January 11, 2011

United Independent School District
3501 East Saunders
Laredo, Texas 78041

Attention: Mr. Cesar Trevino

Telephone: (956) 473-7984
E-mail: ctrevino@uisd.net

Re: Limited Indoor Air Quality Assessment
Salinas Elementary School
1000 Century Drive
Laredo, Webb County, Texas
Terracon Project No. 90107328

Dear Mr. Trevino:

Terracon Consultants, Inc. (Terracon) is pleased to submit the enclosed Limited Indoor Air Quality Assessment report for the above-referenced site. This assessment was performed in accordance with Terracon Proposal No. P90101006-R1 dated December 6, 2010. It was a pleasure being of service to United ISD on this project. Please do not hesitate to call us if you have any questions or if we may be of further assistance.

Respectfully submitted,

Terracon Consultants, Inc.

Lene L. Greigo
Mold Assessment Consultant
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LIMITED INDOOR AIR QUALITY ASSESSMENT
SALINAS ELEMENTARY SCHOOL
1000 Century Drive, Laredo, Texas
Terracon Project No. 90107328

1.0 INTRODUCTION

1.1 Scope of Services
Terracon Consultants, Inc. (Terracon) conducted a Limited Indoor Air Quality (IAQ) Assessment on December 14, 2010 for specific locations at Salinas Elementary School located at 1000 Century Drive in Laredo, Texas. The objective of this assessment was to gather data and render an opinion regarding the absence or presence of potential microbial growth concerns in specific areas at the school. In addition, samples of particulate matter in air were collected from two locations and tested for obvious indicators of potential skin irritants. Bulk dust samples were also collected from three areas and tested for common indoor allergens. Access to the areas assessed was provided by United Independent School District (UISD) personnel.

1.2 Standard of Care
Terracon conducted the mold portion of this assessment in general accordance with acceptable industry standards, our proposal, and the Texas Mold Assessment and Remediation Rules established by the Texas Department of State Health Services (TDSHS). Guidelines established by the American Industrial Hygiene Association Report of Microbial Growth Task Force, 2001 and the US Environmental Protection Agency (USEPA), Mold Contamination in Public Buildings: A Guide to Recognition and Management, 2001 also served as references for this assessment.

1.3 General Conditions and Limitations
The field activities for this limited indoor air quality assessment were conducted on December 14, 2010, in general conformance with the authorized scope of work included in Terracon’s proposal number P90101006-R1. Certain aspects of this project, such as the number and specific locations were samples were collected, were modified in the field based on conditions encountered at Salinas Elementary School, and were made in conjunction with the UISD Environmental Officer. The level of effort and associated tasks completed for this assessment were limited to the parameters and defined limitations included in our proposal. Terracon did not attempt to identify every potential exposure or hazard present in the subject building.
Molds are ubiquitous to the environment, and have somewhat specific requirements for survival and growth. Elevated mold concentrations in indoor environments occur when both moisture and an available food source are present.

Indoor food sources for mold growth can include organic materials such as those resulting from a flood or sewer back up, or building materials high in cellulose such as, but not limited to, carpet backing, drywall paper or ceiling panels. Moisture sources in buildings can occur as a result of leaks from water or sewer lines, moisture intrusion through walls and foundations, or as condensation on windows or in the HVAC (heating, ventilating, and air conditioning) systems.

In some areas of the United States, relative humidity during certain times of the year is high enough to serve as a moisture source. In order to reduce the potential occurrence or recurrence of mold growth in indoor environments, sources of indoor moisture must be eliminated or controlled.

The results, findings, conclusions, and recommendations expressed in this report are based on conditions observed during our limited assessment. Many factors such as weather conditions, building occupancy, ventilation patterns, and seasonal variations in mold levels can affect the conditions observed. The information contained in this report should not be relied upon to represent conditions that existed previously or at a later date. Terracon does not warrant the services 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.

1.4 Reliance

This report is for the exclusive use of the client for the project being discussed. No other individual or entity may rely on this report without the written permission of Terracon and United Independent School District. Reliance on this report by any additional authorized party will be subject to the key understandings and limitations stated in the proposal, this report, and the Services Agreement form (Exhibit B) executed by United Independent School District.

2.0 SITE DESCRIPTION

2.1 Building Description

The subject site consisted of a number of classroom areas, hallways, the Main Administration Office, and Gym located at Salinas Elementary School, reportedly constructed in 1977, in Laredo, Texas. It is our understanding that there have been recent complaints by a few
members of the school faculty of skin irritation, rashes, and general IAQ concerns in a number of areas at the school.

Interior wall systems observed in the majority of the areas that were accessed consist of masonry block and plaster finishes with very limited use of drywall construction. Ceiling materials consist of suspended acoustic ceiling tiles in the majority of the classroom and common areas. Flooring materials consist of vinyl tiles in the majority of the interior spaces. The building heating and cooling is accomplished by a numerous air handler units. Roofing materials themselves were not inspected as part of this assessment.

2.2 Interviews with Facility Representatives

Based on information provided by UISD personnel, it is Terracon’s understanding that there have been recent complaints by a few members of the school faculty of itching and skin rashes that appear to be manifest while at Salinas Elementary. UISD administrators would like to determine if the reported symptoms are related to an indoor air quality condition. Dusty conditions have been reported in the past at the school that were possibly related to building and maintenance activities that occurred over the 2010 summer break. Other than possibly airborne particulate matter, there have not been other obvious indications of potential indoor air quality conditions. UISD personnel initially stated that there have not been significant water intrusion concerns at the school; however, water stains on ceiling tiles, walls, and other building materials were observed in multiple areas during the visual assessment of the site.

The majority of the areas of concern in the building are currently being used, although it is our understanding that Rm #21 has been temporarily vacated pending the outcome of Terracon’s IAQ assessment. Visual assessment and sampling activities for this project were conducted after school was dismissed and Terracon staff was accompanied by the UISD Environmental Officer. Terracon collected non-culturable air samples in a number of areas at the school where IAQ concerns have been reported to evaluate ambient concentrations of airborne mold spores, and performed a visual assessment to investigate for potential water intrusions and fungal amplification. A tape lift sample was also collected from a ceiling tile that appeared to have water damage and tested for indications of mold growth. Additional testing was conducted to assess specific areas for potential skin irritants and common allergens.
3.0 EVALUATION CRITERIA

3.1 Visual Observations

The visual assessment included observation of accessible surfaces and did not include observations of hidden conditions such as unexposed areas, interior of wall cavities, secured HVAC systems, or behind wall paneling or vinyl wall coverings that had not become detached.

3.2 Temperature and 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 55-2004, 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 (%) is recommended for persons doing “office” work and 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 30 and 60%. In order to avoid conditions sufficiently moist to promote the growth of molds or other biogrowth, relative humidity should not exceed 60%.

3.3 Bioaerosol Exposure Limits (Air Samples and Bulk Dust Sample)

Microorganisms are ubiquitous in the environment, and have specific requirements for survival and growth. In the indoor environment, microorganisms often exist as bioaerosols. Bioaerosols can be airborne particles that are living or were released from a living organism. At present, no mandatory regulations or standards have been established for the maximum allowable concentration of bioaerosols such as mold spores. Although bioaerosols have not been conclusively associated with adverse health effects commonly noted in building-related complaints (e.g., mucous membrane irritation, headache, and fatigue) some studies and case histories have shown correlations between these symptoms and microbial contamination of humidification and cooling systems.

When moisture intrusions become chronic or involve sewage contamination, potentially toxigenic (toxin producing) molds, such as the genus Stachybotrys, may become pervasive. Stachybotrys has received significant media attention in recent years due to its ability to produce toxins. Although there is currently inadequate evidence to support the conclusion
that exposure to these mold-produced toxins (mycotoxins) in the indoor environment are causally related to symptoms or illnesses, remediation of surfaces contaminated with mold is warranted to reduce the likelihood of potential health effects related to mold exposure.

Over the past several years, industrial hygienists and researchers from a number of governmental and non-governmental agencies have collectively gathered a significant body of data from air, dust, and surface samples during both investigative studies and mold abatement projects. The recommended criteria for evaluating airborne mold and fungi concentrations which have emerged from peer-reviewed publications include the following:

1. The mold concentration in indoor air should be quantitatively lower than, but qualitatively similar to, that of outdoor air.

2. The presence of one or more mold species at significant levels indoors but not outdoors is evidence of indoor amplification (i.e., biological growth occurring in the indoor environment).

3. Pathogenic (disease causing) and toxigenic (toxin-producing) molds should not be amplified.

Moisture sources in buildings occur most commonly as water and/or sewer leaks, moisture intrusion through walls and foundations, or as condensation in HVAC systems. In some areas of the United States, the relative humidity during certain times of the year is high enough to act as a significant moisture source alone.

Indoor food sources for mold can be any organic material provided by a flood or sewer backup, or cellulosic materials present in the building such as carpet backing, linoleum backing, drywall paper, ceiling panels, or the buildup of plant and/or animal debris on inorganic surfaces. Skin cell fragments are a significant food and colonizing source in office buildings and private homes where a high occupancy exists or where adequate housekeeping is not performed.

Molds colonize most readily when air disturbance is minimal. For this reason, mold colonization occurs most frequently in closed or concealed spaces such as closets, storerooms, basements, refrigeration units, or on the back or underside surface of furniture.

3.3.1 Outdoor Assemblage of Molds

Over 90% of outdoor assemblages of mold spores are commonly populated with the following species (listed in order of descending abundance):
Cladosporium
Mushroom (Ascospores and Basidiospores)
Alternaria
Rusts and Smuts (colonizing primarily flower and leaf parts)
Aspergillus and Penicillium (soil and moist cellulosic surfaces)

These common spores colonize in decaying vegetation and/or soil. The remaining molds listed in this report normally occur with a frequency of less than 10% of the total spore count.

3.3.2 Indoor Assemblage of Molds

The following mold species are most commonly susceptible to indoor amplification and typically comprise over 90% of indoor mold growth. In approximate order of descending abundance, these species include:

- Penicillium species
- Aspergillus species
- Cladosporium
- Stachybotrys
- Alternaria, Ulocladium, Chaetomium
- Zygomycetes (Mucor and Rhizopus)

As a general rule, total indoor airborne spore concentrations in a “typical” clean HVAC-supplied building are comparable to outside concentrations but occur at levels 50% to 25% below the levels measured in the outside sample.

3.4 Surface Samples

Samples taken from a surface may be analyzed by direct microscopic examination. The primary purpose of a direct microscopic examination of a sample taken from a surface is to determine whether or not mold is growing on the surface sampled, and if so, what kinds of molds are present. This type of analysis may identify a skewing of the normal distribution of spore types. It may also identify "marker" genera that may be indicative of indoor mold growth. The presence of biological materials on a particular surface is not a direct indication of what may be in the air.
3.5 Potential Skin Irritants

Skin irritation may be caused by the following:

- Chemical agents are the main cause of occupational skin diseases and disorders. These agents are divided into two types: primary irritants and sensitizers. Primary or direct irritants act directly on the skin though chemical reactions. Sensitizers may not cause immediate skin reactions, but repeated exposure can result in allergic reactions. Skin may be exposed to hazardous chemicals through:
  - direct contact with contaminated surfaces,
  - deposition of aerosols,
  - immersion, or
  - splashes.

- Physical agents such as extreme temperatures (hot or cold) and radiation (UV/solar radiation).
- Mechanical trauma includes friction, pressure, abrasions, lacerations and contusions (scratches, cuts and bruises).
- Biological agents include parasites, microorganisms, plants and other animal materials.

Contact dermatitis is defined as an inflammation of the skin resulting from exposure to a hazardous agent. Common symptoms of dermatitis include:

- Itching,
- Pain,
- Redness,
- Swelling,
- The formation of small blisters or wheals (itchy, red circles with a white centre) on the skin,
- Dry, flaking, scaly skin that may develop cracks.

Occupational contact dermatitis (OCD) may be irritant or allergic. Irritant OCD is inflammation that results from a non-immunologic reaction and is caused by damage to skin following exposure to a hazardous agent. The reaction is typically localized to the area of contact.

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Allergic contact dermatitis is an immunologic reaction triggered by contact with a skin allergen in a person who is already sensitized to the allergen.

### 3.6 Common Indoor Allergens

Although many fungi are known allergens, not all fungi have been shown to be allergenic. Presently, it is not known how many spores are required to induce an allergic reaction. Furthermore, it is quite possible that this quantity will never be known, since individuals respond to different levels of spores (or allergens) and different spores have different sizes and varying amounts of antigens. Chronic exposure to large airborne concentrations of fungal spores can induce allergy or hypersensitivity in certain individuals. In some cases, chronic exposure to fungal spores can result in a flu-like debilitating disease known as hypersensitivity pneumonitis (HP).

Allergies and HP can also be caused by other proteinatious airborne materials (i.e. cockroach antigens, dust mite feces, etc.). Sensitized people subsequently respond to very low levels of environmental antigens. To date, there is no data that supports a threshold limit or dose-response relationship for exposure to fungal aeroallergens. The Occupational Safety and Health Administration (OSHA), National Institute for Occupational Safety and Health (NIOSH), as well as other occupational health related associations, have not established permissible exposure limits (PELs), recommended exposure limits (RELs), or other limit values for aeroallergens. Most environments (air, water, and solid surfaces) contain a wide variety of fungi. However, no research indicating acceptable levels for indoor bioaerosols has been widely accepted by industrial hygiene professionals.

### 4.0 FIELD ACTIVITIES

#### 4.1 Parameters

This limited indoor air quality assessment involved a visual inspection and sample collection for specific parameters in a number of classrooms. Visual observations and temperature/humidity levels were noted in the assessed areas. In addition to visual observations, measurements were made for temperature and humidity, and samples were collected in select areas for non-culturable mold. Samples of particulate matter in air were also tested for obvious indicators of potential skin irritants and bulk dust samples were tested for common indoor allergens. Access to the areas assessed was provided by UISD personnel.
4.2 Visual Assessment

The visual assessment included observation of accessible surfaces and did not include observations of hidden conditions such as unexposed areas, interior of wall cavities, secured HVAC systems, or behind wall paneling or vinyl wall coverings that had not become detached.

4.3 Temperature and Relative Humidity

Terracon measured temperature and relative humidity (RH) using an AMPROBE TH-2A Digital Thermo Hygrometer, a handheld electronic monitoring instrument. The instrument provides direct-reading measurements of temperature and relative humidity.

4.4 Air Samples and Surface Samples

4.4.1 Non-Culturable Mold

During this limited assessment, a total of eight non-culturable air samples were collected from the indoor and outdoor air to evaluate the condition of the air in the assessed areas of the school building using a calibrated sampling pump and Allergenco-D™ cassettes. This sampling method uses an impaction technique to collect total airborne particulates, including mold spores. All samples ran for five minutes at 15 liters per minute. Samples were analyzed by Mycotech Biological, Inc., a TDSHS licensed mold laboratory in Dripping Springs, Texas, which participates in the AIHA Laboratory Accreditation Programs, LLC Environmental Microbiology Proficiency in Analytical Testing (EMPAT) program.

In addition, one tape lift surface mold sample was collected from a ceiling tile in the hallway outside Room #10 that had apparent water damage.

4.4.2 Particulate Matter and Common Allergens

Two samples for potential skin irritants in airborne particulate matter were collected at the school from Room #21 and the Office. The samples were collected using calibrated air sampling pumps and 37-millimeter (mm) open-faced cassettes with 0.45-micrometer (µm) mixed cellulose ester (MCE) filters. The cassettes were positioned facing upwards as instructed by the laboratory. Upon completion of the sampling event, the filter cassette was closed and sent with a COC to EMSL Analytical, Inc. (EMSL), San Antonio, Texas. The samples were forwarded to EMSL’s Cinnaminson, New Jersey laboratory for microscopic analysis. EMSL’s Cinnaminson laboratory is accredited by the AIHA Laboratory Accreditation Programs, LLC under IHLAP.
4.4.3 Bulk Dust

Three bulk dust samples were collected for testing for common indoor allergens from Room #21 (above wooden cabinet), Room #10 (return air duct vent), and the Office (top of cabinet near small statue of children). The samples were collected using 25-mm dust sampling cassettes with 0.45-µm MCE filters. Upon completion of the sampling event, the filter cassettes were sent with a COC to EMSL Analytical, Inc. (EMSL), San Antonio, Texas. The samples were forwarded to EMSL’s Cinnaminson, New Jersey laboratory for analysis.

4.0 RESULTS

4.1 Visual Assessment

- The overall building hygiene observed appeared acceptable. It was noted that air handling equipment was operational in all areas accessed at the time of the assessment and indoor temperatures were observed to be consistent and within ASHRAE standards for persons doing office work in winter clothing.

- Water-stained ceiling tiles were observed in several rooms and hallways as noted in Table 1 and Table 2. Although not verified, it appears the water intrusions are related to a roof leaks and/or condensation on air conditioning lines. There had not been a major rainfall event in Laredo for some time, and it could not be determined if there are currently active leaks at Salinas Elementary School. However, based on discussions with the UISD Environmental Officer, it is our understanding that there have not been recent repairs made to the roof.

- No visible growth was observed on the water-stained ceiling tiles, with the possible exception of a small area in the hallway near Room #10. Terracon collected a tape lift sample from this ceiling tile which was submitted to the laboratory for analysis. Table 1 and Table 2 summarize observations related to potential air quality conditions made during the visual assessment of the site.

<table>
<thead>
<tr>
<th>Room Name / Number</th>
<th>Visual Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office</td>
<td>No water staining or other relevant notable observations.</td>
</tr>
<tr>
<td>Rm #2</td>
<td>No water staining or other relevant notable observations.</td>
</tr>
</tbody>
</table>
# Table 1

**Visual Assessment**

<table>
<thead>
<tr>
<th>Room Name / Number</th>
<th>Visual Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>RM #3</td>
<td>Dust webs on ceiling and dusty ceiling tiles observed, especially above the fans. It appeared that approximately three ceiling tiles had been replaced.</td>
</tr>
<tr>
<td>RM #4</td>
<td>Dusty ceiling tiles observed, especially above the ceiling fans.</td>
</tr>
<tr>
<td>RM #7</td>
<td>No water staining or other relevant notable observations.</td>
</tr>
<tr>
<td>Rm #8</td>
<td>No water staining or other relevant notable observations.</td>
</tr>
<tr>
<td>Rm #10</td>
<td>Water stain observed on ceiling tile. Very dusty air conditioning return air vent cover. Pink insulation visible between ceiling tiles in three areas.</td>
</tr>
<tr>
<td>Rm #11</td>
<td>No water staining or other relevant notable observations.</td>
</tr>
<tr>
<td>Rm #12</td>
<td>Very dusty air conditioning return air vent cover. Dusty conditions in some areas.</td>
</tr>
<tr>
<td>Rm #14</td>
<td>Small water stains observed on 4 to 5 ceiling tiles. Dusty conditions in some areas.</td>
</tr>
<tr>
<td>Rm #15</td>
<td>No water staining or other relevant notable observations.</td>
</tr>
<tr>
<td>Rm #16</td>
<td>No water staining or other relevant notable observations.</td>
</tr>
<tr>
<td>Rm #17</td>
<td>Small water stain observed above window. Various holes / gaps observed in ceiling tiles.</td>
</tr>
<tr>
<td>Rm #18</td>
<td>Small water stain observed on ceiling tile.</td>
</tr>
<tr>
<td>Rm #19</td>
<td>Very dusty ceiling fans, air conditioning vent covers and adjacent ceiling tiles. Dusty ceiling tiles observed, especially above the ceiling fans. Small water stains observed on ceiling tiles in the corner of the room.</td>
</tr>
<tr>
<td>Rm #21</td>
<td>Stained ceiling tile along back, outside wall. Dusty conditions observed in some areas.</td>
</tr>
<tr>
<td>Rm #25</td>
<td>Dusty ceiling tiles observed.</td>
</tr>
<tr>
<td>Rm #27</td>
<td>Small water stain observed on ceiling tile.</td>
</tr>
<tr>
<td>Workroom</td>
<td>Dusty ceiling tiles observed, especially above the ceiling fans. Dusty conditions in some areas.</td>
</tr>
<tr>
<td>Gym</td>
<td>What appeared to be ceiling rot observed.</td>
</tr>
<tr>
<td>Gym Office</td>
<td>One ceiling tile open exposing plenum space.</td>
</tr>
</tbody>
</table>
Table 1
Visual Assessment

<table>
<thead>
<tr>
<th>Room Name / Number</th>
<th>Visual Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hallways</td>
<td>Hallway observation for 12 areas indicated as H-1 through H-12 on the floor plan in Appendix A. See Table 2 below for descriptions.</td>
</tr>
<tr>
<td>Outside</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Table 2 summarizes observations related to potential air quality conditions in hallway areas as noted on the floor plan that can be found in Appendix A.

<table>
<thead>
<tr>
<th>Hallway Area</th>
<th>Visual Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>H-1</td>
<td>Water staining observed on ceiling tiles and walls on both sides of hallway doors. Pink insulation visible between ceiling tiles.</td>
</tr>
<tr>
<td>H-2</td>
<td>Water staining observed on one or more ceiling tiles.</td>
</tr>
<tr>
<td>H-3</td>
<td>Water stain on ceiling tile in front of Rm #10 showed signs of possible mold growth. A tape lift sample was collected for laboratory analysis.</td>
</tr>
<tr>
<td>H-4</td>
<td>Water staining observed on one or more ceiling tiles.</td>
</tr>
<tr>
<td>H-5</td>
<td>Water staining observed a number of ceiling tiles.</td>
</tr>
<tr>
<td>H-6</td>
<td>Water staining observed on wall in front of Rm #7.</td>
</tr>
<tr>
<td>H-7</td>
<td>Water staining observed on one or more ceiling tiles. Pink insulation visible between ceiling tiles.</td>
</tr>
<tr>
<td>H-8</td>
<td>Water staining observed on one or more ceiling tiles.</td>
</tr>
<tr>
<td>H-9</td>
<td>Water staining observed on one or more ceiling tiles.</td>
</tr>
<tr>
<td>H-10</td>
<td>Large dust balls on air conditioning return vent.</td>
</tr>
<tr>
<td>H-11</td>
<td>Water staining observed on one or more ceiling tiles.</td>
</tr>
<tr>
<td>H-12</td>
<td>Water staining observed on one or more ceiling tiles.</td>
</tr>
</tbody>
</table>

Generally dusty conditions were observed in numerous areas at the school. This was especially evident above shelves and cabinets, on the top of fan blades, and on air conditioning vents where accumulations of dust were considerable. Throughout the school, the drop ceiling appeared to be in poor condition; the ceiling was uneven, with gaps or misfit
ceiling tiles exposing the plenum space. Pink insulation was visible between ceiling tiles in a number of areas; however the laboratory results did not detect fibrous glass in either of the two air samples analyzed for this project. Further, although the limited non-culturable mold testing did not provide evidence of mold growth, water staining on ceiling tiles and/or walls was observed in over twenty locations at the site. In addition, potential mold/rot was observed on the ceiling along one of the edges in the Gym.

4.2 Temperature and Relative Humidity

The measured temperature levels in the building ranged from 70° to 74°F. The measured relative humidity levels in the building ranged from approximately 34% to 47%. All readings were within the levels of 30% to 60% recommended by ASHRAE.

4.3 Airborne Spore and Particulate Analysis Results

Total airborne molds spore concentrations in the tested area ranged from 13 to 624 particles per cubic meter of air (particles/m³). The total airborne mold spore concentration for the outdoor sample was 455 particles/m³. The types of outdoor mold spores identified were considered by the analytical laboratory as typical for the outdoor environment. The types of outdoor and indoor spores were similar and no \textit{Stachybotrys} was identified in any air sample collected during the assessment.

Airborne particulates include hyphae, fibers, and epithelial (skin) cells. The hyphae ranged from 39 to 507 particles/m³, the fibers ranged from 52 to 2,431 particles/m³, and the epithelial cells ranged from 91 to 5,356 particles/m³.

<table>
<thead>
<tr>
<th>Room/Area</th>
<th>Sample Location</th>
<th>Mold Spores (Particles/m³)</th>
<th>Predominant Species</th>
<th>Other Airborne Particulates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rm #10</td>
<td>On desk in center of classroom</td>
<td>169</td>
<td>\textit{Cladosporium} spp.</td>
<td>Hyphae = 78</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Fibers = 117</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Epithelial cells = 455</td>
</tr>
<tr>
<td>Rm #17</td>
<td>On desk in center of classroom</td>
<td>78</td>
<td>\textit{Cladosporium} spp.</td>
<td>Fibers = 52</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Basidiospores - like</td>
<td>Epithelial cells = 91</td>
</tr>
<tr>
<td>Rm #21</td>
<td>On desk in center of classroom</td>
<td>91</td>
<td>\textit{Cladosporium} spp.</td>
<td>Hyphae = 117</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Fibers = 234</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Epithelial cells = 1,469</td>
</tr>
<tr>
<td>Room/Area</td>
<td>Sample Location</td>
<td>Mold Spores (Particles/m³)</td>
<td>Predominant Species</td>
<td>Other Airborne Particulates</td>
</tr>
<tr>
<td>-----------</td>
<td>-----------------</td>
<td>----------------------------</td>
<td>---------------------</td>
<td>---------------------------</td>
</tr>
<tr>
<td>Rm #25</td>
<td>On desk in center of classroom</td>
<td>13</td>
<td><em>Curvularia</em> spp.</td>
<td>Hyphae = 65 Fibers = 364 Epithelial cells = 715</td>
</tr>
<tr>
<td>Rm #27</td>
<td>On desk in center of classroom</td>
<td>130</td>
<td><em>Cladosporium</em> spp. <em>Alternaria</em> spp.</td>
<td>Hyphae = 13 Fibers = 390 Epithelial cells = 1,495</td>
</tr>
</tbody>
</table>

Based on laboratory analysis results, all of the air samples collected within the building were reported to contain significantly lower concentrations of total airborne fungal spores and displayed overall similar fungal diversity as compared to the outdoors on the day of testing, with the exception of the sample collected from the gym. The data from the sample collected in the gym was not significantly higher than the outdoor air results. The high results may reflect the suspected mold/rot that was observed on the ceiling of the gym.
4.4 Surface Sample Results

During this limited assessment, one surface tape lift sample was collected from a ceiling tile in the hallway outside Room #10 that had apparent water damage. The sample was submitted to Mycotech Biological for microscopic analysis. Laboratory results are included in Appendix C of this report.

The results from analysis of the tape lift sample identified *Cladosporium* spp. and characteristics consistent with fungal growth.

Mold-contaminated materials and mold related issues are now regulated by the Texas Department of State Health Services (TDSHS). According to the *Texas Mold Assessment and Remediation Rules*, all areas of visible mold growth greater than 25 contiguous square feet, as determined by a licensed Mold Assessment Consultant or Mold Assessment Technician, must be removed under controlled conditions by trained and licensed personnel. Project specifications must be prepared by a licensed Mold Assessment Consultant and clearance protocol must be achieved. Based on the small quantity of visible growth observed, TDSHS rules and regulations would allow the materials to be removed by in-house maintenance or general construction personnel.

4.5 Potential Skin Irritants

The results of the air sampling for potential airborne skin irritants are provided in Table 4. The results are reported in structures per cubic meter of air (str/m$^3$). Although pink fibrous glass insulation was visible between ceiling tiles in a number of areas as indicated in Table 1, the analysis did not detect fibrous glass in either of the two air samples analyzed for this project.

<table>
<thead>
<tr>
<th>Table 4</th>
<th>Common Particle Identification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category</td>
<td>Analyte</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Manmade</td>
<td>Fibrous glass</td>
</tr>
</tbody>
</table>

$^2$ <LOQ means below the limit of quantitation
Table 4
Common Particle Identification

<table>
<thead>
<tr>
<th>Category</th>
<th>Analyte</th>
<th>Rm #21</th>
<th>Office</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>str/m³</td>
<td>Est. %</td>
</tr>
<tr>
<td>Vitreous fibers (MMVFs)</td>
<td>Mineral wool</td>
<td>&lt;LOQ</td>
<td>0.0</td>
</tr>
<tr>
<td>Cellulose</td>
<td>Processed</td>
<td>370.32</td>
<td>24.6</td>
</tr>
<tr>
<td></td>
<td>Natural</td>
<td>&lt;LOQ</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td>Paper pulp</td>
<td>229.25</td>
<td>15.2</td>
</tr>
<tr>
<td></td>
<td>Starch</td>
<td>17.63</td>
<td>1.2</td>
</tr>
<tr>
<td>Synthetics</td>
<td>Total fibers</td>
<td>&lt;LOQ</td>
<td>0.0</td>
</tr>
<tr>
<td>Hair</td>
<td>Human</td>
<td>&lt;LOQ</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td>Animal</td>
<td>&lt;LOQ</td>
<td>0.0</td>
</tr>
<tr>
<td>Biological</td>
<td>Skin fragments</td>
<td>211.61</td>
<td>14.1</td>
</tr>
<tr>
<td></td>
<td>Insect fragments</td>
<td>&lt;LOQ</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td>Mold</td>
<td>&lt;LOQ</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td>Pollen</td>
<td>&lt;LOQ</td>
<td>0.0</td>
</tr>
<tr>
<td>Minerals</td>
<td>Quartz</td>
<td>246.88</td>
<td>16.4</td>
</tr>
<tr>
<td></td>
<td>Calcite</td>
<td>52.90</td>
<td>3.5</td>
</tr>
<tr>
<td>Estimated % unidentified materials</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

No potential airborne particulate skin irritants were identified in the areas that were tested.

4.6 Common Indoor Allergens

The results of the analysis of dust samples for allergens are provided in Tables 5 – 7. The results are reported in micrograms of allergen per gram of dust (µg/g).

Table 5
Indoor Allergens
Rm #21 (Bulk Dust)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Antigens</th>
<th>Concentration</th>
<th>Allergen Risk Levels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dust mite allergen</td>
<td>Der f1</td>
<td>1.20 µg/g</td>
<td>Low</td>
</tr>
<tr>
<td>Dust mite allergen</td>
<td>Der p1</td>
<td>ND</td>
<td>ND</td>
</tr>
</tbody>
</table>
Based on the laboratory results, the allergen risk levels were found to be below the method detection limits or low in Room #21 and Room #10. The results for the sample collected from the Office were all below the method detection limits. Based on these findings, common indoor allergens are not considered an indoor air quality concern in the areas that were tested.

5.0 CONCLUSIONS AND RECOMMENDATIONS

As discussed in various sections of this report, generally dusty conditions were observed in numerous areas at the school. This was especially evident above shelves and cabinets, on
the top of fan blades, and on air conditioning vents where accumulations of dust were considerable. Throughout the school, the drop ceiling appeared to be in poor condition; the ceiling was uneven, with gaps or misfit ceiling tiles exposing the plenum space. Pink insulation was visible between ceiling tiles in a number of areas; however the laboratory results did not detect fibrous glass in either of the two air samples analyzed for this project. Further, although the limited non-culturable mold testing did not provide evidence of mold growth, water staining on ceiling tiles and/or walls was observed in over twenty locations at the site. In addition, potential mold/rot was observed on the ceiling along one of the edges in the gym.

Based on laboratory analysis result for non-culturable mold, all of the air samples collected within the building were reported to contain significantly lower concentrations of total airborne fungal spores and displayed overall similar fungal diversity as compared to the outdoors on the day of testing, with the exception of the sample collected from the gym. The data from the sample collected in the gym was not significantly higher than the outdoor air results. The high results may reflect the potential mold/rot that was observed on the ceiling of the gym. The results from a sample collected outside Room #10 that appeared to have mold growth was identified as *Cladosporium*.

Mold-contaminated materials and mold related issues are now regulated by the Texas Department of State Health Services (TDSHS). According to the *Texas Mold Assessment and Remediation Rules*, all areas of visible mold growth greater than 25 contiguous square feet, as determined by a licensed Mold Assessment Consultant or Mold Assessment Technician, must be removed under controlled conditions by trained and licensed personnel. Based on the small quantities of visible growth observed to be associated with these components, TDSHS rules and regulations would allow the materials to be removed by in-house maintenance or general construction personnel. While not specifically mandated, Terracon recommends that all mold remediation activities be conducted carefully during removal activities to minimize the spread of mold components.

No potential airborne skin irritants were identified in the rooms tested. Common indoor allergens were generally not detected or found in low concentrations in the areas that were tested for this project.

Terracon is not able to make conclusions about the potential causes of medical conditions reported by school occupants as that is a responsibility reserved by physicians.

Terracon recommends the following measures to improve the indoor air quality at Salinas Elementary School:
Additional vacuuming/cleaning to address the dusty conditions at the school, with emphasis on the tops of cabinets, shelves, fan blades, and air conditioning vents.

Although the HVAC system was not inspected as part of the scope of services for this project, the system should be assessed for leaks and proper on-going maintenance procedures, including the frequency of replacing filters. If necessary, the AC ductwork may need to be cleaned or replaced.

The sources of water intrusion, likely roof leaks and/or condensation, should be further investigated and the appropriate repairs implemented. Water-stained ceiling tiles should be replaced.

The potential mold/rot observed on the ceiling along one of the edges in the gym should by investigated, and the appropriate remediation measures implemented.

The drop ceiling is in poor condition throughout most of the site, exposing the plenum space and pink fiberglass insulation in a number of places. Although not a condition that requires immediate action, repairs to the ceiling is suggested as part of maintaining healthy indoor air quality at the school.

If indoor air quality complaints persist, Terracon recommends that affected employees keep detailed symptom logs. At a minimum, the logs should include the time, date, and pertinent observations (e.g., detailed description of symptoms, how long the symptoms lasted, what they were doing when symptoms began, what was happening in adjacent areas when the symptoms began, weather, temperature, humidity, etc.) which may be helpful in identifying a source. Such logs may provide useful information in the event that additional investigation(s) are warranted.

In addition, if IAQ complaints persist, UISD should consider sending affected employees to a board-certified occupational health physician to try to identify potential causes. If employees are diagnosed with a specific allergy, such as dust mites, for example, Terracon can collect samples for analysis of specific antigens.
Site Drawing
Laboratory Results
Terracon Personnel and Laboratory Licenses
Site Drawing
Laboratory Results
EMSL Analytical, Inc.

200 Route 130 North
Cinnaminson, NJ 08077

Tel: (856) 858-4800
Fax: (856) 786-0262

Indoor Allergen Analysis by ELISA

Prepared Exclusively For

Joe Lambert
Terracon Consultants, Inc.
6911 Blanco Road
San Antonio, TX 78216

Date Received: 12/16/2010
Date Reported: 12/23/2010
Project: Salinas Elementary School
EMSL Order: 371015673
Client ID DRASH50

If you have any questions, please do not hesitate to contact us at (856)858-4800.

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.

Please visit our website at http://www.emsl.com for more information about our certifications and accreditations.
### Antigens Concentrations

<table>
<thead>
<tr>
<th>Antigen</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Der f1</td>
<td>1.20 µg/g</td>
</tr>
<tr>
<td>Der p1</td>
<td>ND µg/g</td>
</tr>
<tr>
<td>Fel d1</td>
<td>ND µg/g</td>
</tr>
<tr>
<td>Can f1</td>
<td>ND µg/g</td>
</tr>
<tr>
<td>Bla g1</td>
<td>ND U/g</td>
</tr>
</tbody>
</table>

### Detection Limits

- Dust Mites Allergen: Der f1, Der p1
- Cat Allergen: Fel d1
- Dog Allergen: Can f1
- Cockroach Allergen: Bla g1

### Allergen Risk Levels

- Low: Not Sufficient to cause symptoms.
- Moderate: Risk for sensitization and bronchial hyperactivity.
- High: Risk for acute allergic asthma attack.

### Notes

- Micrograms per gram, U/g: Units per gram, ng/g: Nanogram per gram.
- N/A: Not Applicable.
- ND (None Detected): Indicates that the amount of allergen in the sample is below the detection limits.

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

---

**Jason Dobranic, Ph.D., Lab Manager**

Or Other Approved Signatory
### Indoor Allergen Report

<table>
<thead>
<tr>
<th>Lab Sample ID</th>
<th>371015673-2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Client Sample ID</td>
<td>Rm 10 D</td>
</tr>
<tr>
<td>Sample Location</td>
<td>Room 10</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test Parameter</th>
<th>Antigens</th>
<th>Detection Limits</th>
<th>Concentrations</th>
<th>Allergen Risk Levels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dust Mites Allergen</td>
<td>Der fl</td>
<td>0.40</td>
<td>ND</td>
<td>µg/g</td>
</tr>
<tr>
<td>Dust Mites Allergen</td>
<td>Der p1</td>
<td>0.40</td>
<td>ND</td>
<td>µg/g</td>
</tr>
<tr>
<td>Cat Allergen</td>
<td>Fel d1</td>
<td>0.12</td>
<td>0.23</td>
<td>µg/g</td>
</tr>
<tr>
<td>Dog Allergen</td>
<td>Can fl</td>
<td>0.40</td>
<td>0.45</td>
<td>µg/g</td>
</tr>
<tr>
<td>Cockroach Allergen</td>
<td>Bla g1</td>
<td>0.60</td>
<td>ND</td>
<td>U/g</td>
</tr>
</tbody>
</table>

**Low**: Not Sufficient to cause symptoms. Moderate: Risk for sensitization and bronchial hyperactivity. High: Risk for acute allergic asthma attack. µg/g: Micrograms per gram, U/g: Units per gram, ng/g: Nanogram per gram. N/A: Not Applicable. ND (None Detected): Indicates that the amount of allergen in the sample is below the detection limits.

†: Sufficient evidence is not available for risk levels

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---

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## Indoor Allergen Report

<table>
<thead>
<tr>
<th>Test Parameter</th>
<th>Antigens</th>
<th>Detection Limits</th>
<th>Concentrations</th>
<th>Allergen Risk Levels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dust Mites Allergen</td>
<td>Der f1</td>
<td>0.40</td>
<td>ND</td>
<td>µg/g</td>
</tr>
<tr>
<td>Dust Mites Allergen</td>
<td>Der p1</td>
<td>0.40</td>
<td>ND</td>
<td>µg/g</td>
</tr>
<tr>
<td>Cat Allergen</td>
<td>Fel d1</td>
<td>0.12</td>
<td>ND</td>
<td>µg/g</td>
</tr>
<tr>
<td>Dog Allergen</td>
<td>Can f1</td>
<td>0.40</td>
<td>ND</td>
<td>µg/g</td>
</tr>
<tr>
<td>Cockroach Allergen</td>
<td>Bla g1</td>
<td>0.60</td>
<td>ND</td>
<td>U/g</td>
</tr>
</tbody>
</table>

**Detection Limits**
- **Cockroach Allergen**: Bla g1, 0.60 µg/g
- **Can f1**: 0.40 µg/g
- **Der p1**: 0.40 µg/g
- **Der f1**: 0.40 µg/g

**Concentrations**
- **Der f1**: ND
- **Der p1**: ND
- **Fel d1**: ND
- **Can f1**: ND
- **Bla g1**: ND

**Allergen Risk Levels**
- **Low**: Not Sufficient to cause symptoms.
- **Moderate**: Risk for sensitization and bronchial hyperactivity.
- **High**: Risk for acute allergic asthma attack.

**Detection Levels**
- **ND**: (None Detected)
- **U/g**: Units per gram
- **µg/g**: Micrograms per gram
- **ng/g**: Nanogram per gram
- **N/A**: Not Applicable

- **Lab Sample ID**: 371015673-3
- **Client Sample ID**: Office D
- **Sample Location**: Office

---

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## Guidelines to Interpretation

### µg/g

<table>
<thead>
<tr>
<th></th>
<th>&lt;1</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>&gt;10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fel d1</td>
<td>Low</td>
<td>Mod</td>
<td>Mod</td>
<td>Mod</td>
<td>Mod</td>
<td>Mod</td>
<td>Mod</td>
<td>Mod</td>
<td>High</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Can f1</td>
<td>Low</td>
<td>Low</td>
<td>Mod</td>
<td>Mod</td>
<td>Mod</td>
<td>Mod</td>
<td>Mod</td>
<td>Mod</td>
<td>Mod</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Der p1</td>
<td>Low</td>
<td>Low</td>
<td>Mod</td>
<td>Mod</td>
<td>Mod</td>
<td>Mod</td>
<td>Mod</td>
<td>Mod</td>
<td>Mod</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Der f1</td>
<td>Low</td>
<td>Low</td>
<td>Mod</td>
<td>Mod</td>
<td>Mod</td>
<td>Mod</td>
<td>Mod</td>
<td>Mod</td>
<td>Mod</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Mus m1</td>
<td>No sufficient information is available</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

### µg/m3

<table>
<thead>
<tr>
<th></th>
<th>&lt;0.7 µg/m3 = Not associated with increased risk of asthma</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rat n1</td>
<td>&lt;0.7 µg/m3 = Not associated with increased risk of asthma</td>
</tr>
<tr>
<td>Hev b5</td>
<td>&lt;0.6 ng/m3 = Not associated with increased risk of asthma</td>
</tr>
<tr>
<td>Hev b6.02</td>
<td>&lt;0.6 ng/m3 = Not associated with increased risk of asthma</td>
</tr>
</tbody>
</table>

### µg/g

<table>
<thead>
<tr>
<th></th>
<th>Low</th>
<th>Mod</th>
<th>Mod</th>
<th>Mod</th>
<th>High</th>
<th>High</th>
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<th>High</th>
<th>High</th>
<th>High</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bla g1†</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Mod</td>
<td></td>
<td></td>
<td></td>
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<td>Bla g2†</td>
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<td>Mod</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

† Suggested levels. Not officially established.

### Notes

- 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

### Terminology

- **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 g1**: *Blattella germanica* (Cockroach) allergen 1
- **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**: The smallest amount of a substance, in this case antigens, which can be measured.
- **Fel d1**: *Felis domesticus* (Cat) allergen 1
- **Hev b5**: *Hevea brasiliensis* (Latex) allergen 5
- **Hev b6.02**: *Hevea brasiliensis* (Latex) allergen 6.02
- **Mus m1**: *Mus musculus* (Mouse) allergen 1
- **Rat n1**: *Rattus norvegicus* (Rat) allergen 1

---

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Common Particle Identification™

Project: Salinas Elementary School / 90107328

Analyzed by: Satya Vaddi
Materials Scientist

December 23, 2010

QA/QC :
Matthew Maki
Approved Signatory

December 23, 2010

Eugenia Mirica, Ph.D.
Laboratory Manager

December 23, 2010

Materials Science Division
**Procurement of Samples and Analytical Overview:**

The material for analysis arrived at EMSL Analytical’s corporate laboratory in Cinnaminson, NJ on December 17, 2010. The package arrived in satisfactory condition with no evidence of damage to the contents. The purpose of the analysis is to determine the identification of the individual components. The data reported herein has been obtained using the following equipment and methodologies.

**Methods & Equipment:** Polarized Light Microscopy (PLM)
Results and Discussion:

<table>
<thead>
<tr>
<th>Sample ID</th>
<th>Description</th>
<th>Analyte</th>
<th>Concentration (str/m³)</th>
<th>Est. (%)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rm - 21(A)</td>
<td>Room #21 (Air Sample)</td>
<td>MMVF's: Fibrous Glass</td>
<td>&lt;LOQ</td>
<td>0.0</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mineral Wool</td>
<td>&lt;LOQ</td>
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<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Volume (L)= 1775</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Cellulose: Processed</td>
<td>370.3195</td>
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<tr>
<td></td>
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<tr>
<td></td>
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<td>Paper Pulp</td>
<td>229.2454</td>
<td>15.2</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Starch</td>
<td>17.6343</td>
<td>1.2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Synthetics: Total Fibers</td>
<td>&lt;LOQ</td>
<td>0.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hair: Human</td>
<td>&lt;LOQ</td>
<td>0.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Animal</td>
<td>&lt;LOQ</td>
<td>0.0</td>
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</tr>
<tr>
<td></td>
<td>Biological: Skin Fragments</td>
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</tr>
<tr>
<td></td>
<td>Insect Fragments</td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mold</td>
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</tr>
<tr>
<td></td>
<td>Pollen</td>
<td>&lt;LOQ</td>
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<td>Minerals: Quartz</td>
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<tr>
<td></td>
<td>Calcite</td>
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<td>3.5</td>
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</tr>
</tbody>
</table>

Estimated Percent Unidentified Material: 25 (%)
Sample Loading: 1 (0 to 5 Rating)
(0 = No Particles; 5 = Overloaded)
<table>
<thead>
<tr>
<th>Sample ID</th>
<th>Description</th>
<th>Analyte</th>
<th>Concentration (str/m³)</th>
<th>Est. (%)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office (A)</td>
<td>Office</td>
<td>MMVF's:</td>
<td>Fibrous Glass</td>
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<tr>
<td></td>
<td>(Air Sample)</td>
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<tr>
<td>Volume (L)=1905</td>
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<td>Starch</td>
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<td>0.0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Synthetics:</td>
<td>Total Fibers</td>
<td>&lt;LOQ</td>
<td>0.0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hair:</td>
<td>Human</td>
<td>&lt;LOQ</td>
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<td>&lt;LOQ</td>
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<tr>
<td>Biological:</td>
<td>Skin Fragments</td>
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<td>279.3248</td>
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<td>Insect Fragments</td>
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<td>&lt;LOQ</td>
<td>0.0</td>
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<tr>
<td></td>
<td>Mold</td>
<td></td>
<td>&lt;LOQ</td>
<td>0.0</td>
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<td>Pollen</td>
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<tr>
<td>Estimated Percent Unidentified Material</td>
<td>20 (%)</td>
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<td></td>
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<tr>
<td>Sample Loading: (0 to 5 Rating)</td>
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<td></td>
</tr>
<tr>
<td>0 = No Particles; 5 = Overloaded</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Descriptions & Definitions:

None Detected (ND) denotes the absence of an analyte in the sub-sample analyzed. Trace levels of the analyte may be present in the sample below the limit of detection (LOD).

Trace (TR) denotes the presence of a material in a concentration significantly below the limit of detection (LOD) for the method.

Limit of Detection (LOD): The minimum concentration that can be theoretically achieved for a given analytical procedure in the absence of matrix or sample processing effects. Particle analysis is limited to a single occurrence of an analyte particle in the sub-sample analyzed.

Limit of Quantitation (LOQ): The minimum concentration of an analyte that can be measured within specified limits of precision and accuracy during routine laboratory operating conditions

Concentrations for bulk samples are derived from Visual Area Estimation (VAE) unless otherwise noted. Air sample concentrations are calculated to particles per unit volume.

VAE technique estimates the relative projected area of a certain type of particulate from a mixture of particulate by comparison to data derived from analysis of calibration materials having similar texture and particulate content. Due to bi-dimensional nature of the measurements, in some cases the particle thickness could affect the results.

Optical Particle Identification is only intended to identify larger micro- to macroscopic particle observed in indoor environments such as hair, clothing fibers, skin fragments, insect fragments, mold and pollen. In most cases a significant portion of the material is not identifiable by this technique alone and a more comprehensive analysis may be required.
Important Terms, Conditions, and Limitations

1. **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 may be returned to the client immediately. EMSL reserves the right to charge a sample disposal fee or return samples to the client.

2. **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.

3. **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.

4. **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 value of the original sample delivery group (SDG) samples. In no event shall EMSL be liable to a client or 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.
Company: Terracon Consultants, Inc.
Street: 6911 Blanco Rd
City: San Antonio
State/Province: TX
Zip/Postal Code: 78216
Country: 

Report To (Name): Joe A. Lambert
Telephone #: (210) 641-2112
E-mail Address: jalambert@terracon.com
Project Name/Number: Salinas Elementary School 90107328
State Samples Taken: TX

**Turnaround Time (TAT) Options** - Please Check
- 3 Hour
- 6 Hour
- 24 Hour
- 48 Hour
- 72 Hour
- 96 Hour
- 1 Week
- 2 Week

**Non Culturable Air Samples (Spore Traps)**
- M001 Air-O-Cell
- M049 BioSIS
- M030 Micro 5
- M173 Allegro M2
- M003 Burkard
- M043 Cyclax
- M174 MoldSnap
- M032 Allergence-D
- M002 Cyclax-d
- M176 Relle Smart
- M172 Versa Trap

**Other Microbiology Test Codes**
- M041 Fungal Direct Examination
- M005 Viable Fungi ID and Count
- M006 Viable Fungi ID and Count (Speciation)
- M007 Culturable Fungi (Speciation)
- M008 Culturable Fungi (Speciation)
- M009 Gram Stain Culturable Bacteria
- M010 Bacterial Count and ID – 3 Most Prominent
- M011 Bacterial Count and ID – 5 Most Prominent
- M013 Sewage Contamination in Buildings
- M014 Endotoxin Analysis
- M015 Heterotrophic Plate Count
- M180 Real Time Q-PCR-ERMI 36 Panel
- M018 Total Coliform (Membrane Filtration)
- M020 Fecal Streptococcus (Membrane Filtration)
- M210-215 Legionella Detection
- M026 Recreational Water Screen
- M027 Mycotoxin Analysis
- M029 Enterococcus
- M019 Fecal Coliform
- M133 MRSA Analysis
- M028 Cryptococcus neoformans Detection
- M120 Histoplasma capsulatum Detection
- M033-39 Allergen Testing
- M044 Group Allergen
- (Cat, Dog, Cockroach, Dustmites)
- Other See Analytical Price Guide

**Preservation Method (Water):**

**Name of Sampler:**

<table>
<thead>
<tr>
<th>Sample #</th>
<th>Sample Location</th>
<th>Sample Type</th>
<th>Test Code</th>
<th>Volume/Area</th>
<th>Date/Time Collected</th>
</tr>
</thead>
<tbody>
<tr>
<td>RM-21(A)</td>
<td>Room #21 (Air Sample)</td>
<td>MCE-F110</td>
<td>CPID 1,755 L</td>
<td>12/14/10 @ 8:54 PM</td>
<td></td>
</tr>
<tr>
<td>Office (A)</td>
<td>Office (Air Sample)</td>
<td>CPID 1,905 L</td>
<td>12/14/10 @ 9:30 PM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RM-21(D)</td>
<td>Room #21 (Bulk Dust)</td>
<td>CPID 36 in²</td>
<td>12/14/10 @ 8:58 PM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Office (D)</td>
<td>Office (Bulk Dust)</td>
<td>CPID 37 in²</td>
<td>12/14/10 @ 9:10 PM</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Client Sample # (s):**

**Total # of Samples:** 5

Relinquished (Client):

Received (Client):

**Comments:**

- Analyze bulk dust samples for M033-39 and CPID.
- Air samples collected using "open face" cassette as instructed.

Page 1 of ___ pages
**Mycotech Biological, Inc.**  
650 Rocky Creek Road, Dripping Springs, Texas 78620  
Tel: 800-272-3716, 512-264-9076  
Fax: 512-264-0218  
Field Data Sheet and Chain of Custody Sheet (PLEASE PRINT CLEARLY)

**Company Name:** TERRACON - SAN ANTONIO  
**Contact Name:** Lene Griego / Joe Lambert  
**Phone:** 210-641-2112  
**Email:** lgriego@terracon.com  
**Address:** 1911 Blanco Rd.  
San Antonio, TX 78216  
**Project Name:** Salinas Elementary School Proj. 90107328

<table>
<thead>
<tr>
<th>Sample #</th>
<th>Sample Description or Location</th>
<th>Date</th>
<th>Method</th>
<th>Sample Time</th>
<th>Flow Rate</th>
<th>Sample Volume</th>
<th>Analytical Request</th>
<th>Comments (Media)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rm 10 - S</td>
<td>on Desk in center of classroom</td>
<td>12/4</td>
<td></td>
<td>5 min</td>
<td>154 min</td>
<td>75 L</td>
<td></td>
<td>MEL-26</td>
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<tr>
<td>Rm 17 - S</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rm 21 - S</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rm 25 - S</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rm 27 - S</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Office - S</td>
<td>on counter near center of room</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gym - S</td>
<td>along center of wall w/door</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outside - S</td>
<td>near satellite Dish</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**METHOD OF PAYMENT:** Visa/MC/American Express  
**Card#**  
**Exp. Date:**

**Authorized Signature:**  
**PO# (if applicable):**

**Released by:** Lene Griego  
**Date:** 12/15/10  
**Received by:**  
**Date:** 12/16/10

Mycotech Biological, Inc. is not responsible for damaged samples received and/or samples with an incomplete chain of custody form.

Standard turn-around is 7-10 business days, and does not include weekends and/or holidays.  
ALL SAMPLES RECEIVED AFTER 3:00 PM WILL BE PROCESSED AND MARKED AS RECEIVED THE NEXT BUSINESS DAY.

Questions or complaints should be directed to: Indoor Air Quality Program, Toxic Substances Control Division,  
Texas Department of Health, 1100 West 49th Street, Austin, Texas 78756  
512-834-4509 or 800-293-0752
# Mycotech Biological, Inc.
650 Rocky Creek Road, Dripping Springs, Texas 78620 Tele: 800-272-3716, 512-264-9076 Fax: 512-264-0218
Field Data Sheet and Chain of Custody Sheet (PLEASE PRINT CLEARLY)

<table>
<thead>
<tr>
<th>Company Name:</th>
<th>TERRACON - SAN ANTONIO</th>
<th>Contact Name:</th>
<th>Lene Griego / Joe Lambert</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address:</td>
<td>6911 Blanco Rd. San Antonio, TX 78216</td>
<td>Phone:</td>
<td>210-411-2112</td>
</tr>
<tr>
<td>Project Name:</td>
<td></td>
<td>Email:</td>
<td><a href="mailto:lgriego@terracon.com">lgriego@terracon.com</a></td>
</tr>
</tbody>
</table>

Sample Type: Pre [X] Post [ ] Retest [ ] Clearance [ ]
Turn around time: Same Day [ ] Next Day [ ] Third Day [X]

**PLEASE COMPLETE THIS CHAIN OF CUSTODY AND INCLUDE WITH SAMPLES**

<table>
<thead>
<tr>
<th>Sample #</th>
<th>Sample Description or Location</th>
<th>Date</th>
<th>Method</th>
<th>Sample Time</th>
<th>Flow Rate</th>
<th>Sample Volume</th>
<th>Analytical Request</th>
<th>Comments (Media)</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>Ceiling tile outside Room 10 in hall</td>
<td>12/4</td>
<td>tape lift</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>[X]</td>
<td>MEL-3468</td>
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</tbody>
</table>

METHOD OF PAYMENT: Visa/MC/American Express  Card# ______________________________________  Exp. Date: _______________
Authorized Signature: __________________________________________________________________________ |
Released by: _________________________________________________________________________________ |
Date: 12/15/10  Received by: __________________________________________________________________ |
Date: 1/16/10

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<table>
<thead>
<tr>
<th>Sample No:</th>
<th>(01)</th>
<th>Sample No:</th>
<th>(02)</th>
<th>Sample No:</th>
<th>(03)</th>
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<tbody>
<tr>
<td>Description:</td>
<td>Rm. 10-S</td>
<td>Description:</td>
<td>Rm. 17-S</td>
<td>Description:</td>
<td>Rm. 21-S</td>
</tr>
<tr>
<td>On Desk in Center of Classroom</td>
<td>On Desk in Center of Classroom</td>
<td>On Desk in Center of Classroom</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sample Type:</td>
<td>Pre</td>
<td>Sample Type:</td>
<td>Pre</td>
<td>Sample Type:</td>
<td>Pre</td>
</tr>
<tr>
<td>Sample Date:</td>
<td>12/14/2010</td>
<td>Sample Date:</td>
<td>12/14/2010</td>
<td>Sample Date:</td>
<td>12/14/2010</td>
</tr>
<tr>
<td>Matrix:</td>
<td>Air</td>
<td>Matrix:</td>
<td>Air</td>
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</tr>
<tr>
<td>Date Analyzed:</td>
<td>12/20/2010</td>
<td>Date Analyzed:</td>
<td>12/20/2010</td>
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<td>12/20/2010</td>
</tr>
<tr>
<td>% Analyzed:</td>
<td>100% of Trace at 400X Magnification</td>
<td>% Analyzed:</td>
<td>100% of Trace at 400X Magnification</td>
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<tr>
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<td>35</td>
<td>52</td>
<td>112</td>
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<td>221 Particles / M³</td>
<td>1,911 Particles / M³</td>
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<td>(06)</td>
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<td>------</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Description</td>
<td>Rm. 25-S</td>
<td>Rm. 27-S</td>
<td>Office-S</td>
<td></td>
<td></td>
</tr>
<tr>
<td>On Desk in Center of Classroom</td>
<td>On Desk in Center of Classroom</td>
<td>On Counter Near Center of Room</td>
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</tr>
<tr>
<td>Sample Type</td>
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<tr>
<td>Matrix</td>
<td>Air</td>
<td>Air</td>
<td>Air</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date Analyzed</td>
<td>12/20/2010</td>
<td>12/20/2010</td>
<td>12/20/2010</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Analyzed</td>
<td>100% of Trace at 400X Magnification</td>
<td>100% of Trace at 400X Magnification</td>
<td>100% of Trace at 400X Magnification</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reporting Limit</td>
<td>13</td>
<td>13</td>
<td>13</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Sample Type | Pre | Pre | Pre |
| Sample Date | 12/14/2010 | 12/14/2010 | 12/14/2010 |
| Matrix | Air | Air | Air |
| Date Analyzed | 12/20/2010 | 12/20/2010 | 12/20/2010 |
| % Analyzed | 100% of Trace at 400X Magnification | 100% of Trace at 400X Magnification | 100% of Trace at 400X Magnification |
| Reporting Limit | 13 | 13 | 13 |

**Observed**

<table>
<thead>
<tr>
<th>Sample No</th>
<th>(04)</th>
<th>(05)</th>
<th>(06)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Curvularia spp.</td>
<td>1</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>hyphae</td>
<td>5</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>fibers</td>
<td>28</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>epithelial cells</td>
<td>55</td>
<td>115</td>
<td>171</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sample No</th>
<th>(04)</th>
<th>(05)</th>
<th>(06)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cladosporium spp.</td>
<td>13</td>
<td>91</td>
<td>52</td>
</tr>
<tr>
<td>Alternaria spp.</td>
<td>3</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>hyphae</td>
<td>1</td>
<td>13</td>
<td>1</td>
</tr>
<tr>
<td>fibers</td>
<td>30</td>
<td>390</td>
<td>46</td>
</tr>
<tr>
<td>epithelial cells</td>
<td>115</td>
<td>1,495</td>
<td>2,223</td>
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**Comments**

<table>
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<th>(05)</th>
<th>(06)</th>
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</thead>
<tbody>
<tr>
<td>Results</td>
<td>1,2</td>
<td>1,2</td>
<td>1</td>
</tr>
<tr>
<td>Comments</td>
<td>-</td>
<td>-</td>
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</tr>
</tbody>
</table>

**Reported Count**

<table>
<thead>
<tr>
<th>Sample No</th>
<th>(04)</th>
<th>(05)</th>
<th>(06)</th>
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</thead>
<tbody>
<tr>
<td>1,157</td>
<td>2,028</td>
<td>2,964</td>
<td></td>
</tr>
<tr>
<td>Sample No:</td>
<td>(07)</td>
<td>(08)</td>
<td></td>
</tr>
<tr>
<td>-----------</td>
<td>------</td>
<td>------</td>
<td></td>
</tr>
<tr>
<td><strong>Description:</strong></td>
<td>Gym-S</td>
<td>Outside-S</td>
<td></td>
</tr>
<tr>
<td><strong>Sample Type:</strong></td>
<td>Pre</td>
<td>Pre</td>
<td></td>
</tr>
<tr>
<td><strong>Sample Date:</strong></td>
<td>12/14/2010</td>
<td>12/14/2010</td>
<td></td>
</tr>
<tr>
<td><strong>Matrix:</strong></td>
<td>Air</td>
<td>Air</td>
<td></td>
</tr>
<tr>
<td><strong>Date Analyzed:</strong></td>
<td>12/20/2010</td>
<td>12/20/2010</td>
<td></td>
</tr>
<tr>
<td><strong>% Analyzed:</strong></td>
<td>100% of Trace at 400X Magnification</td>
<td>100% of Trace at 400X Magnification</td>
<td></td>
</tr>
<tr>
<td><strong>Reporting Limit:</strong></td>
<td>13 Particles / M³</td>
<td>13 Particles / M³</td>
<td></td>
</tr>
</tbody>
</table>

### Gym-S (Gym-S along Center of Wall w/Door)

**Raw Count**

<table>
<thead>
<tr>
<th><strong>Comments</strong></th>
<th><strong>Observed</strong></th>
<th><strong>Particles / M³</strong></th>
<th><strong>Results</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Cladosporium spp.</td>
<td>34</td>
<td>442</td>
<td>1</td>
</tr>
<tr>
<td>1 Alternaria spp.</td>
<td>1</td>
<td>13</td>
<td>1, 2</td>
</tr>
<tr>
<td>1 Ascospores - like</td>
<td>1</td>
<td>13</td>
<td>1, 105</td>
</tr>
<tr>
<td>5 Drechslera spp.</td>
<td>1</td>
<td>13</td>
<td>1, 2</td>
</tr>
<tr>
<td>4 Curvularia spp.</td>
<td>4</td>
<td>52</td>
<td>1, 2</td>
</tr>
<tr>
<td>39 hyphae</td>
<td>39</td>
<td>507</td>
<td>7</td>
</tr>
<tr>
<td>3 Nigrospora spp.</td>
<td>3</td>
<td>39</td>
<td>1</td>
</tr>
<tr>
<td>187 fibers</td>
<td>187</td>
<td>2,431</td>
<td>112</td>
</tr>
<tr>
<td>412 epithelial cells</td>
<td>412</td>
<td>5,356</td>
<td>-</td>
</tr>
</tbody>
</table>

### Outside-S (Near Satellite Dish)

**Raw Count**

<table>
<thead>
<tr>
<th><strong>Comments</strong></th>
<th><strong>Observed</strong></th>
<th><strong>Particles / M³</strong></th>
<th><strong>Results</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Cladosporium spp.</td>
<td>27</td>
<td>351</td>
<td>1</td>
</tr>
<tr>
<td>2 Alternaria spp.</td>
<td>2</td>
<td>26</td>
<td>1, 2</td>
</tr>
<tr>
<td>4 Ascospores - like</td>
<td>4</td>
<td>52</td>
<td>1, 105</td>
</tr>
<tr>
<td>1 Curvularia spp.</td>
<td>1</td>
<td>13</td>
<td>1, 2</td>
</tr>
<tr>
<td>1 Epicoccum spp.</td>
<td>1</td>
<td>13</td>
<td>1</td>
</tr>
<tr>
<td>9 hyphae</td>
<td>9</td>
<td>117</td>
<td>7</td>
</tr>
<tr>
<td>11 fibers</td>
<td>11</td>
<td>143</td>
<td>112</td>
</tr>
<tr>
<td>2 Pollen</td>
<td>2</td>
<td>26</td>
<td>1</td>
</tr>
</tbody>
</table>

**Total:** 8,918 Particles / M³  
**Total:** 741 Particles / M³
### Analysis Details:

- **Project:** Mycotech Biological, Inc.
- **Report No:** 10-0787
- **Received date:** 12/16/2010
- **Report date:** 12/20/2010

**Analysis Type:** Micro

**Media:** Tape

---

**Sample Information:**

- **Sample No:** (09)
- **Description:** #1 Ceiling Tile Outside Room 10 in Hall
- **Sample Date:** 12/14/2010
- **Matrix:** Direct
- **Date Analyzed:** 12/20/2010

**Results:**

<table>
<thead>
<tr>
<th>Observed</th>
<th>Raw Count</th>
<th>Results</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cladosporium spp.</td>
<td>1, 129</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Project Information:**

- **Project:** Salinas Elementary School
- **AIHA EMPAT NO:** 103006
- **TDSHS LIC. NO:** LAB0163

**Location:**

- **Terracon - San Antonio**
  - 6911 Blanco Rd.
  - San Antonio, TX 78216
- **TERRACON691**

---

**Contact Information:**

- **650 Rocky Creek Rd.**
- **Dripping Springs, Texas 78620**
- **Tele:** 800-272-3716
- **Fax:** 512-264-0218
General Comment Reference Page

ONLY COMMENT NUMBERS INDICATED ON REPORT ARE RELEVANT.

Mycotech Biological is not responsible for any errors resulting from improper or incorrect sampling procedures, atmospheric conditions at the time of sampling or during shipment, or from shipping conditions or methods. Results relate only to samples analyzed.

1. This is a known and documented aeroallergen. It may cause an allergic reaction to hypersensitive individuals at normal airborne concentrations. Chronic exposure, at above normal airborne concentrations, may also result in the sensitization and development of allergic disease in previously unaffected individuals.

2. This fungus is an opportunistic pathogen. Many factors affect host contraction; however, this fungus will typically infect only those who are immuno-comprised. Immuno-comprization may be a function of age, sex, race, state of health, or nutrition. Individuals exposed to immunotherapy, chemotherapy, radiotherapy, immunosuppressive drugs, or who have contracted an immunological disorder, are at greater risk of infection. As with other diseases, opportunistic infections may be contracted by a variety of potential routes including injection, ingestion, skin contact and/or respiration.

7. The hyphae observed represented desiccated/unorganized hyphal fragments that are not representative of established fungal growth. The presence of this is common to typical dust and debris.

105. Due to the absence of supporting data, a definitive Genus could not be assigned.

112. Natural or man-made textile fibers (not including asbestos); typically from clothing, floor coverings (carpet), or upholstery.

129. The identified organism revealed characteristics that are consistent with fungal growth.
Terracon Personnel and Laboratory Licenses
JOE LAMBERT
PRINCIPAL / ENVIRONMENTAL MANAGER

PROFESSIONAL EXPERIENCE

Joe Lambert has over 20 years of professional environmental and analytical chemistry experience with specialized knowledge in environmental testing and chemical analysis.

As Environmental Department Manager in Terracon’s San Antonio office, Mr. Lambert has overseen hundreds of projects involving a wide range of assessment, monitoring and remediation services. These projects have included underground storage tank removals, subsurface plume delineations, worksite perimeter monitoring, oilfield cleanup, storm water runoff and erosion control, landfill gas monitoring, product recovery and groundwater remediation. Joe has provided technical expertise and oversight for Indoor Air Quality projects, Spill Prevention, Control and Countermeasures (SPCC) Plans, Phase I and Phase II Environmental Site Assessments, hazardous materials handling and disposal, spill containment and cleanup, as well as contaminated soil excavation and remediation. This work has required regulatory compliance in accordance with Texas Commission on Environmental Quality and Environmental Protection Agency protocols and has included the Innocent Owner/Operator Program (IOP), the Voluntary Cleanup Program (VCP) and the US EPA Brownfields Program.

PROJECT EXPERIENCE

- San Antonio Water System Aquifer Storage & Recovery (ASR) Program – Bexar County, Texas
  Performed a Phase II subsurface assessment at four specific locations along the proposed ASR pipeline route that were identified as areas of potential environmental concern. The assessment involved drilling borings and collecting subsurface samples of soil and groundwater at various intervals for laboratory analyses.

- Cedar Creek Property – San Antonio, Texas
  Conducted a Phase I Environmental Site Assessment for part of the Parklands Acquisition over the Recharge and Contributing Zones of the Edwards Aquifer. Assessed historical structures, wetlands, endangered species, sole-source aquifer, and environmental concerns for properties totaling over 800 acres in size.

- Thrift Property – San Antonio, Texas
  Conducted a Phase I Environmental Site Assessment for the Proposition 3 Land Acquisition over the Recharge and Contributing Zones of the Edwards Aquifer. Assessed an approximate 641-acre tract of land for environmental concerns.

- 11.9-Acre New Proposed School – Somerset, Texas
  Performed Phase I Environmental Site Assessment for 11.9-acre tract of land containing numerous oil fields.

- 340-Acres – Laredo, Texas
  Conducted a Phase I Environmental Site Assessment for approximately 340-acres of raw/industrial land for consideration as a housing development. Also evaluated the property for signs of state and federally listed species and their habitat. Conducted a limited archaeological survey for indication of significant historical artifacts and remains.

EDUCATION

Bachelor of Science, Natural Science, 1977, Miami University, Oxford Ohio.

University of Texas at El Paso, Graduate Studies program, Environmental Science and Geology, 1986-1988, completed 23 credit hours.

CERTIFICATIONS

40 Hour OSHA Certificate and Refresher, current.

AFFILIATIONS

Air and Waste Management Association
American Indoor Air Quality Council Member

WORK HISTORY

Terracon, Environmental Manager, 2004-current.
Chenron Incorporated, Assistant Laboratory Manager/Quality Assurance Director, 1991-1998
• **Skygen Project – Corpus Christi, Texas**
  Performed air monitoring for health and safety at several refineries in Corpus Christi, Texas. The air monitoring was prompted by subsurface excavation for a proposed transmission line along the North Oak Park Substation to Lon Hill Switchyard 138 in Corpus Christi, Texas.

• **Dallas Terminal – Dallas, Texas**
  Principal in charge of overseeing remediation activities for a leaking petroleum storage tank trucking facility. Also conducted numerous water sampling events and prepared regulatory compliance reports.

• **San Antonio International Airport Remain Overnight Apron - San Antonio, Texas**
  Performed subsurface assessments (drilling, sample collection, and analysis) and a Hazardous Materials Inventory for contamination at the San Antonio Internation Airport.

• **SPCC Site Evaluation – La Villa, Texas**
  Evaluated SPCC plans for 30 sites.

• **Laredo Community College Voluntary Cleanup Program – Laredo, Texas**
  Conducted a Full Affected Property Assessment Report (APAR) for the Laredo Community College. Excavated over 2,000 cubic yards of contaminated soil. Project received closure.

**ADDITIONAL COURSES**
TEXAS DEPARTMENT OF STATE HEALTH SERVICES

BE IT KNOWN THAT

JOSEPH A LAMBERT

is hereby licensed and authorized to perform as a

Mold Assessment Consultant

in the State of Texas and is hereby governed by the rights, privileges, and responsibilities set forth in

Title 25, Texas Administrative Code, Chapter 295, relating to Texas Mold Assessment and Remediation

Rules, as long as this license is not suspended or revoked.

David L Lakey, M.D
Commissioner of Health

License Number: MAC1179
Control Number: 7234

Expiration Date: 11/16/2012
(Void After Expiration Date)

VOID IF ALTERED NON-TRANSFERABLE
LENÉ L. GRIEGO
STAFF BIOLOGIST

PROFESSIONAL EXPERIENCE
Mrs. Griego is a Staff Biologist in Terracon’s San Antonio, Texas, office. She is proficient in Environmental Site Assessments (ESAs), Wetlands/Waters of the US, Threatened and Endangered Species, and Environmental Assessments (EAs). Mrs. Griego has acquired an understanding of facility operating systems, state and federal regulations, and the fate and transport of chemicals through air, soil, surface water, and groundwater.

AQUATIC TAXONOMIC IDENTIFICATION: Prior to working at Terracon, Mrs. Griego investigated Salado Creek in San Antonio, for the San Antonio River Authority. Her work included analyzing the recycled water used to maintain flow in the creek, identify the 15 different species of fish and the 75 different species of invertebrate taxi, and use this analysis to assess the aquatic habitat. This information was used in a report for the Clean Rivers Project.

PROJECT EXPERIENCE

Environmental Site Assessments (ESAs)
Performed ESAs on several properties throughout Texas.
Project Manager- These assessments included reviewing available sources such as historical photographs, topographic maps, city directories, and endangered species reports, determination of wetlands, FCC regulations, and listed tribal and regulatory databases. The ESAs also included extensive knowledge and identification of distinctive features such as caves, cavities, dry river beds and distressed vegetation that may or may not be associated with environmental conditions.

U.S. Knipping-Bushland Livestock Insects Research Laboratory- Kerrville, Texas
Project Manager -Conducted a Phase I Environmental Site Assessment for a USDA insect research facility. Activities at the facility included pesticide and genetic insect research. The ESA investigation included: possible chemical and radioactive impacts in leach fields pertaining to various on-site septic systems, pesticides associated with the former dipping vat, spray barn, and spray room, PCBs from previously removed transformers, heavy metals and other potential impacts around the vat, spray barn, and spray room, PCBs from previously removed transformers, heavy metals and other potential impacts around the current and former (if known) maintenance and welding shops areas, petroleum hydrocarbon impacts from the former on-site ASTs, Asbestos and lead impacts in the vicinity of buildings that have been demolished on the site, and environmental conditions related to the sediment and sludge from the animal waste lagoons.

Bulverde-Nacogdoches Development – San Antonio, Texas
Project Manager - Conducted a Phase I Environmental Site Assessment for a multi-parcel site that included the Cady (ROWCO) facility. ROWCO is an aerial applicator (crop dusting) business where helicopter repair, stripping and painting took place and pesticides were stored. Chemicals
identified on site included, paint remover that contained methylene chloride and epoxy stripper that contained chlorinated solvents. Additionally, an aboveground storage tank (AST) was observed on the Cady area of the site.

Lockhill Selma at DeZavala – San Antonio, Texas
Project Manager - Conducted a Phase I Environmental Site Assessment for the Stream Realty Acquisition over the Recharge and Contributing Zones of the Edwards Aquifer.

Fort Sam Houston Lighthouse – San Antonio, Texas
Project Manager - Conducted a Phase I Environmental Site Assessment for a 3-acre site on Fort Sam Houston. The tract of land has a long history that included WWII era buildings, pesticide usage, underground storage tanks, and a large number of environmental concerns on adjacent property and in the vicinity. A Phase II study was recommended to assess subsurface impacts.

Environmental Assessments (EAs)
Performed EAs on several properties throughout Texas.
These assessments included determining the effect of additions and new structures on the environment utilizing information from available sources such as, endangered species reports, wetlands determination, FCC regulations, and listed tribal and regulatory databases, State and Federal regulatory agencies.

Veterans Hospital EAs – San Antonio/Harlingen, Texas
Performed the threatened and endangered species portions of Environmental Assessments for the veterans hospitals in San Antonio and Harlingen. Contacted federal, state and local agencies concerning the effects of new facilities on the habitats of threatened and endangered species. Researched threatened and endangered species habitats and assessed the site location for potential habitat.

Additional Courses
40 Hour Hazardous Waste Operations and Emergency Response Course October 24, 2007
Hazardous Waste Operations and Emergency Response Refresher November 2008
40 USGCO Hour Wetland Delineation Certification Course October 26, 2007
Initial Asbestos Inspector Course, December 14, 2007
Asbestos Inspector Refresher, December 2009
Asbestos Inspector Refresher, December 2010
Initial Mold Consultant Course, June-July 2010
Storm Water Construction Inspector Workshop, January 19, 2007

Presentations
The Japanese Tea Garden, Past, Present and a Plan for the Future*
Presented to various Optimist Clubs, Lions Clubs and other neighborhood organizations from July 2005 to March 2006.

"Effects of Recycled Wastewater Effluent as Augmented Baseflow on Benthic Macroinvertebrates in Salado Creek, Bexar County, TX" Presented to the Texas State University thesis committee, and, by invitation, to several Magnet Schools in the San Antonio School District in the Distinguished Lecture Series, May 2005-May 2007.


TEXAS DEPARTMENT OF STATE HEALTH SERVICES

BE IT KNOWN THAT

LENÉ L GRIEGO

is hereby licensed and authorized to perform as a

Mold Assessment Consultant

in the State of Texas and is hereby governed by the rights, privileges, and responsibilities set forth in Title 25, Texas Administrative Code, Chapter 295, relating to Texas Mold Assessment and Remediation Rules, as long as this license is not suspended or revoked.

David L Lakey, M.D
Commissioner of Health

License Number: MAC1174
Control Number: 7196

Expiration Date: 9/16/2012
(Void After Expiration Date)

VOID IF ALTERED NON-TRANSFERABLE
CINDY A. BALDWIN, CIH
SENIOR INDUSTRIAL HYGIENIST

PROFESSIONAL EXPERIENCE
Ms. Baldwin is an industrial hygienist in Terracon’s Cedar Rapids, Iowa, office. She has 27 years of experience in the comprehensive practice of industrial hygiene, asbestos-related issues, occupational safety, and related services. She has held positions in both the regulated community and as the environmental consultant serving industry. She has provided clients with professional, practical solutions in her field nationwide and in Canada.

Her work experience also includes environmental areas of SARA Title III, hazardous and solid waste management, National Pollutant Discharge Elimination System (NPDES), air emissions, and Phase I Environmental Site Assessments. Other experience involved two years of experience with transportation of regulated hazardous materials.

She has experience in identifying environmental, health and safety issues in the public and plant environments and thereafter developing and implementing appropriate corrective actions. These include air and employee exposure monitoring for a wide variety of contaminants. Other industrial services involve noise monitoring, evaluation of ergonomics or evaluation of other worker environments. Her services include development and implementation of programs to meet regulatory requirements and for client loss prevention. She has developed and delivered environmental health and safety training programs to clients ranging from small businesses to large Fortune 500 firms. Her training audiences have included diverse client labor work forces, including organized labor, all levels of management, and environmental, health and safety professionals. She has trained and worked closely with public officials.

Technical experience includes management of projects, performance of environmental assessments, and identification of health and safety hazards through audits in public and private sector establishments. Her knowledge of OSHA, NFPA, DOT and EPA regulations is excellent and she has had experience with OSHA and EPA/DNR inspections.

PROJECT EXPERIENCE

AIR MONITORING
Personal exposure monitoring to evaluate employee exposures to various air contaminants, including:

- Calcium oxide, particulates, respirable silica, asbestos—Miami-Dade Water & Sewer Department, Miami, Florida
- Hexavalent chromium—Ivy Steel & Wire, Hazleton, Pennsylvania; Meadow Burke, Converse, Texas; Kraft Foods, Davenport, Iowa; Kinze Manufacturing, Williamsburg, Iowa
- Welding fume—Sears Manufacturing, Davenport, Iowa, Iowa; Kinze Manufacturing, Inc., Williamsburg, Iowa
- Respirable silica—Cargill Corn Milling, Cedar Rapids; Crawford Quarry, Cedar Rapids, Iowa,
- Propylene oxide, sulfur dioxide, particulates, respirable silica—Cargill, Wet Corn Milling, Cedar Rapids, Iowa
- Acetic acid, furfural—Danisco Sweeteners, Thomson, Illinois

EDUCATION
Master of Science, Environmental Health, Colorado State University
Bachelor of Science, Biology, Metropolitan State College

CERTIFICATIONS/ LICENSES
Certified Industrial Hygienist, Comprehensive Practice #3857
Licensed Industrial Hygienist, State of Illinois #232
Licensed Asbestos Inspector/Management Planner/Project Designer, Illinois ID #100-7020
Licensed Asbestos Inspector/Management Planner, Missouri license #7112103102/MOMR12948; 7112103108/MOMR12948
Asbestos Abatement Project Designer, Iowa license 08-5500PD
Asbestos Inspector/Management Planner, Iowa license 08-55021, 08-5501MP

AFFILIATIONS
American Industrial Hygiene Association (AIHA), Diplomate Member
American Society of Safety Engineers (ASSE)

WORK HISTORY
Terracon Consultants, Inc., Senior Industrial Hygienist, 2002-Present
Pointer Environmental, Inc., Senior Industrial Hygienist, 1997-2002
Beling Consultants, Project Manager, 1995-1997
PROJECT EXPERIENCE (continued)

2008 FLOOD RECOVERY
Iowa flood recovery services, including asbestos inspections; entry procedures and personal protective equipment; and visual clearance inspections and mold testing following cleanup efforts; formalddehyde testing in mobile housing units:
- Cargill Corn Milling, Cedar Rapids, Iowa
- City of Cedar Rapids, Cedar Rapids, Iowa
- University of Iowa, Iowa City, Iowa
- PAMI Ryan Town Centre
- Cedar Falls Utilities, Cedar Falls, Iowa
- TrueNorth Companies, Cedar Rapids, Iowa
- Plaza 425, Cedar Rapids, Iowa
- GreatAmerica, Cedar Rapids, Iowa
- Parkview Church, Iowa City, Iowa

NOISE MONITORING
Personal exposure monitoring to evaluate employee exposures to noise, including:
- Miami-Dade Water & Sewer Department, Miami, Florida
- Cargill Corn Milling, Cedar Rapids, Iowa
- Illini Hospital, Silvis, Illinois
- Paper Cal Steel Co., St. Paul, Minnesota; Houston, Texas
- IPSCO Ontario Inc., Toronto, Ontario; Blytheville Works, Blytheville, Arkansas; IPSCO Tubulars, Inc., Geneva, Nebraska and Camanche, Iowa

Community noise surveys to evaluate environmental noise levels.
- Community Noise Survey, Nichols Aluminum, Davenport, Iowa
- Noise Assessment, HouTex Inn, Houston, Texas

INDOOR AIR QUALITY INVESTIGATIONS
Investigations of indoor air quality (IAQ) complaints, including evaluation of basic IAQ characteristics (carbon dioxide, carbon monoxide, temperature, humidity) and mold.
- Basic IAQ Indicators – Quad City Airport, Moline, Illinois; State Farm, Milwaukee, Wisconsin; Geneseo Telephone Company, Geneseo, Illinois; Genesis Medical Center, Bettendorf, Iowa; Intermec Technologies, Cedar Rapids, Iowa; Curves, Davenport, Iowa; Vera French Community Mental Health Center, Davenport, Iowa; Scott County, Davenport, Iowa
- Mold – Norwood Souvenir, Cedar Rapids, Iowa; Jorgensen Facilities Services, Cedar Rapids, Iowa; Yellow Book USA, Cedar Rapids, Iowa; RF Micro Devices, Cedar Rapids, Iowa; Albany Area Hospital, Albany, Minnesota; University of Dubuque, Dubuque, Iowa; Blackhawk College, Moline, Illinois; Intermec Technologies, Cedar Rapids, Iowa; GE Commercial Finance, Cedar Rapids, Iowa; Planned Parenthood of Greater Iowa, Des Moines, Iowa; Straka Johnson Architects, Dubuque, Iowa; Iowa State Patrol Post, Osceola.

TRAINING
Develop and deliver customized training programs including:
- Health Hazards in Construction – Master Builders of Iowa, Ames, Iowa
- Hearing Conservation – Cargill Corn Milling, Cedar Rapids, Iowa
- Risk Management Plan/Process Safety Management – Hellers Carbonic, Galva, Iowa
- Confined Space Entry and Confined Space Entry Refresher – Alcoa Davenport Works, Bettendorf, Iowa
- Spill Response, First Responder Operations Level and annual refreshers – Augustana College, Rock Island, Illinois
ENVIRONMENTAL SITE ASSESSMENTS/BROWNFIELDS

- Phase I Environmental Site Assessments for a variety of industrial and commercial clients.
- Participated in Brownfields projects for City of Cedar Rapids, Iowa and East Moline, Illinois
- Construction Monitoring/Site Specific Health Plans – Peters Construction Corp., Waterloo, Iowa; Rathje Construction, Cedar Rapids, Iowa; Dave Schmitt Construction, Cedar Rapids, Iowa.

ENVIRONMENTAL, HEALTH, AND SAFETY PROGRAMS

Develop site specific programs to meet regulatory requirements, including:

- Confined Space Entry Program – Croell Redi-Mix, Sumner, Iowa
- Spill Prevention, Control, and Countermeasures (SPCC) – Kirkwood Community College, Cedar Rapids, Iowa; City of Cedar Rapids, Cedar Rapids, Iowa
- Respiratory Protection Programs – Creative Edge Corporation, Fairfield, Iowa; Midland Davis Corporation, Moline, Illinois; Warkins Export Pre-Delivery, Moline, Illinois; and Davenport Machine, Davenport, Iowa

REMEDIATION PROJECTS

- Mold Remediation Guidelines – Blackhawk College, Moline, Illinois; Carroll County Housing Authority, Savanna, Illinois; City of Tipton, Tipton, Iowa; Iowa Illinois Taylor Insulation, Federal Building, Cedar Rapids, Iowa; Cincinnati Insurance Companies, Michael Residence, Muscatine, Iowa; Cincinnati Insurance Companies, Lundell Residence, Burlington, Iowa
- Lead-Based Paint Abatement Specification – City of Springfield, Springfield, Missouri
- Lead Work Plan (Firing Range) – Hardesty Federal Complex, Kansas City, Kansas

ASBESTOS

- Project Designer for asbestos abatement projects – Proposed Wal-Mart, Silvis, Illinois; Goldthorp Science Hall, University of Dubuque; Iowa State Records Building, Des Moines, Iowa; Denison Job Corp. Center, Denison, Iowa; Federal Building, Iowa City, Iowa.
- Project Manager for asbestos inspection projects – Management Company, Cedar Rapids, Iowa; AEGON USA Realty Advisers, Cedar Rapids, Iowa; Wal-Mart, Fairfield, Iowa; Iowa Department of Administrative Services, Tama, Coralville, Toledo, Fort Madison, and Mount Pleasant, Iowa
- Project Manager for asbestos abatement projects – Macerich Management Company, Cedar Rapids, Iowa; University of Iowa, Iowa City, Iowa; Iowa Department of General Services, Des Moines, Fort Madison, and Mount Pleasant, Iowa

PUBLICATIONS/PRESENTATIONS


TEXAS DEPARTMENT OF STATE HEALTH SERVICES

Be it known that

TERRACON CONSULTANTS INC

is licensed to perform as a

Mold Assessment Company

in the State of Texas and is hereby governed by the rights, privileges, and responsibilities set forth in Title 25, Texas Administrative Code, Chapter 295, relating to Texas Mold Assessment and Remediation Rules, as long as this license is not suspended or revoked.

David Lakey, M.D.
Commissioner of Health

License Number: ACO0117
Expiration Date: 12/14/2011

Control Number: 6483
(Void After Expiration Date)

VOID IF ALTERED  NON-TRANSFERABLE