Terracon

January 7, 2019

Clemson University
310 Klugh Avenue
Clemson, South Carolina 29634

Attn: Mr. W. Robert Newberry, IV
E-mail: wnewber@clemson.edu

RE: Limited Asbestos Survey and Mold Investigation Report
Gateway Plaza, Suite 105
385 Old Greenville Highway
Clemson, South Carolina
Terracon Project No. 86187189F

Dear Mr. Newberry:

Terracon Consultants, Inc. (Terracon) is pleased to present the results of the limited asbestos survey and mold investigation of the retail/office space in Suite 105 of the Gateway Plaza located at 385 Old Greenville Highway in Clemson, South Carolina. We understand that this scope of work was requested due to the visible mold growth on various materials of the retail/office space and the proposed leasing of this space by Clemson University.

Asbestos-containing materials (ACM) were not identified in samples of suspect materials collected during our survey. Additionally visible mold growth was observed in various areas of the retail/office space. Please refer to the report for further details.

Terracon appreciates the opportunity to provide environmental consulting services to you on this project. If you should have any questions regarding this report, please contact the undersigned at (864) 292-2901.

Sincerely,

Terracon Consultants, Inc.

Stephen N. Ellis
Staff Industrial Hygienist

Jeffrey Gurrie, CIH
Senior Industrial Hygienist

Limited Asbestos Survey and Mold Investigation Report

GATEWAY PLAZA, SUITE 105
385 OLD GREENVILLE HIGHWAY
CLEMSON, SOUTH CAROLINA

January 7, 2019

Terracon Project No. 86187189F

Prepared for:

Clemson University
Clemson, South Carolina

Prepared by:

Terracon Consultants, Inc.
Greenville, South Carolina

Inspected by:

Stephen N. Ellis
SC DHEC Asbestos Inspector No. BI-01211
Inspected on November 30, 2018

TABLE OF CONTENTS

EXECUTIVE SUMMARY ..... **I**
1.0 INTRODUCTION **1**
2.0 WORK AREA DESCRIPTION **1**
3.0 ASBESTOS SURVEY **1**
3.1 Regulatory Overview 2
3.2 Visual Assessment 3
3.3 Physical Assessment 3
3.4 Sample Collection 3
3.5 Sample Analysis 3
3.6 Findings 4
4.0 MOLD INVESTIGATION **4**
4.1 Mold and Allergen Sampling 4
4.2 Temperature and Relative Humidity 5
4.3 General Observations on November 30, 2018 5
4.4 Mold and Allergen Findings 6
4.5 Conclusions and Recommendations 7
5.0 GENERAL COMMENTS **8**

APPENDICES

APPENDIX A - FIGURE
Figure 1 – General Overview / Asbestos Sample Locations

APPENDIX B - TABLE
Table 1 - Asbestos Survey Sample Summary

APPENDIX C – LABORATORY REPORTS

EXECUTIVE SUMMARY

Terracon Consultants, Inc. (Terracon) conducted a limited asbestos survey and mold investigation of the retail/office space in Suite 105 of the Gateway Plaza located at 385 Old Greenville Highway in Clemson, South Carolina. Our survey was conducted on November 30, 2018, to assess the retail/office space prior to the leasing of the space by Clemson University. This Executive Summary is intended as an overview for the convenience of the reader. The complete report must be reviewed in its entirety prior to making decisions regarding this site.

The asbestos-containing material (ACM) survey was performed by a South Carolina Department of Health and Environmental Control (SC DHEC) licensed asbestos building inspector in general accordance with the sampling protocols established in Environmental Protection Agency (EPA) 40 Code of Federal Regulations (CFR) 763 (Asbestos Hazard Emergency Response Act, AHERA) and the SC DHEC Regulation 61-86.1 *Standards of Performance for Asbestos Projects*.

A total of twenty (20) bulk samples were collected from the retail/office space. A general layout with sample locations is included as Figure 1 in Appendix A. Sample descriptions, locations, analytical results, classification and estimated quantities are summarized in Table 1 in Appendix B. Asbestos laboratory analytical reports are included in Appendix C. Asbestos was not detected in samples of materials submitted to the laboratory.

Additionally a limited mold assessment was conducted. Mold was identified on several surfaces. Air samples collected in the space indicated amplification of mold spores.

LIMITED ASBESTOS SURVEY AND MOLD INVESTIGATION REPORT

GATEWAY PLAZA, SUITE 105
385 OLD GREENVILLE HIGHWAY
CLEMSON, SOUTH CAROLINA
Terracon Project No. 86187189F
January 7, 2019

1.0 INTRODUCTION

Terracon Consultants, Inc. (Terracon) conducted a limited asbestos survey and mold investigation of the retail/office space in Suite 105 of the Gateway Plaza located at 385 Old Greenville Highway in Clemson, South Carolina. Our survey was conducted on November 30, 2018, to assess the retail/office space prior to the leasing of the space by Clemson University.

2.0 WORK AREA DESCRIPTION

Suite 105 of the Gateway Plaza is a small retail/office space and is approximately 2,100 square feet. The space was finished with carpet and mastic on the floors. Interior walls predominantly consist of gypsum board on metal studs/furring strips. Ceilings consist of cellulose ceiling tiles in a drop-in metal grid. A roof mounted heating, ventilation, and air conditioning units was noted on the exterior of the building with flexible duct lines and metal ductwork above the drop ceiling. Piping was observed above the ceiling and appeared to be un-insulated.

Per the scope of work this survey was limited to the Suite 105 and does not include the remainder of the Gateway Plaza. As such Terracon did not evaluate suspect asbestos-containing materials or mold which may be present in the remainder of the building.

3.0 ASBESTOS SURVEY

The asbestos survey was conducted by Mr. Stephen N. Ellis, a SC DHEC licensed Asbestos Building Inspector (License No. BI-01211). The survey was conducted on October 18, 2018. The survey was performed in general accordance with the sampling protocols established by EPA Regulation 40 CFR 763 (AHERA) and SC DHEC R61-86.1. 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/demolition activities. NESHAP requires that asbestos-containing materials (ACM) be identified, classified and quantified prior to planned disturbances or demolition activities. A summary of survey activities is provided below.

3.1 Regulatory Overview

An ACM is defined as any material containing asbestos of any type in an amount greater than one percent (1%). The asbestos NESHAP (40 CFR Part 61, Subpart M) regulates asbestos fiber emissions and asbestos waste disposal practices. It also requires the identification and classification of existing building materials prior to demolition or renovation activity. Under NESHAP, asbestos-containing building materials are classified as either friable, Category I non-friable or Category II non-friable ACM. Friable materials are those that, when dry, may be crumbled, pulverized or reduced to powder by hand pressure. Category I non friable ACM includes packing materials, gaskets, resilient floor coverings and asphalt roofing products containing more than 1 percent (%) asbestos. Category II non-friable ACM are non-friable materials other than Category I materials that contain more than 1% asbestos.

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/demolition activities are considered regulated ACM (RACM). RACM must be removed prior to renovation or demolition activities.

In the State of South Carolina, asbestos activities are regulated by the SC DHEC under SC DHEC Regulation 61-86.1 Standards of Performance for Asbestos Projects. SC DHEC requires that asbestos-related activities conducted in a public building be performed by personnel licensed by SC DHEC. The owner or operator must provide the SC DHEC with written notification of planned abatement and removal activities prior to the commencement of those activities. The SC DHEC requires a four (4) day notification for non-friable projects and 10 day notification for RACM projects. Asbestos abatement must be performed by SC DHEC-licensed asbestos abatement contractors. A SC DHEC-licensed Project Designer shall prepare a written abatement design for each abatement renovation project involving the removal of greater than 3,000 square, 1,500 linear, or 656 cubic feet of RACM. Third-party air monitoring must be conducted during the abatement of friable (regulated) ACM. The SC DHEC asbestos regulations can be found at http://www.SCDHEC.gov.

The Occupational Safety and Health Administration (OSHA) Asbestos Standard for Construction Industry (29 CFR 1926.1101) regulates workplace exposure to asbestos. The OSHA standard requires that employee exposure to airborne asbestos fibers be maintained below 0.1 asbestos fibers per cubic centimeter of air (0.1 f/cc) for an eight-hour time weighted average. The OSHA standard 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. A full copy of the OSHA asbestos standard for general industry may be found at OSHA's website (www.osha.gov) and should be referenced for specific information.

3.2 Visual Assessment

Our survey activities began with visual observation of the retail space to identify apparent homogeneous areas of suspect ACM. A homogeneous area consists of building materials, which appear similar throughout in terms of color, texture and date of application. Building materials which were not identified as concrete, glass, wood, masonry, metal or rubber were considered suspect ACM.

Terracon lifted floor coverings in several areas, where possible, and did not observe additional flooring layers unless mentioned in this report; however, as Terracon could not assess beneath all floor covering in all areas, there may be isolated areas of additional suspect material present beneath existing flooring.

Per the scope of work this survey was limited to the Suite 105 and does not include the remainder of the Gateway Plaza. As such Terracon did not evaluate suspect asbestos-containing materials or mold which may be present in the remainder of the building.

3.3 Physical Assessment

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.

3.4 Sample Collection

Based on our visual observations, bulk samples of suspect ACM were collected in general accordance with sample collection protocols as required by SC DHEC Regulation 61.86.1. Random samples of suspect materials were collected in each homogeneous area. Bulk samples were collected 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.

3.5 Sample Analysis

Bulk samples were submitted using chain-of-custody procedures to EMSL Analytical, Inc. (EMSL) of North Cinnaminson, New Jersey. EMSL is accredited under the National Voluntary Laboratory Accreditation Program NVLAP (#101048-0). Except for surfacing materials, the samples were submitted for a “positive stop” analysis which means that once asbestos is detected in a sample, the remainder of the samples in the same homogenous set are not analyzed and are presumed to be of similar asbestos content.

Asbestos analysis was performed by PLM with dispersion staining techniques per EPA EPA/600/R-93/116. The percentage of asbestos, where applicable, was determined by microscopical visual estimation. Per the SC DHEC Regulation 61-86.1 Standards of Performance for Asbestos Projects,

negative results for non-friable organically bound (NOB) materials such as flooring, mastics, or roofing shall be verified with at least one analysis by transmission electron microscopy (TEM). The additional analysis was performed by TEM in accordance with EPA Chatfield SOP 1988-02 Rev. 1.

3.6 Findings

A total of twenty (20) bulk samples were collected from the retail/office space. A general layout with sample locations is included as Figure 1 in Appendix A. Sample descriptions, locations, analytical results, classification and estimated quantities are summarized in Table 1 in Appendix B. Asbestos laboratory analytical reports are included in Appendix C. Asbestos was not detected in samples of materials submitted to the laboratory.

It should be noted that suspect materials, other than those identified during the November 30, 2018, survey may exist within the work area. Should suspect materials other than those which were identified during this survey be uncovered prior to or during the upcoming renovations, those materials should be assumed to be asbestos-containing until sampling and analysis demonstrates otherwise. Federal, state, and local regulations should be consulted before initiating any action on an ACM.

4.0 MOLD INVESTIGATION

4.1 Mold and Allergen Sampling

Total mold spore trap samples were collected using Air-O-Cell™ spore trap cassettes specifically designed for the collection of airborne mold spores. Air samples were collected using a calibrated Zefon Bio-Pump™ at a flow rate of 15 liters per minute (LPM) for 5 minutes at each location. Additionally one swab sample was collected from a piece of furniture that has a suspect mold growth on it to determine if this debris was settled dusts or potential mold growth.

After collection, the spore trap samples were submitted using chain-of-custody procedures to EMSL of North Cinnaminson, New Jersey. EMSL is accredited by the AIHA® Laboratory Accreditation Programs, LLC under the Environmental Microbiology Laboratory Accreditation Program (EMLAP), Accreditation #100194. Air samples were analyzed by direct microscopic examination and results are reported in spores per cubic meter of air (spores/m^3).

To help interpret the mold sampling results, we compared indoor air and outdoor air measurements. High variability in airborne fungal spore concentrations can exist in different geographic locations, during different seasons, and weather patterns, and over the course of a given day. As a general rule, indoor air fungal spore concentrations in a heating, ventilation and air-conditioning (HVAC)-supplied building are typically less than, but qualitatively similar to, fungal spore concentrations found in the outside environment.

No state or federal exposure limits have been established for fungal aerosols. Regulatory standards, medically based threshold limit, or dose-response relationships have not been established for exposure to airborne or surface concentrations of mold spores. Terracon relies upon experience, professional judgment, current scientific literature, guidelines and recommendations made by professional organizations and experts, and statistical methods in interpreting mold sampling results.

A composite allergen dust sample was collected from the carpeting in the spce using a high volume air sampling pump in conjunction with a 3-piece 37 millimeter dust sampling cassette preloaded with a 5.0 micrometer polyvinyl chloride (PVC) filter. After composite dust sample collection, the allergen sample was shipped by overnight courier to EMSL in Cinnaminson, New Jersey. The allergen sample was analyzed for allergens from dust mites, mouse, rat, cat, dog, and cockroach. Allergen results are reported in micrograms per gram of dust (µg/g).

A dust swab sample was collected from a chair leg where visible mold was identified using a HealthLink Transporter sterile swab. This sample was also sent to EMSL for mold spores by direct microscopic examination.

4.2 Temperature and Relative Humidity

Indoor air temperature and relative humidity are physical conditions important to the perception of comfort. The American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) has published recommendations regarding thermal comfort. ASHRAE Standard 55-2013, Thermal Environmental Conditions for Human Occupancy, identifies six primary factors that affect comfort: metabolic rate (affected by the activity being performed); clothing insulation; air temperature; radiant temperature; air speed; and humidity.

Although the relationships are complex, a temperature range between 73 and 79 degrees Fahrenheit (°F) with relative humidity between roughly 20 and 60 percent (%) are recommended for persons in a conditioned setting wearing light summer clothing. Higher temperatures require lower humidity for comfort. For persons in winter clothing, temperatures can range between 68 and 75°F, with relative humidity between 20% and 60%, with preferred conditions falling between 30% and 50% for both winter and summer temperatures. EPA recommends maintaining indoor humidity below 60%, ideally 30-50%, if possible.

Readings of temperature and relative humidity were collected with an Extech Model 445580 IAQ instrument which was calibrated by the manufacturer.

4.3 General Observations on November 30, 2018

- The space was un-occupied at the time of the assessment and had appeared to have been un-occupied for some time prior.

- The HVAC system was still set on summer time conditioning settings and it felt cool and damp at the time of the assessment.
- The space had a noticeable smell of mold or mildew.
- Visual water damage was noted several ceiling tiles in the space.
- The carpet appeared to be well worn and dirty.
- Visible mold growth was observed on stored goods such as cubicle dividers, chairs, and on a desk.

4.4 Mold and Allergen Findings

On the morning of November 30, 2018, Terracon collected three mold spore trap samples in the office/retail space and two samples in outdoor locations for comparison. The weather on the day we sampled was cold and rainy. In each sample location, measurements of temperature and relative humidity were made. The results of the total spore count samples analyses and the temperature/relative humidity measurements are presented in Table 1 below.

Table 1: Summary of Total Spore Count Analyses, Temperature and Relative Humidity Measurements – November 30, 2018

Sample #	**150-A1**	**150-A2**	**150-A3**	**150-O1**	**150-O1**
Location Description	**Kitchen**	**Middle Office**	**Open Front Area**	**Outdoors 1**	**Outdoors 2**
Spore Type	**Spores/m^3**	**Spores/m^3**	**Spores/m^3**	**Spores/m^3**	**Spores/m^3**
Alternia	---	---	---	---	---
Ascospores	40	40	---	570	400
Basidiospores	490	400	90	9,410	14,500
Bipolaris	40	---	---	---	---
Chaetomium	40	40	---	---	---
Cladosporium	1,700	3,900	13,100	440	400
Curvalaria	---	---	40	---	---
Epicoccum	---	40	---	---	---
Ganoderma	---	---	10	---	---
Myxomycetes	---	40	40	---	10
Penicillium/ Aspergillus	68,500	160,000	129,000	15,900	1,500
Scopulariopsis/ Microascus	---	200	40	---	---
Arthtinium	---	---	---	10	---
Cercospora	---	40	---	---	---
Spegazzinia	400	---	---	---	---
Yeast	200	---	---	---	---
Total	**71,050**	**164,700**	**143,320**	**26,630**	**16,810**
Temperature (degrees Fahrenheit)	62.4	63.3	62.2	52.3	52.2
Relative Humidity (%)	53.2	50.4	54.4	75.5	80.0

The indoor air samples in the retail/office space were higher than outdoor levels. The dominant mold genera indoors were *Penicillium/Aspergillus* type spores. The dominant mold genera outdoors were *Penicillium/Aspergillus* and *Basidiospores* type spores.

On November 30, 2018, Terracon collected a dust sample from the carpeting in space. The sample was analyzed for allergens from dust mites, mouse, rat, cat, dog, and cockroach. Low levels of allergens were identified in the sample. Table 2 below summarizes the laboratory results. The laboratory analytical report is attached and references additional information.

Table 2: Summary of Allergen Analyses – November 30, 2018

Sample #	**150-CV**	
Location	**Front Office Carpet**	
Allergen Type/Antigen	**Concentration (ug/g)**	**Laboratory assigned risk factor**
Dust Mites / Der fl	ND	Low
Dust Mites / Der pl	0.02	Low
Mouse / Mus ml	ND	Low
Rat / Rat nl	ND	Low
Cat / Fel dl	0.05	Low
Dog / Can fl	0.51	Low
Cockroach / Bla g2	ND	Low

Note: ug = microgram (10^{-6} grams), NA = Not Applicable, ND = not detected

Additionally one swab sample (150-SS) was collected from a chair leg where visible mold was identified. The laboratory results indicated that *Aspergillus* spores identified in the swab sample were also observed in the air.

The laboratory analytical reports are provided in Appendix C.

4.5 Conclusions and Recommendations

The following conclusions are provided based on our assessment:

- Air spore trap sampling indicated that indoor spore levels in the retail/office space were above the average outdoor levels; *Aspergillus/Penicillium* type spores were identified in the indoor samples above outdoor levels. This indicates elevated air levels from mold growth in the interior of the space.
- Visible mold growth was noted on various surfaces as well as soft goods throughout the office area. The mold growth appears to be predominantly on the stored office furniture of the space. Swab samples were collected and detected moderate levels of *Aspergillus* type spores.
- Relative humidity levels inside the space were outside of the ASHRAE and EPA guideline ranges, which can lead to potential mold growth.
- Results for allergens from dust mites, mouse, rat, cat, dog, and cockroach were assigned a low risk from the laboratory.

Terracon understands this space may be leased by Clemson University. Prior to leasing the space Terracon recommends that the HVAC unit be assessed and adjusted to the proper settings for fall/winter heating and cooling schedules. Surficial mold growth in the various areas suggest the mold growth may be caused by the HVAC system not removing humidity or not properly operating, as well as the space being unoccupied for an extended period of time. Portable dehumidifiers with high-efficiency particulate arresting (HEPA) filters should be installed in the interim to help regulate the humidity levels until the HVAC system can be assessed. Additionally it is recommended that the damaged ceiling tiles and furniture/furnishings be removed and/or cleaned. The carpeting in the area should also be professionally cleaned utilizing HEPA vacuums and not steam or water-based cleaners as this could exacerbate the mold growth. If the carpet is not to be cleaned then it should be removed along with any underlying padding.

Additional testing should be performed once cleaning and maintenance efforts are completed.

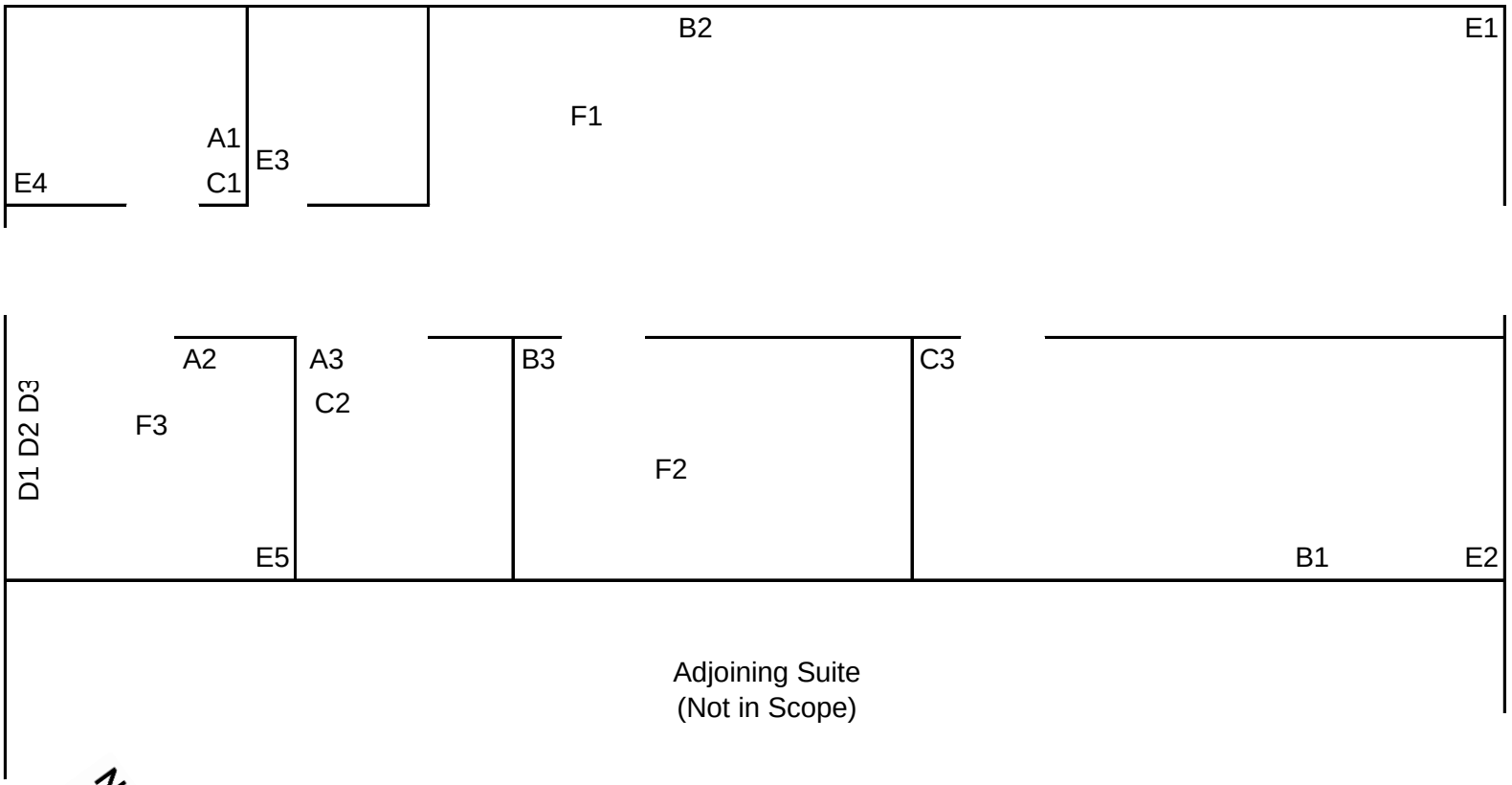
5.0 GENERAL COMMENTS

This limited investigation was 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. Terracon did not attempt to identify every potential exposure or hazard present in the subject building. The results, findings, conclusions and recommendations expressed in this report are based on conditions observed during our sampling. Many factors, such as weather conditions, building occupancy, ventilation patterns and seasonal variations in fungal concentrations, can affect the conditions observed. The information contained in this report should not be relied upon to represent conditions that existed prior to or after this sampling. Terracon does not warrant the services of regulatory agencies, laboratories or other third parties supplying information that may have been used in the preparation of this report.

This report has been prepared on behalf of and exclusively for use by Clemson University for specific application to their project, as discussed herein. 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.

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.

APPENDIX A
FIGURE



Suite layout and sample locations are approximated.

Project Manager: JAG	Project No. 86187189F
Drawn By: SNE	Scale: N.T.S.
Checked By: JAG	File Name:
Approved By:	Date: 12/14/2018

Terracon
Consulting Engineers & Scientists
72 Pointe Circle Greenville, SC 29615
PH. (864) 292-2901 FAX. (864) 292-6361

General Layout / Sample Locations

Gateway Plaza, Suite 105
385 Old Greenville Highway
Clemson, South Carolina

Figure 1

APPENDIX B
TABLE

TABLE 1
ASBESTOS RESULTS SAMPLE SUMMARY

GATEWAY PLAZA, SUITE 105
385 OLD GREENVILLE HIGHWAY
CLEMSON, SOUTH CAROLINA
TERRACON PROJECT NO. 86187089F

Sample Number	Analysis Method	Analytical Results	Sample Location	Sample Description	Homogeneous Area	Classification	Friable / Non-Friable	Current Condition	Potential for Disturbance	Estimated Quantity
A1	PLM	Floor Tile - NAD Mastic - NAD	Kitchen, Store Room, and Restroom	12" White Streaked Floor Tile and Yellow Mastic	A	Miscellaneous	Non-Friable	Good	LPD	500 SF
A2	PLM									
A3	TEM									
B1	PLM	NAD	Throughout	Yellow Carpet Mastic	B	Miscellaneous	Non-Friable	Good	LPD	940 SF
B2	PLM									
B3	TEM									
C1	PLM	NAD	Throughout	Tan Cove Base Mastic	C	Miscellaneous	Non-Friable	Good	LPD	80 SF
C2	PLM									
C3	TEM									
D1	PLM	NAD	Kitchen	Gray Sink Mastic	D	Miscellaneous	Non-Friable	Good	LPD	3 SF
D2	PLM									
D3	TEM									
E1	PLM	Drywall - NAD Joint Compound - NAD	Throughout	Drywall and Joint Compound	E	Surfacing	Friable	Good	LPD	2,940 SF
E2	PLM									
E3	PLM									
E4	PLM									
E5	PLM									
F1	PLM	NAD	Throughout	Ceiling Tile Pinhole and Fissure Pattern	F	Miscellaneous	Non-Friable	Good	LPD	1,440 SF
F2	PLM									
F3	PLM									

Notes:
1) Quantities listed above are estimates to be used for inspection purposes only and should be field-verified for all other uses.
2) A general overview of the site is depicted on Figure 1.

NA - Not Analyzed
NAD - No Asbestos Detected
PLM - Polarized Light Microscopy
TEM - Transmission Electron Microscopy
PACM - Presumed Asbestos Containing Material

LPD - Low potential for disturbance
PD - Potential for disturbance
PSD - Potential of significant disturbance

SF - square feet
LF - linear feet
CF - cubic feet

APPENDIX C
LABORATORY REPORTS

EMSL Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077
Phone/Fax: (800) 220-3675 / (856) 786-5974
http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order ID:	041835486
Customer ID:	GTER78
Customer PO:	861187189F
Project ID:	

Attn: Jeff Gurrie
Terracon Consultants, Inc.
72 Pointe Circle
Greenville, SC 29615

Phone:	(864) 292-2901
Fax:	(864) 292-6361
Collected:	11/30/2018
Received:	12/03/2018
Analyzed:	12/07/2018

Proj: 861187189F - Gateway Plaza 105

Summary Test Report for Asbestos Analysis of Bulk Material via EPA 600/R-93/116

Client Sample ID: A1-Floor Tile **Lab Sample ID:** **041835486-0001**
Sample Description: White Streaked Floor Tile

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	12/07/2018	White	0.0%	100.0%	None Detected	

Client Sample ID: A1-Mastic **Lab Sample ID:** **041835486-0001A**
Sample Description: Mastic

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	12/07/2018	Yellow	0.0%	100.0%	None Detected	

Client Sample ID: A2-Floor Tile **Lab Sample ID:** **041835486-0002**
Sample Description: White Streaked Floor Tile

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	12/07/2018	White	0.0%	100.0%	None Detected	

Client Sample ID: A2-Mastic **Lab Sample ID:** **041835486-0002A**
Sample Description: Mastic

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	12/07/2018	Tan/Yellow	0.0%	100.0%	None Detected	Inseparable leveler attached.

Client Sample ID: A3-Floor Tile **Lab Sample ID:** **041835486-0003**
Sample Description: White Streaked Floor Tile

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
TEM Grav. Reduction	12/06/2018	White	0.0%	100.0%	None Detected	

Client Sample ID: A3-Mastic **Lab Sample ID:** **041835486-0003A**
Sample Description: Mastic

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
TEM Grav. Reduction	12/06/2018	Yellow	0.0%	100.0%	None Detected	

Client Sample ID: B1 **Lab Sample ID:** **041835486-0004**
Sample Description: Yellow Carpet Mastic

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	12/07/2018	Yellow	0.0%	100.0%	None Detected	

EMSL Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077
Phone/Fax: (800) 220-3675 / (856) 786-5974
http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order ID:	041835486
Customer ID:	GTER78
Customer PO:	861187189F
Project ID:	

Summary Test Report for Asbestos Analysis of Bulk Material via EPA 600/R-93/116

Client Sample ID: B2 ***Lab Sample ID:*** **041835486-0005**

Sample Description: Yellow Carpet Mastic

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	12/07/2018	Yellow	0.0%	100.0%	None Detected	

Client Sample ID: B3 ***Lab Sample ID:*** **041835486-0006**

Sample Description: Yellow Carpet Mastic

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
TEM Grav. Reduction	12/06/2018	Yellow	0.0%	100.0%	None Detected	

Client Sample ID: C1 ***Lab Sample ID:*** **041835486-0007**

Sample Description: Tan Cove Base Mastic

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	12/07/2018	Tan	0.0%	100.0%	None Detected	

Client Sample ID: C2 ***Lab Sample ID:*** **041835486-0008**

Sample Description: Tan Cove Base Mastic

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	12/07/2018	Tan	0.0%	100.0%	None Detected	

Client Sample ID: C3 ***Lab Sample ID:*** **041835486-0009**

Sample Description: Tan Cove Base Mastic

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
TEM Grav. Reduction	12/06/2018	Tan	0.0%	100.0%	None Detected	

Client Sample ID: D1 ***Lab Sample ID:*** **041835486-0010**

Sample Description: Gray Sink Mastic

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	12/07/2018	Gray	10.0%	90.0%	None Detected	

Client Sample ID: D2 ***Lab Sample ID:*** **041835486-0011**

Sample Description: Gray Sink Mastic

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	12/07/2018	Gray	10.0%	90.0%	None Detected	

Client Sample ID: D3 ***Lab Sample ID:*** **041835486-0012**

Sample Description: Gray Sink Mastic

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
TEM Grav. Reduction	12/06/2018	Gray	0.0%	100.0%	None Detected	

EMSL Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077
Phone/Fax: (800) 220-3675 / (856) 786-5974
http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order ID:	041835486
Customer ID:	GTER78
Customer PO:	861187189F
Project ID:	

Summary Test Report for Asbestos Analysis of Bulk Material via EPA 600/R-93/116

Client Sample ID: E1-Drywall **Lab Sample ID:** **041835486-0013**
Sample Description: Drywall

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	12/07/2018	Brown/White	15.0%	85.0%	None Detected	

Client Sample ID: E1-Joint Compound **Lab Sample ID:** **041835486-0013A**
Sample Description: Joint Compound

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	12/07/2018	White	0.0%	100.0%	None Detected	

Client Sample ID: E2-Drywall **Lab Sample ID:** **041835486-0014**
Sample Description: Drywall

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	12/07/2018	Brown/White	15.0%	85.0%	None Detected	

Client Sample ID: E2-Joint Compound **Lab Sample ID:** **041835486-0014A**
Sample Description: Joint Compound

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	12/07/2018	White	0.0%	100.0%	None Detected	

Client Sample ID: E3-Drywall **Lab Sample ID:** **041835486-0015**
Sample Description: Drywall

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	12/07/2018	Brown/White	15.0%	85.0%	None Detected	

Client Sample ID: E3-Joint Compound **Lab Sample ID:** **041835486-0015A**
Sample Description: Joint Compound

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	12/07/2018	White	0.0%	100.0%	None Detected	

Client Sample ID: E4-Drywall **Lab Sample ID:** **041835486-0016**
Sample Description: Drywall

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	12/07/2018	Brown/White	20.0%	80.0%	None Detected	

Client Sample ID: E4-Joint Compound **Lab Sample ID:** **041835486-0016A**
Sample Description: Joint Compound

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	12/07/2018	White	0.0%	100.0%	None Detected	

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Project ID:	

Summary Test Report for Asbestos Analysis of Bulk Material via EPA 600/R-93/116

Client Sample ID: E5-Drywall **Lab Sample ID:** **041835486-0017**
Sample Description: Drywall

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	12/07/2018	Brown/White	15.0%	85.0%	None Detected	

Client Sample ID: E5-Joint Compound **Lab Sample ID:** **041835486-0017A**
Sample Description: Joint Compound

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	12/07/2018	White	0.0%	100.0%	None Detected	

Client Sample ID: F1 **Lab Sample ID:** **041835486-0018**
Sample Description: Ceiling Tile - Pinhole and Fissure

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	12/07/2018	Tan/White	90.0%	10.0%	None Detected	

Client Sample ID: F2 **Lab Sample ID:** **041835486-0019**
Sample Description: Ceiling Tile - Pinhole and Fissure

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	12/07/2018	Tan/White	90.0%	10.0%	None Detected	

Client Sample ID: F3 **Lab Sample ID:** **041835486-0020**
Sample Description: Ceiling Tile - Pinhole and Fissure

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	12/07/2018	Gray/White	90.0%	10.0%	None Detected	

Analyst(s):

Jonathan Blanfort	PLM (8)
Matthew Hermann	TEM Grav. Reduction (5)
Natalia Dispensa	PLM (15)

Reviewed and approved by:



Benjamin Ellis, Laboratory Manager
or Other Approved Signatory

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Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NVLAP Lab Code 101048-0, AIHA-LAP, LLC-IHLAP Lab 100194, NYS ELAP 10872, NJ DEP 03036

Initial report from: 12/06/201816:55:42

OrderID: 041835486

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Asbestos Bulk Building Material Chain of Custody

EMSL Order Number (*Lab Use Only*): 041835486

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CINNAMINSON, NJ
2018 DEC 3 A 10:32

Company : Terracon Consultans, Inc.		**EMSL-Bill to:** ☑ Same ☐ Different If Bill to is Different note instructions in Comments	
Street: 72 Pointe Circle		*Third Party Billing requires written authorization from third party*	
City: Greenville	**State/Province:** SC	**Zip/Postal Code:** 29615	**Country:** US
Report To (Name): Jeff Gurrie		**Telephone #:** 864.292.2901	
Email Address: jeff.gurrie@terracon.com		**Fax #:** 864.292.6361	**Purchase Order:**
Project Name/Number: 86187189F - Gateway Plaza 105		**Please Provide Results:** ☐ Fax ☑ Email ☐ Mail	
U.S. State Samples Taken: SC		**CT Samples:** ☐ Commercial/Taxable ☐ Residential/Tax Exempt	

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.*

PLM - Bulk (reporting limit)	TEM – Bulk
☑ PLM EPA 600/R-93/116 (<1%)	☑ TEM EPA NOB – EPA 600/R-93/116 Section 2.5.5.1
☐ PLM EPA NOB (<1%)	☐ NY ELAP Method 198.4 (TEM)
Point Count ☐ 400 (<0.25%) ☐ 1000 (<0.1%)	☐ Chatfield Protocol (semi-quantitative)
Point Count w/Gravimetric ☐ 400 (<0.25%) ☐ 1000 (<0.1%)	☐ TEM % by Mass – EPA 600/R-93/116 Section 2.5.5.2
☐ NIOSH 9002 (<1%)	☐ TEM Qualitative via Filtration Prep Technique
☐ NY ELAP Method 198.1 (friable in NY)	☐ TEM Qualitative via Drop Mount Prep Technique
☐ NY ELAP Method 198.6 NOB (non-friable-NY)	**Other**
☐ OSHA ID-191 Modified	☐
☐ Standard Addition Method	

TEM Concurrent

☑ **Check For Positive Stop – Clearly Identify Homogenous Group** **Date Sampled:** 11-30-18

Samplers Name: Stephen Ellis **Samplers Signature:**

Sample #	HA #	Sample Location	Material Description
A1			White Streaked Floor Tile and Yellow Mastic
A2			"
A3		**	"
B1			Yellow Carpet Mastic
B2			"
B3		**	"
C1			Tan Cove Base Mastic
C2			"
C3		**	"
D1			Gray Sink Mastic

Client Sample # (s): - **Total # of Samples:**

Relinquished (Client): **Date:** 11-30-18 **Time:** 1800

Received (Lab): **Date:** 12-3-18 **Time:** 9:10

Comments/Special Instructions:

** PLM first two samples, TEM 3rd sample per SC DHEC Regulations. (20)

Page 1 of 2 pages

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Asbestos Bulk Building Material Chain of Custody

EMSL Order Number *(Lab Use Only)*: 041835486

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Sample #	HA #	Sample Location	Material Description
D2			Gray Sink Mastic
D3		**	"
E1		Don't Positive Stop - Don't Composite	Drywall and Joint Compound
E2		"	"
E3		"	"
E4		"	"
E5		"	"
F1			Ceiling Tile - Pinhole and Fissure
F2			"
F3			"

***Comments/Special Instructions:**

** PLM first two samples, TEM 3rd sample per SC DHEC Regulations.

Page 2 of 2 pages

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EMSL Order: 371822220
Customer ID: GTER78
Customer PO: 86187189F
Project ID:

Attn: Jeff Gurrie
Terracon Consultants, Inc.
72 Pointe Circle
Greenville, SC 29615

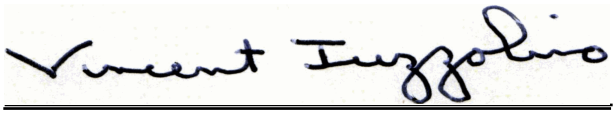
Phone: (864) 360-7572
Fax: (864) 292-6361
Collected: 11/30/2018
Received: 12/03/2018
Analyzed: 12/04/2018

Project: 86187189F - Gateway Plaza 105

Test Report: Air-O-Cell(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

Lab Sample Number:	371822220-0001			371822220-0002			371822220-0003		
Client Sample ID:	150-A1			150-A2			150-A3		
Volume (L):	75			75			75		
Sample Location	In Kitchen			Middle Office			Open Area		
Spore Types	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	1	40	0.1	1	40	0	-	-	-
Aspergillus/Penicillium	1550	68500	96.4	3630	160000	97.1	2920	129000	90.6
Basidiospores	11	490	0.7	8	400	0.2	2	90	0.1
Bipolaris++	3*	40*	0.1	-	-	-	-	-	-
Chaetomium	1	40	0.1	1	40	0	-	-	-
Cladosporium	39	1700	2.4	89	3900	2.4	297	13100	9.2
Curvularia	-	-	-	-	-	-	1	40	0
Epicoccum	-	-	-	1	40	0	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	1*	10*	0
Myxomycetes++	-	-	-	1	40	0	1	40	0
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	4	200	0.1	1	40	0
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Arthrinium	-	-	-	-	-	-	-	-	-
Cercospora++	-	-	-	1	40	0	-	-	-
Spegazzinia	1	40	0.1	-	-	-	-	-	-
Yeast	5	200	0.3	-	-	-	-	-	-
Total Fungi	**1611**	**71050**	**100**	**3736**	**164700**	**100**	**3223**	**142320**	**100**
Hyphal Fragment	-	-	-	3	100	-	5	200	-
Insect Fragment	1	40	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	44	-	-	44	-	-	44	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-	-	13*	-
Skin Fragments (1-4)	-	2	-	-	1	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	1	-	-	1	-	-	1	-

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.



Vincent Iuzzolino, M.S., Laboratory Manager
or other approved signatory

High levels of background particulate can obscure spores and other particulates leading to underestimation. Background levels of 5 indicate an overloading of background particulates, prohibiting accurate detection and quantification. Present = Spores detected on overloaded samples. Results are not blank corrected unless otherwise noted. The detection limit is equal to one fungal spore, structure, pollen, fiber particle or insect fragment. "*" Denotes particles found at 300X. "-" Denotes not detected. Due to method stopping rules, raw counts in excess of 100 are extrapolated based on the percentage analyzed. EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above 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. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ AIHA-LAP, LLC--EMLAP Lab 100194

Initial report from: 12/04/2018 13:07:50

For information on the fungi listed in this report, please visit the Resources section at www.emsl.com

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EMSL Order:	371822220
Customer ID:	GTER78
Customer PO:	86187189F
Project ID:	

Attn:	Jeff Gurrie	**Phone:**	(864) 360-7572
	Terracon Consultants, Inc.	**Fax:**	(864) 292-6361
	72 Pointe Circle	**Collected:**	11/30/2018
	Greenville, SC 29615	**Received:**	12/03/2018
		Analyzed:	12/04/2018
Project:	86187189F - Gateway Plaza 105		

371822220-0001 - Penicillium/Talaromyces-like conidiophores present in sample.
371822220-0002 - Aspergillus conidiophores present in sample.
371822220-0003 - Aspergillus conidiophores present in sample.

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.

Vincent Iuzzolino

Vincent Iuzzolino, M.S., Laboratory Manager
or other approved signatory

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Greenville, SC 29615

Phone: (864) 360-7572
Fax: (864) 292-6361
Collected: 11/30/2018
Received: 12/03/2018
Analyzed: 12/04/2018

Project: 86187189F - Gateway Plaza 105

Test Report: Air-O-Cell(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

Lab Sample Number:	371822220-0004			371822220-0005			371822220-0006		
Client Sample ID:	150-O1			150-O2			BL		
Volume (L):	75			75					
Sample Location	Outdoors 1			Outdoors 2			Blank		
Spore Types	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	13	570	2.2	9	400	2.4	-	-	-
Aspergillus/Penicillium	360	15900	60.4	34	1500	8.9	-	-	-
Basidiospores	213	9410	35.7	327	14500	86.3	-	-	-
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	-
Cladosporium	10	440	1.7	9	400	2.4	-	-	-
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	1*	10*	0.1	-	-	-
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Arthrinium	1*	10*	0	-	-	-	-	-	-
Cercospora++	-	-	-	-	-	-	-	-	-
Spegazzinia	-	-	-	-	-	-	-	-	-
Yeast	-	-	-	-	-	-	-	-	-
Total Fungi	**597**	**26330**	**100**	**380**	**16810**	**100**	**-**	**No Trace**	**-**
Hyphal Fragment	1	40	-	1	40	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	44	-	-	44	-	-	0	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-	-	0*	-
Skin Fragments (1-4)	-	1	-	-	1	-	-	-	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	-	-
Background (1-5)	-	1	-	-	1	-	-	-	-

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.

Vincent Iuzzolino

Vincent Iuzzolino, M.S., Laboratory Manager
or other approved signatory

High levels of background particulate can obscure spores and other particulates leading to underestimation. Background levels of 5 indicate an overloading of background particulates, prohibiting accurate detection and quantification. Present = Spores detected on overloaded samples. Results are not blank corrected unless otherwise noted. The detection limit is equal to one fungal spore, structure, pollen, fiber particle or insect fragment. "*" Denotes particles found at 300X. "-" Denotes not detected. Due to method stopping rules, raw counts in excess of 100 are extrapolated based on the percentage analyzed. EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above 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. Samples received in good condition unless otherwise noted.

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Initial report from: 12/04/2018 13:07:50

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Attn: Jeff Gurrie
Terracon Consultants, Inc.
72 Pointe Circle
Greenville, SC 29615

Phone:	(864) 292-2901
Fax:	(864) 292-6361
Collected:	11/30/2018
Received:	12/03/2018
Analyzed:	12/04/2018

Proj: 86187189F - Gateway Plaza 105

Test Report: Microscopic Examination of Fungal Spores, Fungal Structures, Hyphae, and Other Particulates from Swab Samples (EMSL Method MICRO-SOP-200)

Lab Sample Number:	371822220-0007				
Client Sample ID:	150-SS				
Sample Location:	Office Furniture				
Spore Types	Category	-	-	-	-
Alternaria (Ulocladium)	-	-	-	-	-
Ascospores	-	-	-	-	-
Aspergillus/Penicillium	-	-	-	-	-
Basidiospores	-	-	-	-	-
Bipolaris++	-	-	-	-	-
Chaetomium	-	-	-	-	-
Cladosporium	-	-	-	-	-
Curvularia	-	-	-	-	-
Epicoccum	-	-	-	-	-
Fusarium	-	-	-	-	-
Ganoderma	-	-	-	-	-
Myxomycetes++	-	-	-	-	-
Pithomyces++	-	-	-	-	-
Rust	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-
Zygomycetes	-	-	-	-	-
Aspergillus	*High*	-	-	-	-
Hyphal Fragment	-	-	-	-	-
Insect Fragment	-	-	-	-	-
Pollen	-	-	-	-	-
Fibrous Particulate	Rare	-	-	-	-

Category: Count/per area analyzed - Rare: 1 to 10 Low: 11 to 100 Medium: 101 to 1000 High: >1000

- Denotes Not Detected.
++ = Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.
* = Sample contains fruiting structures and/or hyphae associated with the spores.

No discernable field blank was submitted with this group of samples.

Vincent Iuzzolino, M.S., Laboratory Director
or Other Approved Signatory

Samples received in good condition unless otherwise noted. EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above 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 of the data contained in this report is the responsibility of the client.

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Initial report from: 12/04/2018 13:07:50

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EMSL Order #:	**371822220**
Customer ID:	**GTER78**
Customer PO:	**86187189F**

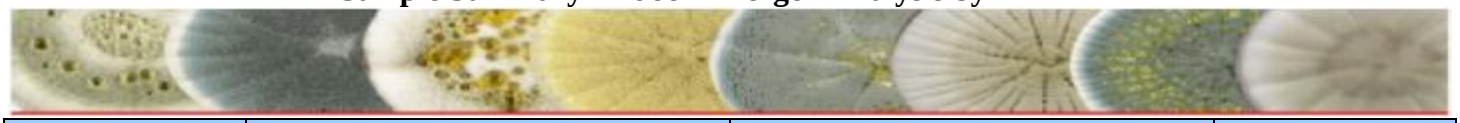
Attn: **Jeff Gurrie**
Terracon Consultants, Inc.
72 Pointe Circle
Greenville, SC 29615

Phone: **864-292-2901**
Fax: **864-292-6361**

Project: **86187189F - Gateway Plaza 105**

Date Collected: **11/30/2018**
Date Received: **12/3/2018**
Date Analyzed: **12/6/2018**

Sample Summary -Indoor Allergen Analysis by MARIA®



Lab Sample Number	Client Sample ID	Sample Location	Sample Type
371822220-0008	150-CV	Front Office Carpet	Bulk

Report Date	Report Revision	Revision Comments
12/10/2018	R0	Initial Report

Vincent Iuzzolino, M.S., Laboratory Director
or approved EMSL Analytical, Inc. signatory

About Us

EMSL Analytical, Inc. offers a full line of analytical solutions for over 30 years across North America. For more information about our nationally accredited locations, vast line of testing services, and our food safety solutions please visit www.EMSL.com or call



Disclaimers

All samples were collected by and all sampling data was provided by the client. The results are valid only for those samples analyzed, and only for those samples collected in accordance with the appropriate methodology as determined by the client. The results herein do not denote or represent a medical or clinical diagnosis or conclusion. In the event that sample(s) were submitted in opened, used, non-sterile or otherwise adulterated condition, EMSL shall not be responsible or liable. EMSL Analytical (Cinnaminson, NJ) is accredited by the American Industrial Hygiene Association (AIHA) in the EMLAP accreditation program for specified Field(s) of Testing as documented on the scope of accreditation.

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EMSL Analytical, Inc.
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http://www.EMSL.com cinnmicrolab@emsl.com

EMSL Order #: **371822220**
Customer ID: **GTER78**
Customer PO: **86187189F**

Attn: **Jeff Gurrie**
Terracon Consultants, Inc.
72 Pointe Circle
Greenville, SC 29615

Phone: **864-292-2901**
Fax: **864-292-6361**

Project: **86187189F - Gateway Plaza 105**

Date Collected: **11/30/2018**
Date Received: **12/3/2018**
Date Analyzed: **12/6/2018**

EMSL Sample #: **371822220-0008**
Client ID: **150-CV**
Location: **Front Office Carpet**

Sample Type: **Bulk**
Sample Size: **58**
Sample Units: **mg**

Analytical Results -Indoor Allergen Analysis by MARIA®

Test Parameter	*Antigens*	*Detection Limits*		*Concentrations*		*Allergen Risk Levels*
Dust Mites Allergen	Der f1	0.012	µg/g	**ND**	µg/g	☑
Dust Mites Allergen	Der p1	0.012	µg/g	**0.02**	µg/g	☑
Mouse Allergen	Mus m1	0.002	µg/g	**ND**	µg/g	☑
Rat Allergen	Rat n1	0.004	µg/g	**ND**	µg/g	†
Cat Allergen	Fel d1	0.004	µg/g	**0.05**	µg/g	☑
Dog Allergen	Can f1	0.012	µg/g	**0.51**	µg/g	☑
Cockroach Allergen	Bla g2	0.012	µg/g	**ND**	µg/g	☑

†Sufficient evidence is not available for risk levels.

Allergen Risk Levels:

High -Risk of acute asthmatic attack.

Moderate -Risk for sensitization and bronchial hyperactivity.

Low -Not sufficient to cause symptoms or ND (None Detected); Indicates that the amount of allergen in the sample is below the detection limits.

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Report Date	**Report Revision**	**Revision Comments**
12/10/2018	R0	Initial Report

Vincent Iuzzolino, M.S., Laboratory Director
or approved EMSL Analytical, Inc. signatory

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EMSL Analytical, Inc.
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http://www.EMSL.com cinnmicrolab@emsl.com

EMSL Order #: **371822220**
Customer ID: **GTER78**
Customer PO: **86187189F**

Attn: **Jeff Gurrie**
Terracon Consultants, Inc.
72 Pointe Circle
Greenville, SC 29615

Phone: **864-292-2901**
Fax: **864-292-6361**

Project: **86187189F - Gateway Plaza 105**

Date Collected: **11/30/2018**
Date Received: **12/3/2018**
Date Analyzed: **12/6/2018**



Guidelines to Interpretation

µg/g

Allergens	<DL	<1	1	2	3	4	5	6	7	8	9	>10
Fel d1	ND	Low	Mod	Mod	Mod	Mod	Mod	Mod	Mod	High	High	High
Can f1	ND	Low	Low	Mod	Mod	Mod	Mod	Mod	Mod	Mod	Mod	High
Der p1	ND	Low	Low	Mod	Mod	Mod	Mod	Mod	Mod	Mod	Mod	High
Der f1	ND	Low	Low	Mod	Mod	Mod	Mod	Mod	Mod	Mod	Mod	High
Mus m1	ND	Low	Mod	Mod	Mod	High	High	High	High	High	High	High

µg/m3

Rat n1	ND	<0.7 µg /m3 = Not associated with increased risk of asthma

µg/g

	<DL	<0.08	0.08	0.09	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8
Bla g2 †	ND	Low	Mod	Mod	Mod	Mod	Mod	Mod	High	High	High	High

† *Suggested levels. Not officially established.*

Note: *This report and guidelines furnish information only. Whether an individual suffers allergic symptoms or not depends on his/her medical history and previous exposure.*

References

Journal of Allergy and Clinical Immunology 1989; 83:416-427
Journal of Allergy and Clinical Immunology 1995; 96:449-456
The American review of respiratory disease 1990; 141:361-367
The American review of respiratory disease 1993; 147:573-578
Environmental Health Perspectives 2002; 110:419-425
Clinical and Experimental Allergy 1998; 28(5):537-44
Pediatric allergy-principles and practice. Mosby Inc 2003: 261-268.

Terminology

ELISA	Enzyme-linked Immunosorbent Assay
MARIA®	Multiplex Array for Indoor Allergens
Allergen	A substance which reacts with the body's immune system to produce an allergic reaction.
Antigen	A substance, foreign to the body, which stimulates the production of antibodies by the immune system.
Bla g2	*Blattella germanica* (Cockroach) allergen 2
Can f1	*Canis familiaris* (Dog) allergen 1
Der f1	*Dermatophagoides farinae* (Dust Mites) allergen 1
Der p1	*Dermatophagoides pteronyssinus* (Dust Mites) allergen 1
Detection Limits	DL is the smallest amount of a substance, in this case antigens, which can be measured.
Fel d1	*Felis domesticus* (Cat) allergen 1
Mus m1	*Mus musculus* (Mouse) allergen 1
ND	None detected, if any allergens are present they are below the detection limits.
Rat n1	*Rattus norvegicus* (Rat) allergen 1

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Project: **86187189F - Gateway Plaza 105**

Date Collected: **11/30/2018**
Date Received: **12/3/2018**
Date Analyzed: **12/6/2018**



Important Terms, Conditions, and Limitations

A. Sample Retention
Samples analyzed by EMSL will be retained for 60 days after analysis date. Storage beyond this period is available for a fee with written request prior to the initial 30 day period. Samples containing hazardous/toxic substances which require special handling will be returned to the client immediately. EMSL reserves the right to charge a sample disposal fee or return samples to the client.

B. Change Orders and Cancellation
All changes in the scope of work or turnaround time requested by the client after sample acceptance must be made in writing and confirmed in writing by EMSL. If requested changes result in a change in cost the client must accept payment responsibility. In the event work is cancelled by a client, EMSL will complete work in progress and invoice for work completed to the point of cancellation notice. EMSL is not responsible for holding times that are exceeded due to such changes.

C. Warranty
EMSL warrants to its clients that all services provided hereunder shall be performed in accordance with established and recognized analytical testing procedures and with reasonable care in accordance with applicable federal, state and local laws. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied. EMSL disclaims any other warranties, express or implied, including a warranty of fitness for particular purpose and warranty of merchantability.

D. Limits of Liability
In no event shall EMSL be liable for indirect, special, consequential, or incidental damages, including, but not limited to, damages for loss of profit or goodwill regardless of the negligence (either sole or concurrent) of EMSL and whether EMSL has been informed of the possibility of such damages, arising out of or in connection with EMSL's services thereunder or the delivery, use, reliance upon or interpretation of test results by client or any third party. We accept no legal responsibility for the purposes for which the client uses the test results. EMSL will not be held responsible for the improper selection of sampling devices even if we supply the device to the user. The user of the sampling device has the sole responsibility to select the proper sampler and sampling conditions to insure that a valid sample is taken for analysis. Any resampling performed will be at the sole discretion of EMSL, the cost of which shall be limited to the reasonable the original sample delivery group (SDG) samples. In no event shall EMSL be liable to a client orvalue of any third party, whether based upon theories of tort, contract or any other legal or equitable theory, in excess of the amount paid to EMSL by client thereunder.

E. Indemnification
Client shall indemnify EMSL and its officers, directors and employees and hold each of them harmless for any liability, expense or cost, including reasonable attorney's fees, incurred by reason of any third party claim in connection with EMSL's services, the test result data or its use by client.

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Report Date	Report Revision	Revision Comments
12/10/2018	R0	Initial Report

Vincent Iuzzolino, M.S., Laboratory Director
or approved EMSL Analytical, Inc. signatory

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OrderID: 371822220

EMSL ANALYTICAL, INC.
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Microbiology Chain of Custody

EMSL Order Number (*Lab Use Only*): 371822220

RECEIVED EMSL CINNAMINSON, N.J. DEC -3 AM 10:25

EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ 08077
PHONE: 1-800-220-3675
FAX: (856) 786-5974

Company Name: Terracon Consultans, Inc.		**EMSL-Bill to:** ☐ Same ☐ Different If Bill to is Different note instructions in Comments** *Third Party Billing requires written authorization from third party*	
Street: 72 Pointe Circle			
City: Greenville	**State/Province:** SC	**Zip/Postal Code:** 29615	**Country:** US
Report To (Name): Jeff Gurrie		**Telephone #:** 864.292.2901	
Email Address: jeff.gurrie@terracon.com		**Fax #:** 864.292.6361	**Purchase Order:**
Project Name/Number: 86187189F - Gateway Plaza 105		**Please Provide Results:** ☐ Fax ☒ Email	
U.S. State Samples Taken: SC	**Project Zip Code:**	**Connecticut Samples:** ☐ Commercial ☐ Residential	

**Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide. TATs are subject to methodology requirements*

Sterile, Sodium Thiosulfate Preserved Bottle Used: ☐ **Biocide Used in Source (specify):** _____ ☐

Public Water Supply Samples: ☐ **Note: All results may automatically be reported to DOH if required by state.**

Turnaround Time (TAT) Options * - Please Check

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

Air / Surface — Allergen

Microbiology Test Codes

M001 Air-O-Cell
M174 MoldSnap
M030 Micro 5
M032 Allergenco-D
M041 Fungal Direct Examination
M169 Pollen ID & Enumeration
M280 Dust Characterization Level-1
M281 Dust Characterization Level-2
M005 Viable Fungi- Air Samples (Genus ID & Count)
M006 Viable Fungi- Air Samples (Includes *Penicillium, Aspergillus, Cladosporium, Stachybotrys* Species ID & Count)
M007 Culturable fungi - Surface Samples (Genus ID & Count)
M008 Culturable fungi - Surface Samples (Includes *Penicillium, Aspergillus, Cladosporium, Stachybotrys* Species ID & Count)
M009 Bacteria Culture Gram Stain & Count
M010 Bacteria Count & ID - 3 Most Prominent
M011 Bacteria Count & ID - 5 Most Prominent
M012 Pseudomonas aeruginosa (P/A***)

M024 Pseudomonas aeruginosa (MFT*)
M015 Heterotrophic Plate Count
M017 Total Coliform & E. coli (Colilert P/A***)
M018 Total Coliform & E. coli (MFT*)
M114 Total Coliform & E. coli Enumeration (Colilert MPN**)
M019 Fecal Coliform (MFT*)
M020 Fecal Streptococcus (MFT*)
M029 Enterococci (MFT*)
M129 Enterococci (Enterolert P/A***)
M180 Real Time qPCR-ERMI 36 Panel
M025 Sewage Screen –Water (MFT*)

M115 Sewage Screen - Water (P/A***)
M116 Sewage Screen - Water (MPN**)
M117 Sewage Screen - Swab (P/A***)
M013 Sewage Screen - Swab (MFT*)
M133 Methicillin-resistant Staph. aureus (MRSA)
M031 Rapid-growing non-TB Mycobacteria Detection & Enumeration
M014 Endotoxin Analysis
M044 Group Allergen (Cat, Dog, Cockroach, Dust Mite)
Other See Analytical Price Guide
Legionella Analysis Please use EMSL Legionella COC

*MFT= Membrane Filtration Technique
**MPN= Most Probable Number
***P/A= Presence/Absence

Name of Sampler: Stephen Ellis **Signature of Sampler:**

Sample #	Sample Location/Description	Sample Type	Potable/ NonPotable (only for waters)	Test Code	Volume/ Area	Date/Time Collected	Temperature (°C) (Lab Use Only)
Example A1	Kitchen Sink/Tap	Water	☒ P ☐ NP	M017	100 mL	9/1/13 4:00 PM	
150-A1	In Kitchen	Air	☐ P ☐ NP	M001	75L	11-30-18	
150-A2	Middle Office	Air	☐ P ☐ NP	M001	75L	11-30-18	
150-A3	Open Area	Air	☐ P ☐ NP	M001	75L	11-30-18	
150-O1	Outdoors 1	Air	☐ P ☐ NP	M001	75L	11-30-18	
150-O2	Outdoors 2	Air	☐ P ☐ NP	M001	75L	11-30-18	
Bl	Blank	Air	☐ P ☐ NP	M001	UL	11-30-18	

Client Sample # (s): **Total # of Samples:** 8 AR **Samples Received Chilled?** Yes / No

Relinquished (Client): **Date:** 11-30-18 **Time:** 1815

Received (Lab): AR FX **Date:** 12/3/18 **Time:** @ 1030A

Comments/Special Instructions:

8CA

Controlled Document – COC-34 Micro R7.2 8/23/2017

OrderID: 371822220

EMSL ANALYTICAL, INC.
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Microbiology Chain of Custody

EMSL Order Number (*Lab Use Only*): 371822220

EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ 08077
PHONE: 1-800-220-3675
FAX: (856) 786-5974

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2018 DEC -3 AM 10: 25

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Sample #	Sample Location/Description	Sample Type	Potable/ NonPotable	Test Code	Volume/ Area	Date/Time Collected	Temperature (°C) (Lab Use Only)
150-SS	Office Furniture	Swab	☐ P ☐ NP	M041	N/A	11-30-18	
150-CV	Front Office Carpet	Bulk Dust	☐ P ☐ NP	M044** + M254	N/A (AM)	11-30-18	
			☐ P ☐ NP				
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Comments/Special Instructions:
** - Please analyze for Rat/Mouse Allergens M254

Page 2 of 2

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