

CHEROKEE NATION
Environmental Programs



Asbestos Sampling Report

PARTICIPANT: MCCARTER, DOUGLAS

PREPARED BY: Brad Asbill **DATE:** 8-22-12
BRAD ASBILL, ENVIRONMENTAL SPECIALIST I

REQUESTED BY: CHEROKEE NATION HOUSING REHABILITATION (HUD) -
GEORGE HUBBARD

TABLE OF CONTENTS

- I. SITE INSPECTION/DESCRIPTION
- II. BACKGROUND
- III. FIELD PROCEDURES AND ANALYTICAL METHODS
- IV. SUMMARY OF FINDINGS
- V. CONCLUSIONS

APPENDIX A: PROJECT SCOPE OF WORK

APPENDIX B: LABORATORY REPORT & CHAIN OF CUSTODY

APPENDIX C: SITE PHOTOGRAPHS

I. Site Inspection/Description

Cherokee Nation Environmental Programs (CNEP) has conducted asbestos sampling for the presence of asbestos containing materials (ACM) for the following site:

Site Name: Douglas McCarter
Address: 17565 W. Robin Drive, Tahlequah, OK 74464
Phone: (918) 457-9362
Lat/Long: 35.97584 N, 94.98233 W

The sampling was performed to determine the presence of all ACM from within the affected parts of the structure for EPA's National Emissions of Hazardous Air Pollutants (NESHAP) compliance as well as OSHA worker protection.

The inspector responsible for this project was:

Brad Asbill ODOL, AIHRA Inspector, License No: OK159939

The sampling was conducted on August 15, 2012 at the request of the Cherokee Nation Housing Rehabilitation Department.

The site is a single family home built in 1978. Sampling was limited to areas that would be affected by the project scope of work (Appendix A) provided by the rehabilitation department.

ACM was found at this site. See Section IV for locations.

II. BACKGROUND

The Oklahoma Department of Environmental Quality (ODEQ) has adopted EPA's NESHAP regulation under OAC252:100, 41-15 and has been delegated authority in the state of Oklahoma for its enforcement. Section 61.145(a) of Federal EPA regulation states that prior to commencement of the demolition or renovation of a facility a thorough inspection of the affected part or parts of a facility is required to determine the presence of all asbestos including Category I and Category II non-friable, and friable ACM. ACM is defined by EPA and OSHA as any material that contains greater than 1% asbestos.

III. FIELD PROCEDURES AND ANALYTICAL METHODS

During the on-site inspection, we visually assessed the physical characteristics of suspect asbestos-containing materials (SACM) based on homogeneous areas. Homogeneous areas are areas of asbestos similar in color, texture, and construction, date of application, and in general

appearance. For purposes of renovation and demolition, homogeneous areas of SACM can be further classified according to NESHAPs rules by whether the material is friable, Category I non-friable, or Category II non-friable.

Friable ACM is defined by NESHAPs rules as any material containing more than 1% asbestos as determined by Polarized Light Microscopy (PLM), that, when dry, can be crumbled, pulverized or reduced to powder by hand pressure.

Category I Non-friable ACM is defined by NESHAPs rules as any asbestos-containing packings, gaskets, construction mastics, resilient floor covering (i.e. floor tiles, roll sheet flooring) or asphalt roofing products that contain more than 1% asbestos as determined by PLM.

Category II Non-friable ACM is defined by NESHAPs rules as any material, excluding Category I non-friable ACM, containing more than 1% asbestos as determined by PLM, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

Typically, non-friable materials, such as transite (cementitious products) and vinyl floor tiles are not regulated by the State of Oklahoma provided they do not become friable. General deterioration, machine grinding, drilling, sanding, and dry-buffing are all ways of causing non-friable materials to become classified as Regulated Asbestos Containing Materials (RACM). All friable materials are classified RACM. Please note that the following materials, even though classified as non-friable are fully regulated by Oklahoma Department of Labor for removal purposes as friable material: ceiling tiles, roll sheet flooring (linoleum), and joint wall compound when deemed friable

In addition to classification of suspect material into friable and non-friable materials, a determination of current condition was conducted as part of the physical assessment. The condition noted is the representative of the material at the time of inspection. Conditions of materials can change very quickly when disturbed. All suspect material was placed in one of the following categories of condition.

Significantly damaged: Material that is damaged, blistered, deteriorated, water stained over at least 10% of its total area.

Damaged: Material that is damaged, blistered, deteriorated, water stained less than 10% of its total area.

Good: Material that has no visible damage or deterioration.

Guidelines used for the number of samples collected per homogeneous area were determined using the Asbestos Hazard Emergency Response Act (AHERA) protocol promulgated in 40 CFR 763. Appendix E as follows:

Surfacing materials – material that is sprayed or troweled on wall, ceilings, or support columns for fireproofing, acoustical, or even decorative purpose.

- Less than 1000 ft² – Minimum 3 samples
- From 1000-5000 ft² – Minimum 5 samples
- Greater than 5000 ft² – Minimum 7 samples

Thermal System Insulation (TSI) materials – thermal system insulation material applied to tanks, boiler, pipes or other structural component for an insulating purpose.

- May omit areas of fibrous glass, foam glass, rubber, and Styrofoam from sampling. Areas that have mastic on seams or outer jacketing will be sampled.
- At least three samples must be collected from each homogeneous area of TSI.
- Plus an additional sample from each patched area of less than 6 linear feet.
- Fittings require a sufficient amount to determine positive or negative nature.
- Inspector will first collect samples from damaged areas, exposed ends, or areas missing jacketing first.

Miscellaneous materials – all other material that are not thermal system insulation or surfacing materials. This includes gaskets, packings, joint wall compound, cementitious asbestos materials, ceiling tiles resilient flooring materials, construction mastics, etc..

- May assume and document as such
- A sufficient amount of samples to determine negative or positive nature. A minimum of one per suspect homogeneous area.
- Collect samples from inconspicuous locations.
- Material such as cementitious asbestos or vibration dampening cloths should not be sampled and will be assumed ACM unless instructed by client to collect these samples.

Bulk samples of suspect ACM were analyzed by Polarized Light Microscopy (PLM) in accordance with EPA Methods 600R-93/116. All samples were sent to a NVLAP accredited laboratory for analysis. EMSL Analytical Inc. (NVLAP # 200742-0) in Saint Louis, MO analyzed the samples. A copy of the full laboratory report and chain of custody can be found in Appendix B.

IV. SUMMARY OF FINDINGS

A total of 22 samples were analyzed from 9 homogeneous areas due to multi-layers of material within some homogeneous sample areas. Photographs of all ACM can be found in Appendix C. All accessible and observable areas within the renovation area were sampled for ACM. Samples were not taken of suspect materials that may have placed the inspector at risk of injury (i.e. electrical panel boxes). Any suspect ACM that have not been tested and/or found positive for asbestos must be assumed ACM until they are analyzed. Upon review of laboratory analysis, the following asbestos containing materials can be found in Table 1. All suspect ACM samples that were analyzed and did not contain asbestos can be found in Table 2.

Table 1. Asbestos Containing Materials

Sample #	Material Description	Locations	Friability (Friable, NF Cat I NF Cat II)	Condition	Sample Results (% Asbestos)
01-04	Wall/Ceiling Texture	Bathroom	Friable	Good	4%
01-05	Wall/Ceiling Texture	Bathroom	Friable	Good	4%
01-06	Wall/Ceiling Texture	Bathroom	Friable	Good	4%
01-07	Joint Compound	Living Room Wall	NF Cat II	Good	2%

Table 2. Non – Asbestos Containing Materials

Sample #	Material Description	Locations	Friability (Friable, NF Cat I NF Cat II)	Condition	Sample Results (% Asbestos)
01-01 01-01 01-01	Paint Joint Compound Paper	Bathroom	NF Cat II	Damaged	None Detected
01-02 01-02	Joint Compound Paper	Bathroom	NF Cat II	Damaged	None Detected
01-03 01-03 01-03	Paint Joint Compound Caulk	Bathroom	NF Cat II	Damaged	None Detected
01-04 01-04	Paint Paper	Bathroom	NF Cat II	Good	None Detected
01-05	Paint	Bathroom	NF Cat II	Good	None Detected
01-06	Paint	Bathroom	NF Cat II	Good	None Detected
01-07 01-07	Paint Drywall	Living Room	NF Cat II	Good	None Detected
01-08 01-08	Paint Drywall	Utility/Laundry Room	NF Cat II	Good	None Detected
01-09	Insulation	Attic	NF Cat II	Good	None Detected

V. CONCLUSIONS

Asbestos is not always an immediate hazard. Intact and undisturbed ACM does not pose a health risk. They may, however become a health hazard if they are damaged, disturbed, or deteriorate over time and release fibers into the air. There are no federal, state, or Tribal laws mandating asbestos removal. It is only when the material can no longer be maintained in good condition and/or airborne concentrations of asbestos are measured and found to be above a permissible exposure limit (PEL), or when the building is to be demolished or renovated, that removal may become necessary. Any renovation/demolition work which may impact these positive materials should be conducted in accordance with all applicable Federal, state, and local regulations.

**EMSL Analytical, Inc.**

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

EMSL Order: 391207402
 CustomerID: CHER25
 CustomerPO: 114068
 ProjectID:

Attn: **Brad Asbill**
Cherokee Nation Environmental Programs
206 East Allen Road
Tahlequah, OK 74464

Phone: (918) 453-5370
 Fax:
 Received: 08/17/12 10:10 AM
 Analysis Date: 8/21/2012
 Collected:

Project: Doug McCarter

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020 Method(s) using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
01-01-Paint 391207402-0001		Various Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
01-01-Joint Compound 391207402-0001A		White Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
01-01-Paper 391207402-0001B		Tan Fibrous Homogeneous	100% Cellulose	0% Non-fibrous (other)	None Detected
01-02-Joint Compound 391207402-0002		White Non-Fibrous Heterogeneous		96% Non-fibrous (other) 4% Mica	None Detected
01-02-Paper 391207402-0002A		Tan Fibrous Homogeneous	100% Cellulose	0% Non-fibrous (other)	None Detected
01-03-Paint 391207402-0003		Various Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
01-03-Joint Compound 391207402-0003A		Cream Non-Fibrous Heterogeneous		96% Non-fibrous (other) 4% Mica	None Detected

Analyst(s)

Sue Ferraro (22)

Jeff Siria, Laboratory Manager
 or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-finite organically bound materials present a problem matrix and therefore EMSL recommends grain size reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, bulk materials manufactured with multiple layers (e.g. insulation, wallboard, etc.) are reported as a single sample. Reporting limits 1%.
 Samples analyzed by EMSL Analytical, Inc., Saint Louis, MO NVLAP Lab Code 200712 0

Initial report from 08/21/2012 11:06:16

**EMSL Analytical, Inc.**3029 S. Jefferson, Saint Louis, MO 63118
Phone/Fax: (314) 577-0150 / (314) 770-3313

sa.allen@emsl.com

EMSL Order	391207402
CustomerID	CHER25
CustomerPO	114068
ProjectID	

Attn: **Brad Asbill**
Cherokee Nation Environmental Programs
206 East Allen Road
Tahlequah, OK 74464

Phone (918) 453-5370
 Fax
 Received: 08/17/12 10:10 AM
 Analysis Date: 8/21/2012
 Collected:

Project: Doug McCarter

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020 Method(s) using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
01-03-Caulk 391207402-0003B		White Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
01-03-Paper 391207402-0003C		Tan Fibrous Homogeneous	100% Cellulose	0% Non-fibrous (other)	None Detected
01-04-Paint 391207402-0004A		Cream Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
01-04-Texture 391207402-0004B		White Non-Fibrous Heterogeneous		98% Non-fibrous (other)	4% Chrysotile
01-04-Paper 391207402-0004B		Tan Fibrous Homogeneous	100% Cellulose	0% Non-fibrous (other)	None Detected
01-05-Paint 391207402-0005A		Cream Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
01-05-Texture 391207402-0005A		White Non-Fibrous Heterogeneous		96% Non-fibrous (other)	4% Chrysotile
01-06-Paint 391207402-0006A		Cream Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected

Analyst(s)

Sue Ferrara (22)

Jeff Siria, Laboratory Manager
or other approved signatory

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 Samples analyzed by EMSL Analytical, Inc. Saint Louis, MO NVLAP Lab Code 260742-0

Initial report from 08/21/2012 11:06:16



EMSL Analytical, Inc.

3028 S. Jefferson, Saint Louis, MO 63118
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EMSL Order: 391207402
CustomerID: CHER25
CustomerPO: 114068
ProjectID

Alt: **Brad Asbill**
Cherokee Nation Environmental Programs
206 East Allen Road
Tahlequah, OK 74464

Phone: (918) 453-6370
Fax:
Received: 08/17/12 10:10 AM
Analysis Date: 8/21/2012
Collected:

Project: Doug McCarter

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020 Method(s) using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
01-06-Texture 391207402-0006A		Cream Non-Fibrous Heterogeneous		95% Non-fibrous (other)	4% Chrysotile
01-07-Paint 391207402-0007		Cream Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
01-07-Joint Compound 391207402-0007A		White Non-Fibrous Heterogeneous		94% Non-fibrous (other) 4% Mica	2% Chrysotile
01-07-Drywall 391207402-0007B		Various Fibrous Heterogeneous	89% Cellulose	11% Non-fibrous (other)	None Detected
01-08-Paint 391207402-0008		White Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
01-08-Drywall 391207402-0008A		Various Non-Fibrous Heterogeneous	39% Cellulose	61% Non-fibrous (other)	None Detected
01-09 391207402-0009		Various Fibrous Heterogeneous	98% Cellulose	2% Non-fibrous (other)	None Detected

Analyst(s)
Sue Ferraro (22)

Jeffery W. Siria
Jeff Siria, Laboratory Manager
or other approved signatory

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Samples analyzed by EMSL Analytical, Inc. St. Louis, MO NVLAP Lab Code 200742-0

Initial report from 08/21/2012 11:08:16



Asbestos Lab Services Chain of Custody

EMSL Order Number (Lab Use Only):

391207402

391207402
 2012-08-15 10:10 AM
 391207402
 PHONE: 318-453-5382
 FAX: 318-453-5382

Company: Cherokee Nation
 Street: 206 E. Allen Road
 City/State/Zip: Tahlequah, OK 74464
 Report To (Name): Brad Asbill
 Telephone: 918-453-5382
 Project Name/Number: Doug McCarter
 Please Provide Results: Email Purchase Order: 114068
 State Samples Taken: OK

EMSL-Bill to: Same Different
 If Bill to Different note instructions in Comments*
 Third Party Billing requires written authorization from third party

Turnaround Time (TAT) Options* - Please Check

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

*For TEM Air 3 hr through 6 hr, please call ahead to schedule. There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.

PCM - Air Check if samples are from NY
 NIOSH 7400
 w/ OSHA 8hr. TWA

PLM - Bulk (reporting limit)
 PLM EPA 600/R-93/116 (<1%)
 PLM EPA NOB (<1%)
 Point Count
 400 (<0.25%) 1000 (<0.1%)
 Point Count w/Gravimetric
 400 (<0.25%) 1000 (<0.1%)
 NYS 198.1 (friable in NY)
 NYS 198.8 NOB (non-friable-NY)
 NIOSH 9002 (<1%)

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

TEM - Bulk
 TEM EPA NOB
 NYS NOB 198.4 (non-friable-NY)
 Chatfield SOP
 TEM Mass Analysis-EPA 600 sec. 2.5

TEM - Water: EPA 100.2
 Fibers >10µm Waste Drinking
 All Fiber Sizes Waste Drinking

TEM - Dust
 Microvac - ASTM D 5755
 Wipe - ASTM D6480
 Carpet Sonication (EPA 600/J-93/187)

Soil/Rock/Vermiculite
 PLM CARB 435 - A (0.25% sensitivity)
 PLM CARB 435 - B (0.1% sensitivity)
 TEM CARB 435 - B (0.1% sensitivity)
 TEM CARB 435 - C (0.01% sensitivity)
 EPA Protocol (Semi-Quantitative)
 EPA Protocol (Quantitative)

Other:

Check For Positive Stop - Clearly Identify Homogenous Group Filter Pore Size (Air Samples): 0.8µm 0.45µm

Samplers Name: Brad Asbill Samplers Signature: Brad Asbill

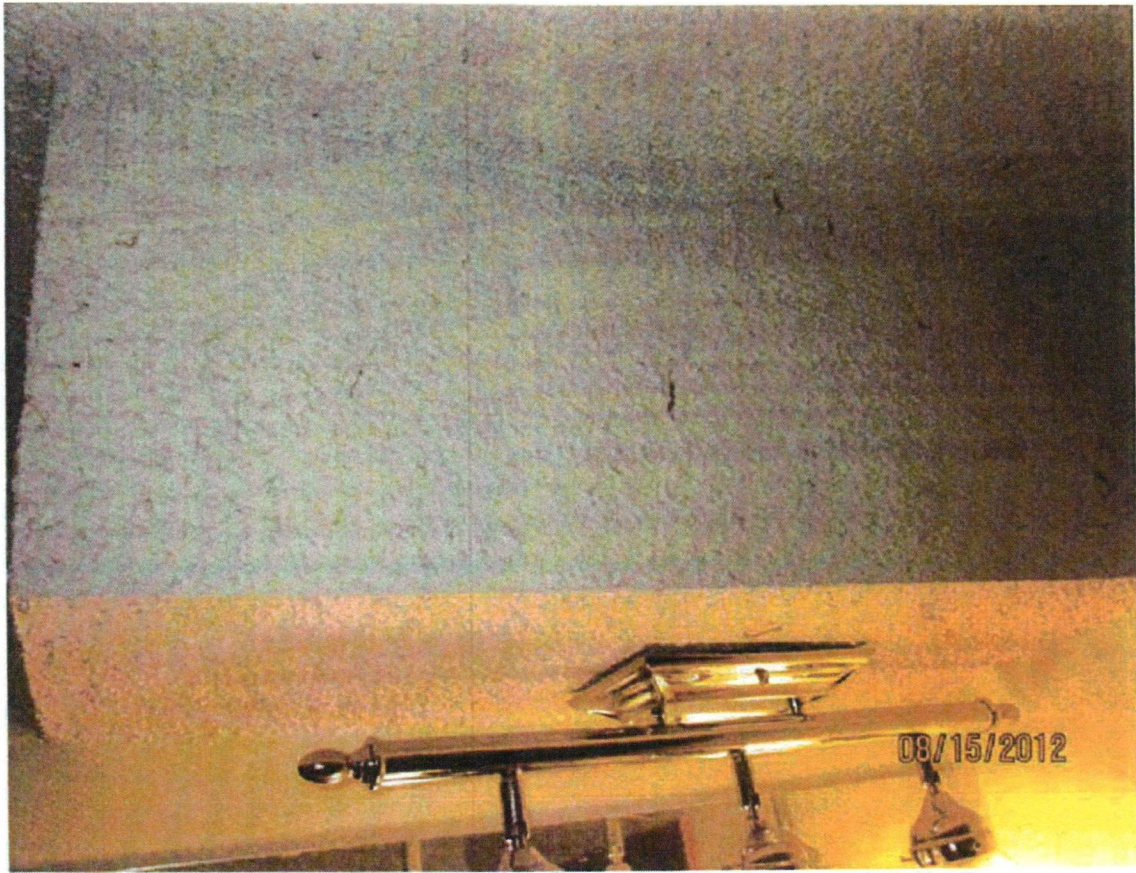
Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
01-01	Bathroom Wall		8-15-12 1:00 pm
01-02	Bathroom Wall		
01-03	Bathroom Wall		
01-04	Bathroom Wall (popcorn)		
01-05	Bathroom Wall (popcorn)		
01-06	Bathroom Wall (popcorn)		
01-07	Living Room Wall		
01-08	Utility Room Wall		

Client Sample # (s): 01-01 - 01-09 Total # of Samples: 9

Relinquished (Client): Brad Asbill Date: 8-15-12 Time: 2:43 pm

Received (Lab): [Signature] Date: 8/16/12 Time: 10:10 a

Comments/Special Instructions:
 Bill To: Cherokee Nation, 206 E. Allen Road, Tahlequah, OK 74464
 Attention: Ashley Wagon Phone: 918 453-5008 Email: ashley-wagon@cherokee.org Purchase Order: 114068
US Mail



Bathroom Wall/Ceiling Texture (4%) Chrysotile Asbestos



Living Room Joint Compound (2%) Chrysotile Asbestos