

October 31, 2016

Mr. Johnny McClanahan
City of Columbia
700 North Garden Street
Columbia, TN 38401

**Re: Pre-Demolition Asbestos Inspection – Diamond Wood Apartment Building, 401
Armstrong Street, Columbia, Maury County, Tennessee
(G&M Project Number 1136-04)**

Dear Mr. McClanahan:

As you requested, Griggs & Maloney, Inc. (G&M) conducted a pre-renovation asbestos inspection of the Diamond Wood Apartment Building located at 401 Armstrong Street in Columbia, Maury County, Tennessee on November 5, 2015. We understand that this building is scheduled for demolition. The building was constructed in 1930 according to tax records and was described as a former school by City of Columbia staff. The building was converted to an apartment building some time ago and has not been occupied in more than 15 years. It is a three-story, brick structure supported by concrete footers and includes a basement under most of the northern portion of the structure. The gable roof of the building is covered with a rubberized membrane tacked to the edges of the building by metal strips. The building is in an uninhabitable condition.

A typical asbestos survey comprised the following activities:

1. Observing readily visible building materials in the buildings and identifying visible suspect asbestos-containing materials (ACM) through visual and tactile inspection. Suspect ACM typically includes building materials that are not solid wood, metal, glass, or plastic.
2. Collecting bulk samples of each identified suspect material for asbestos concentration analysis through polarized light microscopy (PLM) in accordance with current Tennessee Department of Environment and Conservation (TDEC) – Division of Air Pollution Control (DAPC) and the Tennessee Occupational Health and Safety Administration (TOSHA) regulatory requirements. TOSHA regulates all asbestos abatement projects in the State of Tennessee that involve employees/employers.
3. Determining the friability characteristic of each ACM as identified through PLM analysis. A friable material is one that can be crumbled, pulverized, or reduced to a powder under hand pressure.

4. Submitting the collected bulk samples to an accredited National Voluntary Laboratory Accreditation Program (NVLAP) and/or American Industrial Hygiene Association (AIHA) accredited laboratory for PLM analysis in accordance with Appendix A, Subpart F, 40 Code of Federal Regulations (CFR), Part 763, Section 1 as presented in the July 1, 1991 Edition of the CFR.
5. Evaluating the laboratory analytical results to determine if the materials identified as suspect contain a concentration of asbestos fibers and should be characterized as asbestos-containing. DAPC and TOSHA have established that materials comprising concentrations of forms of asbestos above one-percent (1%) through PLM analysis as described above are asbestos-containing.

Asbestos is a naturally occurring fiber found in rock. Because of its durability and excellent fire resistance, it was used extensively from the early 1900s until the early 1970s in building material manufacture. Federal regulations began limiting the use of asbestos in building material manufacture in the 1970 resulting in a gradual phase out of its use. Generally, the use of asbestos in the manufacture of building materials for commercial building construction was limited to floor tile and associated mastic after 1979. However, some incidences of fireproofing materials containing asbestos being applied as late as the 1990's have been documented.

Consequently, the identification of suspect ACM is generally based on the date of material installation and type or nature of the material or identification in building plans or lists of building materials. DAPC and TOSHA require the inspection of any commercial building within the state for the presence of asbestos prior to demolition (regardless of date of construction) or renovation.

The danger posed by asbestos is from breathing airborne asbestos fibers. The federal government has identified asbestos as a material that, through inhalation exposure, can cause cancer and asbestosis. The asbestos fibers become airborne when ACM are, or become, friable and are disturbed.

Identified ACM is usually categorized as belonging to one of three groups including surfacing materials (i.e., ceiling texturing, stucco, etc.), thermal system insulation (TSI) (i.e., pipe insulation), or miscellaneous materials (ceiling tiles, floor tiles, linoleum, etc.).

Inspection Activities:

G&M conducted a peripatetic reconnaissance of the interior and exterior of the building inventorying suspect ACM for sampling. Observed suspect ACM included exterior flashing, roofing materials, window glaze, floor coverings, drywall and associated materials, and ceiling texturing. G&M collected bulk samples of each of the identified suspect materials for laboratory PLM analysis. No other suspect materials were identified in or on the structure. Table 1 lists

suspect ACM and the characteristics and location of each one and the identification of each confirmed ACM.

Table 1. Suspect ACM Information

Suspect ACM	Sample Name	Location and Estimated amount if Asbestos (square or linear feet)	PLM Result	Friable Asbestos?
Flashing (tar-like)	1	Over the north staircase exit door exterior to the building, on brick and mortar – east wall (10 l.f.)	15% Chrysotile	No
Rolled roof cover/membrane	2	Entire roof	NAD	N/A
Window Glaze	3	Exterior windows (6 windows noted)	NAD	N/A
Exterior wall shingles	4	Northern exterior wall elevation at eaves	NAD	N/A
Felt paper	5	Over entire building	NAD	N/A
12" x 12" gray (bubble pattern) floor tile and assoc. mastic	6	Throughout basement areas and northern stairwell (2,900 s.f.) – no asbestos detected in mastic	2% Chrysotile in tile, Mastic - NAD	No
Ceiling texture	7A, 7B, 7C, 7D, 7E, 7F, 7G, 7H, 7I	Throughout the building – samples from random areas	NAD	No
Drywall, joint compound and tape	8	Throughout the building – samples of this material also in 7A-7I	NAD	No
Linoleum – brown rectangle pattern	9	Throughout the building in closets and bathrooms (300 s.f.)	20% Chrysotile	No
Linoleum – brown hexagonal pattern	10	Throughout the building in closets and bathrooms (200 s.f.)	20% Chrysotile	No
Linoleum – brown 4" squares pattern	11	Throughout the building in closets and bathrooms (200 s.f.)	20% Chrysotile	No
Linoleum – mottled beige/brown pattern	12	South rear basement apartment bathroom (96 s.f.)	20% Chrysotile	No

NAD – No Asbestos Detected Gray rows indicate asbestos materials N/A – Not applicable
 *Chrysotile is the most commonly found form of asbestos in building materials

Table 1. Suspect ACM Information

Suspect ACM	Sample Name	Location	PLM Result	Friable Asbestos?
Roof shingles	13	Front awning - red	NAD	N/A
Linoleum – yellow floral pattern	14	Throughout building (140 s.f.)	20% Chrysotile	No
Linoleum – yellow/blue floral pattern	15	Kitchen area second floor (200 s.f.)	20% Chrysotile	No
Linoleum – yellow faux brick pattern	16	Basement foyer area (140 s.f.)	20% Chrysotile	No
12" x 12" Gray streaky floor tile and associated mastic	17	Southern basement apartments	NAD	No
Roof shingles under rolled roofing	18	Entire building roof	NAD	No
Linoleum – red faux brick	19	Southern end of basement, west side, kitchen (235 s.f.)	20% Chrysotile	No
Exterior fire doors	Not Sampled	Presumed to contain asbestos within the cores	PACM	NO

NAD – No Asbestos Detected Gray rows indicate asbestos materials N/A – Not applicable
 *Chrysotile is the most commonly found form of asbestos in building materials. PACM – Presumed ACM

The suspect ACM samples were placed in individual labeled plastic containers and transported by common carrier to Triangle Environmental Service Center, LLC (TESC) in Midlothian, Virginia for PLM analysis.

Asbestos PLM Results:

The attached PLM analytical results from TESC indicate that flashing noted over a northern exterior door (former awning location) comprising approximately 10 linear feet of material and floor coverings comprising approximately 4,411 square feet in many areas of the building are ACM. G&M also noted the presence of six (6) exterior fire doors that are presumed to contain asbestos within their cores. These doors were not sampled and can be easily removed by an abatement contractor in an intact condition.

Mr. Johnny McClanahan

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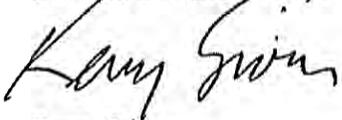
Page 5

All of the observed ACM were in good condition (as defined under U.S. Environmental Protection Agency asbestos guidance) and pose no significant exposure hazard in their current location and if left undisturbed by any activity that would potentially create asbestos-containing dust. Under current DAPC and TOSHA regulations, the identified ACM in this building can be disturbed only by state-licensed asbestos abatement personnel. Typically, the cost of disposal of asbestos-containing building demolition debris is far more expensive if the ACM is left in place during demolition than to remove the ACM and dispose of it separately. Based on our experience, we recommend removal of the identified ACM prior to demolition. The estimated cost of removal, transport and disposal under G&M state-licensed project monitoring on behalf of the City of Columbia is \$12,655.

It should be noted that G&M sampled readily observable suspect ACM in and on this structure. Suspect ACM can be hidden by other materials such as, but not limited to, fireproofing behind wall coverings and multiple layers of flooring and wall coverings.

Sincerely,

GRIGGS & MALONEY, INC.



Kerry Given

Senior Environmental Scientist &

Asbestos Inspector/Management Planner

TRIANGLE ENVIRONMENTAL SERVICE CENTER, INC.

13509 East Boundary Road, Suite B, Midlothian, VA 23112
804-739-1751 • fax: 804-739-1753

BULK ASBESTOS SAMPLE ANALYSIS SUMMARY

CLIENT: Griggs & Maloney, Inc.
P.O. Box 2968
Murfreesboro, TN 37133

TESC LOGIN #: 161025G

DATE OF RECEIPT: 10/25/2016
DATE OF ANALYSIS: 10/25/2016
DATE OF REPORT: 10/25/2016

CLIENT JOB: 1136-04

JOB SITE: Columbia

ANALYST: F. Jiang

TESC SAMPLE #	CLIENT SAMPLE ID & GROSS DESCRIPTION	ESTIMATED % ASBESTOS	NON ASBESTOS % FIBERS	NON FIBROUS % MATERIALS
1	1 / Black adhesive	15% Chrysotile		85%
2	2 / Black rubber	NAD		100%
3	3 / Gray powder	NAD		100%
4	4 / Black tar-like	NAD	20% Cellulose	80%
5	5 / Black fibers	NAD	98% Cellulose	2%
6A	6A - Tile / Brown vinyl	2% Chrysotile		98%
6B	6A - Mastic / Brown adhesive	NAD		100%
7A	6B - Tile / Brown vinyl	2% Chrysotile		98%
7B	6B - Mastic / Brown adhesive	NAD		100%
8	7A / White powder	NAD		100%

Samples are analyzed in accordance with "Interim Method for the Determination of Asbestos in Bulk Insulation Samples", EPA 600/M4-82-020, Dec. 1982 and "Method for the Determination of Asbestos in Bulk Building Materials", EPA 600/R-93/116, July 1993. None Detected: not detected at/or below the detected limit of method (Reporting limit: 1% Asbestos). Glass fiber is analyzed for quality control blank. TESC recommends by point count or Transmission Electron Microscopy (TEM), for materials regulated by the EPA NESHAP (National Emission Standards for Hazardous Air Pollutants) and found to contain less than ten percent (<10%) asbestos by Polarized Light Microscopy (PLM). Both services are available for an additional fee. This report shall not be reproduced, except in full written approval of Triangle Environmental Service Center, Inc. This report must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. This test report relates only to the item(s) tested.

NVLAP Lab Code: 200794-0

[LEGEND NAD=No Asbestos Detected, Lino.=Linoleum, JC=Joint Compound]

Reviewed By Authorized Signatory:



Feng Jiang, MS Senior Geologist, Laboratory Director
Yuedong Fang, Senior Geologist

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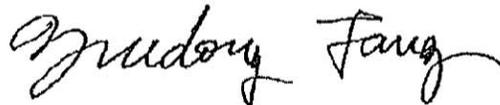
TESC SAMPLE #	CLIENT SAMPLE ID & GROSS DESCRIPTION	ESTIMATED % ASBESTOS	NON ASBESTOS % FIBERS	NON FIBROUS % MATERIALS
9	7B / White powder	NAD		100%
10	7C / White powder	NAD		100%
11	7D / White powder	NAD		100%
12	7E / White powder	NAD		100%
13	7F / White powder	NAD		100%
14	7G / White powder	NAD		100%
15	8 / White powder, brown fibers	NAD	40% Cellulose	60%
16	9 / Brown lino., gray fibers	20% Chrysotile		80%
17	10 / Brown lino., gray fibers	20% Chrysotile		80%
18	11 / Brown lino., gray fibers	20% Chrysotile		80%

Samples are analyzed in accordance with "Interim Method for the Determination of Asbestos in Bulk Insulation Samples", EPA 600/M4-82-020, Dec. 1982 and "Method for the Determination of Asbestos in Bulk Building Materials", EPA 600/R-93/116, July 1993. None Detected: not detected at/or below the detected limit of method (Reporting limit: 1% Asbestos). Glass fiber is analyzed for quality control blank. TESC recommends by point count or Transmission Electron Microscopy (TEM), for materials regulated by the EPA NESHAP (National Emission Standards for Hazardous Air Pollutants) and found to contain less than ten percent (<10%) asbestos by Polarized Light Microscopy (PLM). Both services are available for an additional fee. This report shall not be reproduced, except in full written approval of Triangle Environmental Service Center, Inc. This report must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. This test report relates only to the item(s) tested.

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Yuedong Fang, Senior Geologist

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19	12 / Brown lino., gray fibers	20% Chrysotile		80%
20	13 / Black tar-like	NAD	20% Fiberglass	80%
21	14 / Yellow, green lino., gray fibers	20% Chrysotile		80%
22	15 / Yellow lino., gray fibers	20% Chrysotile		80%
23	16 / Tan lino., gray fibers	20% Chrysotile		80%
24A	17 - Tile / Brown vinyl	NAD		100%
24B	17 - Mastic / Brown adhesive	NAD		100%
25	18 / Black tar-like	NAD	20% Cellulose	80%
26	19 / Red lino., gray fibers	20% Chrysotile		80%

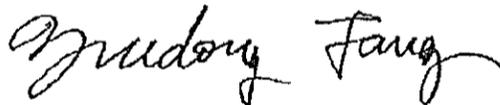
Total Samples/Layers Analyzed: 29

Samples are analyzed in accordance with "Interim Method for the Determination of Asbestos in Bulk Insulation Samples", EPA 600/M4-82-020, Dec. 1982 and "Method for the Determination of Asbestos in Bulk Building Materials", EPA 600/R-93/116, July 1993. None Detected: not detected at/or below the detected limit of method (Reporting limit: 1% Asbestos). Glass fiber is analyzed for quality control blank. TESC recommends by point count or Transmission Electron Microscopy (TEM), for materials regulated by the EPA NESHAP (National Emission Standards for Hazardous Air Pollutants) and found to contain less than ten percent (<10%) asbestos by Polarized Light Microscopy (PLM). Both services are available for an additional fee. This report shall not be reproduced, except in full written approval of Triangle Environmental Service Center, Inc. This report must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. This test report relates only to the item(s) tested.

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Reviewed By Authorized Signatory:



Feng Jiang, MS Senior Geologist, Laboratory Director
Yuedong Fang, Senior Geologist

TESC LOGIN NUMBER:

1610256

TRIANGLE ENVIRONMENTAL SERVICE CENTI

CHAIN OF CUSTODY FORM

13509 E Boundary Rd # B, Midlothian, VA 23112 • Tel: 804-739-1751 • Fax: 804-739-1753

LAB CUSTOMER: Griggs & Maloney, Inc.

P.O. Box 2968

DATE: 10/24/16

ADDRESS: CITY, STATE, ZIP: Murfreesboro, TN 37133-2968

CONTACT NAME: Kerry Given

TAT: 2 Hour: 6 Hour: 24 Hour: 48 Hour: 3 Day: 5 Day:

PROJECT #: 1136-04

CONTACT METHOD: Phone: 615-895-8221

Fax: 615-895-0632

PROJECT SITE: Columbia

Email: kgiven@griggsandmaloney.com

Sample number	Sample Date	Asbestos							Lead				Other Metals			Air Quality/Mold				Comment									
		Bulk ID by PLM	PCM Fiber Count	PLM Point Count 400	PLM Point Count 1000	PLM Gravimetric	CARB 435 (Soil only)	TEM AHERA Air	TEM Bulk Chatfield	Air	Paint(% & PPM)	Soil(PPM)	Wipe	TCLP (Pb)	Waster Water	Drinking Water (Pb)	TCLP RCRA 8	CAM 17	Welding Fume		Toxic Metal Profile	Biocassette	Slide	Surface Tape	Surface Swab	Bulk	Air Volume (L)	Wipe Area (ft ²)	Scrape Area (cm ²)
1	10/21/2016	X																											Flashing over North l
2	10/21/2016	X																											Rolled Roof
3	10/21/2016	X																											Window Glaze
4	10/21/2016	X																											South Ext Eave Shir
5	10/21/2016	X																											Felt under Roofing
6A	10/21/2016	X																											North Stairwell FT an
6B	10/21/2016	X																											North Stairwell FT an
7A	10/21/2016	X																											Popcorn Ceiling
7B	10/21/2016	X																											Popcorn Ceiling
7C	10/21/2016	X																											Popcorn Ceiling

Released by: Kerry Given Signature: [Signature] Date/Time: 10/24/16 - 3:30 PM

Received by: [Signature] Signature: [Signature] Date/Time: [Signature]

Released by: [Signature] Signature: [Signature] Date/Time: [Signature]

Prepared by TESC

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7D	10/21/2016	X																											Popcorn Ceiling
7E	10/21/2016	X																										Popcorn Ceiling	
7F	10/21/2016	X																										Popcorn Ceiling	
7G	10/21/2016	X																										Popcorn Ceiling	
8	10/21/2016	X																										Drywall, JC & Tape	
9	10/21/2016	X																										Br. Rect Lino	
10	10/21/2016	X																										Br. Hexa Lino	
11	10/21/2016	X																										Br. Sq. Lino	
12	10/21/2016	X																										Beige Mottled Lino	
13	10/21/2016	X																										Awning Roof Shingle	

Released by: Kerry Given

Signature: *Kerry Given*

Date/Time: 10/24/16 - 3:30 PM

Received by:

Signature:

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14	10/21/2016	X																											Yellow Lino - Pattern
15	10/21/2016	X																											Yellow Tarket Lino
16	10/21/2016	X																											Yellow Faux Brick Lir
17	10/21/2016	X																											Gray Streaky FT
18	10/21/2016	X																											Roof Shingles under
19	10/21/2016	X																											2 Brick Faux Lino

Released by: Kerry Given

Signature:

Signature:

Signature:

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Date/Time: 10/24/16 - 3:30 PM

Date/Time:

Date/Time:

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Prepared by TESC