Asbestos Survey and Limited Lead-Based Paint Survey

Former Auto Repair Shop

700-702 South Main Street

Hannibal, Marion County, Missouri

January 28, 2011

Terracon Project No. 15107089

Prepared for:

City of Hannibal

Hannibal, Missouri

Prepared by:

Terracon Consultants, Inc.

St. Louis, Missouri

January 28, 2011

Terracon

City of Hannibal
320 Broadway
Hannibal, Missouri 63401

Attn: Mr. Jeff LaGarce
P: [573] 221 0111
F: [573] 221 0646
E: jlagarce@hannibal-mo.gov

Re: Asbestos Survey and Limited Lead-Based Paint Survey
Former Auto Repair Shop
700-702 South Main Street
Hannibal, Marion County, Missouri
Terracon Project No. 15107089

Dear Mr. LaGarce:

Terracon Consultants, Inc. (Terracon) is pleased to submit the enclosed Asbestos Survey and Limited Lead-Based Paint Survey for the above-referenced site. This survey was performed in accordance with the Professional Services Agreement between the City of Hannibal, Missouri and Terracon dated December 7, 2010.

This report contains the results of samples collected and analyzed. Please refer to the attached report for details. Terracon Consultants, Inc. appreciates the opportunity to provide this service to the City of Hannibal. If there are any questions regarding this report or if we may be of further assistance, please do not hesitate to contact us.

Sincerely,
Terracon Consultants, Inc.

Heather Beery
Staff Environmental Scientist

Bryan Gatlin
Project Manager

for:
Gary A. Ganson, CIH, CSP
Senior Consultant

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ASBESTOS SURVEY AND
LIMITED LEAD-BASED PAINT SURVEY

FORMER AUTO REPAIR SHOP
700-702 SOUTH MAIN STREET
HANNIBAL, MARION COUNTY, MISSOURI

Terracon Project No. 15107089
January 28, 2011

1.0 INTRODUCTION

Terracon Consultants, Inc. (Terracon) conducted an asbestos survey and limited lead-based paint survey at the former auto repair shop located at 700-702 South Main Street in Hannibal, Marion County, Missouri. The sampling was conducted on January 5, 2011, in general accordance with the Professional Services Agreement between the City of Hannibal, Missouri and Terracon dated December 7, 2010. The survey included interior and exterior areas of the site building, and consisted of readily visible and accessible building materials.

Asbestos

Samples of suspect asbestos-containing materials (ACM) were collected to determine asbestos content. Sampling was performed in compliance with protocols outlined in EPA regulation 40 CFR 763 (Asbestos Hazard Emergency Response Act, AHERA) and in accordance with the provisions of the Federal National Emission Standard for Hazardous Air Pollutants (NESHAP; 40 CFR 61, Subpart M) and the Missouri Department of Natural Resources (MDNR) under 10 CSR 10-6.241 Asbestos Projects - Registration, Notification, and Performance Requirements. Upon collection, the samples were delivered to an accredited laboratory, EMSL Analytical, Inc. in St. Louis, Missouri, for analysis by polarized light microscopy (PLM) using EPA Method 600/R-93/116 per United States Environmental Protection Agency (EPA) methodology (40 CFR 763, Subpart E).

Lead-Based Paint

Lead-based paint (LBP) is regulated by the Environmental Protection Agency (EPA), Missouri Department of Health (MDOH), and the Occupational Safety and Health Administration (OSHA). The EPA and MDOH regulate lead use, removal, and disposal. The EPA defines LBP as paint, varnish, stain, or other applied coating that contains lead equal to or greater than 1.0 mg/cm^2, 5,000 mg/kg, or 0.5% by dry weight as determined by laboratory analysis.

1.1 Project Objectives

The objectives of this project were to identify the presence or absence of ACM that may be impacted by the impending demolition activities of the site structures, and the presence or absence of LBP considered sufficiently damaged (e.g., paint which is deteriorated and is delaminating from the painted surface) to result in building demolition waste being classified as hazardous for lead.

Terracon visually assessed the interior and exterior of the site building to observe for the presence of potential damaged LBP.

1.2 Project General Information

Asbestos

EPA regulation 40 CFR 61, Subpart M, National Emission Standards for Hazardous Air Pollutants (NESHAP) prohibits the release of asbestos fibers to the atmosphere during renovation or demolition activities. The asbestos NESHAP requires that regulated asbestos-containing building materials be identified, classified and quantified prior to planned disturbances or demolition activities. The NESHAP authority for the state of Missouri is Missouri Department of Natural Resources (MDNR)

Lead-Based Paint

The MDNR Fact Sheet entitled "Disposal of Demolition Wastes Contaminated with Lead or Other Heavy Metals" dated August 2008, provided guidance for the disposal of the following types of waste:

- Paint residue
- Demolition debris, and
- Scrap metal.

The waste disposal requirements depend on the kind of waste disposed and how the owner is regulated. The wastes must be managed and disposed of so as not to adversely affect human health, pose a threat to environment, or create a public nuisance. MDNR indicated there were two classifications of buildings:

- Residential Properties Containing Not More Than four Family Units; and
- Other Structures.

The site building is classified as "Other Structures," which includes multi-family dwellings that are not owner occupied, multi-family dwellings containing more than four family units;

commercial and business enterprises, institutions and industrial buildings, and other structures not specifically identified.

Demolition debris need not be tested prior to disposal, so long as the debris is not chipped, shredded, milled, ground, mulched or similarly processed to enhance their leachability prior to disposal. Unprocessed wastes may be disposed in either a sanitary landfill or a demolition landfill.

Scrap metal should be sent to a salvage yard for recycling.

2.0 BUILDING DESCRIPTION

The site is developed with a one-story, 1,800-square foot former auto repair shop, a one-story, 1,300-square foot barn, and storage shed. The former auto repair shop was constructed in 1930 and remodeled in 1961. The building is a brick and concrete block structure atop a concrete floor slab. Interior walls in the western portion of the building are finished with plaster. The remaining walls are concrete. The roofing system was accessed as part of this survey. The barn was constructed in 1965 and is a wooden building with a steel roof and earth floor. The storage shed is a wooden building with a steel roof and earth dirt floor. The building owner stated that there was no insulation (e.g., vermiculite) inside concrete block walls.

3.0 FIELD ACTIVITIES

The asbestos survey was conducted on January 5, 2011 by Mr. Bryan Gatlin and Ms. Heather Beery, MDNR Certified Asbestos Building Inspectors. Copies of Mr. Gatlin's and Ms. Beery's certificates are attached as Appendix E. The asbestos sampling was conducted consistent with the procedures outlined in our Professional Services Agreement referenced in Section 1.0.

The limited LBP survey was conducted on January 5, 2011 by Mr. Bryan Gatlin, a State of Missouri Licensed lead inspector, to provide the client with information to comply with OSHA requirements for lead-in-air content during disturbance of painted materials. The sampling was not designed to meet the requirements of the U.S. Department of Housing and Urban Development (HUD).

A summary of the field activities is described below.

3.1 Visual Assessment

Terracon began the asbestos sampling activities with a visual assessment, identification and inventory of readily visible and accessible homogeneous areas of suspect ACM. A

homogeneous area consists of building materials that appear similar throughout in terms of color, texture and date of application. The interior assessment was conducted throughout visually accessible areas of the site. Building materials identified as concrete, glass, wood, masonry, metal, plastic or rubber were not considered suspect ACM.

Terracon visually assessed the interior and exterior of the site building to identify construction materials suspect for LBP. Painted/coated surfaces which appear similar throughout in terms of color, texture, substrate and date of application are treated as a homogeneous material for paint chip collection purposes. Painted/coated surfaces were visually assessed for evidence of distress such as delaminating, flaking, or peeling.

3.2 Physical Assessment

Asbestos

A physical assessment of each homogeneous area of suspect ACM was conducted to assess the friability and condition of the materials. A friable material is defined by the EPA as a material which can be crumbled, pulverized or reduced to powder by hand pressure when dry. Friability was assessed by physically touching suspect materials.

Lead-Based Paint

A physical assessment of each painted surface which could be observed was conducted to assess its condition. The painted surfaces were assessed as intact (entire surface intact), fair (less than or equal to 2 square feet of peeling paint on large interior surfaces or 10 square feet on large exterior surfaces), or poor (greater than 2 square feet on large interior surfaces and 10 square feet on large exterior surfaces) condition.

3.3 Sample Collection

Based on results of the visual observation, bulk samples of suspect ACM were collected from the interior and exterior of the subject building. Bulk samples of suspect ACM were collected in general accordance with AHERA sampling protocols using wet methods as applicable to reduce the potential for fiber release. Samples were placed in sealable containers and labeled with unique sample numbers using an indelible marker. A total of fifteen (15) bulk samples were collected from five (5) homogeneous areas of suspect ACM. The asbestos survey sample summary is provided in Appendix A. The confirmed asbestos-containing materials are tabulated in Appendix B. Although reasonable effort was made to survey accessible suspect materials, additional suspect but un-sampled materials could be located in walls, in voids or in other concealed areas.

Lead-Based Paint

At the request of the client, collection of paint samples was requested for painted surfaces which appeared deteriorated to the extent that demolition debris could be considered hazardous. Due to lack of observed peeling, cracking, or chipping paint, Terracon did not collect samples of painted components for TCLP analysis.

3.4 Sample Analysis

Asbestos

Samples of suspect ACM were delivered under proper chain-of-custody to EMSL Analytical, Inc. (EMSL) of St. Louis, Missouri. EMSL is a laboratory accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) under the National Institute of Standards and Technology (NIST) (Lab Code: 200742-0) for analysis by Polarized Light Microscopy (PLM). The percentage of asbestos, where applicable, was determined by microscopical visual estimation. Copies of the analytical reports and chain-of-custody forms are provided in Appendix C.

Lead-Based Paint

Due to lack of observed peeling, cracking, or chipping paint, Terracon did not collect samples of painted components (paint/substrate) for TCLP analysis. .

4.0 REGULATORY OVERVIEW

As a consequence of the health hazard from inhalation of asbestos fibers, a body of federal and state regulations has been developed. Federal regulations pertaining to asbestos are included in AHERA (US EPA 40 CFR 763, Subparts E, F); NESHAP (EPA 40 CFR 61); OSHA Asbestos Standards (29 CFR 1910.1001 and 29 CFR 1926.1101), and ASHARA (Asbestos School Hazard Abatement Reauthorization Act). Many states have additional requirements including state-specific licensing and certification. In Marion County, Missouri, asbestos activities are regulated by the Missouri Department of Natural Resources (MDNR) under 10 CSR 10-6.241 Asbestos Projects - Registration, Notification, and Performance Requirements.

Friable ACM, Category I and Category II non-friable ACM which is in poor condition and has become friable or which will be subjected to drilling, sanding, grinding, cutting or abrading and which could be crushed or pulverized during anticipated renovation or demolition activities are considered regulated ACM (RACM). RACM must be removed prior to renovation or demolition activities which will disturb the materials. The owner or operator must provide MDNR with written notification at least 10 working days prior to the commencement of any renovation activity which will include the disturbance of at least 160 square feet, 260 linear

feet, or one cubic meter of RACM or prior to the commencement of demolition. Removal of RACM must be conducted by a MDNR licensed asbestos abatement contractor. Please note that demolition of any structure, which is defined as removal of a load-bearing member, requires a 10-day notification even when no asbestos is present.

The federal OSHA Asbestos standard for construction (29 CFR 1926.1101) regulates workplace exposure to asbestos. OSHA standards require that employee exposure to airborne asbestos fibers be maintained below 0.1 asbestos fibers per cubic centimeter of air (0.1 f/cc). The OSHA standards classifies construction and maintenance activities which could disturb ACM, and specifies work practices and precautions which employers must follow when engaging in each class of regulated work. However, workers who deliberately disturb any amount of asbestos should have pertinent training and wear proper personal protective equipment according to federal and state regulatory requirements (i.e., OSHA 29 CFR 1926.1101 (g) (1) through (9) for Class I, II and III work).

Lead-Based Paint

The limited LBP survey was performed in accordance with the procedures prescribed in the EPA's work practice standards for conducting lead paint testing (40 CFR 745.227). Lead is regulated by the EPA and OSHA at the federal level and by MDOH at the state level.

The Resource Conservation and Recovery Act (RCRA) gave the USEPA authority to regulate the waste status of demolition and renovation debris, including lead-containing materials. Specific notification and testing requirements must be addressed prior to transporting, treating, storing, or disposing of hazardous wastes. Lead containing wastes are considered hazardous waste under RCRA if Toxicity Characteristic Leaching Procedure (TCLP) results exceed 5 milligrams per liter (mg/L). EPA exempts from most RCRA requirements those generators whose combined hazardous waste generation is less than 100 kilograms (kg) per month.

Detectable lead quantities may constitute a lead dust hazard during renovation/demolition activities. Personnel performing renovation/demolition activities that may disturb painted components with concentrations of lead above the designated analytical detection limit should comply with all current OSHA regulations in order to minimize employee exposure. OSHA regulates construction activities that disturb lead-containing material regardless of the concentration. Currently, any proposed renovation/demolition is subject to the OSHA regulations (29 CFR 1926.62 – Lead Exposure in Construction).

5.0 FINDINGS AND RECOMMENDATIONS

Asbestos

Fifteen samples of suspect ACM were collected from the interior and exterior of the subject building. Laboratory analysis identified asbestos in the following material:

- Window glazing

It is recommended that the identified ACM at the site be managed in place with an Operations and Maintenance (O&M) Plan. ACM that will be disturbed during future renovation or demolition activities should be properly removed and disposed by a trained and licensed abatement contractor.

The asbestos survey sample summary is provided in Appendix A. Confirmed asbestos-containing materials are summarized in Appendix B and laboratory analytical reports are included in Appendix C. Photographs of sampled materials are provided in Appendix D.

Lead-Based Paint

The interior and exterior painted components were in generally fair to intact condition with evidence of weathering. Terracon did not observe painted components which exhibited deterioration as defined in Section 3.2; and therefore did not collect samples of painted materials for TCLP analysis.

6.0 GENERAL COMMENTS

The asbestos survey and limited lead-based paint survey were conducted in a manner consistent with the level of care and skill ordinarily exercised by members of the profession currently practicing under similar conditions in the same locale. The results, findings, conclusions and recommendations expressed in this report are based on conditions observed during our sampling of the building. The information contained in this report is relevant to the date on which these samplings were performed, and should not be relied upon to represent conditions at a later date. This report has been prepared on behalf of and exclusively for use by the City of Hannibal for specific application to their project as discussed. This report is not a bidding document. Contractors or consultants reviewing this report must draw their own conclusions regarding further investigation or remediation deemed necessary. Terracon does not warrant the work of regulatory agencies, laboratories or other third parties supplying information which may have been used in the preparation of this report. No warranty, express or implied is made.

APPENDIX A

ASBESTOS SURVEY SAMPLE SUMMARY

ASBESTOS SURVEY SAMPLE SUMMARY
FORMER AUTO REPAIR SHOP
700-02 SOUTH MAIN STREET, HANNIBAL, MO

Homogeneous Area	Sample No.	Description	Sample Location	Lab Results	Condition
1	1-1	Wall plaster	Former auto repair shop	None Detected	Good
	1-2	Wall plaster	Former auto repair shop	None Detected	
	1-3	Wall plaster	Former auto repair shop	None Detected	
2	2-1	Drywall and joint compound	Ceiling of former auto repair shop	None Detected	Good
	2-2	Drywall and joint compound	Ceiling of former auto repair shop	None Detected	
	2-3	Drywall and joint compound	Ceiling of former auto repair shop	None Detected	
3	**3-1**	**Window glazing**	**Windows of the former auto repair shop**	**4% Chrysotile**	**Good**
	3-2	**Window glazing**	**Windows of the former auto repair shop**	**4% Chrysotile**	
	3-3	**Window glazing**	**Windows of the former auto repair shop**	**4% Chrysotile**	
4	4-1	Window caulk	Exterior of windows on north side of former auto repair shop	None Detected	Good
	4-2	Window caulk	Exterior of windows on north side of former auto repair shop	None Detected	
	4-3	Window caulk	Exterior of windows on north side of former auto repair shop	None Detected	
5	5-1	Roof (built up)	Roof of former auto repair shop	None Detected	Good
	5-2	Roof (built up)	Roof of former auto repair shop	None Detected	
	5-3	Roof (built up)	Roof of former auto repair shop	None Detected	

APPENDIX B

CONFIRMED ASBESTOS-CONTAINING MATERIAL

FORMER AUTO REPAIR SHOP
700-02 SOUTH MAIN STREET
HANNIBAL, MARION COUNTY, MISSOURI
Terracon Project No. 15107089

CONFIRMED ASBESTOS-CONTAINING MATERIAL

HA No.	Description	Material Location	Percent/Type Asbestos	NESHAP Classification	Condition	Estimated Quantity
3	Window glazing	Windows	4% Chrysotile	Category I non-friable	Good	100 LF

SF = Square feet
LF = Linear feet
C = Chrysotile asbestos

APPENDIX C

ANALYTICAL LABORATORY DATA

Asbestos • Lead • Environmental • Materials & Indoor Air Analysis

EMSL Analytical, Inc.

3029 S. Jefferson Saint Louis, MO 63118
Phone: (314) 577-0150 Fax: (314) 776-3313
Web: Email: saintlouislab@emsl.com

FACSIMILE TRANSMITTAL SHEET

To: Bryan Gatlin
Company: Terracon Consultants, Inc.
Fax Number: (314) 692-8810
Phone Number: (314) 692-8811

From: EMSL Analytical, Inc.
Date: January 17, 2011
PAGES INCLUDING COVER: 6

700-702 S. MAIN

RE: Analysis Results for Order(s) 391100142
The following report covers the analysis performed on samples submitted to EMSL Analytical, Inc. on the following date(s):
1/10/2011 9:00:00AM

EMSL Analytical, Inc. News

EMSL PRODUCTS
MONTHLY SPECIALS

Air-o-Cell (50pk) $199.00
PCM Cassettes $24(10+bx)
TEM Cassettes $39(10+bx)

PUMP BLOWOUT SALE

Product #870610
EMSL H/D Diaphragm Pump $169

Product #8706105
H/D Diaphragm Pump Kit $425

IAQ INSTRUMENT DEALS

Product #8703003
Protimeter Mini Moisture Meter $175

Product #8704013
BIOS Defender 510-H $1299

Product #8709001

Online Training

www.EMSLTraining.com

CIE
CMI
CIAQM
Microbiology for the IAQ Professional
HVAC for the IAQ Professional

Online Sampling Videos
www.EMSL.tv

New Lab Services at EMSL

Chinese Drywall Testing
Allergens
PCB's
Rapid Pathogen Detection by Real Time PCR
Radon

Westmont, NJ Lab Open Saturday
Asbestos, Lead, and Mold Analysis!

1-800-220-3675 East Coast
1-888-455-3675 West Coast

If you have any questions, please do not hesitate to contact us at (314) 577-0150.

VISIT OUR WEBSITE AT
Please tell us how we are doing by going to the survey at http://www2.emsl.com/custsurvey/?fromregion=eastcoast

YOU CAN DOWNLOAD AND PRINT
CERTIFICATIONS OF ACCREDITATIONS AND CHAIN OF CUSTODY FORMS

100 - 702 S MAIN

Chain of Custody

EMSL Order Number (Lab Use Only): 391100142

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Company: TERRACON		**EMSL-Bill to:** ☐ Same ☐ Different If Bill to is Different note instructions in Comments** Third Party Billing requires written authorization from third party	
Street: 11600 LILBURN PARK RD			
City: ST LOUIS	**State/Province:** MO	**Zip/Postal Code:** 63146	**Country:**
Report To (Name): BRYAN GATLIN		**Fax #:** 314-692-8810	
Telephone #: 314-692-8811		**Email Address:**	
Project Name/Number: FLOOD BUYOUT - 15107089			
Please Provide Results: ☒ Fax ☐ Email	**Purchase Order:**	**U.S. State Samples Taken:** MO	

Turnaround Time (TAT) Options* - Please Check

☐ 3 Hour ☐ 6 Hour ☐ 24 Hour ☐ 48 Hour ☐ 72 Hour ☐ 96 Hour ☒ 1 Week ☐ 2 Week

*For RUSH TAT's Please Call Ahead to Confirm Lab Hours and Availability. Not all TAT options are valid for every test. Materials Science and IAQ TATs are in Business Days rather than Hours (i.e. 24 Hour = End of Next Business Day)

Asbestos

PCM - Air
☐ NIOSH 7400
☐ w/ 8hr. TWA

TEM - Air ☐ 4-4.5hr TAT (AHERA ONLY)
☐ AHERA 40 CFR, Part 763
☐ NIOSH 7402
☐ EPA Level II
☐ ISO 10312

TEM - Water
Fibers ≥10µm ☐ Waste ☐ Drinking
All Fiber Sizes ☐ Waste ☐ Drinking

PLM - Bulk
☒ PLM EPA 600/R-93/116
☐ PLM EPA NOB (<1%)
☐ NYS 198.1 (friable-NY)
☐ NYS 198.6 (non-friable-NY)
Point Count ☐ 400 (<0.25%) ☐ 1000 (<0.1%)
Point Count w/ Gravimetric ☐ 400 (<0.25%) ☐ 1000 (<0.1%)

TEM - Dust
☐ Microvac – ASTM D 5755
☐ Wipe-ASTM D6480

TEM - Bulk
☐ TEM EPA NOB
☐ NYS NOB 198.4 (non-friable-NY)
☐ Chatfield SOP

Soil/Rock/Vermiculite
☐ PLM CARB 435 – A (0.25% sensitivity)
☐ PLM CARB 435 – B (0.1% sensitivity)
☐ TEM CARB 435 – B (0.1% sensitivity)
☐ EPA Reg. 1 Screening Protocol (Qualitative)

Other:

Lead (Pb)

Flame Atomic Absorption
☐ Chips SW846-7000B or AOAC 974.02
☐ Soil SW846-7000B/7420
☐ Air NIOSH 7082
☐ Wastewater SM3111B or SW846-7000B/7420
☐ ASTM Wipe SW846-7000B/7420
☐ non ASTM Wipe SW846-7000B/7420
☐ TCLP SW846-1311/7420/SM 3111B

ICP
☐ Air NIOSH 7300 Modified
☐ non ASTM Wipe SW846-6010B or C
☐ ASTM Wipe SW846-6010B or C
☐ Soil SW846-6010 B or C
☐ Waste Water SW846-6010B or C
☐ TCLP SW846-6010B or C

Graphite Furnace Atomic Absorption
☐ Soil SW846-7421 ☐ Wastewater EPA 200.9
☐ Air NIOSH 7105 ☐ Drinking Water EPA 200.9

Other: ☐

Materials Science

☐ Common Particle ID (large particles)
☐ Fine Particle ID (environmental dust)
☐ Basic Material ID (solids)
☐ Advanced Material ID
☐ Physical Testing (Tensile, Compression)
☐ Combustion-by-products (soot, char, etc.)
☐ X-Ray Fluorescence (elem. analysis)
☐ X-Ray Diffraction (Crystalline Part.)
☐ MMVF's (Fibrous glass, RCF's)
☐ Particle Size (sieve/microscopy/laser)
☐ Combustible Dust
☐ Petrographic Examination
Other: ☐

Microbiology

Wipe and Bulk Samples
☐ Mold & Fungi – Direct Examination
☐ Mold & Fungi Culture (Genus Only)
☐ Mold & Fungi Culture (Genus & Species)
☐ Bacterial Count & ID (Up to Three Types)
☐ Bacterial Count & ID (Up to Five Types)
☐ MRSA
☐ *Pseudomonas aeruginosa*

Water Samples
☐ Total Coliform & E.coli (P/A)
☐ Fecal Coliform (SM 9222D)
☐ Sewage Screen
☐ Heterotrophic Plate Count (SM 9215)

Air Samples
☐ Mold & Fungi (Spore Trap)
☐ Mold & Fungi Culture (Genus Only)
☐ Mold & Fungi (Genus & Species)
☐ Bacterial Culture & ID (Up to Three Types)
☐ Bacterial Culture & ID (Up to Five Types)
☐ Endotoxin Testing

Real Time Q-PCR (See Analytical Guide for Code)
Code:

Legionella
☐ Level 1 ☐ Level 2 ☐ Level 3 ☐ Level 4

Other: ☐

IAQ

Nuisance Dust NIOSH ☐ 0500 ☐ 0600
Airborne Dust ☐ PM10 ☐ TSP
Silica Analysis: ☐ All Species
Silica Analysis – Single Species
☐ Alpha Quartz ☐ Cristobalite ☐ Tridymite
☐ HVAC Efficiency
☐ Carbon Black
☐ Airborne Oil Mist
Radon Testing: Call for Kit and COC
Other: ☐

****Comments/Special Instructions:**

Client Sample #'s	-	**Total # of Samples:**	15
Relinquished (Client):	**Date:** 1-7-11	**Time:** 3pm	
Received (Lab):	**Date:** 1-10-11	**Time:** 8AM	

Analysis Completed in Accordance with EMSL's Terms and Conditions located in the Analytical Price Guide

Chain of Custody

EMSL Order Number *(Lab Use Only)*: 391100142

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

700-702 S MAIN 1 of 1

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
1-1	WALL PLASTER		
-2	↓		
-3	↓		
2-1	DRYWALL + JOINT COMPOUND		
-2	↓		
-3	↓		
3-1	WINDOW GLAZING		
-2	↓		
-3	↓		
4-1	WINDOW CAULK N. SIDE WINDOWS		
-2	"		
-3	↓ "		
5-1	ROOF (BUILT UP) ROOF		
-2	"		
-3	↓ "		

*Comments/Special Instructions:

Analysis Completed in Accordance with EMSL's Terms and Conditions located in the Analytical Price Guide

EMSL Analytical, Inc.
3029 S. Jefferson, Saint Louis, MO 63118
Phone: (314) 477-9150 Fax: (314) 776-3313 Email: saintlouislab@emsl.com

Attn: **Bryan Gatlin**
Terracon Consultants, Inc.
11600 Lilburn Park Road

Saint Louis, MO 63146

Fax: (314) 692-8810 Phone: (314) 692-8811
Project: **Flood Buyout - 15107089 / 700-702 S. Main**

Customer ID: TERR57
Customer PO:
Received: 01/10/11 9:00 AM
EMSL Order: 391100142

EMSL Proj:
Analysis Date: 1/17/2011

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	Description	Appearance	% Fibrous	% Non-Fibrous	% Type
1-1 *391100142-0001*		Various Non-Fibrous Heterogeneous		74% Non-fibrous (other) 26% Quartz	None Detected
1-2 *391100142-0002*		Various Non-Fibrous Heterogeneous		71% Non-fibrous (other) 29% Quartz	None Detected
1-3 *391100142-0003*		Various Non-Fibrous Heterogeneous	2% Hair	72% Non-fibrous (other) 26% Quartz	None Detected
2-1 *391100142-0004*		Various Non-Fibrous Heterogeneous	13% Cellulose	87% Non-fibrous (other)	None Detected
2-2-Texture *391100142-0005*		Various Non-Fibrous Heterogeneous		98% Non-fibrous (other) 2% Mica	None Detected
2-2-Drywall *391100142-0005A*		Various Non-Fibrous Heterogeneous	13% Cellulose	87% Non-fibrous (other)	None Detected
2-3-Texture *391100142-0006*		Various Non-Fibrous Heterogeneous		98% Non-fibrous (other) 2% Mica	None Detected

Initial report from 01/17/2011 15:43:49

Analyst(s)

Sue Ferrario (17)

Jeff Siria, Laboratory Manager
or other approved signatory

EMSL Analytical, Inc.
3029 S. Jefferson, Saint Louis, MO 63118
Phone: (314) 577-0150 Fax: (314) 776-3313 Email: saintlouislab@emsl.com

Attn: **Bryan Gatlin**
Terracon Consultants, Inc.
11600 Lilburn Park Road

Saint Louis, MO 63146

Fax: (314) 692-8810 Phone: (314) 692-8811
Project: **Flood Buyout - 15107089 / 700-702 S. Main**

Customer ID: TERR57
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Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	Description	Appearance	% Fibrous	% Non-Fibrous	% Type
2-3-Drywall *391100142-0006A*		Various Non-Fibrous Heterogeneous	13% Cellulose	87% Non-fibrous (other)	None Detected
3-1 *391100142-0007*		Gray Non-Fibrous Heterogeneous		96% Non-fibrous (other)	4% Chrysotile
3-2 *391100142-0008*		Gray Non-Fibrous Heterogeneous		96% Non-fibrous (other)	4% Chrysotile
3-3 *391100142-0009*		Gray Non-Fibrous Heterogeneous		96% Non-fibrous (other)	4% Chrysotile
4-1 *391100142-0010*		Various Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
4-2 *391100142-0011*		Various Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
4-3 *391100142-0012*		Various Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected

Initial report from 01/17/2011 15:43:49

Analyst(s)

Sue Ferrario (17)

Jeff Siria, Laboratory Manager
or other approved signatory

EMSL Analytical, Inc.
3029 S. Jefferson, Saint Louis, MO 63118
Phone: (314) 577-6150 Fax: (314) 776-3313 Email: saintlouislab@emsl.com

Attn: **Bryan Gatlin**
Terracon Consultants, Inc.
11600 Lilburn Park Road

Saint Louis, MO 63146

Fax: (314) 692-8810 Phone: (314) 692-8811
Project: **Flood Buyout - 15107089 / 700-702 S. Main**

Customer ID: TERR57
Customer PO:
Received: 01/10/11 9:00 AM
EMSL Order: 391100142

EMSL Proj:
Analysis Date: 1/17/2011

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos			Asbestos
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**% Non-Fibrous**	**% Type**
5-1		Black	9%	Cellulose	62% Non-fibrous (other)	**None Detected**
391100142-0013		Non-Fibrous Heterogeneous	29%	Glass		
5-2		Black	19%	Cellulose	62% Non-fibrous (other)	**None Detected**
391100142-0014		Non-Fibrous Heterogeneous	19%	Glass		
5-3		Brown	39%	Cellulose	61% Non-fibrous (other)	**None Detected**
391100142-0015		Non-Fibrous Heterogeneous				

Initial report from 01/17/2011 15:43:49

Analyst(s)

Sue Ferrario (17)

Jeff Siria, Laboratory Manager
or other approved signatory

THIS IS THE LAST PAGE OF THE REPORT.

APPENDIX D

PHOTOGRAPHS

Asbestos Survey and Limited Lead Based Paint Survey
Terracon Project No. 15107089
Former Auto Repair Shop, 700-02 South Main Street, Hannibal, MO
Date Photos Taken: January 5, 2011

Terracon
Consulting Engineers & Scientists

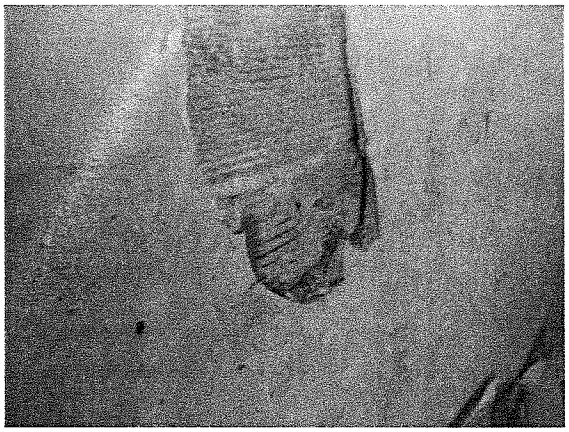

Photo #1 HA 1 – wall plaster

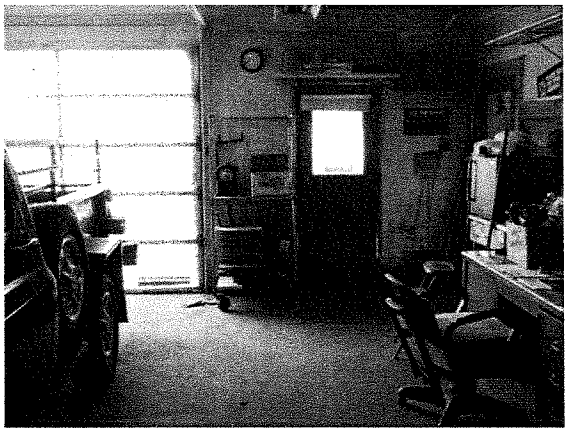

Photo #2 View of western portion of former auto repair shop

Photo #3 View of eastern portion of auto repair shop

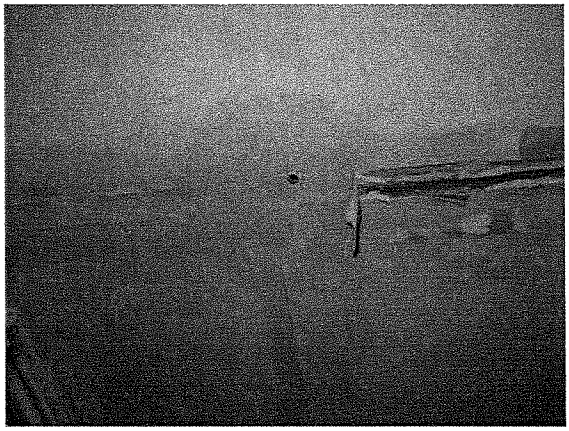

Photo #4 HA 2 – Drywall and joint compound on ceiling of former auto repair shop

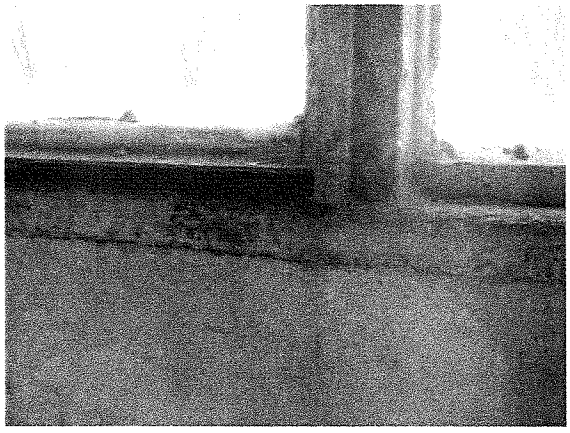

Photo #5 HA 3 – window glazing on windows of former auto repair shop

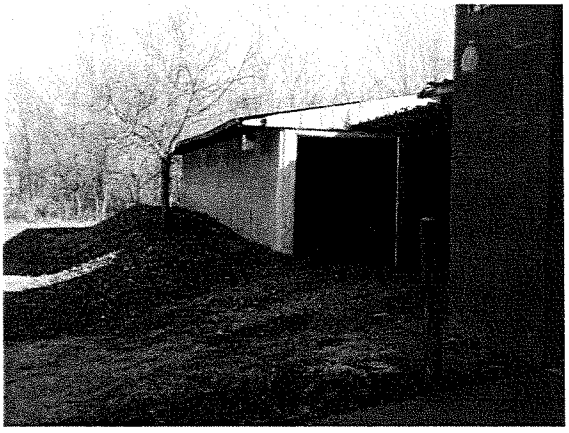

Photo #6 View of on-site barn

Terracon
Consulting Engineers & Scientists

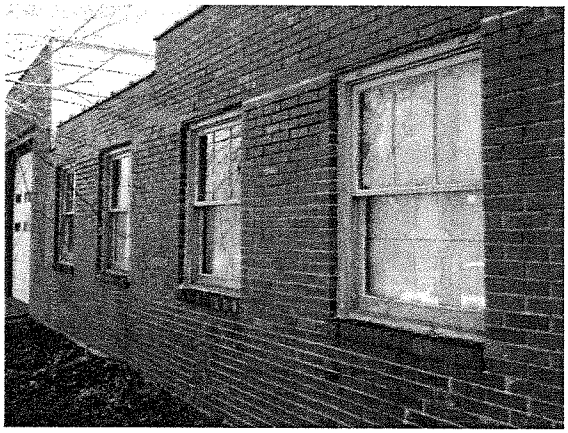

Photo #7 HA 4 – window caulk on exterior windows on north side of former auto repair shop

Photo #8 View of roof with plastic sheet covering

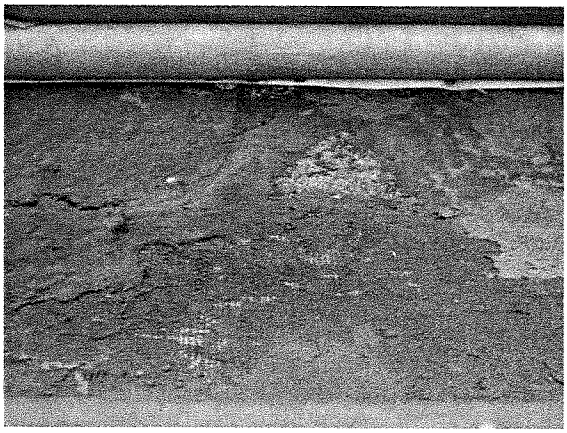

Photo #9 HA 5 – roof of former auto repair shop

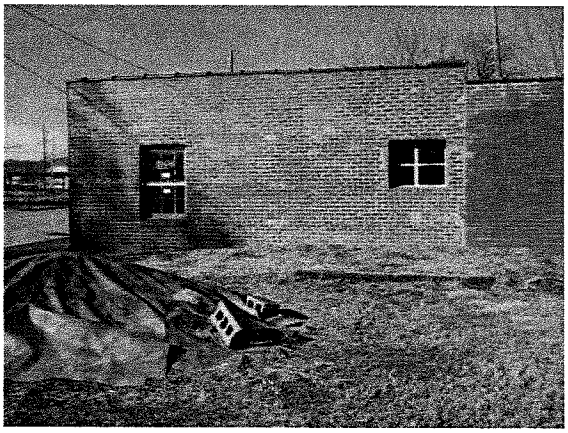

Photo #10 View of south side of former auto repair shop

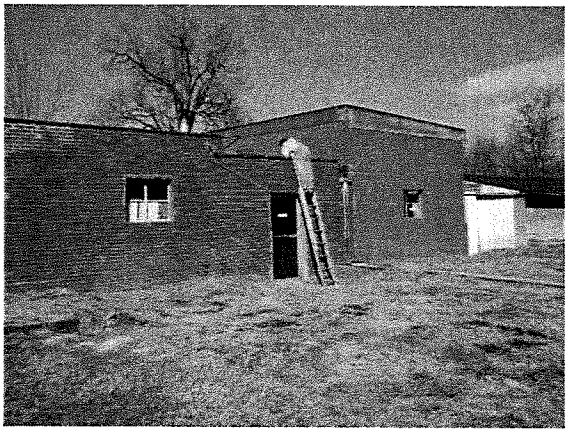

Photo #11 View of south side of auto repair shop, storage shed, and barn

APPENDIX E

CERTIFICATIONS

Expiration Date: **1/18/2012** Certificate Number: 7112121710MOIR5258

Training Date: **12/17/2010**

Missouri State Certificate for Asbestos Related Occupations

issued by Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102
Phone (573) 751-4817

Bryan N. Gatlin

has successfully completed the requirements for certification as a INSPECTOR. This Missouri State Certification is subject to review and the director may deny, suspend or revoke the certification per RSMo chapter 643.230.

1/18/2011
Date

James L. Kavanaugh
Director of Air Pollution Control Program

STATE OF MISSOURI
DEPARTMENT OF HEALTH AND SENIOR SERVICES

LEAD OCCUPATION LICENSE REGISTRATION

Issued to:

BRYAN GATLIN

The person, firm or corporation whose name appears on this certificate has fulfilled the requirements for licensure as set forth in the Missouri Revised Statutes 701.300-701.338, as long as not suspended or revoked, and is hereby authorized to engage in the activity listed below.

Lead Inspector
Category of License

Issuance Date: **11/19/2009**
Expiration Date: **11/19/2011**
License Number: **971119-200033535**

Margaret T. Donnelly

Margaret T. Donnelly
Director
Department of Health and Senior Services

Lead Licensing Program, PO Box 570, Jefferson City, MO 65102

Expiration Date: **4/8/2011** Certificate Number: 7112032410MOII14486

Training Date: **3/24/2010**

Missouri State Certificate for Asbestos Related Occupations

issued by Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102
Phone (573) 751-4817

Heather L. Beery

has successfully completed the requirements for certification as a INSPECTOR. This Missouri State Certification is subject to review and the director may deny, suspend or revoke the certification per RSMo chapter 643.230.

4/8/2010
Date

James L. Kavanaugh
Director of Air Pollution Control Program