

**DATE:** September 5, 2017

**TO:** Kelly Roden, Principal

**SUBJECT:** McKamy MS - IAQ - Air Test Results - Rooms 1120, 1130, 1140, and the Diagnostician's Office

On Tuesday 8/30, Apex-Titan Air tested Rooms 1120, 1130, 1140 and the Diagnostician's Office. It is typically assumed that indoor spore levels in an area with filtered or air conditioned air, and activity levels associated with schools average below the outdoor levels. Data from the airborne fungi sampling indicated that the total indoor concentration of mold/fungi in Room 1120, was **3.4%**, Room 1130, was **3.0%**, Room 1140, was **44.2%**, and the Diagnostician's Office, was **4.4%**, of the outdoor levels. Utilizing this theory, the indoor concentrations are within the acceptable guidelines for areas with filtered air or air conditioning. In Room 1140, there was a high concentration of Aspergillus / Penicillium. On Thursday 8/31, Steven Jones and the Apex-Titan Rep. met to evaluate Room 1140. A de-humidifier and Air Scrubber machines were put in the room and ran all weekend. Also, Custodial did a deep cleaning of all areas in the room. Today, I submitted a P.O. request to have Room 1140 retested. Should have the test results back by Friday 9/8. If you have any questions, please call me.

Thanks,  
Paul

Paul Siddall  
Maintenance Energy Auditor (IAQ)  
Facility Services  
Lewisville ISD  
340 Lake Haven Rd  
Lewisville, TX 75057

**DATE:** September 27, 2017

**TO:** Kelly Knight, Principal

**SUBJECT:** McKamy MS - IAQ - 2nd Retest Results - Room 1140

On Monday 9/25, Apex-Titan Air did a 2<sup>nd</sup> retest of Room 1140. It is typically assumed that indoor spore levels in an area with filtered or air conditioned air, and activity levels associated with schools average below the outdoor levels. Data from the airborne fungi sampling indicated that the total indoor concentration of mold/fungi in Room 1140, was **1.6%** of the outdoor levels. Utilizing this theory, the indoor concentrations are well within the acceptable guidelines for areas with filtered air or air conditioning. If you have any questions, please call me.

Thanks,  
Paul

Paul Siddall  
Maintenance Energy Auditor (IAQ)  
Facility Services  
Lewisville ISD  
340 Lake Haven Rd  
Lewisville, TX 75057



September 24, 2017

Lewisville Independent School District  
340 Lake Haven  
Lewisville, Texas 75057  
Attn: Mr. Paul Siddall

Re: Limited Mold Assessment Services  
McKamy Middle School  
Rooms 1120, 1130, 1140 and Diagnostician's Office  
2401 Old Settlers Road  
Flower Mound, Texas  
LISD PO No. 91744361-00  
Apex Project No. 725010727084

### **Introduction**

Apex TITAN, Inc., a subsidiary of Apex Companies, LLC (APEX) conducted limited mold assessment activities for the Lewisville Independent School District (Lewisville I.S.D.) within McKamy Middle School located at 2401 Old Settlers Road in Flower Mound, Texas (hereinafter referred to as the "Site"). The investigation was limited to areas of the Site identified by Lewisville I.S.D. as described below. The assessment was performed by Mr. Clinton S. Jech, a State of Texas licensed Mold Assessment Technician (Lic. No. MAT1075) on August 29, 2017. Apex's mold services definitions and limitations are included as an attachment to this report.

### **Investigation Areas**

Lewisville I.S.D. identified the following physical portions of the Site as the target investigation areas ("Investigation Areas") for mold assessment: readily accessible areas within rooms 1120, 1130, 1140 and the Diagnostician's office. Apex's mold assessment services were limited to the Investigation Area(s) identified by Lewisville, I.S.D. Additional areas or portions of the Site were out-of-scope and not included in Apex's mold assessment or this report at this time.

### **Scope of Work**

As set forth in Apex's Mold Assessment Proposal (No. P725010727097) dated August 28, 2017. Apex's scope-of-work was to provide visual and/or analytical mold assessment and related services in the Investigation Areas which included:

Visual Reconnaissance: Apex performed a visual reconnaissance of the Investigation Areas for visible indications of moisture intrusion (as indicated by staining or visible moisture) and/or suspect mold growth. Apex's visual reconnaissance only included readily accessible or visible portions of the Investigation Areas.

Suspect Mold Growth Sampling and Analysis: Apex collected limited ambient air samples for nonviable mold spores utilizing Air-O-Cell cassettes. "Air-O-Cell" refers to slit impaction air sampling cassettes manufactured by Zefon Analytical Accessories, St. Petersburg, Florida.

### **Site Reconnaissance Observations/Findings and Recommendations**

Apex' Mold Assessment Site reconnaissance was performed on August 29, 2017 by Mr. Clinton S. Jech. Apex's visual reconnaissance of the Investigation areas revealed the following:

**Temperature and Relative Humidity**

Temperature readings collected inside the rooms ranged from 69.0 to 73.2 degrees Fahrenheit while relative humidity ranged from 37.7 to 59.7 percent. Temperature readings collected outside the building ranged from 82.2 to 85.1 degrees Fahrenheit while outside relative humidity ranged from 47.0 to 57.0 percent.

Relative humidity is a measure of the moisture content of air and is closely tied to the comfort of the office/workplace temperature. As with temperature, there are no regulations governing acceptable office/workplace humidity ranges. Humidity levels in the office/workplace are not only related to health effects, but also have operational impacts on modern office equipment.

Workplace/office temperatures have historically been considered a subjective factor because the perception of uncomfortable temperature levels is specific to each individual. There are no regulations governing acceptable office/workplace temperature ranges, but significant research has been conducted which indicates that there are temperature ranges that are not only comfortable but also result in optimum performance. ASHRAE (American Society of Heating, Refrigerating & Air Conditioning Engineers) has published guidelines describing thermal environmental conditions that at least 80% of the persons who occupy that environment will find acceptable or “comfortable.” Table I below explains the applicable limits and guidelines.

Table I Acceptable Ranges of Temperature And Humidity		
Relative Humidity	Winter Temperatures	Summer Temperatures
30%	68.5 to 76°F	74 to 80°F
40%	68.5 to 75.5°F	73 to 79.5°F
50%	68.5 to 74.5°F	73 to 79°F
60%	68 to 74°F	72.5 to 78°F

Apex utilized a Protimeter Moisture Measurement System (MMS) instrument (Model No. BLD2000) to measure and diagnose dampness in the drywall within random areas. The MMS is a battery powered handheld unit that is equipped with hydrostick probes to measure moisture content in wood, drywall and other and non-conductive materials. The device measures electrical conductivity of building materials and compares the conductivity readings to an internal, electronic standard reading for normal or “dry” materials.

Moisture content readings were obtained by pushing the moisture probe pins into surfaces. The measured values were then displayed on a colored scale depicting if the materials measured were normal (dry), higher than normal but not critical (at risk) or contained excessive moisture levels (wet). Based on the manufacturer’s guidelines, the instrument measurement values are described below:

< 5%	Out of Range
> 5% but < 16%	Normal
> 17% but < 20%	Higher than Normal but Not Critical
> 20%	Excessive Moisture Levels

Moisture meter readings taken from the walls ranged from:

Room 1120 – 14-18%  
 Room 1140 – 14-24%

Room 1130 – 15-19%  
 Diagnostician’s Office – 13-15%

## **Air Monitoring Results**

Apex collected one (1) sample from the interior of each of the investigation areas and two (2) samples from the exterior of the building. The microbial samples were analyzed by Steve Moody Micro Services, LLC (SMMS) in Farmers Branch, Texas; SMMS is a State of Texas licensed mold analysis laboratory and accredited under the AIHA Laboratory Quality Assurance Program for Environmental Microbiology.

### **Room 1120**

Air testing performed using spore traps indicated that total airborne mold spores in the classroom was lower compared to those measured outside of the building at the time the sampling was performed. The total fungal spore concentration within the investigation area was reported as 181 counts/m<sup>3</sup>, while the exterior level ranged from 5,064 to 5,332 counts/m<sup>3</sup>.

One (1) type of mold was identified at a higher concentration within the investigation area as compared to the sample collected from the exterior of the building. Air sample(s) collected within the classroom reported Paecolomyces as 33 counts/m<sup>3</sup> while no exterior levels were reported.

### **Room 1130**

Air testing performed using spore traps indicated that total airborne mold spores in the classroom was lower compared to those measured outside of the building at the time the sampling was performed. The total fungal spore concentration within the investigation area was reported as 161 counts/m<sup>3</sup>, while the exterior level ranged from 5,064 to 5,332 counts/m<sup>3</sup>.

One (1) type of mold was identified at a higher concentration within the investigation area as compared to the sample collected from the exterior of the building. Air sample(s) collected within the classroom reported Hyphal/Spore Fragments-Dematiaceous as 47 counts/m<sup>3</sup> while exterior levels were reported as 33 counts/m<sup>3</sup>.

### **Room 1140**

Air testing performed using spore traps indicated that total airborne mold spores in the classroom was lower compared to those measured outside of the building at the time the sampling was performed. The total fungal spore concentration within the investigation area was reported as 2,355 counts/m<sup>3</sup>, while the exterior level ranged from 5,064 to 5,332 counts/m<sup>3</sup>.

One (1) type of mold was identified at a higher concentration within the investigation area as compared to the sample collected from the exterior of the building. Air sample(s) collected within the classroom reported Aspergillus/Penicillium as 2,267 counts/m<sup>3</sup> while exterior levels were reported as 33 counts/m<sup>3</sup>.

### **Diagnostician's Office**

Air testing performed using spore traps indicated that total airborne mold spores in the classroom was lower compared to those measured outside of the building at the time the sampling was performed. The total fungal spore concentration within the investigation area was reported as 236 counts/m<sup>3</sup>, while the exterior level ranged from 5,064 to 5,332 counts/m<sup>3</sup>.

One (1) type of mold was identified at a higher concentration within the investigation area as compared to the sample collected from the exterior of the building. Air sample(s) collected within the classroom reported Aspergillus/Penicillium as 107 counts/m<sup>3</sup> while exterior levels were reported as 33 counts/m<sup>3</sup>.

The American Conference of Governmental Industrial Hygienists (ACGIH) sets forth assessment criteria related to the “indoor/outdoor” relationship where the indoor air quality should be at or below that of outdoor air quality with regard to fungal spores (see ACGIH Bioaerosols, Assessment and Controls publication, 1999).

### **Suspect Mold**

No visible mold was observed during the assessment. Musty odors were noted within rooms 1140 and the conference area of the Diagnostician’s office.

### **Conclusions and Recommendations**

Based on Apex’s limited assessment and the analytical results collected, it appears that the indoor air quality, as it relates to airborne fungi was within recommended guidelines on the day of the assessment within rooms 1120, 1130 and the Diagnostician’s office. Due to the high concentration of Aspergillus/Penicillium in room 1140, Apex recommends the room be cleaned and retested.

If you have any questions regarding this report or if we can assist you with any other matter, please contact the undersigned at (469) 365-1140.

Sincerely,  
**Apex TITAN, Inc.**



Clinton. S. Jech  
Manager, Field Services  
Texas Mold Assessment Technician, Lic. No. MAT1075



Darren G. Bowden  
Senior Program Manager  
Texas Mold Assessment Consultant Lic. No. MAC0321

Attachments: Analytical Results/Chain of Custody, Mold Services Definitions & Limitations

**ATTACHMENT 1**

Analytical Results/Chain of Custody



# IAQ Mold Report

## Summary

DSHS License No.: LAB0117

AIHA EMPAT ID: 102577

2051 Valley View Lane  
Farmers Branch, TX 75234 Phone: (972) 241-8460

**Client :** Apex Titan, Inc. - Dallas **Lab Job No. :** 17F-10268  
**Project :** McKamy Middle School, Rms 1120, 1130, 1140 & Diag **Report Date :** 08/30/2017 12:25 PM  
**Project # :** 725010727084 **Sample Date:** 08/29/2017  
**Sample Type:** Spore Trap, Non-cultured **Spore Trap Type:** Zefon - Air-O-Cell  
**Test Method:** Mold: ASTM D7391-09 - Standard Profile Page 1 of 5

On 8/29/2017, six (6) samples were submitted by Clint Jech of Apex Titan, Inc. - Dallas (located at 12100 Ford. Rd., Suite 401, Farmers Branch, TX 75234) for Spore Trap, Non-cultured mold analysis. This report consists of three sections; a summary section, a data detail section, and an analytical notes section.

Sample Number	Volume (liters)	Sample Description	Identification	Concentration spores/cubic meter
1	150	Exterior, Northwest	Basidiospores Cladosporium Cercospora Alternaria Myxomycete / Rust / Smut Ascospores Curvularia Nigrospora Drechslera / Bipolaris group Oidium Coprinus group Fusarium Hyphal / Spore Fragments - Dematiaceous Ganoderma Agaricales group Pyricularia Epicoccum Torula Aspergillus / Penicillium Pithomyces  <div style="text-align: right;">Total:</div>	2220 42% 1471 28% 447 8% 367 7% 167 3% 133 2% 107 2% 87 2% 67 1% 40 <1% 40 <1% 33 <1% 33 <1% 33 <1% 33 <1% 20 <1% 13 <1% 7 <1% 7 <1% 7 <1%  5332 100%





# IAQ Mold Report

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2051 Valley View Lane

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Farmers Branch, TX 75234 Phone: (972) 241-8460

**Client :** Apex Titan, Inc. - Dallas

**Lab Job No. :** 17F-10268

**Project :** McKamy Middle School, Rms 1120, 1130, 1140 & Diag

**Report Date :** 08/30/2017 12:25 PM

**Project # :** 725010727084

**Sample Date:** 08/29/2017

**Sample Type:** Spore Trap, Non-cultured

**Spore Trap Type:** Zefon - Air-O-Cell

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Page 2 of 5

On 8/29/2017, six (6) samples were submitted by Clint Jech of Apex Titan, Inc. - Dallas (located at 12100 Ford. Rd., Suite 401, Farmers Branch, TX 75234) for Spore Trap, Non-cultured mold analysis. This report consists of three sections; a summary section, a data detail section, and an analytical notes section.

Sample Number	Volume (liters)	Sample Description	Identification	Concentration spores/cubic meter
2	150	Exterior, North * See Analytical Notes report for further details	Cladosporium Basidiospores Cercospora Alternaria Myxomycete / Rust / Smut Ascospores Curvularia Nigrospora Coprinus group Drechslera / Bipolaris group Aspergillus / Penicillium Pithomyces Oidium Fusarium Agaricales group Ganoderma Torula Epicoccum  Total:	2100 41% 1683 33% 420 8% 227 4% 120 2% 120 2% 87 2% 53 1% 47 <1% 40 <1% 33 <1% 33 <1% 27 <1% 20 <1% 20 <1% 20 <1% 7 <1% 7 <1% 5064 100%



# IAQ Mold Report

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2051 Valley View Lane  
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<b>Client :</b> Apex Titan, Inc. - Dallas	<b>Lab Job No. :</b> 17F-10268
<b>Project :</b> McKamy Middle School, Rms 1120, 1130, 1140 & Diag	<b>Report Date :</b> 08/30/2017 12:25 PM
<b>Project # :</b> 725010727084	<b>Sample Date:</b> 08/29/2017
<b>Sample Type:</b> Spore Trap, Non-cultured	<b>Spore Trap Type:</b> Zefon - Air-O-Cell
<b>Test Method:</b> Mold: ASTM D7391-09 - Standard Profile	Page 3 of 5

On 8/29/2017, six (6) samples were submitted by Clint Jech of Apex Titan, Inc. - Dallas (located at 12100 Ford. Rd., Suite 401, Farmers Branch, TX 75234) for Spore Trap, Non-cultured mold analysis. This report consists of three sections; a summary section, a data detail section, and an analytical notes section.

Sample Number	Volume (liters)	Sample Description	Identification	Concentration spores/cubic meter
3	150	Room 1120	Paecilomyces	33 18%
			Aspergillus / Penicillium	33 18%
			Hyphal / Spore Fragments - Dematiaceous	27 15%
			Basidiospores	27 15%
			Cladosporium	20 11%
			Myxomycete / Rust / Smut	13 7%
			Coprinus group	7 4%
			Cercospora	7 4%
			Curvularia	7 4%
			Ascospores	7 4%
			Total:	181 100%
4	150	Room 1130	Cladosporium	60 37%
			Hyphal / Spore Fragments - Dematiaceous	47 29%
			Aspergillus / Penicillium	20 12%
			Nigrospora	13 8%
			Myxomycete / Rust / Smut	7 4%
			Curvularia	7 4%
			Alternaria	7 4%
			Total:	161 100%



# IAQ Mold Report

## Summary

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2051 Valley View Lane  
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<b>Client :</b> Apex Titan, Inc. - Dallas	<b>Lab Job No. :</b> 17F-10268
<b>Project :</b> McKamy Middle School, Rms 1120, 1130, 1140 & Diag	<b>Report Date :</b> 08/30/2017 12:25 PM
<b>Project # :</b> 725010727084	<b>Sample Date:</b> 08/29/2017
<b>Sample Type:</b> Spore Trap, Non-cultured	<b>Spore Trap Type:</b> Zefon - Air-O-Cell
<b>Test Method:</b> Mold: ASTM D7391-09 - Standard Profile	Page 4 of 5

On 8/29/2017, six (6) samples were submitted by Clint Jech of Apex Titan, Inc. - Dallas (located at 12100 Ford. Rd., Suite 401, Farmers Branch, TX 75234) for Spore Trap, Non-cultured mold analysis. This report consists of three sections; a summary section, a data detail section, and an analytical notes section.

Sample Number	Volume (liters)	Sample Description	Identification	Concentration spores/cubic meter
5	150	Room 1140 * See Analytical Notes report for further details	Aspergillus / Penicillium	2267 96%
			Cladosporium	20 <1%
			Hyphal / Spore Fragments - Dematiaceous	13 <1%
			Curvularia	13 <1%
			Nigrospora	7 <1%
			Coprinus group	7 <1%
			Pithomyces	7 <1%
			Myxomycete / Rust / Smut	7 <1%
			Drechslera / Bipolaris group	7 <1%
			Ascospores	7 <1%
			Total:	2355 100%
6	150	Diagnosticians Office	Aspergillus / Penicillium	107 45%
			Basidiospores	33 14%
			Hyphal / Spore Fragments - Dematiaceous	27 11%
			Ascospores	20 8%
			Nigrospora	7 3%
			Coprinus group	7 3%
			Pithomyces	7 3%
			Myxomycete / Rust / Smut	7 3%
			Drechslera / Bipolaris group	7 3%
			Cladosporium	7 3%
			Alternaria	7 3%
Total:	236 100%			



# IAQ Mold Report

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2051 Valley View Lane  
Farmers Branch, TX 75234 Phone: (972) 241-8460

**Client :** Apex Titan, Inc. - Dallas

**Lab Job No. :** 17F-10268

**Project :** McKamy Middle School, Rms 1120, 1130, 1140 & Diag

**Report Date :** 08/30/2017 12:25 PM

**Project # :** 725010727084

**Sample Date:** 08/29/2017

**Sample Type:** Spore Trap, Non-cultured

**Spore Trap Type:** Zefon - Air-O-Cell

**Test Method:** Mold: ASTM D7391-09 - Standard Profile

Page 5 of 5

On 8/29/2017, six (6) samples were submitted by Clint Jech of Apex Titan, Inc. - Dallas (located at 12100 Ford. Rd., Suite 401, Farmers Branch, TX 75234) for Spore Trap, Non-cultured mold analysis. This report consists of three sections; a summary section, a data detail section, and an analytical notes section.

Sample Number	Volume (liters)	Sample Description	Identification	Concentration spores/cubic meter

Results may not be reported except in full. Data contained in this test report relates only to the samples tested. This report does not express or imply interpretation of the results contained herein. Interpretation should be made by a qualified professional.

Moody Labs assumes no responsibility for the manner in which these samples were collected or handled prior to being received at this laboratory. Moody Labs assumes no responsibility for the qualifications of personnel performing sampling and/or interpretations of this data.

Analyst(s): Mushtaq Khan

Lab Manager : Heather Lopez

Approved Signatory : \_\_\_\_\_

Lab Director : Bruce Crabb

Approved Signatory : \_\_\_\_\_

Thank you for choosing Moody Labs

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# IAQ Mold Report

## Data Detail

DSHS License No.: LAB0117

AIHA EMPAT ID: 102577

2051 Valley View Lane  
Farmers Branch, TX 75234 Phone: (972) 241-8460

**Client :** Apex Titan, Inc. - Dallas  
**Project :** McKamy Middle School, Rms 1120, 1130, 1140 & Diag  
**Project # :** 725010727084  
**Sample Type:** Spore Trap, Non-cultured  
**Test Method:** Mold: ASTM D7391-09 - Standard Profile

**Lab Job No. :** 17F-10268  
**Report Date :** 08/30/2017 12:25 PM  
**Sample Date:** 08/29/2017  
**Spore Trap Type:** Zefon - Air-O-Cell

This report consists of three sections; a summary section, a data detail section, and an analytical notes section. Results may not be reported except in full.

Sample ID:	1					2					3				
Location:	Exterior, Northwest					Exterior, North					Room 1120				
Media Expires On:	Jul 2018					Jul 2018					Jul 2018				
Notes Included:	See Analytical Notes														
Volume:	150					150					150				
	raw ct.	RL	spores/m³	%total	spores/m³ SF	raw ct.	RL	spores/m³	%total	spores/m³ SF	raw ct.	RL	spores/m³	%total	spores/m³ SF
Agaricales group	5	7	33	<1%	30	3	7	20	<1%	20					
Alternaria	55	7	367	7%	370	34	7	227	4%	230					
Ascospores	20	7	133	2%	130	18	7	120	2%	120	1	7	7	4%	7
Aspergillus / Penicillium	1	7	7	<1%	7	5	7	33	<1%	30	5	7	33	18%	30
Basidiospores	111	20	2220	42%	2200	101	17	1683	33%	1700	4	7	27	15%	30
Cercospora	67	7	447	8%	450	63	7	420	8%	420	1	7	7	4%	7
Chaetomium															
Cladosporium	103	14	1471	28%	1500	105	20	2100	41%	2100	3	7	20	11%	20
Coprinus group	6	7	40	<1%	40	7	7	47	<1%	50	1	7	7	4%	7
Curvularia	16	7	107	2%	110	13	7	87	2%	87	1	7	7	4%	7
Drechslera / Bipolaris group	10	7	67	1%	67	6	7	40	<1%	40					
Epicoccum	2	7	13	<1%	10	1	7	7	<1%	7					
Fusarium	5	7	33	<1%	30	3	7	20	<1%	20					
Ganoderma	5	7	33	<1%	30	3	7	20	<1%	20					
Hyphal / Spore Fragments - Dematiace	5	7	33	<1%	30						4	7	27	15%	30
Hyphal / Spore Fragments - Hyaline															
Memnoniella															
Myxomycete / Rust / Smut	25	7	167	3%	170	18	7	120	2%	120	2	7	13	7%	10
Nigrospora	13	7	87	2%	87	8	7	53	1%	50					
Oidium	6	7	40	<1%	40	4	7	27	<1%	30					
Paecilomyces											5	7	33	18%	30
Pithomyces	1	7	7	<1%	7	5	7	33	<1%	30					
Pyricularia	3	7	20	<1%	20										
Stachybotrys															
Torula	1	7	7	<1%	7	1	7	7	<1%	7					
<b>TOTALS</b>	<b>460</b>		<b>5332</b>	<b>100%</b>	<b>5300</b>	<b>398</b>		<b>5064</b>	<b>100%</b>	<b>5100</b>	<b>27</b>		<b>181</b>	<b>100%</b>	<b>180</b>
Analyst	Mushtaq Khan					Mushtaq Khan					Mushtaq Khan				
Analysis Date	8/30/2017					8/30/2017					8/30/2017				
Debris Rating	3					3					3				
Debris Composition															
Fibers	2/5					1/5					2/5				
Inorganic/Other	3/5					3/5					2/5				
Insect Parts	1/5					1/5					0/5				
Pollen	2/5					2/5					0/5				
Skin/Dander	0/5					0/5					3/5				



# IAQ Mold Report

## Data Detail

DSHS License No.: LAB0117

AIHA EMPAT ID: 102577

2051 Valley View Lane  
Farmers Branch, TX 75234 Phone: (972) 241-8460

**Client :** Apex Titan, Inc. - Dallas  
**Project :** McKamy Middle School, Rms 1120, 1130, 1140 & Diag  
**Project # :** 725010727084  
**Sample Type:** Spore Trap, Non-cultured  
**Test Method:** Mold: ASTM D7391-09 - Standard Profile

**Lab Job No. :** 17F-10268  
**Report Date :** 08/30/2017 12:25 PM  
**Sample Date:** 08/29/2017  
**Spore Trap Type:** Zefon - Air-O-Cell

This report consists of three sections; a summary section, a data detail section, and an analytical notes section. Results may not be reported except in full.

Sample ID:	4					5					6				
Location:	Room 1130					Room 1140					Diagnosticians Office				
Media Expires On:	Jul 2018					Jul 2018					Jul 2018				
Notes Included:						See Analytical Notes									
Volume:	150					150					150				
	raw ct.	RL	spores/m <sup>3</sup>	%total	spores/m <sup>3</sup> SF	raw ct.	RL	spores/m <sup>3</sup>	%total	spores/m <sup>3</sup> SF	raw ct.	RL	spores/m <sup>3</sup>	%total	spores/m <sup>3</sup> SF
Agaricales group															
Alternaria	1	7	7	4%	7						1	7	7	3%	7
Ascospores						1	7	7	<1%	7	3	7	20	8%	20
Aspergillus / Penicillium	3	7	20	12%	20	102	22	2267	96%	2300	16	7	107	45%	110
Basidiospores											5	7	33	14%	30
Cercospora															
Chaetomium															
Cladosporium	9	7	60	37%	60	3	7	20	<1%	20	1	7	7	3%	7
Coprinus group						1	7	7	<1%	7	1	7	7	3%	7
Curvularia	1	7	7	4%	7	2	7	13	<1%	10					
Drechslera / Bipolaris group						1	7	7	<1%	7	1	7	7	3%	7
Epicoccum															
Fusarium															
Ganoderma															
Hyphal / Spore Fragments - Dematiace	7	7	47	29%	50	2	7	13	<1%	10	4	7	27	11%	30
Hyphal / Spore Fragments - Hyaline															
Memnoniella															
Myxomycete / Rust / Smut	1	7	7	4%	7	1	7	7	<1%	7	1	7	7	3%	7
Nigrospora	2	7	13	8%	10	1	7	7	<1%	7	1	7	7	3%	7
Oidium															
Paecilomyces															
Pithomyces						1	7	7	<1%	7	1	7	7	3%	7
Pyricularia															
Stachybotrys															
Torula															
<b>TOTALS</b>	<b>24</b>		<b>161</b>	<b>100%</b>	<b>160</b>	<b>115</b>		<b>2355</b>	<b>100%</b>	<b>2400</b>	<b>35</b>		<b>236</b>	<b>100%</b>	<b>240</b>
Analyst	Mushtaq Khan					Mushtaq Khan					Mushtaq Khan				
Analysis Date	8/30/2017					8/30/2017					8/30/2017				
Debris Rating	4					3					3				
Debris Composition															
Fibers	2/5					2/5					2/5				
Inorganic/Other	2/5					3/5					3/5				
Insect Parts	1/5					1/5					0/5				
Pollen	1/5					1/5					0/5				
Skin/Dander	4/5					3/5					3/5				

End of Data Detail section  
17F-10268

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# IAQ Mold Report

## Analytical Notes

DSHS License No.: LAB0117

AIHA EMPAT ID: 102577

2051 Valley View Lane

Farmers Branch, TX 75234 Phone: (972) 241-8460

**Client :** Apex Titan, Inc. - Dallas

**Lab Job No. :** 17F-10268

**Project :** McKamy Middle School, Rms 1120, 1130, 1140 & Diag

**Report Date :** 08/30/2017 12:25 PM

**Project # :** 725010727084

**Sample Date :** 08/29/2017

**Sample Type:** Spore Trap, Non-cultured

**Spore Trap Type:** Zefon - Air-O-Cell

**Test Method:** Mold: ASTM D7391-09 - Standard Profile

Page 1 of 3

This report consists of three sections; a summary section, a data detail section, and an analytical notes section. Results may not be reported except in full.

### Samples Analyzed

Sample No: 2 : Exterior, North

Notes: Please note: the minimum detection limit for Cladosporium is 20 spores / cubic meter. When comparing results to other samples, use calculated results, not raw numbers.  
Please note: the minimum detection limit for Basidiospores is 17 spores / cubic meter. When comparing results to other samples, use calculated results, not raw numbers.

Sample No: 5 : Room 1140

Notes: Please note: the minimum detection limit for Aspergillus / Penicillium is 22 spores / cubic meter. When comparing results to other samples, use calculated results, not raw numbers.

### Field Blanks

No discernable field blanks were submitted with this set of samples.

**NOTE: All remaining samples suitable for analysis.**



# IAQ Mold Report

## Analytical Notes

DSHS License No.: LAB0117

AIHA EMPAT ID: 102577

2051 Valley View Lane

Farmers Branch, TX 75234 Phone: (972) 241-8460

**Client :** Apex Titan, Inc. - Dallas

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**Report Date :** 08/30/2017 12:25 PM

**Project # :** 725010727084

**Sample Date :** 08/29/2017

**Sample Type:** Spore Trap, Non-cultured

**Spore Trap Type:** Zefon - Air-O-Cell

**Test Method:** Mold: ASTM D7391-09 - Standard Profile

Page 2 of 3

This report consists of three sections; a summary section, a data detail section, and an analytical notes section. Results may not be reported except in full.

### Methods

Method: ASTM D7391-09. A standard spore trap reading consists of a 30% reading for small spores; 100% of the sample is read for medium and large spores. A 100% reading is provided for containment samples, upon request, or otherwise as noted. Use final spore concentrations, not raw spore counts, for interpretation of results.

Calculation: Spores/cubic meter = (Raw spore count)\*(RL)

Note: RL (Reporting Limit) is calculated based upon 1 raw spore count.

Moody Labs recommends two significant figures for calculated values based on ASTM D7391-09.

This report must not be used by the customer to claim product certification, approval, or endorsement by AIHA, ISO, or any agency of the Federal Government.

### Debris Rating Key

0 - No linear trace detected

1 - Trace particulate/debris

2 - Light particulate/debris

3 - Moderate particulate/debris.

4 - Substantial particulate/debris

5 - Extensive particulate/debris

6 - Field blank

10 - Hold Sample

11 - Modified Analysis per Client Instructions

NOTE: Particulate/debris are defined as skin, fibers, pollen grains, insect parts, fungal and/or other non-fungal particles.



# IAQ Mold Report

## Analytical Notes

DSHS License No.: LAB0117

AIHA EMPAT ID: 102577

2051 Valley View Lane

Farmers Branch, TX 75234 Phone: (972) 241-8460

**Client :** Apex Titan, Inc. - Dallas

**Project :** McKamy Middle School, Rms 1120, 1130, 1140 & Diag

**Project # :** 725010727084

**Sample Type:** Spore Trap, Non-cultured

**Test Method:** Mold: ASTM D7391-09 - Standard Profile

**Lab Job No. :** 17F-10268

**Report Date :** 08/30/2017 12:25 PM

**Sample Date :** 08/29/2017

**Spore Trap Type:** Zefon - Air-O-Cell

Page 3 of 3

This report consists of three sections; a summary section, a data detail section, and an analytical notes section. Results may not be reported except in full.



LAB # 102577



End of Analytical Notes section

17F-10268

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Moody Labs

2051 Valley View Lane

Farmers Branch, TX 75234 Phone: (972) 241-8460

# IAQ Mold Report Supplemental Overview

DSHS License No.: LAB0117  
AIHA EMPAT ID: 102577

**Client :** Apex Titan, Inc. - Dallas

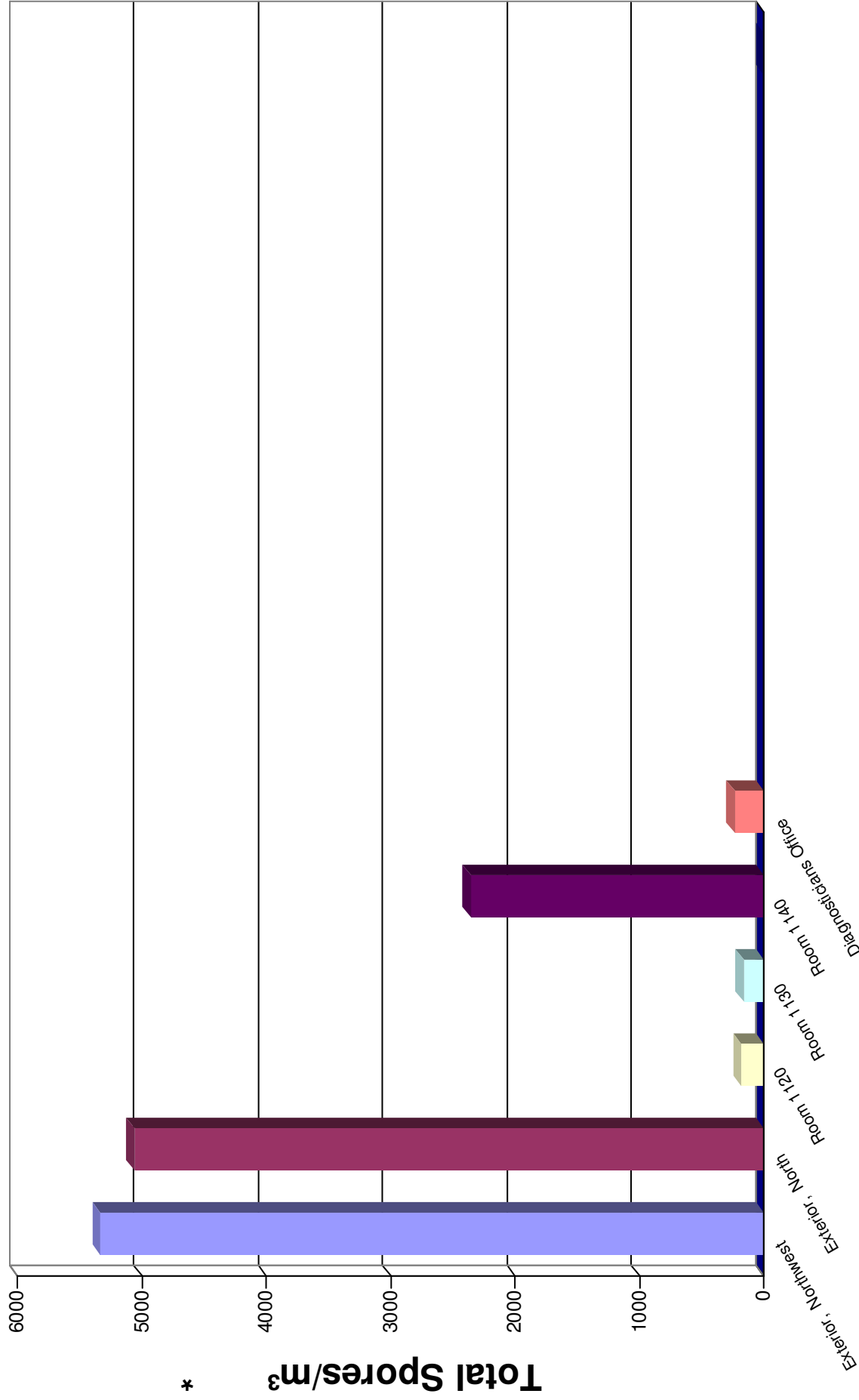
**Project :** McKamy Middle School, Rms 1120, 1130, 1140 & Diag

**Project # :** 725010727084

**Lab Job No.** 17F-10268

**Report Date** 08/30/2017 12:25 PM

**Sample Date :** 08/29/2017



\*

# IAQ Mold Report

## Supplemental Overview

DSHS License No.: LAB0117  
 AIHA EMPAT ID: 102577

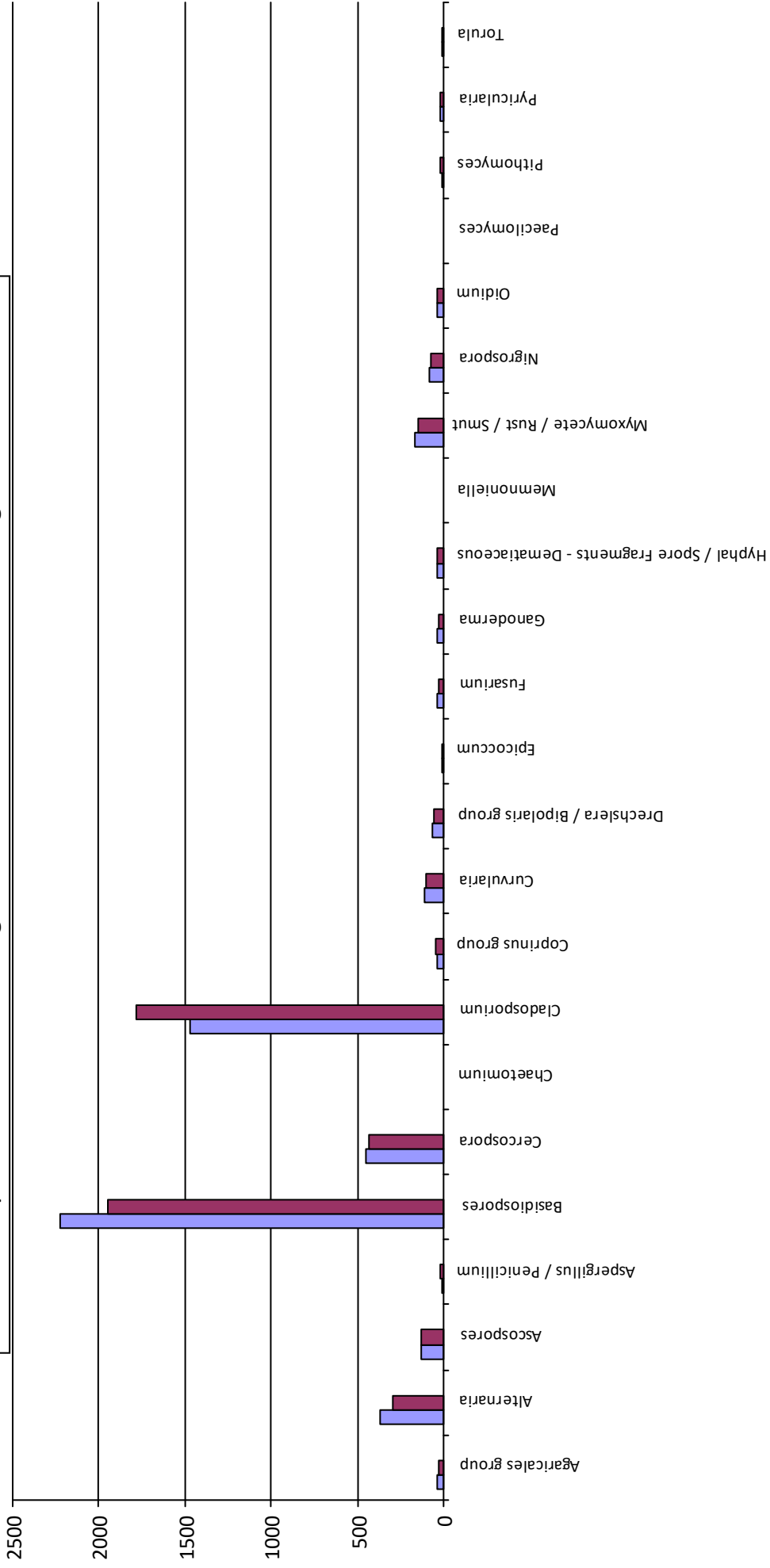


2051 Valley View Lane  
 Farmers Branch, TX 75234 Phone: (972) 241-8460

**Client :** Apex Titan, Inc. - Dallas  
**Project :** McKamy Middle School, Rms 1120, 1130, 1140 & Diag  
**Project # :** 725010727084

**Lab Job No.** 17F-10268  
**Report Date** 08/30/2017 12:25 PM  
**Sample Date :** 08/29/2017  
 Exterior, Northwest

■ Sample    ■ Average Reference 1    ■ Average Reference 2



Average Reference 1 = Exterior, Northwest, Exterior, North

# IAQ Mold Report

## Supplemental Overview

DSHS License No.: LAB0117  
 AIHA EMPAT ID: 102577

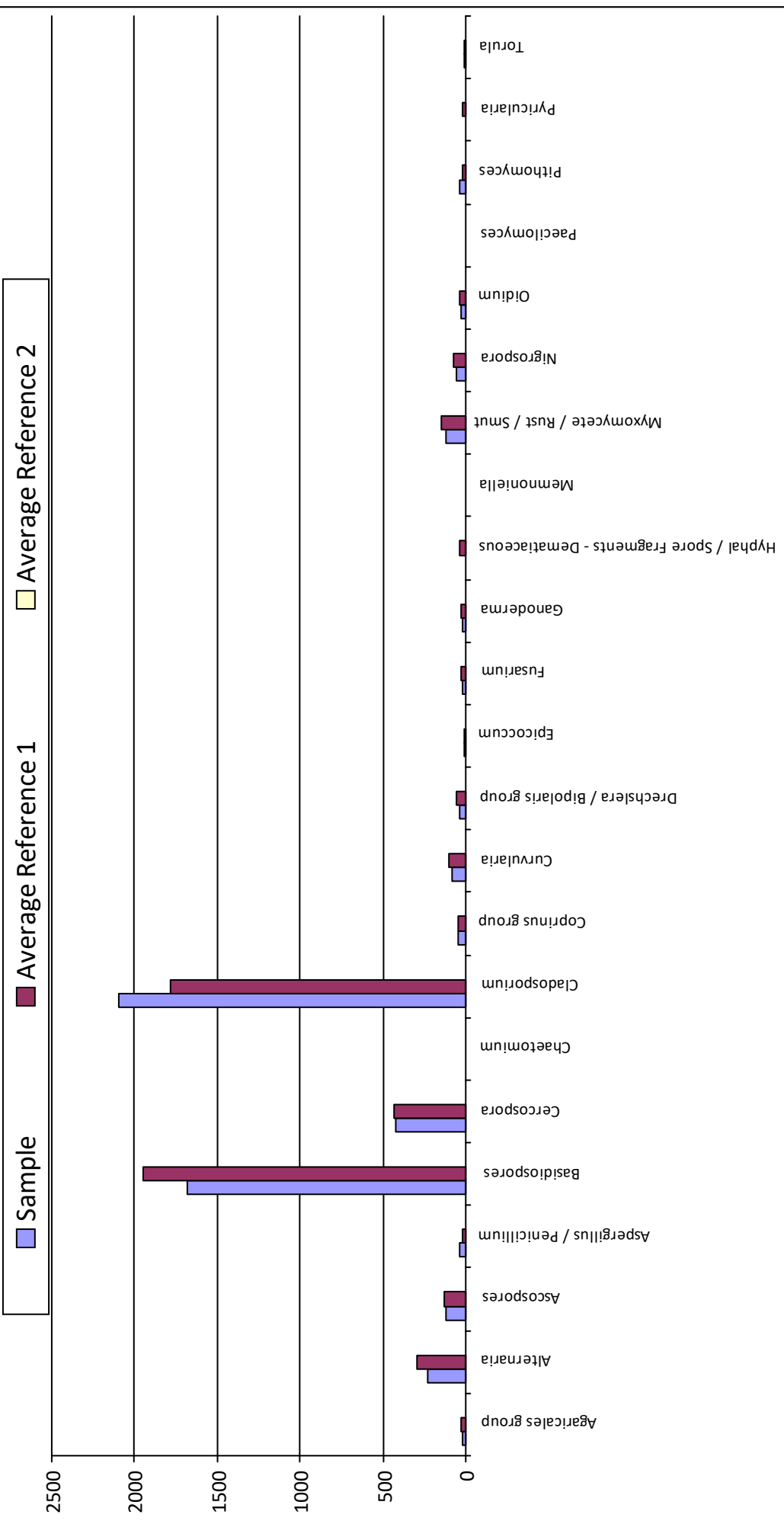


2051 Valley View Lane  
 Farmers Branch, TX 75234 Phone: (972) 241-8460

**Client :** Apex Titan, Inc. - Dallas  
**Project :** McKamy Middle School, Rms 1120, 1130, 1140 & Diag  
**Project # :** 725010727084

**Lab Job No.** 17F-10268  
**Report Date** 08/30/2017 12:25 PM  
**Sample Date :** 08/29/2017

Exterior, North



Average Reference 1 = Exterior, Northwest, Exterior, North

# IAQ Mold Report

## Supplemental Overview

DSHS License No.: LAB0117  
 AIHA EMPAT ID: 102577



2051 Valley View Lane  
 Farmers Branch, TX 75234 Phone: (972) 241-8460

**Client :** Apex Titan, Inc. - Dallas  
**Project :** McKamy Middle School, Rms 1120, 1130, 1140 & Diag  
**Project # :** 725010727084

**Lab Job No.** 17F-10268  
**Report Date** 08/30/2017 12:25 PM  
**Sample Date :** 08/29/2017

Room 1120

■ Sample      ■ Average Reference 1      □ Average Reference 2



Average Reference 1 = Exterior, Northwest, Exterior, North



# IAQ Mold Report

## Supplemental Overview

DSHS License No.: LAB0117  
 AIHA EMPAT ID: 102577



2051 Valley View Lane  
 Farmers Branch, TX 75234 Phone: (972) 241-8460

**Client :** Apex Titan, Inc. - Dallas  
**Project :** McKamy Middle School, Rms 1120, 1130, 1140 & Diag  
**Project # :** 725010727084

**Lab Job No.** 17F-10268  
**Report Date** 08/30/2017 12:25 PM  
**Sample Date :** 08/29/2017

Room 1130

■ Sample
 ■ Average Reference 1
 ■ Average Reference 2



Average Reference 1 = Exterior, Northwest, Exterior, North

# IAQ Mold Report

## Supplemental Overview

DSHS License No.: LAB0117  
 AIHA EMPAT ID: 102577

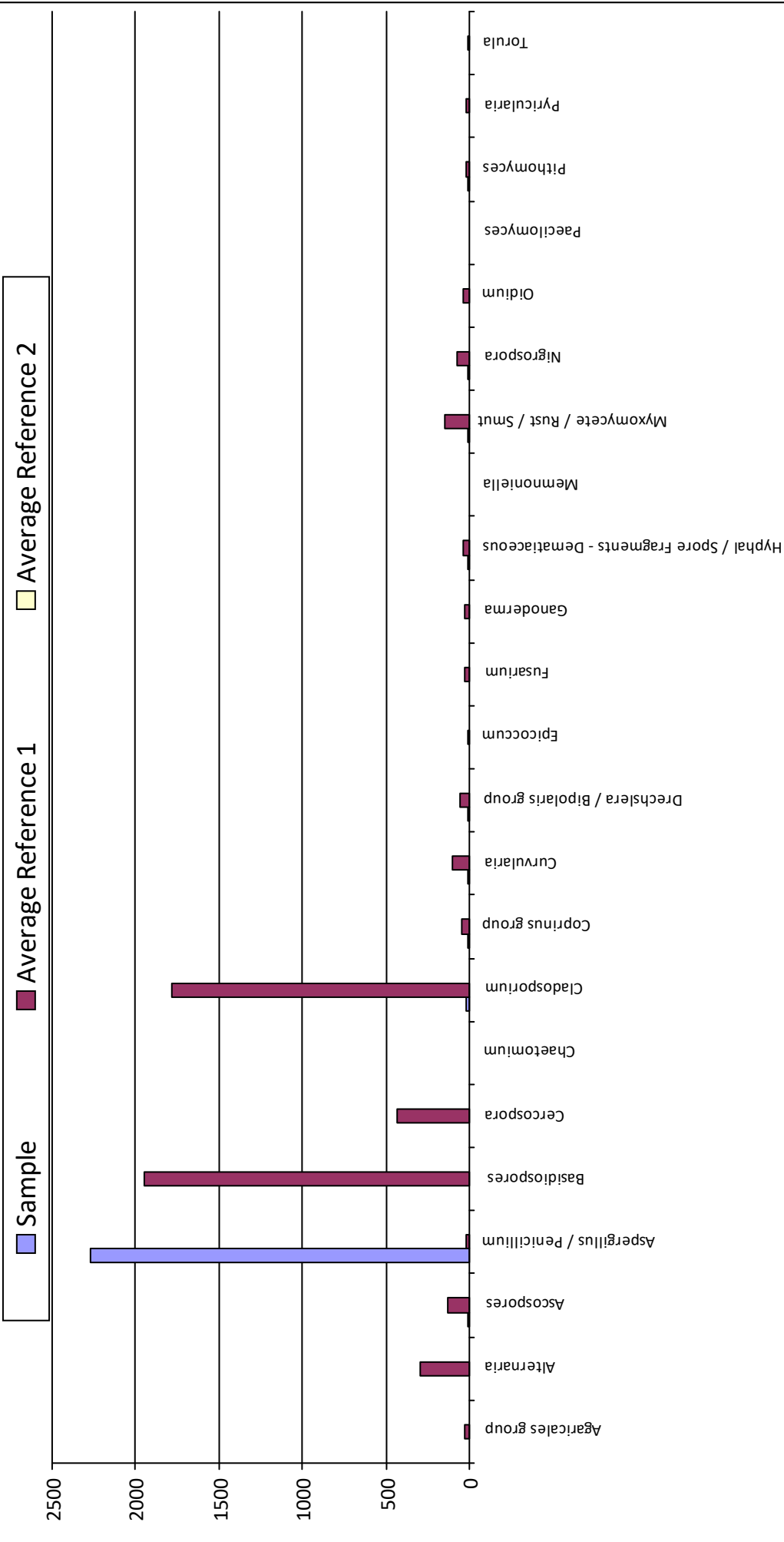


2051 Valley View Lane  
 Farmers Branch, TX 75234 Phone: (972) 241-8460

**Client :** Apex Titan, Inc. - Dallas  
**Project :** McKamy Middle School, Rms 1120, 1130, 1140 & Diag  
**Project # :** 725010727084

**Lab Job No.** 17F-10268  
**Report Date** 08/30/2017 12:25 PM  
**Sample Date :** 08/29/2017

Room 1140



Average Reference 1 = Exterior, Northwest, Exterior, North



2051 Valley View Lane  
Farmers Branch, TX 75234 Phone: (972) 241-8460

# IAQ Mold Report

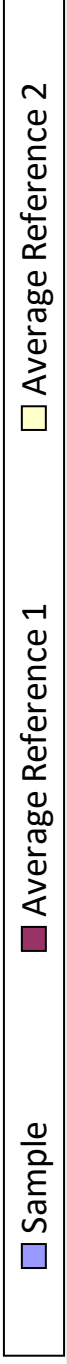
## Supplemental Overview

DSHS License No.: LAB0117  
AIHA EMPAT ID: 102577

**Client :** Apex Titan, Inc. - Dallas  
**Project :** McKamy Middle School, Rms 1120, 1130, 1140 & Diag  
**Project # :** 725010727084

**Lab Job No.** 17F-10268  
**Report Date** 08/30/2017 12:25 PM  
**Sample Date :** 08/29/2017

Diagnosticians Office



Average Reference 1 = Exterior, Northwest, Exterior, North



Chain of Custody

Lab Job # ME-10268A006
Lab Job #
Lab Job #

\*Please call in advance for immediate, after-hour, & weekend pricing & availability.\*

ASBESTOS PLM

Bulk [ ] Immediate [ ] 1 day [ ] 2 day [ ] 3 day [ ] 5 day
[ ] Analyze All [ ] Positive Stop

PCM Air (7400)

[ ] Immediate [ ] 1 day [ ] 2 day [ ] 3 day [ ] 5 day

TOTAL DUST(0500/0600)

[ ] 1 day [ ] 2 day

ASBESTOS TEM

Air AHERA Method [ ] Late Night\* [ ] 6 hr [ ] 12 hr [ ] 24 hr
Air 7402 (Modified) [ ] 1 day [ ] 2 day [ ] 3 day
Bulk [ ] 1 day [ ] 2 day [ ] 3 day [ ] 5 day
Water/Wipe/Micro Vac [ ] 1 day [ ] 2 day [ ] 3 day
Analyze Blanks [ ] Yes [ ] No

\*Late night analysis surcharges apply

MOLD

Direct Exam [ ] Immediate [ ] 1 day [ ] 2 day
Standard Air [ ] Immediate [x] 1 day [ ] 2 day
Expanded Air [ ] Immediate [ ] 1 day [ ] 2 day
Culture\*\* [ ] 10-14 days
Analyze Blanks [ ] Yes [ ] No

\*\*Turnaround of Culture Samples subject to Culture Growth\*\*

BACTERIA\*\*

Colony Counts (CC) [ ] 3 day [ ] 5 day
CC + Gram Stain [ ] 3 day [ ] 5 day
Coliform & E. coli (P/A) [ ] 2-3 day
Legionella [ ] 14 days

OTHER:

Billing Company / City: Apex Titen, Inc

# of Samples: 6

Submitter's Company:

Sample Date: 8/29/2017

Submitter's Name: Clinton S. Tech

Project #: 725010727084

Project: McKamy Middle School Rooms 1120, 1130, 1140 - Diagnostician (MSS) office

Phone #:

Contact Information: Name: Clint Tech

Mobile #: (972) 989-1031

E-mail Results to: Clint/Darren/Veronica

Fax #:

Invoice Address: Veronica

P.O. #:

\*Please review paperwork and samples before submitting to lab. Unsealed / improperly packaged / damaged / expired samples or excessive administrative requests may incur additional fees\*

Notes:

Table with 4 columns: Sample #, Sample Description, Vol. / Area (if applicable), Location / Notes. Contains 5 rows of data for exterior and room samples with temperature and humidity readings and material notes.

Released By: [Signature] Date/Time: 8/29/2017 1534 Received By: [Signature] Date/Time: 8.29.17 3:36pm



Chain of Custody

Lab Job # 17F-10268
Lab Job #
Lab Job #

\*Please call in advance for immediate, after-hour, & weekend pricing & availability.\*

ASBESTOS PLM

Bulk [ ] Immediate [ ] 1 day [ ] 2 day [ ] 3 day [ ] 5 day
[ ] Analyze All [ ] Positive Stop

PCM Air (7400)

[ ] Immediate [ ] 1 day [ ] 2 day [ ] 3 day [ ] 5 day

TOTAL DUST(0500/0600)

[ ] 1 day [ ] 2 day

ASBESTOS TEM

Air AHERA Method [ ] Late Night\* [ ] 6 hr [ ] 12 hr [ ] 24 hr
Air 7402 (Modified) [ ] 1 day [ ] 2 day [ ] 3 day
Bulk [ ] 1 day [ ] 2 day [ ] 3 day [ ] 5 day
Water/Wipe/Micro Vac [ ] 1 day [ ] 2 day [ ] 3 day
Analyze Blanks [ ] Yes [ ] No

\*Late night analysis surcharges apply

MOLD

Direct Exam [ ] Immediate [ ] 1 day [ ] 2 day
Standard Air [ ] Immediate [ ] 1 day [ ] 2 day
Expanded Air [ ] Immediate [ ] 1 day [ ] 2 day
Culture\*\* [ ] 10-14 days
Analyze Blanks [ ] Yes [ ] No

\*\*Turnaround of Culture Samples subject to Culture Growth\*\*

BACTERIA\*\*

Colony Counts (CC) [ ] 3 day [ ] 5 day
CC + Gram Stain [ ] 3 day [ ] 5 day
Coliform & E. coli (P/A) [ ] 2-3 day
Legionella [ ] 14 days

OTHER:

Billing Company / City: Apex Titan, Inc
Submitter's Company:
Submitter's Name: Clinton S. Jech
Project:
Contact Information: Name: Clint Jech
E-mail Results to: Clint/Darren/Veronica
Invoice Address: Veronica

# of Samples:
Sample Date:
Project #:
Phone #:
Mobile #: (972) 989-1031
Fax #:
P.O. #:

\*Please review paperwork and samples before submitting to lab. Unsealed / improperly packaged / damaged / expired samples or excessive administrative requests may incur additional fees\*

Notes:

Table with 4 columns: Sample #, Sample Description, Vol. / Area (if applicable), Location / Notes. Row 1: 6, Diagnostician's office, 150, T=69.0 ° H=39.1 ° L.M=13-15' Ceilings=Ceiling Tile Walls=Sheetrock Floors=Floor Tile Note: Musty Smell in Front Conference Area

Released By: Date / Time: Received By: Date / Time:
Released By: Date / Time: Received By: Date / Time:

## **ATTACHMENT 2**

Mold Services Definitions & Limitations/Standard of Care and Reliance



## **Mold Services Definitions & Limitations**

*“Mold” defined.* Mold is a general term used to describe various types of singled-celled naturally occurring biological organisms occurring worldwide. For purposes of this report the term “mold” is broadly defined to include any living or dead fungi or related products or parts, including spores, hyphae, and mycotoxins.

*Limited Scope of Mold Assessment.* The scope of Apex’s mold assessment services as reflected in the Proposal and this report are limited in that (i) they were physically limited to certain portions of the building structure (e.g., the Client identified Investigation Areas); and (ii) limited by accessibility to building materials or components within the Investigation Area(s). In contrast to a Limited Assessment” is a comprehensive assessment, which involves destructive sampling methods and the scope of the assessment typically extending to the entire building structure.

*Time sensitive.* Mold assessments are essentially a “*snap shot in time,*” and the results are only relevant at the time of site reconnaissance. Because mold, when biologically active, is a living organism, its presence is influenced and controlled by environmental conditions. Mold assessments, therefore, are “time sensitive” in that the presence and concentration of mold and similar organisms in building structures or in the air is directly influenced by environmental conditions (such as humidity, moisture, nutrients and substrates), whether natural or caused by man, which conditions may vary significantly over relatively short periods of time.

*Methodologies.* Currently, mold assessment methodologies and protocols are governed by persuasive guidelines (rather than promulgated federal/state or local regulations). Presently, there is no data that supports a threshold limit or dose-response relationship for exposure to mold aeroallergens, individual pathogens, opportunistic pathogens and/or mycotoxins. The Occupational Safety and Health Administration (OSHA), the National Institute of Occupational Safety and Health (NIOSH) and other non-governmental associations, have not yet established permissible exposure limits (PELs), recommended exposure limits (RELs), or other limit values for aeroallergens. Because no limit values presently exist, Apex will not and cannot represent that the site contains no harmful microbes, mold, fungi, or their metabolites, or other latent conditions beyond those identified by the limited scope of this mold assessment.

*Findings limited.* Findings from a limited mold assessment are limited because of the nature of the information obtained (e.g., visual reconnaissance of readily accessible areas of building structures, interview information, anecdotal information, and limited sampling data derived from one or more specific sampling events). Apex cannot warrant the accuracy of prior or subsequent information/data, reports and services performed by other firms at the Site. Apex assumes no responsibility or liability for errors in information or data provided by or through the client or third party sources. Apex’s services are not to be construed as legal or medical interpretation or advice.

*Moisture Intrusion Limitation.* Apex performs mold assessment services and is not a moisture intrusion, HVAC, roofing, plumbing or building envelope specialist. However, during the course of conducting its mold assessment services, Apex will report observed areas of apparent moisture intrusion. Apex does not and will not investigate the cause or causes of such observed moisture intrusion. In the event apparent moisture intrusion is observed, Apex will recommend

that the client contact a specialist (i.e., plumbing contractor, building envelope specialist, HVAC contractor, water intrusion specialist, etc.) to assist the client in determining the specific cause or causes of the moisture intrusion and remedial options.

**Standard of Care**

Apex performed its Services in accordance with generally accepted practices of the profession undertaken in similar services at the same time and in the same geographical area. No other warranties, expressed or implied, apply to the Services hereunder or this report.

**Reliance**

Apex’s proposal for this project, services and this report have been prepared on behalf of and for the exclusive use of Lewisville Independent School District solely for their use and reliance in assessing the presence of mold in the Investigation Areas of the site. Lewisville Independent School District is the only party to which Apex explained the risks and limitations of the services and was solely involved in shaping the scope of services. Accordingly, reliance on this report by any other party may involve assumptions leading to an unintended interpretation of findings and opinions. With the consent of the client, Apex may offer reliance to third parties or contract with other parties to develop findings and opinions related to such party’s unique risk management concerns. Notwithstanding the foregoing, reliance by any and all third parties upon the proposal, the Services or this report shall be limited in the aggregate to all relying parties to the fair market value of the Services provided by Apex.