	Material Classification	% Asbestos Laboratory Result	Sample Location	Approx. Material Quantity
MS-HM-01A	Asphalt Shingle	No	М	Category I	ND	Exterior	NA
MS-HM-01B	Asphalt Shingle	No	М	Category I	ND	Exterior	NA
MS-HM-02A	House Roofing	No	М	Category I	ND/ND	Exterior	NA
MS-HM-02B	House Roofing	No	М	Category I	ND/ND	Exterior	NA
MS-HM-03A	White Layered Pebble Linoleum	No	М	Category I	ND/ND	Garage	NA
MS-HM-03B	White Layered Pebble Linoleum	No	М	Category I	ND/ND	Garage	NA
MS-HM-04A	Window Glazing	Yes	М	Category II	5%CH	Garage	6 Windows
MS-HM-04B	Window Glazing	Yes	М	Category II	NA	Garage	NA
MS-HM-05A	12x12 Layered Grey Diamond VFT	No	М	Category I	ND/ND/ND/ 10%CH/ND	Kitchen	166 sq. ft.
MS-HM-05B	12x12 Layered Grey Diamond VFT	No	М	Category I	ND/ND/ND/ NA/ND	Kitchen	NA
MS-HM-06A	9x9 Black VFT	No	М	Category I	10%CH/ND	Front Entry	25 sq. ft.
MS-HM-06B	9x9 Black VFT	No	М	Category I	NA/ND	Front Entry	NA
MS-HM-07A	1x1 White Smooth Ceiling Tile (Glue Pods)	Yes	М	Category II	ND/5%CH	Kitchen	126 sq. ft.
MS-HM-07B	1x1 White Smooth Ceiling Tile	Yes	М	Category II	ND/NA	Kitchen	NA
MS-HM-08A	Drywall and Joint Compound	No	М	Category II	ND/ND	Bathroom Ceiling	NA
MS-HM-08B	Drywall and Joint Compound	No	М	Category II	ND/ND	Kitchen Wall	NA
MS-HM-09A	1x1 White Ceiling Tile w/ Pinholes (Glue Pods)	Yes	М	Category II	ND/5%CH	NW Bedroom	154 sq. ft.
MS-HM-09B	1x1 White Ceiling Tile w/ Pinholes	Yes	М	Category II	ND/NA	NW Bedroom	NA
MS-HM-10A	12x12 Parkay VFT	No	М	Category I	ND/ND	2 <sup>nd</sup> Fl. Bathroom	NA
MS-HM-10B	12x12 Parkay VFT	No	М	Category I	ND/ND	2 <sup>nd</sup> Fl. Bathroom	NA
MS-HM-11A	Window Glazing	Yes	М	Category II	1.50%CH-PC	Kitchen	18 Windows
MS-HM-11B	Window Glazing	Yes	М	Category II	NA	Living	NA
MS-HM-12A	Fiberboard	Yes	М	Category II	ND	Exterior	NA
MS-HM-12B	Fiberboard	Yes	М	Category II	ND	Exterior	NA
MS-HM-13A	House Vapor Barrier	Yes	М	Category II	ND	Exterior	NA

Table 2 - Summary of Sample Descriptions and Asbestos Laboratory Results, 3031 Merriam St., Muskegon Heights, Michigan

Sample Number	Sample Description	Friable	Material Type	Material Classification	% Asbestos Laboratory Result	Sample Location	Approx. Material Quantity
MS-HM-13B	House Vapor Barrier	Yes	М	Category II	ND	Exterior	NA
MS-HM-14A	House Window Caulk	No	М	Category II	5%CH	Living	18 Windows
MS-HM-14B	House Window Caulk	No	М	Category II	NA	NW Bedroom	NA
MS-HM-15A	Garage Roofing	No	М	Category I	ND/ND/ND/ND/ ND/ND/ND/ND/ ND	Garage Exterior	NA
MS-HM-15B	Garage Roofing	No	М	Category I	ND/ND/ND/ND/ ND/ND/ND/ ND/ND	Garage Exterior	NA
MS-HM-16A	Soffit Caulk	No	М	Category II	5%CH	Exterior	210 lin. ft.
MS-HM-16B	Soffit Caulk	No	М	Category II	NA	Exterior	NA
MS-HM-17A	Flashing	No	М	Category II	ND	Exterior	NA
MS-HM-17B	Flashing	No	М	Category II	ND	Exterior	NA
MS-HS-01A	Plaster	No	S	Category II	ND/ND	Rear Entry Ceiling	NA
MS-HS-01B	Plaster	No	S	Category II	ND/ND/ND	Dining Ceiling	NA
MS-HS-01C	Plaster	No	S	Category II	ND/ND/ND	Kitchen Wall	NA
MS-HS-01D	Plaster	No	S	Category II	ND/ND	Dining Wall	NA
MS-HS-01E	Plaster	No	S	Category II	ND/ND	2 <sup>nd</sup> Fl. Bathroom Ceiling	NA
MS-HS-01F	Plaster	No	S	Category II	ND/ND	2 <sup>nd</sup> Fl. SE Bedroom Wall	NA
MS-HS-01G	Plaster	No	S	Category II	ND/ND	2 <sup>nd</sup> Fl. NE Bedroom Wall	NA
MS-HS-02A	Textured Surfacing	No	S	Category II	1.50%CH-PC	Bathroom	365 sq. ft.
MS-HS-02B	Textured Surfacing	No	S	Category II	NA	Bathroom	NA
MS-HS-02C	Textured Surfacing	No	S	Category II	NA	Bathroom	NA

#### Notes:

#### Material Types

M = Miscellaneous building material

TSI = Thermal System Insulation

- S = Surfacing Material
- PC = Point Count Analysis

CH = Chrysotile Asbestos

### Abbreviations

NQ = Not quantified

NA = Not applicable

ND = Not detected. Laboratory result is less than 1 % asbestos

lin. ft. = linear feet

sq. ft. = square feet

#### Table 2 - Summary of Sample Descriptions and Asbestos Laboratory Results, 3031 Merriam St., Muskegon Heights, Michigan

Asbestos Containing Material (ACM) is defined as any material containing more than 1 percent asbestos as determined utilizing Polarized Light Microscopy.

Asbestos Containing Material Description and Location					
Location	Material Description	Friable	Condition	Material Type	Approx. Quantity
Dining (1 register, 10 sq. ft.) NW Bedroom (1 register, 10 sq. ft.) 2 <sup>nd</sup> Fl. NE Bedroom (1 register, 10 sq. ft. and vertical chase to basement, 25 sq. ft.) 2 <sup>nd</sup> Fl. SE Bedroom (1 register, 10 sq. ft.)	HVAC Duct Wrap	Yes	Fair	TSI	65 sq. ft.
Basement (8"x12" square HVAC Ductwork with 3" Tape, 350 lin. ft.)	HVAC Tape	Yes	Fair	TSI	350 lin. ft.

#### Notes:

Material Types

#### Abbreviations

= Miscellaneous building material М

TSI = Thermal System Insulation S = Surfacing Material

lin. ft. = linear feet sq. ft. = square feet

Interior - Asbestos Containing Materials				
Location	Material Description		Friable	Approx. Quantity
Front Entry	9x9 Black VFT		No	25 sq. ft.
Kitchen	12x12 Layered Grey Diamond VFT		No	126 sq. ft.
Rear Entry	12x12 Layered Grey Diamond VFT		No	40 sq. ft.
		Total		191 sq. ft.
Interior - Asbestos Containing Materials				
Location	Material Description		Friable	Approx. Quantity
Dining (1 register, 10 sq. ft.) NW Bedroom (1 register, 10 sq. ft.) 2 <sup>nd</sup> Fl. NE Bedroom (1 register, 10 sq. ft. and vertical chase to basement, 25 sq. ft.) 2 <sup>nd</sup> Fl. SE Bedroom (1 register, 10 sq. ft.)	HVAC Duct Wrap		Yes	65 sq. ft.
		Total		65 sq. ft.
Interior - Asbestos Containing Materials				
Location	Material Description		Friable	Approx. Quantity
Basement (8"x12" square HVAC Ductwork with 3" Tape, 350 lin. ft.)	HVAC Tape		Yes	350 lin. ft.
		Total		350 lin. ft.
Interior - Asbestos Containing Materials				
Location	<b>Material Description</b>		Friable	Approx. Quantity
Garage (6 windows 27" wide x 29" tall)	Glazing		Yes	6 Windows
House (16 windows 27" wide x 53" tall)	Glazing		Yes	16 Windows
House (1 window 54" wide x 53" tall)	Glazing		Yes	1 Window
House (1 window 52" wide x 26" tall)	Glazing		Yes	1 Window
		Total		24 Windows
Exterior - Asbestos Containing Materials				
Location	Material Description		Friable	Approx. Quantity
Building Exterior	Soffit Caulk		No	210 lin. ft.
		Total		210 lin. ft.

### Table 4 - Summary of All Asbestos Containing Materials, 3031 Merriam St., Muskegon Heights, Michigan

Interior - Asbestos Containing Materials			
Location	Material Description	Friable	Approx. Quantity
House (16 windows 27" wide x 53" tall)	Window Caulk	No	16 Windows
House (1 window 54" wide x 53" tall)	Window Caulk	Yes	1 Window
House (1 window 52" wide x 26" tall)	Window Caulk	Yes	1 Window
	Total		<b>18 Windows</b>
Interior - Asbestos Containing Materials			
Location	Material Description	Friable	Approx. Quantity
Kitchen	1x1 White Smooth Ceiling Tile (Glue Pods)	No	126 sq. ft.
NW Bedroom	1x1 White Ceiling Tile w/ Pinholes (Glue Pods)	No	154 sq. ft.
	Total		280 sq. ft.
Interior - Asbestos Containing Materials			
Location	Material Description	Friable	Approx. Quantity
Bathroom	Textured Surfacing	No	365 sq. ft.

#### Table 4 - Summary of All Asbestos Containing Materials, 3031 Merriam St., Muskegon Heights, Michigan

#### Notes:

#### Abbreviations

lin. ft. = linear feet sq. ft. = square feet

**Shaded/Bolded** = Friable ACM and any Category I and Category II non-friable ACM that has a high probability of becoming crumbled, pulverized, or reduced to powder by the demolition or renovation activities that must be properly abated prior to commencement of any demolition/renovation activities.

Demolition/renovation activities completed with intact Category I non-friable ACM are regulated by OSHA and must be completed following the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

Please note that a Negative Pressure Enclosure must be utilized during abatement when Site Conditions Warrant. Examples of these conditions include the abatement of Plaster and Vermiculite insulation, HVAC Duct Wrap in Poor Condition, and Air-O-Cell/Mag Pipe Wrap. Conditions outside of these should be assessed on a case by case basis during the Asbestos Abatement Contractors site walk and Work Plan Preparation.



P.O. Box 13216 Lansing, MI 48901 Phone: 888.449.4566 Fax: 888.448.8739 www.redcedarconsulting.net

October 31, 2018

Mr. Tim Burgess Muskegon County Land Bank Land Bank Coordinator 173 E. Apple Avenue, Suite 104 Muskegon, MI 49442

#### RE: Asbestos Containing Material and Hazardous Materials Inspection 3109 Highland St., Muskegon Heights, MI 49444 Parcel ID: 61-26-770-035-0004-00

Dear Mr. Burgess:

Red Cedar Consulting has completed an asbestos-containing material (ACM) and hazardous materials inspection at 3109 Highland St., Muskegon Heights, Michigan (Subject Property). This inspection was completed at the request of the Muskegon County Land Bank to comply with the United States Environmental Protection Agency (USEPA) requirements for demolition and renovation set forth under the National Emissions Standards for Hazardous Air Pollutants (NESHAP, 40 CFR Part 61). This inspection was also completed to comply with the Occupational Safety and Health Administration (OSHA) Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

#### **SUBJECT PROPERTY**

The Subject Property is comprised of a .18 acre residential parcel which contains a 240 sq. ft. detached garage and approximate 1,410 square foot residential building (the Building) constructed in 1930. The Building was constructed on a concrete block basement with one aboveground floor. The exterior walls of the Building were finished with Transite over a vapor barrier and wood lap while the roof was sealed with asphalt shingles. The Building can be further divided into a living room, dining room, kitchen, bathroom and three bedrooms.

#### VISUAL INSPECTION AND SAMPLING

#### **Asbestos Containing Materials Inspection**

Mr. Aaron Paquet of Red Cedar Consulting (Red Cedar), an accredited State of Michigan/EPA Asbestos Building Inspector (Accreditation Number A30955) whom completed training per the Michigan Asbestos Workers Accreditation Act 440 completed an inspection of the Subject Property on October 22, 2018 for suspected asbestos containing building materials.

This inspection, and subsequent sample collection was completed in accordance with the USEPA Asbestos Hazard Emergency Response Act (AHERA) (40 CFR Part 763) assessment and sampling protocol.

During the completion of the inspection, each area of the Subject Property was visually inspected for asbestos containing building materials (ACBM). Following the completion of the visual inspection, Red Cedar staff identified each suspect area of friable and non-friable ACBM and sorted them into one of three homogenous categories for sampling purposes. AHERA defines friable as a material that when dry, may be crumbled, pulverized, or reduced to powder by hand pressure. A homogenous area is defined by OSHA as an area of surfacing, thermal system insulation (TSI) or miscellaneous material that is uniform in color and texture. Surfacing materials are most commonly found in sprayed-on, troweled-on or otherwise applied to surfaces, such as acoustical plaster on ceilings and fireproofing materials on structural members. TSI refers to materials applied to pipes, fittings, boilers, ductwork, or other components to prevent heat loss or gain, or condensation. Any material that does not fall under the surfacing or TSI category, such as floor tile, drywall, and acoustical ceiling tile are placed into the miscellaneous materials category.

Following the completion of the visual inspection, Red Cedar staff identified the following materials as suspect ACBM:

- Vapor Barrier
- Roofing Materials
- 12"x12" Vinyl Floor Tile
- Linoleum
- Drywall and Joint Compound
- Caulk
- Plaster
- Window Glazing

Red Cedar staff collected twenty nine samples of suspect ACBM separated into thirteen distinct homogenous groups for laboratory analysis. Samples were collected and submitted to APEX Research Inc. Laboratories (APEX) (Accreditation Number 102118-0) for laboratory analysis. Analysis was completed utilizing polarized light microscopy (PLM) which is the Environmental Protection Agency (EPA) approved method for analysis of bulk materials for asbestos. PLM analysis completed pursuant to method (EPA 600/M4-82-020) identifies asbestos fiber bundles by the visual properties displayed when the sample is treated with various dispersion staining liquids. The laboratory report completed following the sample analysis indicates if asbestos is present, and at what percentage along with a description and percentage of other fibrous and non-fibrous materials and sample color. Chain-of-custody documentation was followed from sample collection through shipping and receiving of the samples at the designated laboratory. The documentation assures that samples will meet the quality assurance/quality control measures defined by AHERA. The laboratory analytical report prepared by APEX for the twenty nine samples is included as Attachment A.

#### **Hazardous Materials Inspection**

On October 22, 2018 the Subject Property was also inspected for the presence of hazardous materials which include but are not limited to polychlorinated biphenyls (PCBs) and potential mercury containing equipment and any items or containers that may contain or be classified as a hazardous or regulated material. Each material, if identified, was documented along with the approximate location. Any materials identified as hazardous are included in Table 1.

### **INSPECTION RESULTS AND RECOMMENDATIONS**

During the completion of the asbestos inspection, twenty nine samples of suspect ACM were collected and are documented in Table 2 along with the Red Cedar sample number, description, friability, material type, ACM classification, sample location, material quantity and laboratory analytical results.

ACM, as defined by the USEPA NESHAP is "any material containing more than 1 percent asbestos as determined using the method specified in appendix E, subpart E, 40 CFR part 763 Section 1, Polarized Light Microscopy".

Friable ACM is defined by NESHAP as any material containing more than 1 percent asbestos that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. Friable ACM is a concern due the ease of unintentionally disturbing the ACM which may result in "visible emissions" which is known as a Fiber Release Episode.

Non-friable asbestos-containing material is defined as "material containing more than 1 percent asbestos that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. Non-friable ACM's are separated into Category I and Category II ACM. Category I ACM is any asbestos containing packing's, gaskets, resilient floor coverings (vinyl floor tile and linoleum are examples of these) and asphalt roofing products. Category II ACM is stated by NESHAP as any material excluding Category I non-friable ACM such as drywall, plaster or fiberboard insulation.

#### **Presumed Asbestos Containing Material**

Presumed Asbestos Containing Materials (PACM) are suspect surfacing, TSI and miscellaneous materials found in buildings constructed prior to 1980 which are classified as and due to the age of the structure, are assumed to be ACM and do not require sample collection and analysis. OSHA dictates that PACM may be "rebutted" following a complete inspection pursuant to AHERA protocol.

The Cementatious "Transite" Siding on the Building was classified as PACM due to the age of the structure and samples were not collected.

Table 3 lists the location, material description, friability, condition, material type (surfacing, thermal or miscellaneous) and approximate quantity of all PACM documented at the Subject Property.

Table 4 provides a summary all ACM documented at the Subject Property which includes the material location, description, and approximate quantity.

#### Friable ACM's

A window glazing sample collected from a window in the basement was found to contain up to 10% asbestos following analysis. The assessment to quantify the extent of this material identified six windows at the following locations that would fall into the same homogenous group. The locations of the windows are listed below:

• Basement (6 windows 32" wide x 22" tall)

#### **Category I ACM**

No Category I ACM was identified during the completion of this inspection.

#### **Category II ACM**

The cementatious "Transite" siding located on the exterior of the Building was classified as PACM and no samples were collected. The visual assessment to quantify the extent of this material identified 1,863 sq. ft. of cementatious (Transite) siding on the Building.

#### **RECOMMENDATIONS**

#### **Asbestos Containing Materials**

Friable asbestos containing window glazing was identified on six windows throughout the Building. The locations of these windows that should be abated prior to demolition/renovation activities are listed below:

• Basement (6 windows 32" wide x 22" tall)

Please note: Other different sized windows are located throughout the Building but these windows were assessed and found to be constructed either without window glazing or were sampled and found to not contain asbestos and therefore are not required to be removed.

Please note: The location of samples obtained during this inspection were in a random fashion and areas that were not identified during this inspection may be damaged or have become damaged since the inspection was completed. If Category I or Category II friable materials are discovered prior to or during the demolition/renovation process, these materials must be abated prior to commencement of any demolition/renovation activities at the Subject Property.

#### **Hazardous Materials**

Hazardous Materials identified at the Subject Property and documented in Table 1 which require proper removal and disposal consist of the following items:

- Smoke Detector (3)
- Automobile Tires (12)
- Spray Can Misc. Paint (1)
- Television (1)
- Air Conditioner (1)
- Gallon Container Misc. Paint (15)
- Propane Tank (1)
- Quart Container Misc. Paint (4)
- Pint Container Misc. Paint (12)

#### **REGULATORY REQUIREMENTS**

A Notification of Intent to Renovate/Demolish form must be filed with the Michigan Department of Environmental Quality- Air Quality Division at least 10 working days prior to any renovation or demolition activities at a site.

The Notification of Intent to Renovate/Demolish form must also be completed and submitted to the MIOSHA-Asbestos Program whenever demolition, encapsulation and/or renovation activities at a site involving greater than ten lineal feet and/or fifteen square feet of ACM will be completed.

Regulated asbestos containing materials per NESHAP (40 CFR Part 61) which falls into any of the following categories are ACM's that must be removed prior to any renovation/demolition activities at the Subject Property.

- Friable asbestos material.
- Category I non-friable ACM that has become friable.
- Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading.
- Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of renovation or demolition operations.

Asbestos abatement should only be performed by a certified asbestos abatement contractor licensed to complete abatement work. The contractor must also follow the standards and requirements set forth per the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) and the USEPA NESHAP (40 CFR Part 61).

Additional information regarding the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) and the USEPA NESHAP (40 CFR Part 61) can be obtained by contacting the associated agency below.

NESHAP Asbestos Program Department of Environmental Quality Phone: 517-284-6777 MIOSHA-CSHD-Asbestos Program State of Michigan Phone: 517-284-7680 Email: asbestos@michigan.gov

#### **DISCLAIMER**

Red Cedar Consulting performed destructive testing methods in an attempt to access and inspect all areas of the Building. Unfortunately, due to the age of construction along with multiple additions/renovations that may have been completed on the Building, additional inspections may be required if suspect ACM material not documented within this report is encountered during renovation/demolition activities.

This report was prepared at the request and for exclusive use by the Muskegon County Land Bank and may not be reproduced or sold without written permission from Red Cedar Consulting.

We appreciate the opportunity to provide the requested services. Please contact us at (888) 449-4566 with any questions or concerns.

Sincerely, Red Cedar Consulting

arm Paquet

Aaron Paquet Michigan/EPA Certified Asbestos Building Inspector (A30955)

Red Cedar Consulting

# Attachment 1

APEX Research Laboratory Analytical Results

Test Method, Polarized Light Microscopy (PLM)

Project : 3109 Highland Ave.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80536Date Collected:10/22/18Date Received:10/23/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80536 - 01 Cust. #: HS-HM-01A Material: Black Vapor Barrier Location: Appearance: black,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 75% Other - 25%
Lab ID #: 80536 - 02 Cust. #: HS-HM-01B Material: Black Vapor Barrier Location: Appearance: black,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 75% Other - 25%
Lab ID #: 80536 - 03 Cust. #: HS-HM-02A Material: Brown Vapor Barrier Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 75% Other - 25%

For Layered Samples, each component will be analyzed and reported separately.

Kut Joh

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 3109 Highland Ave.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80536Date Collected:10/22/18Date Received:10/23/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80536 - 04 Cust. #: HS-HM-02B Material: Brown Vapor Barrier Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 75% Other - 25%
Lab ID #: 80536 - 05 Cust. #: HS-HM-03A Material: Roofing Material Location: Appearance: black,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 15% Other - 85%
Lab ID #: 80536 - 06 Cust. #: HS-HM-03B Material: Roofing Material Location: Appearance: black,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 10% Other - 90%

For Layered Samples, each component will be analyzed and reported separately.

Kut Jet

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 3109 Highland Ave.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80536Date Collected:10/22/18Date Received:10/23/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80536 - 07 Cust. #: HS-HM-04A Material: 12x12 Gold VFT Location: Appearance: beige,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80536 - 07a Cust. #: HS-HM-04A Material: Mastic Location: Appearance: yellow,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80536 - 08 Cust. #: HS-HM-04B Material: 12x12 Gold VFT Location: Appearance: beige,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 3109 Highland Ave.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80536Date Collected:10/22/18Date Received:10/23/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80536 - 08a Cust. #: HS-HM-04B Material: Mastic Location: Appearance: yellow,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80536 - 09 Cust. #: HS-HM-05A Material: Tan Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80536 - 10 Cust. #: HS-HM-05B Material: Tan Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

Kut Joh

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 3109 Highland Ave.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80536Date Collected:10/22/18Date Received:10/23/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80536 - 11 Cust. #: HS-HM-06A Material: 12x12 White VFT Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80536 - 11a Cust. #: HS-HM-06A Material: Mastic Location: Appearance: yellow,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80536 - 12 Cust. #: HS-HM-06B Material: 12x12 White VFT Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 3109 Highland Ave.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80536Date Collected:10/22/18Date Received:10/23/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80536 - 12a Cust. #: HS-HM-06B Material: Mastic Location: Appearance: yellow,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80536 - 13 Cust. #: HS-HM-07A Material: Lite Brown Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80536 - 14 Cust. #: HS-HM-07B Material: Lite Brown Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

Kut Joh

Robert T. Letarte Jr., Laboratory Director

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**Report To:** 

Mr. Aaron Paquet

# **Certificate of Laboratory Analysis**

Test Method, Polarized Light Microscopy (PLM)

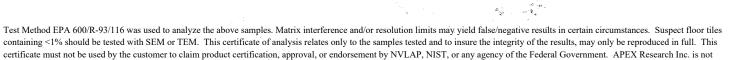
Project : 3109 Highland Ave.

Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		Date Received:10/23/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80536 - 15 Cust. #: HS-HM-08A Material: Woodgrain Linoleum Location: Appearance: brown,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 15% Fiberglass - 10% Synthetic - 5% Other - 70%
Lab ID #: 80536 - 16 Cust. #: HS-HM-08B Material: Woodgrain Linoleum Location: Appearance: brown,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 15% Fiberglass - 10% Synthetic - 5% Other - 70%
Lab ID #: 80536 - 17 Cust. #: HS-HM-09A Material: Drywall Location: Appearance: white,fibrous,nonhomogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 15% Other - 85%

For Layered Samples, each component will be analyzed and reported separately.

responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.

Robert T. Letarte Jr., Laboratory Director





18-80536

10/22/18

ARI Report #

Date Collected:

Test Method, Polarized Light Microscopy (PLM)

Project : 3109 Highland Ave.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80536Date Collected:10/22/18Date Received:10/23/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80536 - 17a Cust. #: HS-HM-09A Material: Joint Compound Location: Appearance: beige,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80536 - 18 Cust. #: HS-HM-09B Material: Drywall Location: Appearance: white,fibrous,nonhomogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 15% Other - 85%
Lab ID #: 80536 - 18a Cust. #: HS-HM-09B Material: Joint Compound Location: Appearance: beige,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Kut Joh

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 3109 Highland Ave.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80536Date Collected:10/22/18Date Received:10/23/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80536 - 19 Cust. #: HS-HM-10A Material: Basement Window Caulk Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80536 - 20 Cust. #: HS-HM-10B Material: Basement Window Caulk Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80536 - 21 Cust. #: HS-HS-01A Material: Plaster Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 3109 Highland Ave.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80536Date Collected:10/22/18Date Received:10/23/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80536 - 21a Cust. #: HS-HS-01A Material: Mortar Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Hair - 2% Other - 98%
Lab ID #: 80536 - 22 Cust. #: HS-HS-01B Material: Plaster Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80536 - 22a Cust. #: HS-HS-01B Material: Mortar Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Hair - 2% Other - 98%

For Layered Samples, each component will be analyzed and reported separately.

Kut Joh

Robert T. Letarte Jr., Laboratory Director

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Test Method, Polarized Light Microscopy (PLM)

Project : 3109 Highland Ave.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80536         Date Collected:       10/22/18         Date Received:       10/23/18         Date Analyzed:       10/24/18         Date Reported:       10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80536 - 23 Cust. #: HS-HS-01C Material: Plaster Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80536 - 23a Cust. #: HS-HS-01C Material: Mortar Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Hair - 2% Other - 98%
Lab ID #: 80536 - 24 Cust. #: HS-HS-01D Material: Plaster Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Kut Joh

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 3109 Highland Ave.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80536Date Collected:10/22/18Date Received:10/23/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80536 - 24a Cust. #: HS-HS-01D Material: Mortar Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Hair - 2% Other - 98%
Lab ID #: 80536 - 25 Cust. #: HS-HS-01E Material: Plaster Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80536 - 25a Cust. #: HS-HS-01E Material: Mortar Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Hair - 2% Other - 98%

For Layered Samples, each component will be analyzed and reported separately.

Kut Jet

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the US Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.



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Test Method, Polarized Light Microscopy (PLM)

Project : 3109 Highland Ave.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80536         Date Collected:       10/22/18         Date Received:       10/23/18         Date Analyzed:       10/24/18         Date Reported:       10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80536 - 26 Cust. #: HS-HM-11A Material: Glazing Location: Appearance: beige,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>YES</b> Chrysotile - 10%	Other - 90%
Lab ID #: 80536 - 27 Cust. #: HS-HM-11B Material: Glazing Location: Appearance: Layer: of	Asbestos Present: NOT ANALYZED	
Lab ID #: 80536 - 28 Cust. #: HS-HM-12A Material: Flooring Location: Appearance: brown,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 35% Other - 65%
For Layered Samples, each component will be analyzed and report	ed separately.	

Robert T. Letarte Jr., Laboratory Director

Kut Jet



**Certificate of Laboratory Analysis** Test Method, Polarized Light Microscopy (PLM)

Project : 3109 Highland Ave.



<b>Report To:</b> Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80536         Date Collected:       10/22/18         Date Received:       10/23/18         Date Analyzed:       10/24/18         Date Reported:       10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80536 - 29 Cust. #: HS-HM-12B Material: Flooring Location: Appearance: brown,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 35% Other - 65%
Lab ID #: Cust. #: Material: Location: Appearance: Layer: of	Asbestos Present:	
Lab ID #: Cust. #: Material: Location: Appearance: Layer: of	Asbestos Present:	

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



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E E	APEX RESEARCH
Client Name: Red Cedar Consulting Date of Survey : 22-18	Lab Use Only Log-In
	Report
City, St., Zip: Lansing, MI 48901 Project #:	
49-4566 Fax: (888) 448-8739	
<b>LUFN AFOUNG LIMES</b> ; (Circle One) PLM EPA 600, PC all samples with a detection of st Asbestos: Bulk <sup>X</sup> Wipe Point Count PCM	-25 AUM.
Wipe	
IT Tape BioSIS Other	Viable
AHERA 7400	
Lab ID #     Client ID #     Material/Location     Volume     Area	Results
i HS-HM-01A Black Vern Bernen	
3 / 024 Frown Veger Bernei	
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Рhone: 734-449-9990 Fax: 734-449-9991	15-22-78 Lab Use Only Log-In Log-In Report	<pre>t Person: Aaron Paquet apaquet@redcedarconsulting.net amples with a detection of &lt;5% ACM. Point Count PCM</pre>	Paint Soil Soil Other Viable	EPA Level II ne Area Results					Received by: 0CT 2 3 2018	Date : _ APEX RESEARCH
APEX Research, Inc. 11054 Hi Tech Drive, Whitmore Lake, MI 48189 Phone: 734-449-9990 E-mail: apexresearch@chartermi.net Fax: 734-449-9991	Red Cedar Consulting     Date of Survey :       PO Box 13216     Project : 3/D9	7, St., Z1p: Lansing, MI 48901 me: (888) 449-4566 Fax: (888) 448-8739 Contact Irn Around Times: (Circle One) PLM EPA 600, PC all Asbestos: Bulk × Wipe	Rush     24 hour     Lead:     Bulk     Wipe     Air       48 hour     72 hour     Mold:     Bulk     Tape     BioSIS	ID #     Client ID #     TEM: AHERA 7400 BulkNOB	AHS-HM-	16 0 24 kloodgrain Censlerne	17 092 derenal of fourt compared	HS - HS-450	Relinquished by: Relinquished by: UPS Relinquished by:	Date: <u>/0-22-/8</u> Date: <u>/0-22-/8</u> Date:

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Name:     Red Cedar Consulting     Date of Survey:     2.2.3.8       S:     Project:     3/5     Aratements       Mound Times;     Fax: (gee) 448-9739     Project:     3/5       Around Times;     Contact Person:     Aron Equet       Around Times;     Contact Person:     Aron Equet       Around Times;     Contact Person:     Aron Equet       Anou     Anserses Buk     Wipe     Are       Project:     3/5     Mold:     Buk     Tape       Mold:     Buk     Tape     Bucknob     Project       Mold:     Buk     Tape     Bucknob     Protecul       Mot     Mold:     Bucknob     Protecul       Mot<				
s: Po Box 13216 Project : $\overline{J} / \mathcal{O} \mathcal{A} \mathcal{M} \mathcal{A}$ (889) 449-4566 Fax : (989) 449-6739 Contact Person: Aaron Paquetaeradical Around Times: (Circle One) PLM EPA 600, PC all samples with a aron Paquetaeradical Around Times: (Circle One) PLM EPA 600, PC all samples with a Paint S 24 hour 24 hour 1 east Bulk Wipe Aria Point Count PCM 22 hour 1 East Bulk Wipe Bulk One BiolS Onter PCM $24 hour 1 east Bulk Vipe Bulk One BiolS Onter PCM 24 hour 1 east Bulk Vipe Bulk One BiolS Onter PCM 24 hour 1 east Bulk Vipe Bulk One BiolS Onter PCM 24 hour 1 east Bulk Vipe Bulk One BiolS Onter PCM 24 hour 1 east Bulk Vipe Bulk One BiolS Onter PCM 24 hour 1 east Bulk Vipe Bulk One BiolS Onter Vipe Onter Vip$	Red Cedar Consulting	0		-In
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(886)     448-456     Fax:     (886)     448-9739     Contact Person:     Aaron Faquet       Around Times:     (Cicle One)     FLM ERA 600, PC all samples with a discretion       Around Times:     (Cicle One)     FLM ERA 600, PC all samples with a discretion       24 hour     Lead:     Bulk     Wipe     Point Count     PCM       24 hour     Lead:     Bulk     Wipe     Air     Paint     S       72 hour     Mold:     Bulk     Tape     BioSIS     Other     PCM       72 hour     Mold:     Bulk     Nipe     Air     Paint     S       24 hour     TEM:     AHERA 7400     BulkNOB     EPA Level I       25     H5-H5-o/C     Paterial/Location     Volume     Area       37     H5-HA-H/A     Affertial/Location     Volume     Area       36     H5-HA-H/A     Affertial/Location     Volume     Area       37     H5-HA-H/A     Affertial/Location     Volume     Area       36     H5-HA-H/A     Affertial/Location     Volume     Area       37     H5-HA-H/A     Affertial/Location     Volume     Area       36     H5-HA-H/A     Affertial/Location     Volume     Area       37     H5-HA-H/A     Affertial/Loca	Lansing, MI 48901	ct # : / 0		
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Z4 hour       Ashestos: Bulk       Wipe       Point Count       PCM         72 hour       Lead: Bulk       Nipe       Air       Paint       S         Tead: Bulk       Tape       BioSIS       Other       S         Mold: Bulk       Tape       BioSIS       Other       S         AFS-HS-c/C       D#       Material/Location       Volume       Area         32       H5-HS-E       Afs-HS-C/C       Bulk/NOB       EPALevel II         32       H5-HS-E       Afs-HS-C/C       Area       Area         33       H5-HS-E       Afs-HS-E       Area       Area         34       H5-HM-11A       Material/Location       Volume       Area         35       H5-HM-12G       Afs       Afs       Afs       Area         36       H5-HM-12G       Afs       Afs       Afs       Afs       Afs         36       H5-HM-12G       Afs       Afs       Afs       Afs       Afs         35       H5-HM-12G       Afs       Afs       Afs       Afs       Afs         36       H5-HM-12G       Afs       Afs       Afs       A	Around Times: (Circle One) PLM EPA	apaquet@redc l samples with a detecti	cedarconsulting. on of <5% ACM.	net
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35     HS-HS-E        26     LIS-HM_IIA        37     HS-HM_IIA        36     HS-HM_IIA        37     JUS-HIM_IIA        38     JUS-HIM_IIA        39     JUS-HIM_IIA        30     JUS-JZ     JUS				
26     LS-FIM-IIA        37     HS-FIM-IIA        36     H5-FIM-IIA        37     LIS-FIM-IIA        39     LIS-FIM-IIA        31     LIS-FIM-IIA        32     LIS-FIM-IIA        33     LIS-FIM-IIA        34     LIS-FIM-IIA        35     LIS-FIM-IIA        36     LIS-FIM-IIA        37     LIS-FIM-IIA        38     LIS-FIM-IIA        39     LIS-FIM-IIA        30     LIS-FIM-IIA        31     LIS-FIM-IIA        32     LIS-FIM-IIA        33     LIS-FIM-IIA        34     LIS-FIM-IIA        35     LIS-FIM-IIA        36     LIS-FIM-IIA        37     LIS-FIM-IIA        38     LIS-FIM-IIA        39     LIS-FIM-IIA        39     LIS-FIM-IIA        39     LIS-FIM-IIA        39     LIS-FIM-IIA        39     LIS-FIM-IIA	HS-HS-			
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35     H5-HM-PA       29     H5-HM-PA       29     H5-HM-12G       20     H5-HM-12G       21     Date:       22     Date:       13     Date:				
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Red Cedar Consulting

Tables

Hazardous Materials Description and Location					
Location	Material Description	Quantity			
Exterior	Automobile Tires	8			
Front Porch	Automobile Tires	4			
NE Bedroom	Smoke Detector	1			
SE Bedroom	Smoke Detector	1			
2 <sup>nd</sup> Floor	Smoke Detector	1			
2 <sup>nd</sup> Floor	Spray Can Misc. Paint	1			
Basement	Television	1			
Basement	Air Conditioner	1			
Basement	Gallon Container Misc. Paint	15			
Basement	Propane Tank	1			
Basement	Quart Container Misc. Paint	4			
Basement	Pint Container Misc. Paint	12			

Table 2 - Summary of Sample Descriptions and Asbestos Laboratory Results, 3109 Highland St., Muskegon Heights, Michigan

Sample Number	Sample Description	Friable	Material Type	Material Classification	% Asbestos Laboratory Result	Sample Location	Approx. Material Quantity
HS-HM-01A	Black Vapor Barrier	Yes	М	Category II	ND	Exterior	NA
HS-HM-01B	Black Vapor Barrier	Yes	М	Category II	ND	Exterior	NA
HS-HM-02A	Brown Vapor Barrier	Yes	М	Category II	ND	Exterior	NA
HS-HM-02B	Brown Vapor Barrier	Yes	М	Category II	ND	Exterior	NA
HS-HM-03A	Roofing Material	No	М	Category I	ND	Exterior	NA
HS-HM-03B	Roofing Material	No	М	Category I	ND	Exterior	NA
HS-HM-04A	12x12 Gold VFT	No	М	Category I	ND/ND	Bathroom	NA
HS-HM-04B	12x12 Gold VFT	No	М	Category I	ND/ND	Bathroom	NA
HS-HM-05A	Tan Linoleum	No	М	Category I	ND	Living	NA
HS-HM-05B	Tan Linoleum	No	М	Category I	ND	Living	NA
HS-HM-06A	12x12 White VFT	No	М	Category I	ND/ND	N Bedroom	NA
HS-HM-06B	12x12 White VFT	No	М	Category I	ND/ND	N Bedroom	NA
HS-HM-07A	Lite Brown Linoleum	No	М	Category I	ND	NE Bedroom	NA
HS-HM-07B	Lite Brown Linoleum	No	М	Category I	ND	NE Bedroom	NA
HS-HM-08A	Woodgrain Linoleum	No	М	Category I	ND	Dining	NA
HS-HM-08B	Woodgrain Linoleum	No	М	Category I	ND	Dining	NA
HS-HM-09A	Drywall and Joint Compound	No	М	Category II	ND/ND	N Bedroom Wall	NA
HS-HM-09B	Drywall and Joint Compound	No	М	Category II	ND/ND	Basement Wall	NA
HS-HM-10A	Basement Window Caulk	No	М	Category I	ND	Basement	NA
HS-HM-10B	Basement Window Caulk	No	М	Category I	ND	Basement	NA
HS-HM-11A	Glazing	Yes	М	Category II	10%CH	Basement	6 Windows
HS-HM-11B	Glazing	Yes	М	Category II	NA	Basement	NA
HS-HM-12A	Flooring	No	М	Category I	ND	Stairway	NA
HS-HM-12B	Flooring	No	М	Category I	ND	Stairway	NA
HS-HS-01A	Plaster	No	S	Category II	ND/ND	SE Bedroom Ceiling	NA
HS-HS-01B	Plaster	No	S	Category II	ND/ND	N Bedroom Ceiling	NA
HS-HS-01C	Plaster	No	S	Category II	ND/ND	Bathroom Wall	NA

Table 2 - Summary of Sample Descriptions and Asbestos Laboratory Results, 3109 Highland St., Muskegon Heights, Michigan

Sample Number	Sample Description	Friable	Material Type	Material Classification	% Asbestos Laboratory Result	Sample Location	Approx. Material Quantity
HS-HS-01D	Plaster	No	S	Category II	ND/ND	Living Wall	NA
HS-HS-01E	Plaster	No	S	Category II	ND/ND	NE Bedroom Wall	NA

Notes:

Material Types

Abbreviations

S PC	<ul> <li>Miscellaneous building material</li> <li>Thermal System Insulation</li> <li>Surfacing Material</li> <li>Point Count Analysis</li> <li>Chrysotile Asbestos</li> </ul>	lin. ft.	<ul> <li>Not quantified</li> <li>Not applicable</li> <li>Not detected. Laboratory result is less than 1 % asbestos</li> <li>linear feet</li> <li>square feet</li> </ul>
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Asbestos Containing Material (ACM) is defined as any material containing more than 1 percent asbestos as determined utilizing Polarized Light Microscopy.

### Table 3 - Summary of Presumed Asbestos Containing Materials, 3109 Highland St., Muskegon Heights, Michigan

Asbestos Containing Material Description and Location					
Location Material Description			Condition	Material Type	Approx. Quantity
Building Exterior	Transite Siding	No	Fair	М	1,863 sq. ft.

Notes:

Material Types

Abbreviations

М	= Miscellaneous building material	lin. ft.	= linear feet
TSI	= Thermal System Insulation	sq. ft.	= square feet
S	= Surfacing Material		

#### Table 4 - Summary of All Asbestos Containing Materials, 3109 Highland St., Muskegon Heights, Michigan

Interior - Asbestos Containing Materials				
Location	<b>Material Description</b>		Friable	Approx. Quantity
Basement (6 windows 32" wide x 22" tall)	Glazing		Yes	6 Windows
		Total		6 Windows
<b>Exterior - Asbestos Containing Materials</b>				
Location	<b>Material Description</b>		Friable	Approx. Quantity
Building Exterior	Transite Siding		No	1,863 sq. ft.
		Total		1,863 sq. ft.

#### Notes:

Abbreviations

#### lin. ft. = linear feet sq. ft. = square feet

**Shaded/Bolded** = Friable ACM and any Category I and Category II non-friable ACM that has a high probability of becoming crumbled, pulverized, or reduced to powder by the demolition or renovation activities that must be properly abated prior to commencement of any demolition/renovation activities.

Demolition/renovation activities completed with intact Category I non-friable ACM are regulated by OSHA and must be completed following the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

Please note that a Negative Pressure Enclosure must be utilized during abatement when Site Conditions Warrant. Examples of these conditions include the abatement of Plaster and Vermiculite insulation, HVAC Duct Wrap in Poor Condition, and Air-O-Cell/Mag Pipe Wrap. Conditions outside of these should be assessed on a case by case basis during the Asbestos Abatement Contractors site walk and Work Plan Preparation.



P.O. Box 13216 Lansing, MI 48901 Phone: 888.449.4566 Fax: 888.448.8739 www.redcedarconsulting.net

October 31, 2018

Mr. Tim Burgess Muskegon County Land Bank Land Bank Coordinator 173 E. Apple Avenue, Suite 104 Muskegon, MI 49442

#### RE: Asbestos Containing Material and Hazardous Materials Inspection 3213 6th St., Muskegon Heights, MI 49444 Parcel ID: 61-26-770-028-0006-00

Dear Mr. Burgess:

Red Cedar Consulting has completed an asbestos-containing material (ACM) and hazardous materials inspection at 3213 6th St., Muskegon Heights, Michigan (Subject Property). This inspection was completed at the request of the Muskegon County Land Bank to comply with the United States Environmental Protection Agency (USEPA) requirements for demolition and renovation set forth under the National Emissions Standards for Hazardous Air Pollutants (NESHAP, 40 CFR Part 61). This inspection was also completed to comply with the Occupational Safety and Health Administration (OSHA) Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

### SUBJECT PROPERTY

The Subject Property is comprised of a .12 acre residential parcel which contains an approximate 844 square foot residential building (the Building) constructed in 1940. The Building was constructed on a concrete foundation with one aboveground floor. The exterior walls of the Building were finished with vinyl over asphalt siding and a vapor barrier while the roof was sealed with asphalt shingles. The Building can be further divided into a living room, kitchen, bathroom, and three bedrooms.

### VISUAL INSPECTION AND SAMPLING

#### **Asbestos Containing Materials Inspection**

Mr. Aaron Paquet of Red Cedar Consulting (Red Cedar), an accredited State of Michigan/EPA Asbestos Building Inspector (Accreditation Number A30955) whom completed training per the Michigan Asbestos Workers Accreditation Act 440 completed an inspection of the Subject Property on October 30, 2018 for suspected asbestos containing building materials.

This inspection, and subsequent sample collection was completed in accordance with the USEPA Asbestos Hazard Emergency Response Act (AHERA) (40 CFR Part 763) assessment and sampling protocol.

During the completion of the inspection, each area of the Subject Property was visually inspected for asbestos containing building materials (ACBM). Following the completion of the visual inspection, Red Cedar staff identified each suspect area of friable and non-friable ACBM and sorted them into one of three homogenous categories for sampling purposes. AHERA defines friable as a material that when dry, may be crumbled, pulverized, or reduced to powder by hand pressure. A homogenous area is defined by OSHA as an area of surfacing, thermal system insulation (TSI) or miscellaneous material that is uniform in color and texture. Surfacing materials are most commonly found in sprayed-on, troweled-on or otherwise applied to surfaces, such as acoustical plaster on ceilings and fireproofing materials on structural members. TSI refers to materials applied to pipes, fittings, boilers, ductwork, or other components to prevent heat loss or gain, or condensation. Any material that does not fall under the surfacing or TSI category, such as floor tile, drywall, and acoustical ceiling tile are placed into the miscellaneous materials category.

Following the completion of the visual inspection, Red Cedar staff identified the following materials as suspect ACBM:

- Roofing Materials
- Vapor Barrier
- Linoleum
- 12"x12" Vinyl Floor Tile
- 1'x1' Ceiling Tile
- 2'x4' Ceiling Tile
- Drywall and Joint Compound
- Window Glazing
- Asphalt Siding
- Plaster

Red Cedar staff collected twenty seven samples of suspect ACBM separated into twelve distinct homogenous groups for laboratory analysis. Samples were collected and submitted to APEX Research Inc. Laboratories (APEX) (Accreditation Number 102118-0) for laboratory analysis. Analysis was completed utilizing polarized light microscopy (PLM) which is the Environmental Protection Agency (EPA) approved method for analysis of bulk materials for asbestos. PLM analysis completed pursuant to method (EPA 600/M4-82-020) identifies asbestos fiber bundles by the visual properties displayed when the sample is treated with various dispersion staining liquids. The laboratory report completed following the sample analysis indicates if asbestos is present, and at what percentage along with a description and percentage of other fibrous and non-fibrous materials and sample color. Chain-of-custody documentation was followed from sample collection through shipping and receiving of the samples at the designated laboratory. The documentation assures that samples will meet the quality assurance/quality control measures defined by AHERA. The laboratory analytical report prepared by APEX for the twenty seven samples is included as Attachment A.

#### **Hazardous Materials Inspection**

On October 18, 2018 the Subject Property was also inspected for the presence of hazardous materials which include but are not limited to polychlorinated biphenyls (PCBs) and potential mercury containing equipment and any items or containers that may contain or be classified as a hazardous or regulated material. Each material, if identified, was documented along with the approximate location. Any materials identified as hazardous are included in Table 1.

### **INSPECTION RESULTS AND RECOMMENDATIONS**

During the completion of the asbestos inspection, twenty seven samples of suspect ACM were collected and are documented in Table 2 along with the Red Cedar sample number, description, friability, material type, ACM classification, sample location, material quantity and laboratory analytical results.

ACM, as defined by the USEPA NESHAP is "any material containing more than 1 percent asbestos as determined using the method specified in appendix E, subpart E, 40 CFR part 763 Section 1, Polarized Light Microscopy".

Friable ACM is defined by NESHAP as any material containing more than 1 percent asbestos that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. Friable ACM is a concern due the ease of unintentionally disturbing the ACM which may result in "visible emissions" which is known as a Fiber Release Episode.

Non-friable asbestos-containing material is defined as "material containing more than 1 percent asbestos that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. Non-friable ACM's are separated into Category I and Category II ACM. Category I ACM is any asbestos containing packing's, gaskets, resilient floor coverings (vinyl floor tile and linoleum are examples of these) and asphalt roofing products. Category II ACM is stated by NESHAP as any material excluding Category I non-friable ACM such as drywall, plaster or fiberboard insulation.

### **Presumed Asbestos Containing Material**

Presumed Asbestos Containing Materials (PACM) are suspect surfacing, TSI and miscellaneous materials found in buildings constructed prior to 1980 which are classified as and due to the age of the structure, are assumed to be ACM and do not require sample collection and analysis. OSHA dictates that PACM may be "rebutted" following a complete inspection pursuant to AHERA protocol.

No PACM was identified during the completion of this inspection. All suspect materials identified were sampled and analyzed for ACM.

Table 3 lists the location, material description, friability, condition, material type (surfacing, thermal or miscellaneous) and approximate quantity of all PACM documented at the Subject Property.

Table 4 provides a summary all ACM documented at the Subject Property which includes the material location, description, and approximate quantity.

#### Friable ACM's

A window glazing sample collected from a window in the Building was found to contain up to 2.25% asbestos following analysis. The assessment to quantify the extent of this material identified ten windows within the Building that would fall into the same homogenous group. The quantity and dimensions of the windows are listed below:

- 4 windows 34" wide x 66" tall
- 1 window 28" wide x 56" tall
- 2 windows 24" wide x 28" tall
- 1 window 24" wide x 30" tall
- 1 window 48" wide x 28" tall
- 1 window 45" wide x 36" tall

#### Category I ACM

No Category I ACM was identified during the completion of this inspection.

#### **Category II ACM**

No Category II non-friable ACM was identified during the completion of this inspection.

#### **RECOMMENDATIONS**

#### **Asbestos Containing Materials**

Friable asbestos containing window glazing was identified on ten windows throughout the Building. The quantity and dimensions of these windows that should be abated prior to demolition/renovation activities are listed below:

- 4 windows 34" wide x 66" tall
- 1 window 28" wide x 56" tall
- 2 windows 24" wide x 28" tall
- 1 window 24" wide x 30" tall
- 1 window 48" wide x 28" tall
- 1 window 45" wide x 36" tall

Please note: Other different sized windows are located throughout the Building but these windows were assessed and found to be constructed either without window glazing or were sampled and found to not contain asbestos and therefore are not required to be removed.

Please note: The location of samples obtained during this inspection were in a random fashion and areas that were not identified during this inspection may be damaged or have become damaged since the inspection was completed. If Category I or Category II friable materials are discovered prior to or during the demolition/renovation process, these materials must be abated prior to commencement of any demolition/renovation activities at the Subject Property.

#### **Hazardous Materials**

Hazardous Materials identified at the Subject Property and documented in Table 1 which require proper removal and disposal consist of the following items:

• Automobile Tires (4)

### **REGULATORY REQUIREMENTS**

A Notification of Intent to Renovate/Demolish form must be filed with the Michigan Department of Environmental Quality- Air Quality Division at least 10 working days prior to any renovation or demolition activities at a site.

The Notification of Intent to Renovate/Demolish form must also be completed and submitted to the MIOSHA-Asbestos Program whenever demolition, encapsulation and/or renovation activities at a site involving greater than ten lineal feet and/or fifteen square feet of ACM will be completed.

Regulated asbestos containing materials per NESHAP (40 CFR Part 61) which falls into any of the following categories are ACM's that must be removed prior to any renovation/demolition activities at the Subject Property.

- Friable asbestos material.
- Category I non-friable ACM that has become friable.
- Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading.
- Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of renovation or demolition operations.

Asbestos abatement should only be performed by a certified asbestos abatement contractor licensed to complete abatement work. The contractor must also follow the standards and requirements set forth per the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) and the USEPA NESHAP (40 CFR Part 61).

Additional information regarding the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) and the USEPA NESHAP (40 CFR Part 61) can be obtained by contacting the associated agency below.

NESHAP Asbestos Program Department of Environmental Quality Phone: 517-284-6777 MIOSHA-CSHD-Asbestos Program State of Michigan Phone: 517-284-7680 Email: asbestos@michigan.gov

### **DISCLAIMER**

Red Cedar Consulting performed destructive testing methods in an attempt to access and inspect all areas of the Building. Unfortunately, due to the age of construction along with multiple additions/renovations that may have been completed on the Building, additional inspections may be required if suspect ACM material not documented within this report is encountered during renovation/demolition activities.

This report was prepared at the request and for exclusive use by the Muskegon County Land Bank and may not be reproduced or sold without written permission from Red Cedar Consulting.

We appreciate the opportunity to provide the requested services. Please contact us at (888) 449-4566 with any questions or concerns.

Sincerely, Red Cedar Consulting

Raion Poquet

Aaron Paquet Michigan/EPA Certified Asbestos Building Inspector (A30955)

Red Cedar Consulting

# Attachment 1

APEX Research Laboratory Analytical Results

Test Method, Polarized Light Microscopy (PLM)

Project : 3213 6th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80472         Date Collected:       10/18/18         Date Received:       10/19/18         Date Analyzed:       10/24/18         Date Reported:       10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80472 - 01 Cust. #: SS-HM-01A Material: Roofing Materials Location: Appearance: black,fibrous,homogenous Layer: 1 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 10% Other - 90%
Lab ID #: 80472 - 01a Cust. #: SS-HM-01A Material: Shingle Location: Appearance: black,fibrous,homogenous Layer: 2 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 10% Other - 90%
Lab ID #: 80472 - 01b Cust. #: SS-HM-01A Material: Shingle Location: Appearance: black,fibrous,homogenous Layer: 3 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Other - 90%

For Layered Samples, each component will be analyzed and reported separately.

Kut Joh

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 3213 6th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80472         Date Collected:       10/18/18         Date Received:       10/19/18         Date Analyzed:       10/24/18         Date Reported:       10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80472 - 01c Cust. #: SS-HM-01A Material: Shingle Location: Appearance: black,fibrous,homogenous Layer: 4 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 15% Other - 85%
Lab ID #: 80472 - 02 Cust. #: SS-HM-01B Material: Roofing Materials Location: Appearance: black,fibrous,homogenous Layer: 1 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 10% Other - 90%
Lab ID #: 80472 - 02a Cust. #: SS-HM-01B Material: Shingle Location: Appearance: black,fibrous,homogenous Layer: 2 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 10% Other - 90%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 3213 6th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80472Date Collected:10/18/18Date Received:10/19/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80472 - 02b Cust. #: SS-HM-01B Material: Shingle Location: Appearance: black,fibrous,homogenous Layer: 3 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 10% Other - 90%
Lab ID #: 80472 - 02c Cust. #: SS-HM-01B Material: Shingle Location: Appearance: black,fibrous,homogenous Layer: 4 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 15% Other - 85%
Lab ID #: 80472 - 03 Cust. #: SS-HM-02A Material: Brown Vapor Barrier Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 75% Other - 25%

For Layered Samples, each component will be analyzed and reported separately.

Kut Joh

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 3213 6th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80472         Date Collected:       10/18/18         Date Received:       10/19/18         Date Analyzed:       10/24/18         Date Reported:       10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80472 - 04 Cust. #: SS-HM-02B Material: Brown Vapor Barrier Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 75% Other - 25%
Lab ID #: 80472 - 05 Cust. #: SS-HM-03A Material: Layered Grey Flagstone Linoleum Location: Appearance: grey,fibrous,nonhomogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 5% Other - 95%
Lab ID #: 80472 - 05a Cust. #: SS-HM-03A Material: Linoleum Location: Appearance: grey,fibrous,nonhomogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 10% Other - 90%

For Layered Samples, each component will be analyzed and reported separately.

Kut Joh

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 3213 6th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80472         Date Collected:       10/18/18         Date Received:       10/19/18         Date Analyzed:       10/24/18         Date Reported:       10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80472 - 06 Cust. #: SS-HM-03B Material: Layered Grey Flagstone Linoleum Location: Appearance: grey,fibrous,nonhomogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 5% Other - 95%
Lab ID #: 80472 - 06a Cust. #: SS-HM-03B Material: Linoleum Location: Appearance: grey,fibrous,nonhomogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 10% Other - 90%
Lab ID #: 80472 - 07 Cust. #: SS-HM-04A Material: Rainbow Marble Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

Kut Joh

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.



APEX Research Inc., 11054 Hi Tech Drive, Whitmore Lake, MI 48189 (734) 449-9990, Fax (734) 449-9991

Test Method, Polarized Light Microscopy (PLM)

Project : 3213 6th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80472         Date Collected:       10/18/18         Date Received:       10/19/18         Date Analyzed:       10/24/18         Date Reported:       10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80472 - 08 Cust. #: SS-HM-04B Material: Rainbow Marble Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 80472 - 09 Cust. #: SS-HM-05A Material: 12x12 Gray Marble VFT Location: Appearance: grey,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> Chrysotile - 0.50% POINT COUNT RESULT	Other - 99.50%
Lab ID #: 80472 - 10 Cust. #: SS-HM-05B Material: 12x12 Gray Marble VFT Location: Appearance: grey,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> Chrysotile - 0.75% POINT COUNT RESULT	Other - 99.25%
For Layered Samples, each component will be analyzed and report		

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method, Polarized Light Microscopy (PLM)

Project : 3213 6th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80472Date Collected:10/18/18Date Received:10/19/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80472 - 11 Cust. #: SS-HM-06A Material: 12x12 White VFT Location: Appearance: grey,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80472 - 12 Cust. #: SS-HM-06B Material: 12x12 White VFT Location: Appearance: grey,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80472 - 13 Cust. #: SS-HM-07A Material: 1x1 White Smooth Ceiling Tile Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 75% Other - 25%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 3213 6th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80472Date Collected:10/18/18Date Received:10/19/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80472 - 14 Cust. #: SS-HM-07B Material: 1x1 White Smooth Ceiling Tile Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 75% Other - 25%
Lab ID #: 80472 - 15 Cust. #: SS-HM-08A Material: 2x4 White Ceiling Tile w/ PH & Gouges Location: Appearance: grey,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Fiberglass - 10% Other - 70%
Lab ID #: 80472 - 16 Cust. #: SS-HM-08B Material: 2x4 White Ceiling Tile w/ PH & Gouges Location: Appearance: grey,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Fiberglass - 10% Other - 70%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 3213 6th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80472Date Collected:10/18/18Date Received:10/19/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80472 - 17 Cust. #: SS-HM-09A Material: Drywall Location: Appearance: white,fibrous,nonhomogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 15% Other - 85%
Lab ID #: 80472 - 17a Cust. #: SS-HM-09A Material: Joint Compound Location: Appearance: white,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80472 - 18 Cust. #: SS-HM-09B Material: Drywall Location: Appearance: white,fibrous,nonhomogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 15% Other - 85%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 3213 6th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-804/2Date Collected:10/18/18Date Received:10/19/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80472 - 18a Cust. #: SS-HM-09B Material: Joint Compound Location: Appearance: white,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80472 - 19 Cust. #: SS-HM-10A Material: Window Glazing Location: Appearance: beige,fibrous,homogenous	Asbestos Present: <b>YES</b> Chrysotile - 2.25% POINT COUNT RESULT	Other - 97.75%
Layer: 1 of 1		
Lab ID #: 80472 - 20 Cust. #: SS-HM-10B Material: Window Glazing	Asbestos Present:	
Location: Appearance: Layer: of	NOT ANALYZED	
For Lavered Samples, each component will be analyzed and reporte	ad comparately.	

Kant John

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 3213 6th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80472Date Collected:10/18/18Date Received:10/19/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80472 - 21 Cust. #: SS-HM-11A Material: Asphalt Siding Location: Appearance: blue,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 40% Other - 60%
Lab ID #: 80472 - 22 Cust. #: SS-HM-11B Material: Asphalt Siding Location: Appearance: blue,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 40% Other - 60%
Lab ID #: 80472 - 23 Cust. #: SS-HS-01A Material: Plaster/Mortar Location: Appearance: grey,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Kant Joh

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 3213 6th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80472Date Collected:10/18/18Date Received:10/19/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80472 - 24 Cust. #: SS-HS-01B Material: Plaster Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80472 - 24a Cust. #: SS-HS-01B Material: Mortar Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Hair - 2% Other - 98%
Lab ID #: 80472 - 25 Cust. #: SS-HS-01C Material: Plaster Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 3213 6th St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80472Date Collected:10/18/18Date Received:10/19/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80472 - 25a Cust. #: SS-HS-01C Material: Mortar Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Vermiculite - 5% Hair - 1% Other - 94%
Lab ID #: 80472 - 26 Cust. #: SS-HS-01D Material: Plaster Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80472 - 26a Cust. #: SS-HS-01D Material: Mortar Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Hair - 1% Other - 99%

For Layered Samples, each component will be analyzed and reported separately.

Kut Joh

Robert T. Letarte Jr., Laboratory Director



**Report To:** 

# Kut

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the US Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.

# **Certificate of Laboratory Analysis**

Test Method, Polarized Light Microscopy (PLM)

Project : 3213 6th St.

Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		Date Collected:10/18/18Date Received:10/19/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80472 - 27 Cust. #: SS-HS-01E Material: Plaster Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80472 - 27a Cust. #: SS-HS-01E Material: Mortar Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Vermiculite - 5% Hair - 1% Other - 94%
Lab ID #: Cust. #: Material: Location: Appearance: Layer: of	Asbestos Present:	
For Layered Samples, each component will be analyzed and repo	rted separately.	



18-80472

ARI Report #

	1013
APEX Research, Inc. 11054 Hi Tech Drive, Whitmore Lake, MI 48189 Phone: 734-449-9990 E-mail: apexresearch@chartermi.net Fax: 734-449-9991	449-9990 (АРЕХ) 49-9991
Client Name: Red Cedar Consulting Date of Survey : /8-/8-,	Lab Use Only Log-In
PO Box 13216	J.
Zip: Lansing, MI 48901 Project # :	
49-4566 Fax: (888) 448-8739 Contact	Paquet
Around Times: (Circle One) PLM EPA 600, PC all	apaquet@redcedarconsulting.net samples with a detection of <5% ACM.
Asbestos: Bulk X Wipe Point Count	PCM
Rush 24 hour Lead: Bulk Wipe Air Paint	Soil
Duilt Tane BioSIS	Other Viahle
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Lab ID #     Client ID #     Material/Location     Volume	Area Results
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	APEX RESEARCH
Work Forms: COC	·

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243	APEX	Lab Use Only Log-In Report	onsulting.net <5% ACM.	Viable	Results					RCENCE	OCT 1 9 2018	APEX RESEARCH
	MI 48189 Phone: 734-449-9990 ni.net Fax: 734-449-9991	1-0/:1	<pre>t Person: Aaron Paquet</pre>	BioSIS Other Other EPA Level II	Volume Area					Received by:	Date :	
	APEX Research, Inc. 11054 Hi Tech Drive, Whitmore Lake, MI 48189 Phone: 734-449-9990 E-mail: apexresearch@chartermi.net Fax: 734-449-9991	Client Name:Red Cedar ConsultingDate of Survey :Address:PO Box 13216Project : 32/3City, St., Zip:Lansing, MI 48901Project # :	Und Times: (888) 448-8739 Contac Asbestos: Bulk X Wipe	48 hour 72 hour 12 hour Albert Treats but whe house the two two the two	Lab ID #     Client ID #     Material/Location	128121/21	820	6 08A 2X 4 white CT & PHYquide		le filation Rec		Rev. 12/03 Work Forms: COC

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S	APEX	Lab Use Only Log-In Report		Viable	Results					PECEIVED 0CT 1 9 2018 APEX RESEARCH
302	Phone: 734-449-9990 Fax: 734-449-9991	18 18 11 -	<pre>Paquet et@redcedarcc detection of PCM</pre>	soil Soil	Area					Received by:
	, MI 48189 Phone: 7 mi.net Fax: 73	Date of Survey : $2-3$ Project : $32/3$ $62$	t Person: Aaron Paquet t Person: Aaron Paquet samples with a detection of <5% ACM. Point Count PCM	Air Paint Othe Discrete II	Volume					
	APEX Research, Inc. 11054 Hi Tech Drive, Whitmore Lake, MI 48189 Phone: 734-449-9990 E-mail: apexresearch@chartermi.net Fax: 734-449-9991	Date of Survey Project : 32/	B8) 448-8739 Contact Person: One) PLM EPA 600, PC all samples w Asbestos: Bulk X Wipe Point Co	Bulk Wipe Uniter Wipe Aulk NOB AHERA 7400 Bulk Bulk NOB	Material/Location	ter				Relinquished by:
	, Inc.	ting	Fax : (888) 4 Fax : (888) 4 S (Circle One) Asbest	Lead: Mold: TEM:	M	<u>t</u>				 1 by: UZ
	tesearch	Red Cedar Consul PO Box 13216	Parsing, MI 48901 9-4566 Fax Ind Times: (	TTP All Samples	Client ID #	710-54-55	$\left(\begin{array}{c} 0 B \\ 3 C \\ 3 C \\ 0 C \\ 0 C \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\$	TIO / /		Martin Received by: Date : //
	APEX R		, Ju, Zup ine: (888)44 I <b>rn Arou</b>	Rush 24 hour 48 hour 72 hour	Lab ID #	6E	24	£ £		Relinquished by: Acad Date : 0 c ) 7 ( ) 6 Rev: 12/03 Work Forms: COC

Red Cedar Consulting

Tables

## Table 1 - Summary of Hazardous Materials, 3213 6th St., Muskegon Heights, Michigan

Hazardous Materials Description and Location							
Location	Material Description	Quantity					
Exterior	Exterior     Automobile Tires						

Table 2 - Sun	mary of Sam	ple Descriptions a	nd Asbestos Laborat	orv Results. 321	13 6th St., Muskege	on Heights, Michigan

Sample Number	Sample Description	Friable	Material Type	Material Classification	% Asbestos Laboratory Result	Sample Location	Approx. Material Quantity
SS-HM-01A	Roofing Materials	No	М	Category I	ND/ND/ND/ND	Exterior	NA
SS-HM-01B	Roofing Materials	No	М	Category I	ND/ND/ND/ND	Exterior	NA
SS-HM-02A	Brown Vapor Barrier	Yes	М	Category II	ND	Exterior	NA
SS-HM-02B	Brown Vapor Barrier	Yes	М	Category II	ND	Exterior	NA
SS-HM-03A	Layered Grey Flagstone Linoleum	No	М	Category II	ND/ND	Kitchen	NA
SS-HM-03B	Layered Grey Flagstone Linoleum	No	М	Category II	ND/ND	Bathroom	NA
SS-HM-04A	Rainbow Marble Linoleum	No	М	Category I	ND	NE Bedroom	NA
SS-HM-04B	Rainbow Marble Linoleum	No	М	Category I	ND	NE Bedroom	NA
SS-HM-05A	12x12 Gray Marble VFT	No	М	Category II	0.50%CH-PC	SW Bedroom Closet	NA
SS-HM-05B	12x12 Gray Marble VFT	No	М	Category II	0.75%CH-PC	SW Bedroom Closet	NA
SS-HM-06A	12x12 White VFT	No	М	Category II	ND	Hallway	NA
SS-HM-06B	12x12 White VFT	No	М	Category II	ND	Hallway	NA
SS-HM-07A	1x1 White Smooth Ceiling Tile	Yes	М	Category II	ND	S Bedroom	NA
SS-HM-07B	1x1 White Smooth Ceiling Tile	Yes	М	Category II	ND	S Bedroom	NA
SS-HM-08A	2x4 White Ceiling Tile w/ PH & Gouges	Yes	М	Category II	ND	Bathroom	NA
SS-HM-08B	2x4 White Ceiling Tile w/ PH & Gouges	Yes	М	Category II	ND	Bathroom	NA
SS-HM-09A	Drywall and Joint Compound	No	М	Category II	ND/ND	SW Bedroom Wall	NA
SS-HM-09B	Drywall and Joint Compound	No	М	Category II	ND/ND	SW Bedroom Wall	NA
SS-HM-10A	Window Glazing	Yes	М	Category II	2.25% CH-PC	Bathroom	10 Windows
SS-HM-10B	Window Glazing	Yes	М	Category II	NA	Kitchen	NA
SS-HM-11A	Asphalt Siding	No	М	Category I	ND	Exterior	NA
SS-HM-11B	Asphalt Siding	No	М	Category I	ND	Exterior	NA
SS-HS-01A	Plaster	No	S	Category II	NA	Bathroom Ceiling	NA
SS-HS-01B	Plaster	No	S	Category II	ND/ND	Hallway Ceiling	NA
SS-HS-01C	Plaster	No	S	Category II	ND/ND	NE Bedroom Wall	NA
SS-HS-01D	Plaster	No	S	Category II	ND/ND	Bathroom Wall	NA

Sample Number	Sample Description	Friable	Material Type	Material Classification	% Asbestos Laboratory Result	Sample Location	Approx. Material Quantity
SS-HS-01E	Plaster	No	S	Category II	ND/ND	Kitchen Wall	NA

Notes:

Mate	rial Types	Abbreviations					
М	= Miscellaneous building material	NQ	= Not quantified				
TSI	= Thermal System Insulation	NA	= Not applicable				
S	= Surfacing Material	ND	= Not detected. Laboratory result is less than 1 % asbestos				
PC	= Point Count Analysis	lin. ft.	= linear feet				
СН	= Chrysotile Asbestos	sq. ft.	= square feet				

Asbestos Containing Material (ACM) is defined as any material containing more than 1 percent asbestos as determined utilizing Polarized Light Microscopy.

## Table 3 - Summary of Presumed Asbestos Containing Materials, 3213 6th St., Muskegon Heights, Michigan

Asbestos Containing Material Description and Location								
Location	Material Description	Friable	Condition	Material Type	Approx. Quantity			
No Presumed Asbestos Containing Materials Identified								

Notes:

Mater	ial Types	Abbrevi	ations
TSI	<ul><li>= Miscellaneous building material</li><li>= Thermal System Insulation</li><li>= Surfacing Material</li></ul>		= linear feet = square feet

Interior - Asbestos Containing Materials				
Location	<b>Material Description</b>	Fri	iable	Approx. Quantity
4 windows 34" wide x 66" tall	Glazing	Y	les	4 Windows
1 window 28" wide x 56" tall	Glazing	Y	les	1 Window
2 windows 24" wide x 28" tall	Glazing	Y	les	2 Windows
1 window 24" wide x 30" tall	Glazing	Y	les	1 Window
1 window 48" wide x 28" tall	Glazing	Y	les	1 Window
1 window 45" wide x 36" tall	Glazing	Y	les	1 Window
		Total		<b>10 Windows</b>

## Table 4 - Summary of All Asbestos Containing Materials, 3213 6th St., Muskegon Heights, Michigan

#### Notes: Abbreviations

lin. ft. = linear feet sq. ft. = square feet

**Shaded/Bolded** = Friable ACM and any Category I and Category II non-friable ACM that has a high probability of becoming crumbled, pulverized, or reduced to powder by the demolition or renovation activities that must be properly abated prior to commencement of any demolition/renovation activities.

Demolition/renovation activities completed with intact Category I non-friable ACM are regulated by OSHA and must be completed following the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

Please note that a Negative Pressure Enclosure must be utilized during abatement when Site Conditions Warrant. Examples of these conditions include the abatement of Plaster and Vermiculite insulation, HVAC Duct Wrap in Poor Condition, and Air-O-Cell/Mag Pipe Wrap. Conditions outside of these should be assessed on a case by case basis during the Asbestos Abatement Contractors site walk and Work Plan Preparation.



P.O. Box 13216 Lansing, MI 48901 Phone: 888.449.4566 Fax: 888.448.8739 www.redcedarconsulting.net

October 31, 2018

Mr. Tim Burgess Muskegon County Land Bank Land Bank Coordinator 173 E. Apple Avenue, Suite 104 Muskegon, MI 49442

## RE: Asbestos Containing Material and Hazardous Materials Inspection 3237 Leahy St., Muskegon Heights, MI 49444 Parcel ID: 61-26-615-002-0004-00

Dear Mr. Burgess:

Red Cedar Consulting has completed an asbestos-containing material (ACM) and hazardous materials inspection at 3237 Leahy St., Muskegon Heights, Michigan (Subject Property). This inspection was completed at the request of the Muskegon County Land Bank to comply with the United States Environmental Protection Agency (USEPA) requirements for demolition and renovation set forth under the National Emissions Standards for Hazardous Air Pollutants (NESHAP, 40 CFR Part 61). This inspection was also completed to comply with the Occupational Safety and Health Administration (OSHA) Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

## SUBJECT PROPERTY

The Subject Property is comprised of a .14 acre residential parcel which contains a 400 sq. ft. detached garage and approximate 1,064 square foot residential building (the Building) constructed in 1935. The Building was constructed on a concrete block basement with one aboveground floor. The exterior walls of the Building were finished with wood lap over a vapor barrier while the roof was sealed with asphalt shingles. The Building can be further divided into a living room, dining room, kitchen, bath, three bedrooms and rear entry.

## VISUAL INSPECTION AND SAMPLING

## **Asbestos Containing Materials Inspection**

Mr. Aaron Paquet of Red Cedar Consulting (Red Cedar), an accredited State of Michigan/EPA Asbestos Building Inspector (Accreditation Number A30955) whom completed training per the Michigan Asbestos Workers Accreditation Act 440 completed an inspection of the Subject Property on October 17, 2018 for suspected asbestos containing building materials.

This inspection, and subsequent sample collection was completed in accordance with the USEPA Asbestos Hazard Emergency Response Act (AHERA) (40 CFR Part 763) assessment and sampling protocol.

During the completion of the inspection, each area of the Subject Property was visually inspected for asbestos containing building materials (ACBM). Following the completion of the visual inspection, Red Cedar staff identified each suspect area of friable and non-friable ACBM and sorted them into one of three homogenous categories for sampling purposes. AHERA defines friable as a material that when dry, may be crumbled, pulverized, or reduced to powder by hand pressure. A homogenous area is defined by OSHA as an area of surfacing, thermal system insulation (TSI) or miscellaneous material that is uniform in color and texture. Surfacing materials are most commonly found in sprayed-on, troweled-on or otherwise applied to surfaces, such as acoustical plaster on ceilings and fireproofing materials on structural members. TSI refers to materials applied to pipes, fittings, boilers, ductwork, or other components to prevent heat loss or gain, or condensation. Any material that does not fall under the surfacing or TSI category, such as floor tile, drywall, and acoustical ceiling tile are placed into the miscellaneous materials category.

Following the completion of the visual inspection, Red Cedar staff identified the following materials as suspect ACBM:

- Vapor Barrier
- Asphalt Shingles
- Linoleum
- 9"x9" Vinyl Floor Tile
- Window Glazing
- Plaster

Red Cedar staff collected thirty samples of suspect ACBM separated into thirteen distinct homogenous groups for laboratory analysis. Samples were collected and submitted to APEX Research Inc. Laboratories (APEX) (Accreditation Number 102118-0) for laboratory analysis. Analysis was completed utilizing polarized light microscopy (PLM) which is the Environmental Protection Agency (EPA) approved method for analysis of bulk materials for asbestos. PLM analysis completed pursuant to method (EPA 600/M4-82-020) identifies asbestos fiber bundles by the visual properties displayed when the sample is treated with various dispersion staining liquids. The laboratory report completed following the sample analysis indicates if asbestos is present, and at what percentage along with a description and percentage of other fibrous and non-fibrous materials and sample color. Chain-of-custody documentation was followed from sample collection through shipping and receiving of the samples at the designated laboratory. The documentation assures that samples will meet the quality assurance/quality control measures defined by AHERA. The laboratory analytical report prepared by APEX for the thirty samples is included as Attachment A.

## **Hazardous Materials Inspection**

On October 17, 2018 the Subject Property was also inspected for the presence of hazardous materials which include but are not limited to polychlorinated biphenyls (PCBs) and potential mercury containing equipment and any items or containers that may contain or be classified as a hazardous or regulated material. Each material, if identified, was documented along with the approximate location. Any materials identified as hazardous are included in Table 1.

## **INSPECTION RESULTS AND RECOMMENDATIONS**

During the completion of the asbestos inspection, thirty samples of suspect ACM were collected and are documented in Table 2 along with the Red Cedar sample number, description, friability, material type, ACM classification, sample location, material quantity and laboratory analytical results.

ACM, as defined by the USEPA NESHAP is "any material containing more than 1 percent asbestos as determined using the method specified in appendix E, subpart E, 40 CFR part 763 Section 1, Polarized Light Microscopy".

Friable ACM is defined by NESHAP as any material containing more than 1 percent asbestos that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. Friable ACM is a concern due the ease of unintentionally disturbing the ACM which may result in "visible emissions" which is known as a Fiber Release Episode.

Non-friable asbestos-containing material is defined as "material containing more than 1 percent asbestos that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. Non-friable ACM's are separated into Category I and Category II ACM. Category I ACM is any asbestos containing packing's, gaskets, resilient floor coverings (vinyl floor tile and linoleum are examples of these) and asphalt roofing products. Category II ACM is stated by NESHAP as any material excluding Category I non-friable ACM such as drywall, plaster or fiberboard insulation.

## **Presumed Asbestos Containing Material**

Presumed Asbestos Containing Materials (PACM) are suspect surfacing, TSI and miscellaneous materials found in buildings constructed prior to 1980 which are classified as and due to the age of the structure, are assumed to be ACM and do not require sample collection and analysis. OSHA dictates that PACM may be "rebutted" following a complete inspection pursuant to AHERA protocol.

Air-O-Cell Pipe Wrap located in the Building was classified as PACM due to the age of the structure and samples were not collected.

Table 3 lists the location, material description, friability, condition, material type (surfacing, thermal or miscellaneous) and approximate quantity of all PACM documented at the Subject Property.

Table 4 provides a summary all ACM documented at the Subject Property which includes the material location, description, and approximate quantity.

## Friable ACM's

A window glazing sample collected from a window in the Building was found to contain up to 2.25% asbestos following analysis. The assessment to quantify the extent of this material identified twenty seven windows at the following locations that would fall into the same homogenous group. The quantity and dimensions of the windows are listed below:

- 6 windows 27" wide x 58" tall
- 1 window 26" wide x 24" tall
- 2 windows 40" wide x 58" tall
- 7 windows 27" wide x 53" tall
- 10 windows 24" wide x 53" tall
- 1 window 36" wide x 20" tall

Air-O-Cell Pipe Wrap identified in the Building in conjunction with the hot water heating system is classified as friable ACM. The visual assessment to quantify the extent of this material identified Friable ACM at the following locations within the basement and first floor:

• Basement Boiler Pipe (Air-O-Cell 3" to 4") (75 lin. ft.)

## Category I ACM

Two types of resilient floor covering (Grey Woodgrain Linoleum and 9"x9" Red Vinyl Floor Tile) located within the kitchen and bathroom were found to contain up to 10% Chrysotile asbestos. The assessment to quantify the extent of this material identified approximately 252 sq. ft. of this material within the Building.

## **Category II ACM**

No Category II non-friable ACM was identified during the completion of this inspection.

## **RECOMMENDATIONS**

### **Asbestos Containing Materials**

HVAC material identified in the Building system and listed below is classified as friable ACM and should be removed prior to any renovation/demolition activities.

• Basement Boiler Pipe (Air-O-Cell 3" to 4") (75 lin. ft.)

Friable asbestos containing window glazing was identified on twenty seven windows throughout the Building. The quantity and dimensions of these windows that should be abated prior to demolition/renovation activities are listed below:

- 6 windows 27" wide x 58" tall
- 1 window 26" wide x 24" tall
- 2 windows 40" wide x 58" tall
- 7 windows 27" wide x 53" tall
- 10 windows 24" wide x 53" tall
- 1 window 36" wide x 20" tall

Please note: Other different sized windows are located throughout the Building but these windows were assessed and found to be constructed either without window glazing or were sampled and found to not contain asbestos and therefore are not required to be removed.

The Category I resilient floor coverings (Grey Woodgrain Linoleum and 9"x9" Red Vinyl Floor Tile) are non-friable ACM's that may be left in place as long as the demolition/renovation activities are completed following the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

Please note: The location of samples obtained during this inspection were in a random fashion and areas that were not identified during this inspection may be damaged or have become damaged since the inspection was completed. If Category I or Category II friable materials are discovered prior to or during the demolition/renovation process, these materials must be abated prior to commencement of any demolition/renovation activities at the Subject Property.

## **Hazardous Materials**

Hazardous Materials identified at the Subject Property and documented in Table 1 which require proper removal and disposal consist of the following items:

- Television (6)
- Gallon Container Misc. Paint (10)
- Quart Container Misc. Paint (15)

## **REGULATORY REQUIREMENTS**

A Notification of Intent to Renovate/Demolish form must be filed with the Michigan Department of Environmental Quality- Air Quality Division at least 10 working days prior to any renovation or demolition activities at a site.

The Notification of Intent to Renovate/Demolish form must also be completed and submitted to the MIOSHA-Asbestos Program whenever demolition, encapsulation and/or renovation activities at a site involving greater than ten lineal feet and/or fifteen square feet of ACM will be completed.

Regulated asbestos containing materials per NESHAP (40 CFR Part 61) which falls into any of the following categories are ACM's that must be removed prior to any renovation/demolition activities at the Subject Property.

- Friable asbestos material.
- Category I non-friable ACM that has become friable.
- Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading.
- Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of renovation or demolition operations.

Asbestos abatement should only be performed by a certified asbestos abatement contractor licensed to complete abatement work. The contractor must also follow the standards and requirements set forth per the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) and the USEPA NESHAP (40 CFR Part 61).

Additional information regarding the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) and the USEPA NESHAP (40 CFR Part 61) can be obtained by contacting the associated agency below.

NESHAP Asbestos Program Department of Environmental Quality Phone: 517-284-6777 MIOSHA-CSHD-Asbestos Program State of Michigan Phone: 517-284-7680 Email: asbestos@michigan.gov

## **DISCLAIMER**

Red Cedar Consulting performed destructive testing methods in an attempt to access and inspect all areas of the Building. Unfortunately, due to the age of construction along with multiple additions/renovations that may have been completed on the Building, additional inspections may be required if suspect ACM material not documented within this report is encountered during renovation/demolition activities.

This report was prepared at the request and for exclusive use by the Muskegon County Land Bank and may not be reproduced or sold without written permission from Red Cedar Consulting.

We appreciate the opportunity to provide the requested services. Please contact us at (888) 449-4566 with any questions or concerns.

Sincerely, Red Cedar Consulting

Raion Poquet

Aaron Paquet Michigan/EPA Certified Asbestos Building Inspector (A30955)

Red Cedar Consulting

# Attachment 1

APEX Research Laboratory Analytical Results

Test Method, Polarized Light Microscopy (PLM)

Project : 3237 Leahy St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80475         Date Collected:       10/17/18         Date Received:       10/19/18         Date Analyzed:       10/24/18         Date Reported:       10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80475 - 01 Cust. #: LS-HM-01A Material: Vapor Barrier, Brown Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 95% Other - 5%
Lab ID #: 80475 - 02 Cust. #: LS-HM-01B Material: Vapor Barrier, Brown Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 95% Other - 5%
Lab ID #: 80475 - 03 Cust. #: LS-HM-02A Material: Shingle Roof Location: House Appearance: black,fibrous,homogenous Layer: 1 of 5	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%
For Layered Samples, each component will be analyzed and repo	orted separately.	

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 3237 Leahy St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80475         Date Collected:       10/17/18         Date Received:       10/19/18         Date Analyzed:       10/24/18         Date Reported:       10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80475 - 03a Cust. #: LS-HM-02A Material: Shingle Location: House Appearance: black,fibrous,homogenous Layer: 2 of 5	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%
Lab ID #: 80475 - 03b Cust. #: LS-HM-02A Material: Shingle Location: House Appearance: black,fibrous,homogenous Layer: 3 of 5	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%
Lab ID #: 80475 - 03c Cust. #: LS-HM-02A Material: Shingle Location: House Appearance: black,fibrous,homogenous Layer: 4 of 5	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%
For Layered Samples, each component will be analyzed and rep	ported separately.	

Kent Sett

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 3237 Leahy St.



	Date Analyzed:10/24/18Date Reported:10/26/18
Asbestos Type/Percent	Non-Asbestos Material
Asbestos Present: <b>NO</b>	Cellulose - 35%
No Asbestos Observed	Other - 65%
Asbestos Present: <b>NO</b>	Cellulose - 30%
No Asbestos Observed	Other - 70%
Asbestos Present: <b>NO</b>	Cellulose - 30%
No Asbestos Observed	Other - 70%
	Asbestos Present: <b>NO</b> No Asbestos Observed Asbestos Present: <b>NO</b> No Asbestos Observed Asbestos Present: <b>NO</b>

For Layered Samples, each component will be analyzed and reported separately.

Sout

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 3237 Leahy St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80475         Date Collected:       10/17/18         Date Received:       10/19/18         Date Analyzed:       10/24/18         Date Reported:       10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80475 - 04b Cust. #: LS-HM-02B Material: Shingle Location: House Appearance: black,fibrous,homogenous Layer: 3 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%
Lab ID #: 80475 - 04c Cust. #: LS-HM-02B Material: Tar Paper Location: House Appearance: black,fibrous,homogenous Layer: 4 of 4	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 35% Other - 65%
Lab ID #: 80475 - 05 Cust. #: LS-HM-03A Material: Shingle Roof Location: Garage Appearance: black,fibrous,homogenous Layer: 1 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 20% Other - 80%
For Layered Samples, each component will be analyzed and repo	orted separately.	

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 3237 Leahy St.



	ARI Report #18-80475Date Collected:10/17/18Date Received:10/19/18Date Analyzed:10/24/18Date Reported:10/26/18
Asbestos Type/Percent	Non-Asbestos Material
Asbestos Present: <b>NO</b>	Fiberglass - 20%
No Asbestos Observed	Other - 80%
Asbestos Present: <b>NO</b>	Cellulose - 30%
No Asbestos Observed	Other - 70%
Asbestos Present: <b>NO</b>	Fiberglass - 20%
No Asbestos Observed	Other - 80%
	Asbestos Present: <b>NO</b> No Asbestos Observed Asbestos Present: <b>NO</b> No Asbestos Observed Asbestos Present: <b>NO</b>

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 3237 Leahy St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80475         Date Collected:       10/17/18         Date Received:       10/19/18         Date Analyzed:       10/24/18         Date Reported:       10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80475 - 06a Cust. #: LS-HM-03B Material: Shingle Location: Garage Appearance: black,fibrous,homogenous Layer: 2 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Fiberglass - 20% Other - 80%
Lab ID #: 80475 - 06b Cust. #: LS-HM-03B Material: Shingle Location: Garage Appearance: black,fibrous,homogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 30% Other - 70%
Lab ID #: 80475 - 07 Cust. #: LS-HM-04A Material: Vapor Barrier, Black Location: Appearance: black,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 35% Other - 65%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 3237 Leahy St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report # 18-804/5 Date Collected: 10/17/18 Date Received: 10/19/18 Date Analyzed: 10/24/18 Date Reported: 10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80475 - 08 Cust. #: LS-HM-04B Material: Vapor Barrier, Black Location: Appearance: black,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 35% Other - 65%
Lab ID #: 80475 - 09 Cust. #: LS-HM-05A Material: Grey Woodgrain Linoleum Location: Appearance: beige,fibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>YES</b> Chrysotile - 10%	Other - 90%
Lab ID #: 80475 - 09a Cust. #: LS-HM-05A Material: Mastic Location: Appearance: yellow,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Sent

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 3237 Leahy St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80475Date Collected:10/17/18Date Received:10/19/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80475 - 10 Cust. #: LS-HM-05B	Asbestos Present:	
Material: Grey Woodgrain Linoleum Location: Appearance: Layer: 1 of 2	NOT ANALYZED	
Lab ID #: 80475 - 10a Cust. #: LS-HM-05B Material: Mastic Location: Appearance: yellow,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80475 - 11 Cust. #: LS-HM-06A Material: Yellow Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Fiberglass - 10% Other - 70%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 3237 Leahy St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80475         Date Collected:       10/17/18         Date Received:       10/19/18         Date Analyzed:       10/24/18         Date Reported:       10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80475 - 12 Cust. #: LS-HM-06B Material: Yellow Linoleum Location: Appearance: beige,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Fiberglass - 10% Other - 70%
Lab ID #: 80475 - 13 Cust. #: LS-HM-07A Material: Brown Woodgrain Linoleum Location: Appearance: brown,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Fiberglass - 10% Other - 70%
Lab ID #: 80475 - 14 Cust. #: LS-HM-07B Material: Brown Woodgrain Linoleum Location: Appearance: brown,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 20% Fiberglass - 10% Other - 70%

For Layered Samples, each component will be analyzed and reported separately.

Kent

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 3237 Leahy St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-804/5Date Collected:10/17/18Date Received:10/19/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80475 - 15 Cust. #: LS-HM-08A Material: 9x9 Red VFT Location: Appearance: red,fibrous,homogenous Layer: 1 of 3	Asbestos Present: <b>YES</b> Chrysotile - 10%	Other - 90%
Lab ID #: 80475 - 15a Cust. #: LS-HM-08A Material: Mastic Location: Appearance: black,fibrous,homogenous Layer: 2 of 3	Asbestos Present: <b>YES</b> Chrysotile - 10%	Other - 90%
Lab ID #: 80475 - 15b Cust. #: LS-HM-08A Material: Tar Paper Location: Appearance: black,fibrous,homogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 35% Other - 65%
For Layered Samples, each component will be analyzed and repo	rted separately.	

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 3237 Leahy St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80475         Date Collected:       10/17/18         Date Received:       10/19/18         Date Analyzed:       10/24/18         Date Reported:       10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80475 - 16 Cust. #: LS-HM-08B Material: 9x9 Red VFT	Asbestos Present:	
Location: Appearance: Layer: 1 of 3	NOT ANALYZED	
Lab ID #: 80475 - 16a Cust. #: LS-HM-08B Material: Mastic	Asbestos Present:	
Location: Appearance: Layer: 2 of 3	NOT ANALYZED	
Lab ID #: 80475 - 16b Cust. #: LS-HM-08B Material: Tar Paper Location: Appearance: black,fibrous,homogenous Layer: 3 of 3	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 35% Other - 65%
For Layered Samples, each component will be analyzed and repo	orted separately.	Rout Jett

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 3237 Leahy St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80475         Date Collected:       10/17/18         Date Received:       10/19/18         Date Analyzed:       10/24/18         Date Reported:       10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80475 - 17 Cust. #: LS-HM-09A Material: Window Glazing Location: House Appearance: beige,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>YES</b> Chrysotile - 2.25% POINT COUNT RESULT	Other - 97.75%
Lab ID #: 80475 - 18 Cust. #: LS-HM-09B Material: Window Glazing Location: House Appearance: Layer: of	Asbestos Present: NOT ANALYZED	
Lab ID #: 80475 - 19 Cust. #: LS-HM-10A Material: Window Glazing Location: Basement Appearance: beige,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Wollastonite - 2% Other - 98%
For Layered Samples, each component will be analyzed and repo	· · · · · ·	

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 3237 Leahy St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report # 18-80475 Date Collected: 10/17/18 Date Received: 10/19/18 Date Analyzed: 10/24/18 Date Reported: 10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80475 - 20 Cust. #: LS-HM-10B Material: Window Glazing Location: Basement Appearance: beige,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Wollastonite - 2% Other - 98%
Lab ID #: 80475 - 21 Cust. #: LS-HS-01A Material: Layered Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 5	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80475 - 21a Cust. #: LS-HS-01A Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 2 of 5	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Other - 98%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 3237 Leahy St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-80475Date Collected:10/17/18Date Received:10/19/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80475 - 21b Cust. #: LS-HS-01A Material: Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 3 of 5	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80475 - 21c Cust. #: LS-HS-01A Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 4 of 5	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Other - 98%
Lab ID #: 80475 - 21d Cust. #: LS-HS-01A Material: Drywall Location: Appearance: white,fibrous,nonhomogenous Layer: 5 of 5	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 25% Other - 75%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 3237 Leahy St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-804/5Date Collected:10/17/18Date Received:10/19/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80475 - 22 Cust. #: LS-HS-01B Material: Layered Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 5	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80475 - 22a Cust. #: LS-HS-01B Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 2 of 5	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Other - 98%
Lab ID #: 80475 - 22b Cust. #: LS-HS-01B Material: Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 3 of 5	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Sout

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 3237 Leahy St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-804/5Date Collected:10/17/18Date Received:10/19/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80475 - 22c Cust. #: LS-HS-01B Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 4 of 5	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Other - 98%
Lab ID #: 80475 - 22d Cust. #: LS-HS-01B Material: Drywall Location: Appearance: white,fibrous,nonhomogenous Layer: 5 of 5	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 25% Other - 75%
Lab ID #: 80475 - 23 Cust. #: LS-HS-01C Material: Layered Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 5	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Sout

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 3237 Leahy St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-804/5Date Collected:10/17/18Date Received:10/19/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80475 - 23a Cust. #: LS-HS-01C Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 2 of 5	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Other - 98%
Lab ID #: 80475 - 23b Cust. #: LS-HS-01C Material: Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 3 of 5	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80475 - 23c Cust. #: LS-HS-01C Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 4 of 5	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Other - 98%

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 3237 Leahy St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-804/5Date Collected:10/17/18Date Received:10/19/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80475 - 23d Cust. #: LS-HS-01C Material: Drywall Location: Appearance: white,fibrous,nonhomogenous Layer: 5 of 5	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 25% Other - 75%
Lab ID #: 80475 - 24 Cust. #: LS-HS-02A Material: Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80475 - 24a Cust. #: LS-HS-02A Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Other - 98%

For Layered Samples, each component will be analyzed and reported separately.

Sout

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 3237 Leahy St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80475         Date Collected:       10/17/18         Date Received:       10/19/18         Date Analyzed:       10/24/18         Date Reported:       10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80475 - 25 Cust. #: LS-HS-02B Material: Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80475 - 25a Cust. #: LS-HS-02B Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Other - 98%
Lab ID #: 80475 - 26 Cust. #: LS-HS-02C Material: Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Sout

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 3237 Leahy St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-804/5Date Collected:10/17/18Date Received:10/19/18Date Analyzed:10/24/18Date Reported:10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80475 - 26a Cust. #: LS-HS-02C Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Other - 98%
Lab ID #: 80475 - 27 Cust. #: LS-HS-02D Material: Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80475 - 27a Cust. #: LS-HS-02D Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Other - 98%

For Layered Samples, each component will be analyzed and reported separately.

Sout

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 3237 Leahy St.



Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #       18-80475         Date Collected:       10/17/18         Date Received:       10/19/18         Date Analyzed:       10/24/18         Date Reported:       10/26/18
Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 80475 - 28 Cust. #: LS-HS-02E Material: Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Other - 100%
Lab ID #: 80475 - 28a Cust. #: LS-HS-02E Material: Plaster Base Coat Location: Appearance: grey,fibrous,homogenous Layer: 2 of 2	Asbestos Present: <b>NO</b> No Asbestos Observed	Cellulose - 2% Other - 98%
Lab ID #: 80475 - 29 Cust. #: LS-HM-11A Material: Window Glazing Location: Garage Appearance: beige,fibrous,homogenous Layer: 1 of 1	Asbestos Present: <b>NO</b> No Asbestos Observed	Wollastonite - 2% Other - 98%

For Layered Samples, each component will be analyzed and reported separately.

Sout

Robert T. Letarte Jr., Laboratory Director



Test Method, Polarized Light Microscopy (PLM)

Project : 3237 Leahy St.



Sample InformationAsbestos Type/PercentNon-Asbestos MaterialLab ID #:Subsection:Asbestos Present: NO No Asbestos ObservedWollastonite - 2% Other - 98%Location:Garage Appearance:beige,fibrous,homogenous Layer: 1 of 1Asbestos Present:Lab ID #: Location: Appearance: Layer:Asbestos Present:Wollastonite - 2% Other - 98%Lab ID #: Location: Appearance: Layer: Layer:Asbestos Present:Wollastonite - 2% Other - 98%Lab ID #: Location: Appearance: Layer: Layer:Asbestos Present:Wollastonite - 2% Other - 98%Lab ID #: Location: Appearance: Layer: Material: Location: Appearance: Layer: Material: Iocation: Appearance: Layer: Material: Iocation: Appearance: Layer: Material: Iocation: Appearance: Layer: Material: Iocation: Appearance: Layer: Material: Iocation: Appearance: Layer: Material: Iocation: Appearance: Layer: Material: Iocation: Appearance: Layer: Material: Iocation: Appearance: Layer: Material: Iocation: Appearance: Layer: Material: Iocation: Appearance: Layer: Material: Iocation: Appearance: Layer: Material: Iocation: Appearance: Layer: Material: Iocation: Appearance: Layer: Material: Iocation:Material: Iocation: Asbestos Present:Lab ID #: Material: Iocation: Appearance: Layer: Material: Iocation:Material: Iocation: Iocation: Iocation: Iocation: Iocation:Material: Material: Iocation: Material: Iocation: Iocation:Material: Iocati	Report To: Mr. Aaron Paquet Red Cedar Consulting P.O. Box 13216 Lansing, MI 48901		ARI Report #18-804/5Date Collected:10/17/18Date Received:10/19/18Date Analyzed:10/24/18Date Reported:10/26/18
Cust. #: LS-HM-11B       No Asbestos Observed       Other - 98%         Material:       Window Glazing       Description         Location:       Garage       Garage         Appearance:       beige,fibrous,homogenous       Lawer:         Lab ID #:       Asbestos Present:         Cust. #:       Material:         Location:       Appearance:         Layer:       of         Lab ID #:       Asbestos Present:         Cust. #:       Material:         Location:       Appearance:         Layer:       of	Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Cust. #: Material: Location: Appearance: Layer: of Lab ID #: Cust. #: Material: Location: Appearance:	Cust. #: LS-HM-11B Material: Window Glazing Location: Garage Appearance: beige,fibrous,homogenous		
Cust. #: Material: Location: Appearance:	Cust. #: Material: Location: Appearance:	Asbestos Present:	
	Cust. #: Material: Location: Appearance:	Asbestos Present:	

For Layered Samples, each component will be analyzed and reported separately.

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Robert T. Letarte Jr., Laboratory Director



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APEX Research, Inc. 11054 Hi Tech Drive, Whitmore Lake, MI 48189 Phone: 734-449-9990 E-mail: apexresearch@chartermi.net Fax: 734-449-9991	AI 48189 Phone: 734-449-999 net Fax: 734-449-9991	9-9990 АРЕХ -9991	
Client Name: Red Cedar Consulting Date of Survey :	urvey: 10-17-18		Lab Use Only Log-In
	3237 Leahy	Y St. Report.	
Zip: Lansing, MI 48901			
149-4566 Fax: (888) 448-8739 Contact	<b>CrSOn:</b> Aaron Paquet	ruet	
Around Times: (Circle One) PLM EPA 600, PC all	apaquet@r mples with a dete Doint Count	apaquet@redcedarconsulting.net samples with a detection of <5% ACM. Doint Count	e t
		<b> </b>	
1	Air Paint	Soil	
	BioSIS Other	er Viable	
Other: O O.A.Y UIPAII Samples TEM: AHERA 7400 Bulk/NOB	EPA Level II		
Lab ID #     Client ID #     Material/Location	Volume	Area Results	ts
1 LS-HM-01A Vapor Barrier (Brown)			
2 LS-HM-018 11 11			
3 LS-HM-OZA Shingle Roof (House)			
4 LS-HM-028 "			
S LS-HM-03A Shingle Roof (Garage)			
6 LS-HM-03B "" "			
7 LS-HM-OHA Vapor Barrier (Black)			
& LS-HM-04B " " "			
9 LS-HM-05A Crav Hoodgrath Lindeum			
R LS-HM-05B " " "			
11 LS-HM-OLD A Yellow Laferdy Lingleym			
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Rev: 12/03 Work Forms: COC	Å	APEX RESEARCH	

20f 3	APEX APEX RESEARCH	Lab Use Only Log-In Report	sulting.net 5% ACM.	Viable		Results										RECEIVED	007 1 9 2018	APEX RESEARCH
	Phone: 734-449-9990 Fax: 734-449-9991	10-17-18 17 Leahy St.	<pre>#: Person: Aaron Paquet apaquet@redcedarconsulting.net samples with a detection of &lt;5% ACM. Point Count PCM</pre>	Soil Other	evel II	Area										Received by:	Date :	
	MI 48189 Phone: 7 u.net Fax: 73	rvey :32.3	f: Person: Aaron amples with a c Point Count	Air Paint BioSIS	B EPA Level II	Volume												
	11054 Hi Tech Drive, Whitmore Lake, MI 48189 Phone: 734-449-9990 E-mail: apexresearch@chartermi.net Fax: 734-449-9991	Date of S Project :	Project Contact 600, PC all Wipe	Wipe	,	cation	inoleum	Lineleum	-		(House)		(Basevent)	15	1	Relinquished by:	Date :	
	11054 Hi <sup>.</sup> Tech Dri E-mail: ape		88) 448-8739 One) PLM EPA Asbestos: Bulk <sup>X</sup>	d: Bulk d: Bulk		Materjal/Location	syered 1	n Noodgrain		Ked VFT	OH GLAZING	11	low Glazing 1	1.10		Ŋ	J.	
	n, Inc.	lting	<sup>1901</sup> Fax : <sup>(888)</sup> S. (Circle One Asbe	Lead: Mold:			Yello			4x9 "	Wing	N	N. N.		r-ayereo	Received by: UPS	10-17-1	
	APEX Research, Inc.	r Coi 3216	<sup>g, MI 41</sup>		TTP All Samples	Client ID #	LS-HM-06B	LS-HM-07A	12- HM-078	LS- HM-08A	-		LS- HM-10 A	L3- HM-10 B	LS-H5-018	la terei	Date :	
	EX Re	<u> </u>	City, St., Zip: Lansin Phone: (888) 449-4566 <b>Turn Around</b>	24 hour 72 hour	S day	Lab ID #	<u>C</u>	1 <i>G</i>		2	3	41			55	Relinquished by: ACU	0.17-15	Rev: 12/03 Work Forms: COC
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	APEX Research, Inc. 11054 HF Tech Drive, Whitmore Lake, MI 48189 Phone: 734-449-9990	MI 48189 Phone: 734-449-9	990 APEX
Cliant Nome. Red Cedar Consulting	E-mail: apexresearch@chartermi.net	$\frac{1}{Date of Survey} \cdot \frac{1}{2} + \frac$	
aun.	Durion	11 1 col. 1	
V XOA UY	IIUJCCI Droiort # ·	Jes/ Leuny	37. Report
Dhone: (888) 449-4566 Fax: (88	8) 448-8739	Crson: Aaron Paquet	
<b>Time</b>	PLM EPA	apaque ith a d	cedarconsulting.net ion of <5% ACM. M
Rush 24 hour			
48 hour 72 hour	Lead: Bulk Wipe	Air Paint	Soil
γ	Mold: Bulk Tape	BioSIS Other	Viable
- Long -	TEM: AHERA 7400 Bulk/NOB	B EPA Level II	
Lab ID # Client ID #	Material/Location	Volume A1	Area Results
23 LS-HS-01C L	Layered Plaster (5 Layers)		
LS-HS-OZA			
25 LS-HS-028			
26 LS-HS-02C			
27 LS-HS-02 D			
25 LS-H5-02E	φ 4		
A AN-MA-ILA h	Window Glazing (Garage)		
30 LS-HM-IB			
			RECEIVE
Relinquished by: <u>A Marting</u> Received by:	UPS Relinquished by:	Receiv	Received by: 0C7 1 9 2018
Date : /0-/7-/8 Date : /0-/7-	P. X Date:	Date :	APEX RESEARCH

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Red Cedar Consulting

Tables

### Table 1 - Summary of Hazardous Materials, 3237 Leahy St., Muskegon Heights, Michigan

	Hazardous Materials Description and Location	
Location	Material Description	Quantity
Living	Television	2
Dining	Television	3
Front Entry	Television	1
Basement	Gallon Container Misc. Paint	10
Basement	Quart Container Misc. Paint	15

Table 2 - Summary of Sample Descriptions and Asbestos Laboratory Results, 3237 Leahy St., Muskegon Heights, Michigan

Sample Number	Sample Description	Friable	Material Type	Material Classification	% Asbestos Laboratory Result	Sample Location	Approx. Material Quantity
LS-HM-01A	Vapor Barrier, Brown	Yes	М	Category II	ND	House Exterior	NA
LS-HM-01B	Vapor Barrier, Brown	Yes	М	Category II	ND	House Exterior	NA
LS-HM-02A	Shingle Roof	No	М	Category I	ND/ND/ND/ ND/ND	House Exterior	NA
LS-HM-02B	Shingle Roof	No	М	Category I	ND/ND/ND/ ND/ND	House Exterior	NA
LS-HM-03A	Shingle Roof	Yes	М	Category II	ND/ND/ND	Garage Exterior	NA
LS-HM-03B	Shingle Roof	Yes	М	Category II	ND/ND/ND	Garage Exterior	NA
LS-HM-04A	Vapor Barrier, Black	Yes	М	Category II	ND	House Exterior	NA
LS-HM-04B	Vapor Barrier, Black	Yes	М	Category II	ND	House Exterior	NA
LS-HM-05A	Grey Woodgrain Linoleum	Yes	М	Category II	10%CH/ND	Kitchen	180 sq. ft.
LS-HM-05B	Grey Woodgrain Linoleum	Yes	М	Category II	NA/ND	Kitchen	NA
LS-HM-06A	Yellow Linoleum	Yes	М	Category II	ND	Bathroom	NA
LS-HM-06B	Yellow Linoleum	Yes	М	Category II	ND	Bathroom	NA
LS-HM-07A	Brown Woodgrain Linoleum	Yes	М	Category II	ND	NW Bedroom	NA
LS-HM-07B	Brown Woodgrain Linoleum	Yes	М	Category II	ND	NW Bedroom	NA
LS-HM-08A	9x9 Red VFT	Yes	М	Category II	10%CH/10%CH/ ND	Rear Entry	72 sq. ft.
LS-HM-08B	9x9 Red VFT	Yes	М	Category II	NA/NA/ND	Rear Entry	NA
LS-HM-09A	Window Glazing	Yes	М	Category II	2.25%СН-РС	Living	27 Windows
LS-HM-09B	Window Glazing	Yes	М	Category II	NA	Kitchen	NA
LS-HM-10A	Window Glazing	Yes	М	Category II	ND	Basement	NA
LS-HM-10B	Window Glazing	Yes	М	Category II	ND	Basement	NA
LS-HM-11A	Window Glazing	Yes	М	Category II	ND	Garage	NA
LS-HM-11B	Window Glazing	Yes	М	Category II	ND	Garage	NA
LS-HS-01A	Layered Plaster (5 Layers)	No	S	Category II	ND/ND/ND/ ND/ND	Living Ceiling	NA
LS-HS-01B	Layered Plaster (5 Layers)	No	S	Category II	ND/ND/ND/ ND/ND	Living Ceiling	NA
LS-HS-01C	Layered Plaster (5 Layers)	No	S	Category II	ND/ND/ND/ ND/ND	Living Ceiling	NA

Table 2 - Summary of Sample Descriptions and Asbestos Laboratory Results, 3237 Leahy St., Muskegon Heights, Michigan

Sample Number	Sample Description	Friable	Material Type	Material Classification	% Asbestos Laboratory Result	Sample Location	Approx. Material Quantity
LS-HS-01A	Plaster (Dark Gray)	No	S	Category II	ND/ND	Dining Ceiling	NA
LS-HS-01B	Plaster (Dark Gray)	No	S	Category II	ND/ND	NW Bedroom Ceiling	NA
LS-HS-01C	Plaster (Dark Gray)	No	S	Category II	ND/ND	Living Wall	NA
LS-HS-01D	Plaster (Dark Gray)	No	S	Category II	ND/ND	NW Bedroom Wall	NA
LS-HS-01E	Plaster (Dark Gray)	No	S	Category II	ND/ND	NE Bedroom Wall	NA

#### Notes:

Material Types

M = Miscellaneous building material

TSI = Thermal System Insulation

S = Surfacing Material

PC = Point Count Analysis

CH = Chrysotile Asbestos

### Abbreviations

NQ = Not quantified

NA = Not applicable

ND = Not detected. Laboratory result is less than 1 % asbestos

- lin. ft. = linear feet
- sq. ft. = square feet

Asbestos Containing Material (ACM) is defined as any material containing more than 1 percent asbestos as determined utilizing Polarized Light Microscopy.

### Table 3 - Summary of Presumed Asbestos Containing Materials, 3237 Leahy St., Muskegon Heights, Michigan

A	Asbestos Containing Material Description a	nd Location			
Location	Material Description	Friable Condition		Material Type	Approx. Quantity
Basement Boiler Pipe	Air-O-Cell 3" to 4"	Yes	Fair	TSI	75 lin. ft.

Notes:

Material Types

#### Abbreviations

M = Miscellaneous building material TSI = Thermal System Insulation

S = Surfacing Material lin. ft. = linear feet sq. ft. = square feet

Transform	MatelDandation		E. A.L.	
Location	Material Description		Friable	Approx. Quantity
Kitchen	Grey Woodgrain Linoleum		No	180 sq. ft.
Bathroom	9x9 Red VFT		No	72 sq. ft.
		Total		252 sq. ft.
Interior - Asbestos Containing Materials				
Location	<b>Material Description</b>		Friable	Approx. Quantity
Basement Boiler Pipe	Air-O-Cell 3" to 4"		Yes	75 lin. ft.
		Total		75 lin. ft.
Interior - Asbestos Containing Materials				
Location	<b>Material Description</b>		Friable	Approx. Quantity
6 windows 27" wide x 58" tall	Glazing		Yes	6 Windows
1 window 26" wide x 24" tall	Glazing		Yes	1 Window
2 windows 40" wide x 58" tall	Glazing		Yes	2 Windows
7 windows 27" wide x 53" tall	Glazing		Yes	7 Windows
10 windows 24" wide x 53" tall	Glazing		Yes	10 Windows
1 window 36" wide x 20" tall	Glazing		Yes	1 Window
		Total		27 Windows

### Table 4 - Summary of All Asbestos Containing Materials, 3237 Leahy St., Muskegon Heights, Michigan

Notes:

Abbreviations

lin. ft. = linear feet sq. ft. = square feet

**Shaded/Bolded** = Friable ACM and any Category I and Category II non-friable ACM that has a high probability of becoming crumbled, pulverized, or reduced to powder by the demolition or renovation activities that must be properly abated prior to commencement of any demolition/renovation activities.

Demolition/renovation activities completed with intact Category I non-friable ACM are regulated by OSHA and must be completed following the OSHA Asbestos Standards for Construction (29 CFR 1926.1101) which limits employee exposure to asbestos.

Please note that a Negative Pressure Enclosure must be utilized during abatement when Site Conditions Warrant. Examples of these conditions include the abatement of Plaster and Vermiculite insulation, HVAC Duct Wrap in Poor Condition, and Air-O-Cell/Mag Pipe Wrap. Conditions outside of these should be assessed on a case by case basis during the Asbestos Abatement Contractors site walk and Work Plan Preparation.