COUNTY DEPARTMENT AGENDA REQUEST

Department:	Sheriff-Jail	Presenter(s):	Major Charles Cowart
Meeting Date:	Thursday, October 27, 2011	Type of Request:	Old Business

Wording for the Agenda:

Consideration of a request from the Sheriff's Department Jail Division for funding the cost for removal of mold and repairs to the inmate shower areas in the Jail.

Background/History/Details:

Testing for mold was done in 2010 which confirmed mold was present in the inmate showers at the Fayette County Jail. It is recommended that the floors and walls of the showers be coated with a urethane/epoxy material to make them impervious to mold. Grills/ vents/partitions need to be replaced with stainless steel models.

Representatives from the Jail came before the Board of Commissioners in late 2010 concerning this issue but no action was taken. However the scope of the work has changed in that two more shower areas have been added to the request for mold remediation, thus the total cost for repairs has increased by $5,000 from last year.

What action are you seeking from the Board of Commissioners?

Approval of a request from the Sheriff's Department Jail Division for funding the cost for removal of mold and repairs to the inmate shower areas in the Jail. If the Board wishes to approve this request, available funds will need to be identified.

If this item requires funding, please describe:

Approximately $89,000. is needed. Funding in the amount of $77,837 could be made available from a previous Project 0326A (Repairs to County Jail), which is now complete. That leaves a balance needed of $11,163 still needed.

Has this issue come before the Commissioners in the past?	Yes	If so, when?	Wednesday, December 1, 2010
Do you need audio-visual for the presentation?	No	Back-up Material Submitted?	Yes

STAFF USE ONLY

Approved by Finance	Yes	Reviewed by Legal	Yes
Approved by Purchasing	Not Applicable	Approved by County Clerk	Yes
Administrator's Approval	Yes		

Staff Notes:

Minutes

Board of Commissioners
December 9, 2010
7:00 P.M.

Notice: A complete audio recording of this meeting can be heard by accessing Fayette County's Website at www.fayettecountyga.gov. Click on "Board of Commissioners", then "County Commission Meetings", and follow the instructions. The entire meeting or a single topic can be heard.

The Board of Commissioners of Fayette County, Georgia, met in Official Session on Thursday, December 9, 2010, at 7:00 p.m. in the Public Meeting Room of the Fayette County Administrative Complex, 140 Stonewall Avenue, Fayetteville, Georgia.

Commissioners Present:	Jack Smith, Chairman Herb Frady, Vice Chairman Robert Horgan Eric Maxwell
Commissioner Absent:	Lee Hearn
Staff Present:	Jack Krakeel, County Administrator Scott Bennett, County Attorney Carol Chandler, Executive Assistant Robyn Wilson, Planning Commission Secretary

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D. FURTHER CONSIDERATION OF STAFF'S REQUEST FROM THE SHERIFF'S DEPARTMENT FOR FUNDING FOR REPAIRS IN THE SHOWER AREAS OF INMATE CELL BLOCKS IN THE JAIL:

Major Charlie Cowart of the Sheriff's Department had further discussion with the Board about the need to address issues of mold in the shower areas of the County Jail. A copy of the request and backup, identified as "Attachment No. 28", follows these minutes and are made an official part hereof. He said Consulting Engineer David Jaeger of Mallett Consulting recommended overlaying the existing floor tile and wall surfaces with a special coating specifically designed for use in wet areas in lieu of removing and replacing the floor tile grout. He said this coating would be a durable mold resistant urethane or epoxy type coating. He noted that the tile and block walls would be stripped, cleaned and prepped for the new coating including killing all existing mold. He said the metal partitions would be removed during the floor and wall work and cleaned and reinstalled with some minor adjustments during the reinstallation of the metal partitions.

Commissioner Maxwell remarked that item D and item E were both related. He noted that until the old jail was renovated there was no where to move the displaced prisoners. He felt this allowed additional time to listen to Mr. Jaeger in order to get more information.

The Board suggested that Mr. Cowart gather more information about alternative methods for alleviating the problem, cost comparisons, the sequence of activities that would provide a remedy for the problem, and the time frame during which repairs would occur. The Board expressed support for resolving the issue but asked that more definitive information be provided before authorizing funds for the repairs.

September 22, 2011

David Jaeger
Mallet & Associates
115 B Bradford Square
Fayetteville, GA 30215

Re: Fayette County Jail Showers

Dear David,

This is to report on our observations and to make recommendations to deal with the problem of mold growth in stall showers in the Fayette County Jail. There are four groups of stall showers off dayrooms, six groups at dormitories, and a shower and bathroom at the infirmary.

Observations:

The Jail has been in operation about 8 years. The shower floors are quarry tile in good condition except for mineral deposits on the tile and mold growth on the tile joints. The shower walls originally had a glazed wall coating. This coating is reported to have failed after about 5 years of use and was recoated with an unknown product by inmate labor. This second coating is coming off in large flakes with mold growing on and under this coating.

Plain steel used for exhaust grills, pipe covers and structural columns has a paint finish that is failing and rust is widespread.

Stainless steel shower partitions appear in reasonably good condition but harbor mold growth in cracks and joints. One particularly bad area occurs where pilasters set on the floor behind quarry tile curbs with the space between pilaster and curb too tight to allow for cleanup.

The showers were wet from use at the time of the visit and it is expected that they stay wet a large part of the day.

All of the above conditions are illustrated in the attached photos.

Recommendations:

Our first consideration was ventilation of the shower area. Our design engineer reviewed the design and found that the air exhaust is in compliance with code requirements. Further, the shower areas are open to the adjacent dayrooms which have humidity control. It is our opinion that added ventilation will have little, if any affect, on mold growth.

Mold growth can best be managed by having impervious surfaces that will not support mold and minimum cracks and crevices that will collect deposits that will support mold.

IPG, INCORPORATED
ARCHITECTS AND PLANNERS
807 Northwood Park Drive, Valdosta, Georgia 31602-1393 • 229.242.3557 • Fax 229.242.4339
E-mail: mail@ipgarchitects.com http://www.ipgarchitects.com

Ceramic (including quarry) tile are good surfaces except for grouted joints. The problem with the existing quarry tile shower floors is mold in the joints.

There are a number of proprietary coatings that have been developed specifically for use in wet areas. They are generally epoxy or urethane based and there are formulations specifically for walls or floors. Critical to the installation of these coatings is surface preparation and with appropriate preparation the wall coatings can be used over the plain steel that is rusting. The cost of these coatings will be about the same as tile.

We recommend that the floors and walls of the showers receive an appropriate urethane/epoxy coating.

We recommend that the plain steel surfaces be included in the areas to be coated except for the security-type exhaust grills which should be changed to stainless steel. Coating the existing grills would reduce the free area of grills which is not acceptable.

To accommodate the coating installation, the stainless steel shower partitions should be removed. When reinstalled, the partition pilasters should be relocated to the top of the quarry tile curb. New continuous channel anchors should be made for anchoring the divider panels. New anchors will allow for the relocated pilasters and making them continuous will minimize the cracks and corners that encourage mold.

Cost and Time:

After talking to two manufacturers' representatives, we expect the total cost of the work in accordance with the above recommendation to be in the area of $78,000. Time for doing the work in each bank of showers will be about one week. There are ten separate banks of showers. Doing only one bank of showers at a time in order to minimize shut down of beds will result in a total construction time of about ten weeks.

Closing:

Let me know if you have questions about any of the above. We would be glad to discuss this further with you or County people.

Sincerely,

IPG, Incorporated

Jim Ingram

JI/ah

Copy: IPG File 1065 / A1

IPG, Incorporated
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Mallett Consulting, Inc.

ENGINEERING - SURVEYING - PROJECT MANAGEMENT

101 DEVANT STREET, SUITE 804
FAYETTEVILLE, GEORGIA 30214
770-719-3333
770-719-3377 (fax)

Major Charles R. Cowart - Director
Fayette County Sheriff's Office - Jail Division
145 Johnson Avenue
Fayetteville, Georgia 30214

Re: Jail Showers - Mold Remediation

October 25, 2010

Dear Major Cowart:

Mallett Consulting, Inc. is pleased to offer our professional services for preparation of bid documents, including detailed plans and specifications, construction contract, insurance and bonding requirements along with project management and construction monitoring for the above referenced project. Proposed repair strategy will be in accordance with the recommendations made in the report prepared by Mr. Jim Ingram of IPG - see attached. Our project team will include architectural design services by IPG, Inc. IPG, Inc provided similar services for the original design and construction of the Jail facility.

Proposed Fees are as follows:

1.	Design and preparation of Plans and Specifications:	$5900.00
2.	Project Management:	$1200.00
3.	Construction Monitoring: (50 Working Days)	Hourly (est. 3750.00)
4.	Reimbursables - printing, shipping, etc.:	at cost

Please feel free to call me to discuss this proposal further. We will wait for your authorization before proceeding with the work.

Sincerely,
Mallett Consulting, Inc.

David Jaeger, PE
President

FCW, LLC

Mold Solutions

3950 Newnan Rd, Griffin GA 30223

Phone: 770-468 2349 Fax: 770-227 5307 Email: Francisllc@bellsouth.net

Customer: Fayetteville Jail
Address of Property inspected:
Date of Inspection: 8-11-10

Observations:

Cell Block E:

Observed collections of mold staining on the walls of the showers as well as organic stains on the ceiling of these showers. There also appears to be a dip in the floor of the shower that is not allowing the residual shower water to exit to the drain. The grout of the the shower floors have minor voids that allow the water to escape to the lower level. The shower partitions have mold growth on the bottom sides as well as loose hardware attachment to the floor.(Possible mold growth area) The paint on the shower walls has begun peeling and mold has grown behind the peeling paint. Bulk samples were taken and submitted for lab testing. (Results attached).

Section G. and H.

Almost identical situation as E. Buildup of substance around the dividers was particularly bad. Instant mold tests were taken behind the shower plate fixtures and tested positive for mold in all locations. Cameras were used to look behind the shower wall and significant amounts of mold substance were visible. Capt. Henkel was able to confirm these locations on our cameras. Thermal cameras were also utilized in this inspection and enabled us to locate several areas in the shower walls that had moisture buildup. These areas that trap and retain moisture allow mold to grow.

Section K. Infirmary.

Plumbing issues were observed specifically in the shower area drain. There was minor organic staining on the ceiling and walls. The bathtub was installed incorrectly not allowing the tile to overlap the tub. Reinstallation is recommended.

*Causes and growing conditions: Molds are found everywhere inside and outside, and can grow on almost any substance when moisture is present. Molds reproduce by spores, which can be carried by air currents. When these spores land on a moist surface that is suitable for life, they begin to grow. For significant mold growth to occur, there must be a source of water or humidity, a source of food and a substrate capable of sustaining growth. After a single incident of water damage occurs in a building, molds grow inside walls and then become dormant until a subsequent incident of high humidity. The right conditions reactivate mold and studies show that mycotoxin levels are perceptibly higher in buildings that have once had a water incident.

Many fungi produce toxic metabolites called mycotoxins. Dramatic and carcinogenic effects have been recorded for humans and animals exposed to high levels of mycotoxins. Symptoms of exposure may include cold and flu-like symptoms, headache, nosebleeds, dermatitis and immune suppression. Many mycotoxins are highly disease causing. Exposure to high levels of mycotoxins can lead to neurological problems and in some cases death. Prolonged exposure, e.g. daily workplace exposure, can be particularly harmful.

Francis Construction & Woodworking
Mr. Nicholas Tvrdeich
3950 Newnan Rd.
Griffin, GA 30223 USA
(770) 468-2349

INSPECT. ANALYZE. INTERPRET.

MoldREPORT™

EMLab P & K

www.MoldREPORT.com

info@MoldREPORT.com

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(800) 224-1527 (858) 292-2721 Fax (858) 292-2722

Table of Contents

Thank you for choosing MoldREPORT™ from EMLab P&K. Our mission is to provide industry leadership for the assessment of mold in the home indoor environment.

Your MoldREPORT™ is designed and intended for use by professional inspectors in office and residential home inspections to help in the assessment of mold growth in the living areas sampled by professional inspectors. Our laboratory analysis is based on the samples submitted to EMLab P&K. Please read the entire report to fully understand the complete MoldREPORT™ process. The following is a summary of the report sections:

1. Detailed Results of Sample Analysis - Laboratory results from the samples collected at the site.

2. Understanding Your Sample Analysis Results - Detailed summary of how to understand the analytical results from the air samples and/or surface samples including interpretive guidelines.

3. Important Information, Terms and Conditions - General information to help you understand and interpret your MoldREPORT™, including important terms, conditions and applicable legal provision relating to this report.

4. Scope and Limitations - Important information regarding the scope of the MoldREPORT™ system, and limitations
of mold inspection, air sampling, and surface sampling.

5. Glossary - Definitions and descriptions of frequently used terms and commonly found mold.

6. References and Resources - Literature, websites, and other materials that can provide more in-depth information about mold and indoor air quality.

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Client: Francis Construction & Woodworking
Contact: Mr. Nicholas Tvrdeich
Project: Fayetteville
Date of Sampling: 08-06-2010
Date of Receipt: 08-11-2010
Date of Report: 08-13-2010

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Summary of Sample Analysis Results

Do not take any action based on the results of this report until you have read the entire report.

Surface Sample Summary:

The surface sample results of 1, 2, 3 indicated mold growth on the surface(s) sampled at the time of sampling.

Please see the sections titled "Detailed Results of the Surface Sample Analysis", "Understanding Your Surface Sample Analysis Results", "Important Information, Terms and Conditions" and "Scope and Limitations" for additional information.

Location	Mold Growth	Dominant Types
1: Swab/Shower Stall E * see p. 4 for details	Mold Growth	Aspergillus species Cladosporium species
2: Swab/Shower Stall G * see p. 5 for details	Mold Growth	Fusarium species Aspergillus species
3: Flaking Paint Stall E * see p. 6 for details	Mold Growth	Cladosporium species

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Detailed Results of Surface Sample Analysis

Location:	1: Swab/Shower Stall E
Sample Type:	Swab sample

Mold growth present*: Low=small amounts of mold growth present High=large amounts of mold growth present	No growth found	Low			High
Acremonium species					
Alternaria species					
Aspergillus species					
Aureobasidium species					
Chaetomium species					
Cladosporium species					
Penicillium species					
Stachybotrys species					
Trichoderma species					
Ulocladium species					

Miscellaneous spores present: Indicative of normal conditions**	Very few

Background debris:	Moderate

Other comments:	None

* Quantities of molds seen growing are graded Low to High with High denoting the highest numbers.

** Indicative of normal conditions, i.e. seen on surfaces everywhere. Includes basidiospores (mushroom spores), myxomycetes, plant pathogens such as ascospores, rusts and smuts, and a mix of saprophytic genera with no particular spore type predominating. Distribution of spore types seen mirrors that usually seen outdoors.

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Detailed Results of Surface Sample Analysis

Location:	2: Swab/Shower Stall G
Sample Type:	Swab sample

Mold growth present*: Low=small amounts of mold growth present High=large amounts of mold growth present	No growth found	Low			High
Acremonium species					
Alternaria species					
Aspergillus species					
Aureobasidium species					
Chaetomium species					
Cladosporium species					
Fusarium species					
Penicillium species					
Stachybotrys species					
Trichoderma species					
Ulocladium species					

Miscellaneous spores present: Indicative of normal conditions**	Few

Background debris:	Moderate

Other comments:	None

* Quantities of molds seen growing are graded Low to High with High denoting the highest numbers.

** Indicative of normal conditions, i.e. seen on surfaces everywhere. Includes basidiospores (mushroom spores), myxomycetes, plant pathogens such as ascospores, rusts and smuts, and a mix of saprophytic genera with no particular spore type predominating. Distribution of spore types seen mirrors that usually seen outdoors.

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Detailed Results of Surface Sample Analysis

Location:	3: Flaking Paint Stall E
Sample Type:	Bulk sample

Mold growth present*: Low=small amounts of mold growth present High=large amounts of mold growth present	No growth found	Low			High
Acremonium species					
Alternaria species					
Aspergillus species					
Aureobasidium species					
Chaetomium species					
Cladosporium species					
Penicillium species					
Stachybotrys species					
Trichoderma species					
Ulocladium species					

Miscellaneous spores present: Indicative of normal conditions**	Very few

Background debris:	N/A

Other comments:	None

* Quantities of molds seen growing are graded Low to High with High denoting the highest numbers.

** Indicative of normal conditions, i.e. seen on surfaces everywhere. Includes basidiospores (mushroom spores), myxomycetes, plant pathogens such as ascospores, rusts and smuts, and a mix of saprophytic genera with no particular spore type predominating. Distribution of spore types seen mirrors that usually seen outdoors.

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Understanding Your Surface Sample Analysis Results

Analysis by direct microscopic examination
Each surface sample was analyzed by direct microscopic examination. This method of analysis is an effective means of determining whether or not mold is growing on the surface sampled, and if so, what kinds of molds are present. A direct microscopic examination, in the absence of evidence of growth on the surface sampled, may also occasionally pick up indications of mold growth in the vicinity based upon the mix of spore types present in the sample. Most surfaces collect a mix of spores that are normally present in the environment. At times it is possible to note a skewing of the normal distribution of spore types, and also to note marker genera that may indicate indoor mold growth. Note that locating an area of mold growth indoors using surface samples does not provide information regarding airborne spore levels.

Mold growth present
Samples are examined for the presence of mold growth, as indicated by groups, clumps, and/or chains of single spore types, usually accompanied by intact mycelial and/or sporulating structures. These areas of growth are then identified to genus name, if possible. Quantities are estimated and are graded on a scale from "Low" to "High," with "High" denoting the highest amount.

If mold growth is found, regardless of the magnitude of the growth, it is recommended that the growth be physically removed using appropriate controls and precautions. If mold has been located and removed, it is also important to identify and correct the source of moisture or dampness that allowed the mold to grow. If the affected area becomes moist again, mold growth will occur again. We recommend that you consult a professional if you are not familiar with how to locate and safely remove mold growth or how to identify and correct moisture problems that may exist.

Miscellaneous spores present
This is a measure of the mix of spores that are present and are indicative of normal conditions, in other words, seen normally on surfaces almost everywhere. This includes basidiospores (mushroom spores), myxomycetes ("slime molds"), plant pathogens such as rusts and smuts, and a mix of saprobic mold with no particular spore type predominating. The distribution of these spore types resembles that seen outdoors.

Background debris
Background debris is an indication of the amounts of non-biological particulate matter present. This background material is graded and described as light, medium, heavy, or very heavy. Very heavy background debris may obscure visibility for the analyst. Bulk samples are not graded in this category.

Other comments
Additional relevant information is provided, such as the presence of marker genera or the abnormal distribution of spore types. Bacteria may be noted, as well as significant numbers of other biological particles such as algae, lichen, dust mites, etc. In addition, when deemed to be helpful, non-biological particles are also described.

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Glossary

Background Debris - Material(s) found on the air sample other than mold spore(s) or mycelia. Examples include skin cells, insect parts, and fibers.

False Positive - A test result that incorrectly indicates mold growth, when in reality there is none. For example, an air sample test result indicating indoor mold growth, when no mold growth is actually present is a "False Positive."

False Negative - A test result that shows no mold growth, when in reality mold growth is present. For example, an air sample test result indicating no indoor mold growth, when mold growth is actually present.

Fungi - A kingdom that includes yeasts, molds, smuts, and mushrooms. Fungi are not animals, plants or bacteria, but their own kingdom.

HVAC - Heating, Ventilation, and Air Conditioning (HVAC) systems are possible reservoirs for mold growth.

IAQ - Indoor Air Quality (IAQ) is the main focus of EMLab P&K and the majority of its customers.

Industrial Hygienist - A professional who monitors exposure to environmental factors that can affect human health. Examples of environmental factors include chemicals, heat, asbestos, noise, radiation, and biological hazards.

Marker Spores - Spore types, such as *Chaetomium* and *Stachybotrys,* that when found indoors, even in moderate numbers are an indication of indoor mold growth.

Note: This glossary is intended to provide general information about commonly occurring molds, and is not intended to be a complete source.

Alternaria:
Distribution: *Alternaria* is one of the most common molds and is abundant worldwide. This genus contains around 40 to 50 different species, only a few of which are commonly found indoors.
How it is spread: *Alternaria* spores are easily dispersed through the air by wind.
Where it is found outdoors: *Alternaria* is common outdoors in soil, dead organic debris, foodstuffs, and textiles. It is also a plant pathogen and is frequently found on dead or weakened plants.
Where it is found indoors: *Alternaria* can grow on a variety of substrates indoors when moisture is present.

Acremonium:
Distribution: *Acremonium* is a common mold, including about 80 to 90 different species.
How it is spread: *Acremonium* produces wet slimy spores and is normally dispersed through water flow or droplets, or by insects. Old dry *Acremonium* spores can sometimes be dispersed through the air by wind.
Where it is found outdoors: *Acremonium* is found in soil, on dead organic material and debris, hay, and foodstuffs.
Where it is found indoors: *Acremonium* can be found anywhere indoors, but requires very wet conditions in order to proliferate. The spores probably require active disturbance for release.

Aspergillus: (see *Penicillium/Aspergillus)*

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Important Information, Terms and Conditions Relating to your MoldREPORT™

The study and understanding of molds is a progressing science. Because different methods of sampling, collection and analysis exist within the indoor air quality industry, different inspectors or analysts may not always agree on the mold concentrations present in a given environment. Additionally, the airborne levels of mold change frequently and by large amounts due to many factors including activity levels, weather, air exchange rates (indoors), and disturbance of growth sites. It is possible for report interpretations and ranges of accuracy to vary since comprehensive, generally accepted industry standards do not currently exist for indoor air quality inspections of mold in residential indoor environments. MoldREPORT™ is intended to provide an analysis based upon samples taken at the site at the time of the inspection. Mold levels can and do change rapidly, especially if home building materials or contents remain wet for more than 24 hours, or if they are wet frequently. MoldREPORT™ is not intended to provide medical or healthcare advice. All allergy or medical-related questions and concerns, including health concerns relating to possible mold exposure, should be directed to a qualified physician. If this report indicates scores that are higher than in typical indoor living spaces relative to the outdoor environment, or indicates any findings that are of concern to you, further evaluation by a trained mold professional or a Certified Industrial Hygienist (CIH) may be advisable.

Warranties, legal disclaimers and limitations
MoldREPORT™ is designed and intended for use only in residential home inspections to help in the assessment of mold growth in the living areas sampled. Our laboratory analysis and report are based on the samples submitted to EMLab P&K. The inspection(s) and sampling should be performed only by a licensed and professional home inspector, environmental mold specialist, industrial hygienist or residential appraiser trained and qualified to conduct mold inspections in residential buildings. Client agrees to these conditions for the on-site project inspection.

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Scope and Limitations of Report and Analysis

The scope of the MoldREPORT™ system is limited to EMLab P&K's proprietary MoldSCORE™ analysis of the air and surface samples taken at the time of the inspection. EMLab P&K cannot be liable, in any form of action, for any items that are not included within the scope of the MoldREPORT™ system.

MoldREPORT™ Inspection Limitations
MoldREPORT™ results are based upon mold air and surface samples. Mold surface samples are useful for confirming and identifying mold growth while air samples measure airborne mold levels.

This report provided by EMLab P&K is based upon the assumption that the information provided by the inspector is true and correct, that a sufficient number of mold and air samples were collected at all the appropriate locations following proper inspection and sampling protocols, and that the mold samples collected represent normal conditions at the site sampled. EMLab P&K is not able to, and cannot, guarantee the skill level or experience of the inspector performing the MoldREPORT™ inspection, nor can it guarantee that the samples have been properly collected at the site or are representative of normal conditions since many factors outside of EMLab P&K's (and the inspector's) control can and do substantially affect mold levels. Consequently, EMLab P&K cannot guarantee the accuracy of the interpretation provided herein. It is the responsibility of the inspector to insure that the mold samples were collected properly. MoldREPORT™ relies on non-invasive and non-destructive tests, so it cannot guarantee that hidden mold problems will be detected and reported. MoldREPORT™ results apply only to the rooms sampled, not to the entire building or any other rooms. It is the responsibility of the property owner, potential purchaser or other end-user of this report to select a properly trained and qualified inspector.

About Air Sample Sampling and Analysis
EMLab P&K requires at least one outdoor air sample and one indoor air sample in order to make indoor/outdoor comparisons and assessments of airborne mold levels, which are an integral part of the EMLab P&K MoldREPORT™ system. The indoor air samples taken can be representative of the airborne mold present in the area sampled. The analysis and interpretation of these air samples is proprietary and is based upon: relative levels of spores present, quantities and concentration of *Penicillium/ Aspergillus* type spores, quantity and concentration of *Cladosporium* spores, quantity and concentration of basidiospores, quantity and concentration of "marker" spore types, quantity and concentration of "other" spore types, and the distribution of mold spore types. Spore identification is performed visually by trained analysts according to industry norms. Using visual identification, most mold spores lack sufficient distinguishing characteristics to allow for species identification, so the MoldREPORT™ analysis is generally performed at the genus level. Currently there are no generally-accepted protocols or regulations regarding air sampling for molds, in large part due to the inability of any single technique to provide a complete analysis of all mold spores and mold growth in an area. Air sampling for MoldREPORT™ can be performed using any standard "spore trap" method, which are also called "non-viable air sampling methods" because spore traps do not require the germination and growth of the spores before identification. Commonly used spore trap equipment for performing air sampling for mold includes Zefon Air-O-Cell™ Cassettes, Burkard™ samplers, and Allergenco™ samplers.

About Surface Sampling and Analysis
Surface sampling can be useful for differentiating between mold growth and stains, for identifying the type of mold growth present (if present), and, in some cases, identifying signs of mold growth in the vicinity. Although not required, surface sampling can improve the accuracy of the results and interpretation of the inspected environment if sampled correctly. EMLab P&K accepts surface samples in the form of swabs, tapes, or bulks in order to perform a direct examination of a specific location. The MoldREPORT™ analysis system uses the direct examination data in addition to the MoldREPORT™ air sample analysis.

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Glossary (continued)

Basidiospores:
Distribution: Basidiospores are produced by a very large and diverse group of fungi called basidiomycetes, which contains over 1000 different genera. This group includes many well-known macrofungi, such as mushrooms. Basidiospores are often abundant in outdoor air and sometimes in indoor air.
How they are spread: Many types of basidiospores are actively released into the air during periods of high humidity or rain. Once the spores are expelled into the air, they are dispersed easily by wind.
Where they are found outdoors: Basidiomycetes are very common outdoors and can be found in gardens, forests, grasslands, and anywhere there is a substantial amount of dead organic material. They are also found on or near plants and some are known to be plant pathogens.
Where they are found indoors: Basidiospores found indoors typically come from outdoor sources and are carried inside by airflow or on clothing. Certain kinds of basidiomycetes can grow indoors, such as those that cause "dry rot", which can cause structural damage to wood. Occasionally, other basidiomycetes such as mushrooms can be found indoors, but this is not common. Generally, basiodiomycetes require wet conditions for prolonged periods in order to grow indoors.

Bipolaris / Dreschlera:
Distribution: *Bipolaris* and *Dreschlera* are two separate genera of molds that are so visually similar that they are commonly discussed together as a group. Both genera include around 30 - 40 different species.
How they are spread: *Bipolaris / Dreschlera* spores are easily dispersed through the air by wind.
Where they are found outdoors: *Bipolaris / Dreschlera* type spores are most abundant in tropical or subtropical climates. They can grow in soils, on plant debris and grasses, and are known to be plant pathogens.
Where they are found indoors: *Bipolaris / Dreschlera* can grow on a variety of indoor substrates when moisture is present.

Ceratocystis / Ophiostoma:
Distribution: *Ceratocystis / Ophiostoma* are two separate genera of molds that are so visually similar that they are commonly discussed together as a group. These genera contain around 50 to 60 different species.
How they are spread: *Ceratocystis / Ophiostoma* produce wet slimy spores and are normally dispersed through water flow, droplets, or by insects. These spores are rarely identified in air samples.
Where they are found outdoors: *Ceratocystis / Ophiostoma* are very common in commercial lumberyards and forests.
Where they are found indoors *Ceratocystis / Ophiostoma* are abundant on wood framing material in the home, although the spores are rarely found in air samples. This mold is sometimes called "lumber mold".

Chaetomium:
Distribution: *Chaetomium* is a common mold worldwide. This genus contains around 80 - 90 different species.
How it is spread: *Chaetomium* spores are formed inside fruiting bodies. The spores are released by being forced out through a small opening in the fruiting body. The spores are then dispersed by wind, water drops, or insects.
Where it is found outdoors: *Chaetomium* can be found in soil, on various seeds, cellulose substrates, dung, woody materials and straw.
Where it is found indoors: *Chaetomium* can grow in a variety of areas indoors, but is usually found on cellulose-based or woody materials in the home. It is very common on sheetrock paper that is or has been wet.

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Glossary (continued)

Cladosporium:
Distribution: *Cladosporium* is an abundant mold worldwide and is normally one of the most abundant spore types present in both indoor or outdoor air samples. This genus contains around 20 - 30 different species.
How it is spread: *Cladosporium* produces dry spores that are formed in branching chains. Spores are released by twisting of the spore-bearing hyphae as they dry. Thus, the spores are most abundant in dry weather.
Where it is found outdoors: *Cladosporium* is found in a wide variety of soils, in plant litter, and on old and decaying plants and leaves. Some species are plant pathogens
Where it is found indoors: *Cladosporium* can be found anywhere indoors, including textiles, bathroom tiles, wood, moist windowsills, and any wet areas in a home. Some species of *Cladosporium* grow at temperatures near or below 0(C) / 32(F) and can often be found on refrigerated foodstuffs and even frozen meat.

Curvularia:
Distribution: *Curvularia* is a cosmopolitan fungus and includes approximately 30 different species.
How it is spread: *Curvularia* produces dry spores that are formed in fragile chains and is very easily dispersed through the air by wind.
Where it is found outdoors: *Curvularia* is most common in tropical or subtropical regions. It is found in soil and on debris of tropical plants.
Where it is found indoors: *Curvularia* can be found growing on a variety of substrates indoors.

Epicoccum:
Distribution: *Epicoccum* is a cosmopolitan mold that includes only two species.
How it is spread: *Epicoccum* produces large dry spores that are easily dispersed through the air by wind.
Where it is found outdoors: *Epicoccum* can be found in soils or on plant debris.
Where it is found indoors: *Epicoccum* is commonly found on many different substrates indoors including paper, textiles, and insects.

Memnoniella:
Distribution: *Memnoniella* is a cosmopolitan mold genus that includes approximately five species. It is frequently found in conjunction with *Stachybotrys* species due to its similar ecological preferences.
How it is spread: *Memnoniella* produces dry spores that are easily dispersed through the air by wind.
Where it is found outdoors: *Memnoniella* can be found outdoors in soil, in plant debris or litter, and as pathogens on some types of living plants.
Where it is found indoors: *Memnoniella* can grow on a variety of substrates indoors, but mainly can be found on wet cellulose-based materials, such as wallboard, jute, wicker, straw baskets, paper and other wood by-products.

Paecilomyces:
Distribution: *Paecilomyces* is ubiquitous in nature and includes between 9 and 30 different species, depending on the taxonomic system used. Its spores are visually similar to *Penicillium / Aspergillus* types of spores.
How it is spread: *Paecilomyces* produce dry spores that are easily dispersed through the air by wind.
Where it is found outdoors: *Paecilomyces* is found outdoors in soils and decaying plant matter, composting processes, legumes and cottonseeds. Some species parasitize insects.
Where it is found indoors: *Paecilomyces* can be found on a number of materials indoors. It has been isolated from jute fibers, papers, PVC, timber, optical lenses, leather, photographic paper, cigar tobacco, harvested grapes, bottled fruit, and fruit juice undergoing pasteurization.

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Glossary (continued)

Penicillium / Aspergillus:
Distribution: *Penicillium / Aspergillus* are two separate genera of molds that are so visually similar that they are commonly discussed together as a group. Together, there are approximately 400 different species of *Penicillium / Aspergillus.*
How it is spread: *Penicillium / Aspergillus* produce dry spore types that are easily dispersed through the air by wind. These fungi serve as a food source for mites, and therefore can be dispersed by mites and various insects as well.
Where it is found outdoors: *Penicillium / Aspergillus* are found in soils, decaying plant debris, compost piles, fruit rot and some petroleum-based fuels.
Where it is found indoors: *Penicillium / Aspergillus* are found throughout the home. They are common in house dust, growing on wallpaper, wallpaper glue, decaying fabrics, wallboard, moist chipboards, and behind paint. They have also been isolated from blue rot in apples, dried foodstuffs, cheeses, fresh herbs, spices, dry cereals, nuts, onions, and oranges.

Stachybotrys:
Distribution: *Stachybotrys* is ubiquitous in nature. This genus contains about 15 species.
How it is spread: *Stachybotrys* produces wet slimy spores and is commonly dispersed through water flow, droplets, or insect transport, less commonly through the air.
Where it is found outdoors: *Stachybotrys* is found in soils, decaying plant debris, decomposing cellulose, leaf litter and seeds.
Where it is found indoors: *Stachybotrys* is common indoors on wet materials containing cellulose such as wallboard, jute, wicker, straw baskets, and other paper materials.

Torula:
Distribution: *Torula* is a cosmopolitan microfungus and includes approximately eight different species
How it is spread: *Torula* produces dry spores that are easily dispersed through the air by wind.
Where it is found outdoors: *Torula* is most common in temperate regions and has been isolated from soils, dead herbaceous stems, sugar beet roots, groundnuts, and oats.
Where it is found indoors: *Torula* is common indoors on wet materials containing cellulose, such as wallboard, jute, wicker, straw baskets, and other paper materials.

Ulocladium:
Distribution: *Ulocladium* is ubiquitous in nature and includes approximately nine different species.
How it is spread: *Ulocladium* produces dry spores that are easily dispersed through the air by wind.
Where it is found outdoors: *Ulocladium* is common outdoors in soils, dung, paint, grasses, wood, paper, and textiles.
Where it is found indoors: *Ulocladium* is common indoors on very wet materials containing cellulose such as wallboard, jute, wicker, straw baskets, and other paper materials. *Ulocladium* requires a significant amount of water to flourish.

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Useful Websites:

www.acgih.org
American Conference of Governmental Industrial Hygienists - information on IAQ and useful links.

www.aiha.org
American Industrial Hygiene Association - general IAQ information

www.calepa.ca.gov
California Environmental Protection Agency - California IAQ resources

www.emlab.com
EMLab P&K

www.epa.gov
Environmental Protection Agency - information regarding prevention and remediation of mold

www.health.state.ny.us
New York State Department of Health - New York state recommendations for IAQ, indoor mold inspections, remediation, and prevention

www.moldreport.com
MoldREPORT™ - online store, and other information about MoldREPORT™

www.nih.gov
National Institutes of Health - information regarding environmental health issues, including IAQ

www.niehs.nih.gov
National Institute of Environmental Health Sciences - information on mold

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	ORIGINAL APPROP	TRANFRS/ ADJSTMTS	REVISED BUDGET	YTD ACTUAL	ENC/REQ	AVAILABLE BUDGET	PCT USED
0326A Repairs to County Jail							
37530326 390100 0326A TRANSFER FROM	-161,800	0	-161,800	-161,800.00	.00	.00	100.0%
37530326 521211 0326A ENGINEERING S	0	0	0	5,383.75	.00	-5,383.75	100.0%*
37530326 521220 0326A PROJECT MANAG	0	0	0	13,277.59	.00	-13,277.59	100.0%*
37530326 522235 0326A BUILDING MAIN	161,800	0	161,800	65,301.36	.00	96,498.64	40.4%
TOTAL Repairs to County Jail	0	0	0	-77,837.30	.00	77,837.30	100.0%
TOTAL REVENUES	-161,800	0	-161,800	-161,800.00	.00	.00	
TOTAL EXPENSES	161,800	0	161,800	83,962.70	.00	77,837.30	
GRAND TOTAL	0	0	0	-77,837.30	.00	77,837.30	100.0%

** END OF REPORT - Generated by Mary Holland **