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7768 Pleasant Lane  
Ypsilanti, MI 48197

AM10:57

Kevin Wilson  
U.S. Office of Special Counsel  
1730 M Street, N.W., Suite 300  
Washington, D. C. 20036-4505

USOSC HQ DC '09JAN

Dear Mr. Wilson,

Thank you for time and effort you have put forth with the allegations I have made over mold and moisture problems and the associated health issues at Detroit Metro Airport. Numerous attachments are submitted with my response to include documents from Michael Pinto, CSP, CMP and CEO of Wonder Makers Environmental, Inc. (WME) and Ritchie C. Shoemaker, M.D., P.A. Due to the technical nature and specificity of the documents, comments will be referenced so as not to be lost in translation.

Although the Assistant Secretary substantiated some of my claims, there are numerous issues with the report. The OST states, in a callous manner, that we *believe* that our adverse health effects are caused by exposure to mold and moisture in our work environment. They go on to state that there have not been any new OSHA recordable employee injuries or illnesses related to mold or indoor air quality since July 2006. The OSHA logs stated are maintained by the vary agency refuting our health issues.

In October 1995 DOT employees in the Nassif building in Washington, D.C. filled out a symptom survey regarding indoor air quality, to include mold, in their area. More than 90 percent of the respondents reported one or more of the symptoms: headache (51 percent), odor (41 percent), scratchy or dry throat (38 percent), eye irritation (32 percent), dizziness or drowsiness (28 percent), skin tingling or itching (22 percent). These are some of the symptoms we have or are encountering at our facility for nearly four years.

The Agency has made statements about not having medical documentation stating mold is the cause of our illnesses, therefore there is not a problem. When we did produce medical documents, they dismissed the findings. The Agency is now stating that no new OSHA recordable employee injuries or illnesses related to mold or indoor air quality is the baseline for employee symptoms caused by the building. There is no requirement for supporting medical documentation to prove that a building is making the occupants sick. That is what employee health surveys accomplish. The Nassif building survey was conducted due to complaints by employees about a musty, mildewy, moldy, or chemical odor. OSHA performed interviews, sampling, and medical evaluations. When OSHA visited our facility, no such actions were taken. The OSHA representatives even refused to review submitted medical files from employees. I even filed a Health Hazard Evaluation and NIOSH never entered the building. Not one entity involved or previously involved with our situation has performed a health employee survey.

One of main factors for the drop in reported health issues is the treatment of employees who step forward. They are in fear of losing their medical certifications, no administrative duties available for tower personnel, then the exhaustion of all leave and the inevitable loss of pay. This has happened to three employees and in the process of impacting a fourth. This is a very intimidating and harassing deterrent. Having to choose between your health and supporting your family is a horrible position to be in.

Dr. Ritchie Shoemaker's report was submitted to the Agency on May 30, 2008 documenting the various injuries and illnesses the Agency states have not been reported since July 2006. (Attachment 1) Dr. Shoemaker's report has been dismissed with no basis in fact or submitted documentation justifying such a total dismissal. His entire report was just dismissed. There is also reference made to Dr. Shoemaker's testimony in court proceedings. The report unfortunately vaguely focuses on exclusions. Dr. Shoemaker, on 25 separate occasions, was allowed to testify in numerous courts around the country. (Attachment 1)

On page 6 of the FAA's response, there is a statement that is as follows, "*While we did commission the inspection, we now believe Dr. Shoemaker's methodology and work unreliable.*" This statement appears after the Agency's offering of Dr. Shoemaker's court appearances. Dr. Shoemaker was never commissioned by the Agency to conduct nor has he ever conducted an inspection of the facility. Frankly, I am at a loss for words as to what the Agency is talking about with this oddly placed statement. Again, they dismiss Dr. Shoemaker's work and methodology without documentation or reason.

Meanwhile there are more and more associations and agencies that are requesting Dr. Shoemaker's expertise. Dr. Shoemaker testified in January 2006 before the US Senate HEAL committee at the request of Senator Kennedy's office. After his testimony, it was arranged for him to examine patients in New Orleans. His findings were later confirmed by NIOSH and the CDC. The Discovery Health Channel has also agreed to air programs focusing on three of Dr. Shoemaker's patients. Filming began December 12, 2008. Dr. Shoemaker's credentials and methods, unlike the unsupported Agency's dismissal, are further documented in attachment one beginning on page three.

Dr. Shoemaker's findings and diagnosis of facility employees is accurate, well documented and supported. The pathetic dismissal of his findings without a shred of evidence or supporting scientific data is an insult to those of us who are and have been suffering. We deserve and expect more from our employer.

It is repeatedly stated that indoor fungal spores detected would not adversely impact employee health. Also stated is that that overall airborne spore concentrations in the building were less than those found out-of-doors while ignoring the types found inside and out. On page 10 of the DOT report Mr. Cecil states, "*The concentration of airborne fungal spores detected was considered insignificant and do not indicate elevated mold spore concentrations within the tower or base building that would be likely to adversely impact employee health.*" From attachment 2 "This statement is in direct contradiction to the conclusion offered by the same investigators on

the previous page where they state, “this investigative team is in agreement with the findings in the July 24, 2006, hazard evaluation by the National Institute for Occupational Safety and Health (NIOSH) which states: ...Mold contamination on drywall resulted in employees’ health concerns.” This situation has existed since some time in 2004 (possibly earlier), and can be expected to continue or recur until all leaks have been repaired, HVAC deficiencies corrected, and all mold sources located and successfully remediated. Until this remediation takes place, the employees who experience upper airway symptoms when exposed to mold may continue to experience them.”

Ms Peters states in her letter that; “*In addition, the measured airborne fungal spores detected within the facility do not indicate elevated mold spore concentrations that would be likely to adversely impact employee health.*”

Although the limited sampling conducted during the limited DOT inspection did show that overall airborne spore concentrations in the building were less than those found out-of-doors, the second part of the sentence is not justified. Even the DOT inspectors agreed that occupants who were suffering from mold-related health effects would likely continue to suffer until proper remediation was completed (page 9, DOT report). The simple fact that employees are reporting health symptoms when in the building and substantiating those claims with medical records which indicate that their problems are linked to mold makes the FAA’s assessment (that fungal spore levels in the building are not likely to adversely impact health) false and misleading. (Attachment 2)

From Mr. Sturgell’s memo, page 1:

*In fact, indoor concentrations were consistently lower than outdoor concentrations.*

The FAA and DOT investigators continue to place inordinate emphasis on the overall comparison of mold spore levels inside the structure to the number of spores identified outside the structure. Although this is an appropriate starting point, even a cursory review of the documents that are considered authoritative in the industry shows that it is not an ending point for the analysis of data related to potential fungal contamination and indoor air quality problems. Of primary concern is the fact that every major document that suggests a comparison of indoor an outdoor contamination levels states that a review should be done of the *types* of spores that are found inside and outside. By its statements the Agency is misrepresenting the facts. For example, the FAA would like to ignore that spore types were found inside the building that were not recovered from out-of-doors such as:

- *Stachybotrys* that was identified in four samples collected in room 928 and in one sample collected in room 428.
- *Aspergillus versicolor* found in the base building 1<sup>st</sup> floor office
- *Ulocladium* on samples collected in rooms 928 (2 samples), 428 (2 samples), and the TRACON. (Attachment 2)

On page 3 the investigators state, “*Other measured air quality data for temperature, relative humidity, carbon monoxide, carbon dioxide, and airborne particles, did not reveal any indicators of poor indoor air quality in either the tower or base building.*”

This statement is refuted by their data in Table 3 of Appendix D which provides particle count information. The afternoon monitoring in the TRACON revealed particulate

counts substantially higher indoors than out-of-doors (counts were 21 to 320 times greater indoors depending on the particle size range). The TRACON airborne particulate counts in the afternoon were between 110 and 558 times greater than corresponding particulate counts from that morning. Numerous studies have shown that elevated dust levels contribute to indoor air quality problems both as an irritant and as a vehicle for bacteria and other contaminants to stay suspended in the air. (Attachment 2)

On page 2 of the DOT report the inspector's state, "*The highest indoor concentrations of airborne fungal spores were noted in the unoccupied rooms 928 and 428 of the tower. This correlation is likely due to the air monitoring occurring after the wall cavities were cut open and molded materials observed.*" The second part of this statement is not true. The removal of the wall panels was conducted after the morning walkthrough visual inspection and sampling had been completed.

Page 10 of the report states, "*While the finding of Stachybotrys spores is significant because it is an indicator that there is or has been a chronic moisture problem in the tower, it does not pose a health hazard more than any other mold or fungal spore that individuals can become sensitized to.*"

This is a factually incorrect. Experienced professionals are aware that certain fungi have been shown to produce mycotoxins, poisonous compounds that are found in or on various parts of fungal organisms. The American Conference of Governmental Industrial Hygienists uses the distinction of fungi that produced mycotoxins as the basis for their definition of "toxigenic fungi". Their book, *Bioaerosols: Assessment and Control*, is recognized as a core document in the mold remediation industry and states that "the most frequently studied mycotoxins are produced by species of *Aspergillus*, *Fusarium*, *Penicillium*, *Stachybotrys*, and *Myrothecium*. (*Bioaerosols: Assessment and Control*, section 24.1.4) (Attachment 2)

Page three of Appendix D and page 10 of the DOT report give contradictory statements on spore propagation and the elevator shaft as follows (From Attachment 2):

Page 10 states, "*The shaft did not appear to be a conduit or active pathway for mold spores to travel within the facility.*"

The erroneous nature of this statement is supported by information elsewhere in the report. The investigators identified fungal growth on the back side of the elevator shaft liner boards (page 9). The investigators identified areas in the elevator shaft where cleaning of fungal growth had been completed (page 10). The investigators identified areas of the elevator shaft where evidence of moisture tracking was present (page 10). The investigators' photographs show that the elevator liner panels are held in place by metal tracks with no caulking or other sealing to prevent air from inside the wall cavity from migrating into the elevator shaft (page 1 of Appendix C). The investigators identified the presence of air supply and return vents in the elevator shaft (page 1 of Appendix C). The investigators were aware of the concept of the "stack effect" and that it can move contaminants throughout the building through the elevator shaft. (page 2 of Appendix A). Obviously, the weight of this collective information confirms the inaccuracy of the statement.

Page 3 of Appendix D states' *"The only connection would be the air moved through the piston action of the elevator car in the elevator shaft which contains relief vents allowing air to be discharged at the top and bottom of the shaft."*

This statement about relief vents conflicts with the statement on page 1 of Appendix C which states, "The elevator shaft had air supply and return vents."

They are basically stating that the elevator shaft is a conduit for mold spores to spread only within the elevator shaft. Since January 2005, we have been told on different occasions that the grills in the shaft are air supply and return vents and relief vents never receiving a conformation on either description. This is the first time we have received both statements in one document.

Page 11 of the DOT report:

*All recorded measurements were within legal, regulatory limits and within or insignificantly below ASHRAE recommended ranges.*

Seven average relative humidity measurements inside the building are provided on page 10 of Appendix D. Not one of the indoor measurements is within the ASHRAE recommended range for the season (40-60%). The closest indoor measurement was 23% below the ASHRAE recommended lower limit with most of the samples more than one third lower than the recommended value. Obviously, this data set would *not* be considered "insignificantly" outside the recommended values. (Attachment 2)

The following statements have been made by Mr. Sturgell and Zaidman. (Attachment 3)  
*"All project work to remediate and resolve previously identified mold and moisture issues at the DTW ATCT has been completed. Other than the concerns and allegations raised by NATCA, no indication or evidence of mold growth has been evident since completion of remediation and corrective actions in 2006 and 2007"* and *"Extensive mold and moisture remediation projects were completed in February 2007 An FAA review and assessment in June 2007 indicated no further mold issues exist in the facility."*

The Agency refused to conduct anything more than visual inspections for more than three years, refused to conduct employee health surveys, conducted an inspection in the dead of night without employee knowledge and refused to give their own inspectors past building condition reports and findings. The Agency has stated since February 2007 that no evidence or indication of mold or mold issues exist at the facility. Now that their piteous attempts and statements have proven to be inadequate and inaccurate, the only recourse they have is to demean employee health complaints and misrepresent their own data to distort the true condition of the facility and employees.

There are no less than 35 inaccuracies and contradictions of their own report and/or accepted industry standards as set forth in the submitted attachments. The Department of Transportation investigators may not have understood their own data, but a number of the results presented in their report (*e.g.*, fungal species identified indoors, relative humidity

levels, particulate levels, etc.) are clear indicators of indoor air quality problems and in my opinion are too obvious to misidentify.

The FAA states they will develop and implement projects to remove molded and water damaged porous materials identified from the inspection. They will do just that. Only remove what was found during their limited inspection. It was clear with the amount of mold discovered that a more extensive and detailed inspection is warranted before any work is performed. They are going to make the same mistakes. They are going to waste more money, further impact our health and still not properly correct the problem. They could have fixed this entire problem properly and correctly with the money they have spent to date. Just look at what they have done up to this point, they have to re-remediate the ninth and fourth floors. That alone speaks volumes. I guarantee they are going to try to just wipe down, spray and/or seal the mold discovered on any surface associated with the elevator liner and drywall over it.....again.

In April 2006 there was a report issued by DMJMH+N. (Attachment 7, pages 28 and 30) In this report it recommends the installation of dehumidifiers on floors 3 through 10 to dry out the air. Also in the report it recommends removal of the entire partition wall between elevator vestibules and unoccupied rooms on floors 5 through 10. Neither of these solid recommendations was executed.

This conduct raises serious concerns over how the inspection of other Leo Daly designed facilities will be conducted and how the problems encountered will be handled.

The GAO issued a report in September 2008 addressing indoor mold. (Attachment 8) In the report they state that, "*The 2004 Institute of Medicine report, Damp Indoor Spaces and Health, found sufficient evidence of an association between exposure to indoor mold and certain adverse health effects--that is, an association between the agent and the outcome has been observed in studies in which chance, bias, and confounding factors can be ruled out with reasonable confidence. These health effects include: upper respiratory tract symptoms, including nasal congestion, sneezing, runny or itchy nose, and throat irritation; exacerbation of pre-existing asthma; wheeze; cough; hypersensitivity pneumonitis in susceptible persons; and: fungal colonization or opportunistic infections in immune-compromised persons.*" The report goes on to state, "*According to the 2004 Institute of Medicine report, the evidence of an association between exposure to indoor mold and a variety of other health effects, however, is inadequate or insufficient--that is, the available studies are of insufficient quality, consistency, or statistical power to permit a conclusion regarding the presence of an association. The health effects for which there is inadequate or insufficient evidence of an association with indoor mold include: acute idiopathic pulmonary hemorrhage in infants; airflow obstruction in otherwise-healthy persons; cancer; chronic obstructive pulmonary disease; development of asthma; fatigue; gastrointestinal tract problems; inhalation fevers not related to occupational exposures; lower respiratory illness in otherwise-healthy adults; mucous membrane irritation syndrome; neuropsychiatric symptoms; reproductive effects; rheumatologic and other immune diseases; shortness of breath; and: skin symptoms.*" We have

experienced or have been diagnosed with almost every one of the above listed adverse health effects.

Due to civil taken against the contractors who performed prior remediation, both an expert for the defense, Mr. Kenneth Fischer, and the plaintiffs, Mr. Pinto were present for equal representation. At the end of the May 2008 DOT inspection an out briefing was held. When Mr. Black stated that the meeting was over I asked him to confirm we were done because I wanted to have a word with him. He said the meeting was over. So Mr. Black, Ms. Gretchen McMullen (union attorney) and I stepped out. Mr. Pinto stayed in the room. When we returned I again asked if the meeting was over and Mr. Black said yes. McMullen, Pinto and I then left and door was closed behind us. After we left, Gretchen returned to the room to ask Mr. Black a question. Mr. Fischer was still in the room where discussions continued after we were told the meeting was over and the door was closed behind us. I conveyed this to our civil attorney. He contacted the defendant's attorney and attachment 5 is what was received in response. It states, "*The afternoon session between the FAA, your representatives and Mr. Fischer was interrupted when Ms. McMullen, Mr. Pinto and Mr. Sugen decided to leave the conference room to confer in private.*" This is not true and is someone's way of explaining why Mr. Fischer remained in the meeting and why our expert did not. This conduct is unacceptable.

I approached my manager, who was also at the out briefing, and showed him the letter and asked if this is what he recalled. He said it was not. I told him what I remembered and he agreed with my recollection. It appears that Mr. Burkholder possibly received his information from the FAA/DOT concerning the events surrounding the meeting. I do not believe that Mr. Fischer would have given Mr. Burkholder this type of misinformation; he did not come across as that type of person. My managers' reaction to the letter seemed to be genuine and appeared he was not aware of its existence.

As for an inspection after the DOT's concluded; at approximately 2:40 pm on Tuesday, May 20 a controller assisted a group of individuals to the 9<sup>th</sup> floor. You cannot just select the 9<sup>th</sup> floor button on the elevator and go to the 9<sup>th</sup> floor. There is a series of buttons you must hit in order for the elevator to stop there. A group of individuals was on the elevator when the door opened on the junction level. They did not know how to take the elevator to the 9<sup>th</sup> floor. The controller who assisted them entered the code so they could stop off on the 9<sup>th</sup> floor. The controller did not recognize the people on the elevator and the fact that they did not know the code for the 9<sup>th</sup> existed is proof that they were not occupants or associates of the building. I do not know if Mr. Fischer attended that inspection, nor did I ever state that he had, but it did take place.

In Mr. Sturgell's memo the following is stated about improving communication:

*A. OST Recommendation (ATCT): Develop a mold remediation project communication plan for the facility to improve communication efforts between FAA management and union employees.*

*FAA Response: The FAA will develop a plan to improve communication. Action: Project communication plan implementation date is October 1, 2008*

If the meetings that have taken place in October and November 2008 are an indication of the FAA's improved communication, then the union can only expect more of what they have experienced since 2004. For example, during a November 5, 2008, meeting regarding mold and roof repairs, the Agency knew they were moving forward with the intrusive inspection of other parts of the building (the purchase order is dated September 22, 2008), yet the inspection was not mentioned by any of the attendees. If the Agency is sincere about improving communication and providing a safe workplace, they will avail themselves of the union's experts at the meetings and as participants in a task force. The occupants and the flying public deserve to have the safest approach to mold remediation planned and successfully executed. That can only be accomplished by including all of the stakeholders in the process.

I repeatedly requested a scope of work for the roof replacement project. I received one page of what is being called a scope of work dated 5/17/07 via email. I have been asking for the scope of work since the first meeting. My manager has told me, upon every request, that he has not received it either. I had to request the assistance of the OSC in getting a simple document. Instead, what did we did get, again a one page of what is being called a scope of work dated 5/17/07, amendments to contracts, documents we have already received and an air monitoring plan that is different from the one we already received from the Agency on November 17, 2008.

One Air Monitoring Plan has a date and a revision number, the other does not. In the back ground portion, the undated one states that we have been sensitive to air quality issues within their workspace. It is absent from the other. Other differences include "materials" instead of "mold", "fumes" instead of "odors", labor-relations in one and no mention of relations in the other and in both the deliberate non-acknowledgement of mold in the ceiling. Which copy was intended for whom? (Attachment 6) This is what the Agency is calling improving communication.

We requested a simple system to be utilized during the roof replacement project. The request was denied. The union offered to pay for the system. The request was denied. This reluctance to include reasonable protections such as a plastic barrier under the interior ceiling tiles is even more puzzling given the history of building contamination problems the FAA has experienced with roofing projects across the country over the past three years. In fact, the FAA's *Indoor Air Quality Implementation Guidance* dated September 25, 2006 was developed primarily in response to IAQ incidents from roofing projects. The guidance states:

*"Contaminants can also migrate from the work area through any openings such as pipe chases, abandoned duct, or holes in walls, floors, and ceilings. Any opening will convey contaminants if not sealed. Pay particular attention to the barrier between the construction area and the adjacent non-construction areas. For some renovation projects, the contractor may need to build an extensive barrier wall system between the occupied and construction areas. (page 32, item B)."* The Agency is not even capable of following their own guidance.



During the roof removal portion of the project, when the company began to tear up the old roof, it began to break into half dollar size pieces and blow onto the flight line where the aircraft are parked. If a proper inspection of the roof was conducted, this would have been known and avoided. This roof condition was part of the DOT inspection in May 2008 conducted by Mr. Cecil. The removal was halted until barriers were put up to prevent blowing debris. Three times during the project the roof leaked severely on the second floor.

In the May 2008 inspection, Mr. Cecil admitted the following: *“The highest indoor concentrations of airborne fungal spores were noted in the unoccupied rooms 928 and 428 of the tower. This correlation is likely due to the air monitoring occurring after the wall cavities were cut open and molded materials observed.”* Even though Mr. Cecil is wrong in the order of occurrence, he is not wrong with the fact that opening up wall cavities disturbs mold. Yet he moved forward in December 2008 knowing he would be disturbing mold with no environmental controls, with no regard to industry standards or employee health.

During Mr. Cecil’s December 2008 inspection, there were eleven violations of the industry protocols governing such inspections and are presented in attachment 4. They range from the most basic (e.g., refusal to use disposable suits to minimize transference of dust and cross contamination of fungal spores from one area to another) to the most dangerous (e.g., “cleaning” the HEPA-filter of the shop vacuum used for controlling dust during the removal of drywall by banging it on the floor so that the inside of the filter became contaminated and subsequent use of the vacuum dispersed contaminants at high velocity). Each problem identified with the inspection process is summarized with an indication of the source of the information. A brief description explaining why the item violates industry standards is also presented, followed by specific references to documents accepted as authoritative by mold inspection and remediation professionals which support the description of the deficiency. There were 11 CA1’s filed for a variety of symptoms to include headaches, chest tightness and respiratory issues resulting from his actions.

Another sad part of this hap hazard invasive inspection is there are three CIH’s involved; Mr. Cecil, Barbara Hebert and Wayne Vogelsburg and not one of them knew or even cared that there are industry standards, guidelines and protocols covering these types of inspections. All of them have the New York City Department of Health: Guidelines, OSHA: A Brief Guide to Mold in the Workplace, EPA: Mold Remediation in Schools and Commercial Buildings, ACGIH: Bioaerosols, Assessment and Control, Institute of Inspection, Cleaning and Restoration Certification, American Industrial Hygiene Association, the Texas Department of State Health Services, and the GAO report, to name a few, at their disposal. Yet they have chosen to ignore all of this information and reference material available to them.

This conduct raises serious concerns over how the inspection of other Leo Daly designed facilities will be conducted and how the problems encountered will be handled.

The reckless manner in which they continue to conduct themselves is not going to correct the problems. As with the poorly executed roof project, they will only create more problems with remediation projects, immediate and long term and further impact our health.

After our review of the report information, we believe it to be inaccurate and misleading and does not correctly identify the existing conditions or the efforts that FAA has taken to protect its employees.

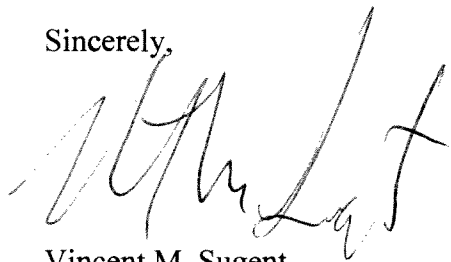
The information offered by the Agency to indicate that conditions are better inside the facility than documented by the DOT. As shown in our attachments, the DOT inspection does not correctly identify the existing conditions, primarily because the report skews the data to the positive side rather than being negative. In actuality, conditions inside the building related to indoor air quality are objectively worse than the DOT inspectors conclude.

The problems documented and summarized here are so numerous and severe that they call into question the competency of the individuals who designed and implemented the process. As such, the gross violations of industry protocols indicate that the FAA was either intentional in minimizing facility problems or that the Agency management is so inept in matters related to employees' health and environmental contamination that is not capable of selecting qualified contractors and supervising such critical operations.

Given the past incompetence related to mold in our building and based on the performance of the FAA contractors and project managers during the latest inspection and roof project, we fear that any future mold inspection or remediation efforts will put us at grave risk.

Thank you very much for your time and the opportunity to review, evaluate and comment on the report.

Sincerely,

A handwritten signature in black ink, appearing to read "Vincent M. Sugent". The signature is written in a cursive, flowing style with a large, prominent "V" at the beginning and a long, sweeping tail.

Vincent M. Sugent

**1**

Vince Sugent  
7768 Pleasant Lane  
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48197

12/20/08

Dear Mr. Sugent,

I have written to you on 11/19/08 regarding the multiple factual errors in the FAA report to the Office of the Special Counsel. You asked that I supplement that brief report with additional details focusing on five separate elements. These are:

1. My credentials
2. My methods in medicine and research
3. Findings in the Tower cohort
4. My discussion regarding the thoroughness (or lack thereof) of the FAA report
5. My discussion of the bias of the FAA report

I understand that you have obtained an extension in the deadline for this report, required in part due to my previously scheduled work. I further understand that recent work in the elevator shaft of the Tower has revealed extensive microbial growth. Given the ongoing presence of adverse health effects as my data documents objectively and the comments made consistently by Dr. Pinto that the building still was contaminated, this finding of a reservoir of inflammagens and toxigens is not surprising. Apparently, the only figures in this battle who didn't know about the true extent of the contamination were the administrators directed by the FAA to actuate a thorough investigation and contractors hired by the FAA to find the microbial growth

I have attached my CV to this report as Exhibit 1.

Before answering your specific questions, I want to place the discussion of human health effects acquired following exposure to a water-damaged building in perspective. The FAA stands alone as the only Federal agency that doesn't recognize human health effects acquired following exposure to WDB. As we sit here today, other than the FAA, there is no US governmental agency or international health organization found anywhere that agrees that occupancy of a WDB with microbial growth is a benign process. US governmental agencies, including HHS, NIH, CDC and EPA, are all involved with

extensive (and expensive) research that is seeking to unveil the mechanisms of human illness in this illness related to inhalation of materials in WDB. A recent GAO report, one that you have read (Exhibit 2), clearly establishes the plausibility of human illness from exposure to WDB and the need for targeted research.

Other than the FAA underlings you must argue with, the only people saying that illness from WDB is impossible are highly paid consultants (called Naysayers for this report) who testify for huge amounts of money paid to them by those defending mold claims. These consultants are a tightly knit group who act in concert by citing bogus scientific papers as valid and agree to produce consensus statements (they form their own consensus panel) that support their illogical and unsupported opinions for use in court proceedings. These consultants can produce no human health data to support their opinions. They have no studies to refute the mountain of data accumulated by researchers from around the world that show that not only does exposure to WDB cause (in some) illness, but the illness is readily defined by measures of inflammation, particularly innate immunity, acquired following inhalation. Yet the tiny cadre of Naysayers tells us that ingestion of massive amounts of moldy materials is the only way to acquire illness.

The collusion of these defense consultants has been exposed by the Wall Street Journal (Exhibit 3) in January 2007. Why is it therefore necessary to write this opinion *two years later*? Haven't there been enough exposures of the conspiracy, collusion and self-serving deception from the Naysayers to satisfy any reasonable finder of fact? See the recent paper written by James Craner MD published by the International Journal of Occupational and Environmental Health (Exhibit 4).

If this scenario sounds abhorrent to human decency, science and logic, it is. If it sounds like something out of the Tobacco Wars, with Big Tobacco telling lies to the public and the government for years and getting away with such fabrications, it is. One might wonder if the perpetrators of this national disgrace hail from Big Tobacco: they do. A metaphor from the reptile world may be apt there: once a forked tongue, always a forked tongue.

Take a quick look at the tobacco Legacy library at UCSF (<http://legacy.library.ucsf.edu>). Enter the names of the key members of the Naysayers. Now look at what work the Naysayers do (including business interests like Veritox where a profitable business was formed to carry out spurious testimony). Incredibly they are advising the military on how to deny health benefits for our soldiers!

Look for the tell-tale features of deception regarding mold illness in your upcoming battles. When you hear them, let all around you know that deception for gain, not Elvis, is in the building. Their stock in trade is sleight of hand dressed up as "evidence." (1) You will be told that ingestion is the source of illness. (2) You will hear that levels of mycotoxins (as if mycotoxins alone had anything to do with this illness) must be reached to obtain proper dose for illness. (3) You will hear that mold exposure follows traditional toxicologic principles of monotonic dose response relationships. (4) You will hear that

just because mold is present that fact doesn't mean the mold is potentially harmful. (5) You will hear that the science that shows the presence of WDB illness is flawed.

These assertions are each wrong. Each has no basis in truth or reality to support their intent. The intent is simple: avoid financial responsibility for those who own or insure moldy buildings. Truth is damned; don't lose the lawsuits, no matter how many people are hurt. If you didn't recognize Big Tobacco before, do you see it now?

All of those assertions, together with the expected attacks on the character and integrity of you, your co-workers, Dr. Pinto, me and anyone else who stands up for truth is apparently acceptable behavior in litigation. This leads to a legal system that can make illogical decisions unilaterally due to flawed health/scientific testimony flowing from the use of witnesses who are purely and simply "for hire." Rent an "expert" is a common feature of our legal system but has no place when the health of so many is jeopardized by this shirking of responsibility.

### **CREDENTIALS:**

My record as a treating physician for patients made ill by exposure to the interior environment of water-damaged buildings (WDB) may be unequalled in the USA. I maintain a roster of patients seen since 1997, collating symptoms, visual contrast sensitivity scores and laboratory results. To date, there are more than 7200 patients in my overall registry of biotoxin associated illness files, with more than 5100 of these people having been made ill by exposure to the interior environment of WDB. When I say "seen," I need you to know that these people have been patients at my office or at a clinic I have attended outside my office; each has been thoroughly evaluated and each has been offered treatment.

I am consulted by other physicians on a daily basis regarding management of mold illness. For sake of definition, I will use the term, "mold illness," in this discussion. This short hand term **does not imply** that the illness I am discussing solely comes from exposure to mold growing in WDB. By the term mold illness, I mean an acute or chronic illness acquired following exposure to the indoor air of a building with a history of water intrusion and amplified growth of toxin-forming microbes, including but not limited to fungi, actinomycetes, bacteria and mycobacteria; as well as inflammagens such as hemolysins, proteinases, beta glucans, mannans, mannosylated glycoproteins, volatile organic compounds (VOCs) and spirocyclic drimanes. It is the importance, largely seen in newly published research, of these inflammagens that has caused me to alter my nomenclature for mold illness from being a biotoxin associated illness to a chronic inflammatory response syndrome. Until 2006, I felt that biotoxin associated illness was the best descriptor of the illness. Newly published research confirms that the illness is much more than just exposure to mycotoxins, endotoxins, mycolactones or toxins of actinomycetes: the illness is an acute and chronic systemic inflammatory response syndrome. It is also the newly published literature that clearly shows how woefully inadequate the attempts of the FAA have been to "clear" the Tower as a source of illness.

When I say that other physicians consult me, that statement is confirmed by (1) the number of patients seen here who have been treated by physicians with my protocols; (2) the physicians coming for treatment of their own illness or that of their loved ones; (3) the physicians who call asking for help with diagnosis and therapy (4) the physicians who ask for me to lecture to their group and (5) the physicians who order “my” tests.

Along this line, we used to be able to track the number of health care providers who purchased the visual contrast sensitivity (VCS) test kits, but that data is no longer available after Stereo-Optical leadership changed and the inventor of the FACT version of the VCS kit, Dr. Arthur Ginsburg, died.

No body, especially not the FAA, can be considered to be a credible source of information regarding human health risks when its leaders deliberately ignore what is known about mold illness. I am accustomed to defense interests trying to ignore my work, but in this case, one of the leading mold illness research facilities in the world regarding the inflammatory effects of exposure to elements found in WDB is Dr. Pestka’s lab at Michigan State. It is remarkable to me that no one responsible for the safe work environment of the Air Traffic Controllers (read here the FAA) even bothered to contact this nearby academic resource. The FAA has ignored a situation caused by its unsafe premises, a situation that clearly impacts the health and mental acuity of some of its ATC personnel – people who hold the lives of thousands in their hands every day.

I have provided testimony to a variety of legislative bodies and governmental agencies beginning with the House of Representatives in September 2004. I testified at the request of Rep. John Conyers (D, Mich.), sponsor of House legislation regarding mold problems, including human health. I don’t see that there has been any involvement of Mr. Conyers office with this investigation. Perhaps I have missed the expected consultation from FAA with the leading mold legislator in the USA, one whose office is just down the road.

I testified January 2006 at the US Senate HEAL committee at the request of Senator Kennedy’s office. Following this testimony, it was arranged that I would examine patients in New Orleans with the agreement of the State of Louisiana, Homeland Security and FEMA. I published my findings on the website of St. Bernard’s Parish, confirming the density of human illness found in the 212 patients I examined compared to matched controls. NIOSH and the CDC eventually confirmed my findings, though not until 2007 and 2008. I note that CDC is now funding mold research using visual contrast sensitivity testing (VCS) and uses VCS in NIOSH investigations.

I provided testimony to the National Toxicology Program on 12/6/07. This agency is part of Health and Human Services. They invited testimony on human health as part of their \$10 million program to investigate health effects of inhalation exposure to WDB. They wanted to know what effects could be observed in rats exposed to WDB because then they might be able to hypothesize as to what health effects humans might suffer. Given the stated reason for the study, I told them I could, therefore, save them the \$10 million if they simply looked at what my (then) 4500 human WDB patients had in the way of

health effects shown objectively to be caused by exposure. These data include the densely ill cohort from the Metro Tower.

As my CV documents I have lectured by invitation to multiple academic audiences throughout the US on the subject of innate immune disturbances found in biotoxin associated illness patients. I have appeared on international panels to discuss mold illness. I have been asked by leading indoor hygiene/air quality organizations to lecture, including presentations at the American Indoor Air Quality meetings in October 2007 and the American Industrial Hygiene Association meetings in June 2008. I will present lectures in 2009 to the AIHA in June; Healthy Buildings in September and at the Johnson Conference of the ASTM in July.

In 2001, Dr. Michael Harbut, of Wright State University, convened a panel of US experts in an effort to develop a case definition for mold illness. I presented my findings along with six other experts. My focus was on biomarkers for the illness and treatment of the illness. This group didn't publish its findings. I published my case definition in 2003.

I have written numerous papers, some peer-reviewed and some others not. The three peer-reviewed papers most directly applicable to the Tower cohort include one published in 2005 in a compendium of papers from the 5<sup>th</sup> International conference on Bioaerosols and two published in Neurotoxicology and Teratology (2005, 2006). These papers are attached as Exhibits 5, 6, 7.

I have been invited to lecture at numerous academic associations as detailed in my CV, including the International Society of Testing and Measurement in 2006 and 2009.

I participate in several international groups of physicians who are collaborating to study illnesses such as these. The results of such collaboration are sharing of data; sharing of hypotheses; sharing of scientific investigation; and sharing of discussion of ideas for therapy.

Discovery Health Channel has agreed to host patients of mine on three separate programs. Filming began 12/19/08. One of these shows will feature the Belperron family, ignored and untreated by countless academic physicians from the Boston area until their mold illness was documented here at my office. Treatment followed diagnosis. The message of this show is plain: the illness is so obvious the only way it can remain undiagnosed is through a simple lack of knowledge.

I have written a detailed summary of the Tower cohort at the request of your Union in May 2008 (Exhibit 8). The only way that the illness of your cohort can continue unabated is by ignoring my report. If ignorance of science can be corrected by education, how then can we correct deletion by the FAA of critical evidence? Remember that in my May report I reviewed the cases of three of your cohort group who underwent diagnostic prospective re-exposure protocols that proved beyond any reasonable doubt that re-exposure to the Tower made each of these people quite ill, with laboratory testing providing objective confirmation of illness acquisition. This protocol provides



99.999999% certainty of causation of illness only by exposure to the indoor air of the Tower.

Pretending that published information doesn't exist, like the FAA has done by ignoring what I have proven, as opposed to open discussion of that evidence, even including cross examination, has no role in a modern society ruled by law. Imagine how we as a people would feel if we found out that a crime of massive proportion had been covered up by an agency of government. Words like obstruction of justice might arise. If instead the "crime" were changed to become deliberate sickening of exposed workers in the Tower, is the cover-up more or less egregious? In the end, the actions of the FAA are a cover-up.

## **METHODS:**

My approach to diagnosis and treatment of the complex illness syndromes presented by the cohort of ATC is no different from what I have been doing for tens of thousands of patients for more than 30 years: history, physical exam, lab analysis, treatment (intervention) and assessment of the results of each subsequent step following each successive intervention. This process is transparent: each step is documented to lead to the next in an orderly, logical fashion. This process embodies the scientific approach to medicine: always analyze results of action taken. Moreover, this approach is the standard process of the practice of medicine.

My work in diagnosis is not simply to say that if one is exposed to the Tower then therefore the Tower made that person ill. More precisely, other potential illnesses are considered. The peer-reviewed, published case definition provides the potential that the illness is from a common exposure. The results of interventions are then factored into the evolving concept of the illness with regard to verification of the underlying illness. Finally, causation (the Tower or not) is addressed by a repetitive exposure protocol that involves several steps with prospective interventions, each of which can be used to answer the epidemiologic principle of risk which in turn means causation. In simple parlance – did exposure to the Tower make them sick (again)? Did exposure to other environments make them sick (again)? This is the process of differential diagnosis applied to complex, chronic illness.

Each step of my treatment sequence is driven by documentation of physiologic abnormalities obtained from high quality, high complexity national laboratories. The process is rigorous; transparent; and reproducibly reliable.

Note the role of epidemiology in this cohort assessment. In order to prove illness causation, the prospective clinical trial alone suffices. Does the trial tell us what made your cohort members ill? No, it doesn't have to. What we have is the presence of unique abnormalities in every member of your group. Not all members have all elements involved. Each has enough, however, to meet a case definition. Each is a case. Any one of these documented laboratory abnormalities (symptoms cluster; VCS; HLA DR; MSH; MMP9; ADH/osmolality; ACTH/cortisol; C4a; VIP; VEGF) occurs in well patients less than once in 100 to 1000 times (1% to 1/10<sup>th</sup> of 1%). For a given patient to have all of

these abnormalities, or even just four would occur by chance in fewer than once in 1,000,000,000,000 times (one trillion). For this situation to exist by chance for all 15 cohort members would be occurring in one trillion times one trillion fifteen times over. That number is fewer than one in one times ten to the 180<sup>th</sup> power. And the FAA says that no one is ill: epidemiology does not agree.

Return to London in the mid 1850s for a minute. You are Dr. John Snow. You see that cholera is widespread, yet the only people who acquire that life-threatening disease are those who drink from one public well. Do you say clean up the well? Or do you say, I won't do anything until the exact identification of cholera is completed? If you chose to do the latter, then consider that the bacteria that causes cholera was identified *30 years later* and the *physiology of the illness was unveiled in the mid-1960s*. Perhaps you decide to identify the well as doing something/containing something that causes diarrhea. Will you simply add bleach, ignoring the flow of raw sewage into the unlined well head, walk away from London and announce from Paris that the well clearly is safe since you haven't been told of any more cases of diarrhea?

Now substitute the Tower for the well in this analogy. How many people will be sickened while the FAA waits? The solution is as obvious as stopping use of the cholera-contaminated well: close the Tower and clean it up correctly. Announcing from Washington that there are no more cases, when no attempt was made to find cases and ignoring my report documenting the presence of new acquisition of illness, without dealing with presence of microbial reservoirs and new sources of microbial contamination from condensation and ongoing leaks is no different from my cholera analogy above. Yet that is exactly what the FAA has been and is doing.

No one in epidemiology says ignore the public health risk. That is unacceptable. Instead we use the best consideration of *all data available at the time*, even if all possible data aren't in. There are countless examples of action taken throughout history based on the best possible available evidence. Doing nothing in the face of illness is unacceptable. Doing nothing when the illness has the potential to cause a calamity due to the specialized nature of the workplace is reckless and reprehensible.

Even worse, giving lip service to remediation by opening a few walls without containment or isolation (and finding lots of mold in every floor of the Tower) doesn't correct the problem. Indeed, it makes it much worse as now the contamination is spread far more efficiently. Please see Dr. Pinto's report of 12/8/08 for confirmation.

And wouldn't performance of a health survey of those controllers who have transferred away from the Tower make some sense to an unbiased but interested party? Those data are available too. Would the absence of return to health while a controller worked in the Tower, but who showed clear improvement only with removal from exposure make a difference to an unbiased but interested party?

Do the prospective clinical trial and the detailed health survey I completed provide reliable evidence? Yes; the methods I use are based on the scientific method, differential diagnosis and all the tools of modern molecular biology.

As an aside, the genomics assays taken from each of your cohort members will be analyzed in the coming weeks, as that technology is now available. We will add those results to the “best available evidence.”

My approach to use of biomarkers begins with literature searches based on current publications in immunology, microbiology, toxicology, epidemiology and many other disciplines of medicine. I am not board certified in any of these disciplines, yet I don't have to be board certified in any discipline to read medical literature. Based on a solid background in peer-reviewed medical literature, I then proceed to use testing to support or refute my hypotheses on pathophysiology of your cohort's illness. Over several years, by repetitive iterations of test, trial, error, inference, deduction, treatment and retesting, the process of sequential interventions I use has been refined by testing in the purest sense: what works to help people versus what doesn't. In the end I am a treating physician.

Those without knowledge of treatment of a mold illness patient cannot logically discuss either diagnosis or treatment with a basis in experience. The weight of such opinion is less than trivial: it becomes analogous to the little boy trying to watch a baseball game from the wrong side of the ballpark fence. He jumps up and down, catching microsecond views of the action, yet feels he can describe the game in detail when he returns home. The tale of the little boy becomes dangerous when he fills in the gaps of what he didn't know by making guesses and assumptions. Analogously, the opinion of mold Naysayers is dangerous when their guesses and assumptions laid forth as pure scientific fact are believed by those third parties who don't understand that jumping up and down is no substitute for years of firsthand experience.

It is the long term experience of treatment that provides the basis for ongoing use, or not, of given medical tests. Use of control groups, i.e. those (1) with exposure but no illness; and those (2) without exposure and without illness; provides grist for the statistical back-up of what my interventional methods provide. Since we can categorize patients based on symptoms, VCS, lab abnormalities and response to therapy, we can then look at patients before therapy to sort them as possible cases versus controls.

So in my research I first use a case/control model to establish an association. I then use prospective re-exposures to establish causation. As you can see in NTT 2, this paper is the only one in the world's literature that is allowed by editors to use the word causation. In my treatments, I use a transparent, sequential, allopathic approach. Each step I take has a clear trail of review of data and decision making process, based on the results of prior interventions.

#### **CASE DEFINITION:**

Proper discussion of an illness begins with a discussion of what do **all cases** have that **all non-cases** don't have. The following case definition has been peer-reviewed and published. It is used by treating physicians all over the country. The case definition of an adult mold illness patient contains two tiers as follows. Any diagnosis of environmentally acquired biotoxin illness, including that from mold, must include:

- (1) the potential for exposure;
- (2) the presence of a distinctive grouping of symptoms; and
- (3) the absence of confounding diagnoses and exposures.

This first tier of the case definition is adopted from the initial CDC case definition of *Pfiesteria* cases from 1998. The second tier of objective factors includes three of six of the following:

- (1) HLA DR by PCR showing susceptibility;
- (2) reduced levels of melanocyte stimulating hormone (MSH) in a properly performed specimen;
- (3) elevated levels in matrix metalloproteinase-9 (MMP9) in a properly prepared serum specimen;
- (4) deficits in visual contrast sensitivity (VCS);
- (5) dysregulation of ACTH/cortisol in simultaneously obtained specimens;
- (6) dysregulation of ADH/osmolality in simultaneously obtained specimens.

This second tier is adapted from similar use of different parameters in illnesses such as systemic lupus erythematosus and rheumatic fever, among others. The case definition is derived from looking at what thousands of mold illness patients demonstrated that none of the control patients demonstrated.

While others may not at first recognize "absence of confounders," an element of the first tier of the case definition, as being the same as differential diagnosis, those terms are functionally identical. The approach I use as a treating physician is to follow the standard process of medicine by performing a history, performing a physical examination and obtaining a battery of lab results. I then establish a differential diagnosis and initiate a plan for therapy. Results of therapy are then evaluated with additional modifications made as clinical data suggest. This standard medical approach, used and accepted by the general medical community, was used in the case of each of your cohort members. The differential diagnosis in this case is quite narrow: there are very few illnesses that could cause the constellation of abnormalities demonstrated simultaneously by each of your cohort members. A differential diagnosis demands complete recording of symptoms, an element missing in prior work-ups.

After having considered past medical history of individual members of the cohort and absent any other confounding occupational or residence exposures, and after reviewing the results of their comprehensive lab evaluation and then comparing those factors to the current grouping of abnormalities, one can disregard hypothetical diagnoses other than mold illness. Mold exposure is on the list of diagnoses in a differential list, as any

physician who *actually treats* mold illness knows. I am not swayed by the opinion of any person to discuss mold illness when that person has never been faced with correcting the illnesses these patients have in all their modalities of symptoms, visual contrast sensitivity deficits, innate immune abnormalities seen in blood test results, genetic factors and presence of normal findings in many commonly used laboratory tests.

Based on the findings from the history and physical, each cohort member met the first tier requirements for satisfying the case definition of a chronic, biotoxin-associated illness, in that she had the potential for exposure to toxigenic agents, typical multisystem and multisymptom illness and no confounding illness. The second tier for a mold illness diagnosis requires presence of three of six secondary criteria. Each member satisfied those tier requirements as well.

## FINDINGS IN THE TOWER COHORT

Please review the attachments to my May 2008 report. Each of your members satisfies the case definition. Each is a case. All but two members of the cohort followed my treatment protocols and improved with reduction of symptoms and improvement in their laboratory parameters. Compared to known controls, the differences between your cohort and non-cases are statistically different with an incredibly small possibility (low  $p$  value) that the differences were due to chance. This is the case/control arm of the science.

With treatment of the cohort showing improvement following use of an unabsorbed anion binding resin, cholestyramine (CSM), a medication that *cannot add anything* to the patient, but can only remove compounds, the process of differential diagnosis is extended. No other illness could explain each of the patients' symptoms and laboratory abnormalities. No other group of unique illnesses for a given individual could give the same satisfaction of the case definition that we see in the cohort.

Three members of the cohort agreed to undergo a repetitive exposure protocol, one that will give prospectively obtained data that in turn gives us the chance to validate *causation of illness* by exposure to the interior environment of the Tower. Under this "proof" protocol, a previously ill person, one that met the case definition and who then improved as shown by symptoms and lab results based on a treatment (CSM) that only removes toxins and adds nothing, becomes a volunteer. In your case the 3 volunteers stopped their medication while remaining away from the Tower. Then, despite exposure to the ubiquitous fungi of the world in their homes and public places, no-one reacquired the illness. Note that if the homes of the three were contaminated or if alternative exposures of the three were the source of illness, we would see changes in symptoms and lab results within three days of exposure away from the Tower without the protective therapy of CSM. We did not.

Then the three volunteers were re-exposed to the Tower for three days, still without the CSM medication. Each of the three reacquired the illness rapidly, with lab abnormalities

appearing in exactly the same time as predicted by my previously published work. We don't argue about what chemical/microbes were in the Tower: we simply prove that the exposure to the indoor air in the Tower caused the illness. Other exposures did not. The symptoms and lab tests recorded are the same ones that I have used in a previously presented protocol regarding sequential activation of innate immune elements (SAIIE).

Note that this protocol destroys any conceivable attempt to invoke a dose-response relationship. The illness reacquired in three days is exactly as that which appeared in three years. The illness isn't a linear dose response: it is the host response to small amounts of an initial offending/invasive antigen that evokes this phenomenally precise innate immune response. Please note the following discussion of what went happened to your cohort and then to your volunteers who suffered both illness acquisition and then reacquisition.

The work that our group, the Center for Research on Biotxin Associated Illnesses (CRBAI), has completed in collaboration with other experts on an international basis shows that the basic mechanisms common to all these biotoxin associated illnesses is activation of an ever-expanding biological cascade of systemic inflammatory responses following exposure. It is the inflammatory response from the innate immune system that distinguishes these patients from allergic responses. Allergic responses involve production of antibodies, largely of the IgE class. Allergic response is part of the acquired immune system and does not involve innate immunity. Chronic inflammatory response syndromes are not allergy and have nothing to do with allergy. The presence of chronic inflammatory response syndromes is manifested by a unique clustering of symptoms and laboratory findings, including genetic findings. These innate immune responses are all acquired following environmental exposure. These findings, taken together, are shared by no other illness.

The inflammatory process begins with antigen detection and proceeds to activation of exponentially expanding biological cascades of responses involving cytokines, vascular growth factors, transforming growth factor beta-1 (TGF beta-1), complement, hypoxia growth factors and more. It is this biological cascade of innate immune responses, beginning with pattern recognition of "foreign invaders" (antigen), leading to selective gene activation and activation of multiple arms of innate immune response elements that creates **the non-linear dose response seen in these illnesses.** We are not looking at one effect from one exposure; we are seeing multiple effects from that one exposure such that each subsequent effect amplifies the initial perturbation exponentially. By its very nature, inflammatory responses are dependent upon "signal transmission" from one part of a cell to another by intracellular messengers that in turn control activation of transcription (copying the DNA message) exponentially and then to the downstream effects of these gene products which are also exponentially increased. This clear distinction from the simple adage that "one input means one response," as seen in traditional toxicologic practice, further supports why **the idea of monotonic dose response has no relevance** to illness acquired following exposure to WDB.

The gene products turn on additional multiplying pathways that continue to recruit new “participants” as the process continues. Just as each drop of water in a cascade impacts and accelerates multiple new recruits and so on, thus the inflammatory cascade progresses. As opposed to the idea from toxicology that the “poison is in the dose,” the concept here is that the poison is in the initiation of the mega-multiplying response to a given signal. As Dr. Lewis Thomas has said repeatedly, “the response of the host makes the disease.” Said another way, Dr. Thomas rightfully tells us that “the reaction of sensing is the clinical disease” (NEJM 1972; 287: 553-555) and, “we are in danger from so many defense mechanisms, that we are in more danger from them than from the invaders.” This simple concept is lost on those Naysayers who attempt to deceive us that mycotoxins alone are the source of illness from exposure to water-damaged buildings. They want you to believe that a dose of poison is required for the action of the poison. The truth is that the host inflammatory response is the result of exposure to miniscule amounts of many poisons made from many kinds of organisms. The Naysayers want you to think that poisons don’t initiate cascades of host responses. They want you to completely ignore the wonderful data contained in thousands of academic papers that delineate the process of pattern recognition of foreign antigen followed by cytokine and complement responses; followed by hypoxia induced responses and differential gene activation.

Do not be fooled by those who would hide science from you and who would at the same time hide behind biased consensus statements from ACOEM and AAAAI that are masquerading as science. These repugnant shams have been exposed to the sunlight of truth by the Wall Street Journal and the International Journal of Occupational and Environmental Health.

Gene activity and receptor activation are not a “one and done deal” - they are ongoing if the stimuli for initiation of the inflammatory response continues, which it does in chronic exposures, both massive and not-massive, as occurs in patients spending time in WDB.

What we see in allergic reactions (an acquired immune response) is absence of a dose response relationship, based on individual susceptibility, and is paralleled by inflammatory responses of innate immune mechanisms. Just as response from a bee sting is not dose-related (some have no ill effects, some die from anaphylaxis), so too in innate immune mechanisms, the responses of anaphylatoxins, such as the split product of the fourth element of complement (C4a), and other inflammatory mediators, do not follow a dose response relationship.

C4a production is controlled by an enzyme, mannose binding lectin associated serine protease 2 (MASP-2), that *autoactivates*. This autoactivation provides for a more rapid and more extreme response of C4a production, the so-called “*sicker, quicker,*” phenomenon, as demonstrated by the C4a level of members of the Tower cohort (NB: some of your cohort had **C4a exceeding 60,000** ng/ml. Normal levels are **less than 2,830** ng/ml. There is no dose response relationship in autoactivation.

Many new mechanisms of action that apply to patients with illness acquired following exposure to WDB are currently being identified, particularly involving C4a and activation of C-type lectin receptors. Moreover we have recently found differential gene activation in cases of mold illness, activation not found in controls. Thus the era of hiring “mold-naysayers,” each relying on nonsensical attempts to ascribe monotonic dose response to inflammatory processes, is over.

The illness of the Tower cohort is identical in concept to the illness of thousands of other chronic inflammatory response syndrome patients. Once the inflammatory abnormalities initiated by the exposure to the interior environment of WDB progress, a final common pathway of illness is identified that generalizes to all sources of biotoxin associated illness, particularly illness acquired following exposure to WDB.

These reactions are based on the genetic susceptibility of the patient as well as the patient’s prior innate immune responses. Once a patient has been sickened by exposure to WDB, innate immune events occur faster and with greater severity following subsequent re-exposure. To paraphrase Dr. Lewis Thomas (op.cit.) the body’s defenses create the disease once the initial toxin activates them.

It may be helpful to review the complexity of the “chemical stew” found inside a water-damaged building (WDB) and the complexity of illness that follows exposure. Dose response relationships seen in illness caused by exposure of genetically susceptible patients to interior environments of water-damaged buildings (WDB) are not linear: there are so many variables of exposure and response that postulating a 1:1 relationship of total mass or number of mold spores (only one of the pathogenic elements present) required for a threshold exposure is nonsensical.

Consider that an effect or response (X) is related in a linear fashion to dose. (X) will then be equal to the sum of routes of exposure (A) plus contaminants (B) plus length of time of exposure (C) plus individual genetic susceptibility (D) plus individual prior exposure and change of susceptibility from that exposure (E) plus types of microbial organisms, each potentially acting synergistically with another (F) plus the types of inflammagens causing potentially exponential changes in c-type lectin receptors, especially dectin-1 and dectin-2 receptors (G). Particular compounds, including mannosylated glycoproteins, made by fungi can activate mannose receptors (H) that then alter the signal given to antigen recognition cells to respond to such antigens, further altering the processing of antigen in the intracellular components (endoplasmic reticulum and Golgi body) of such cells. X then is equal to the combined effects of A through H, each of which can cause *amplification*, an exponential result, *not addition*, of effects of innate immune responses. Moreover, the elements A through H are each themselves variable. The analysis gets worse for the linear dose-response advocates: there are interactions of A through H, some of which are synergistic and some involve differential gene activation as well as epigenetic phenomena. It is impossible to assume that response or effect X will be linearly related to variables, each simultaneously expressed A through H.



Naive assumptions about dose response being linear, as seen in two severely discredited “consensus” panels of defense consultants in mold litigation, do not have any validity in actual scientific fact. None of these hired “experts” do any research on diagnosis or treatment of patients from WDB, nor are they treating physicians so they have no first-hand experience in treating such patients (who according to their paid testimony do not exist).

We cannot analyze one component of exposure, namely mold spores, as suggested by non-treating professionals in various groups, including the FAA, and come to any meaningful conclusions from classical monotonic dose-response relationships.

Let me say this another way: the complex mixture of exposures and the complex alteration of hosts caused by prior exposure to WDB, combined with the complexity of pattern recognition responses of innate immunity, yields an extraordinarily amplifying immunologic response to even short-term, low level exposures to WDB.

Clear data has emerged in recent months that also implicate the role of “inflammagens,” such as endotoxins, VOCs, hemolysins, proteinases, spirocyclic drimanes and beta glucans as direct activators of innate immune responses, though from a different mechanism from that initiated by gene activation from toxigenic compounds. Any analysis of human inflammatory illness seen following exposure to WDB that does not include assessment of all elements of the known sources of inflammation cannot be considered authoritative. It is this “new knowledge” about additional sources of inflammation that has led our group to embrace the concept that mold illness is a chronic systemic inflammatory responses syndrome that includes elements associated with biotoxin exposure but we now must acknowledge that mold illness is more than just a biotoxin illness.

## **PRIOR TESTIMONY**

On 25 separate occasions I was allowed to testify (see Exhibit 9, deposition list), including Daubert challenges in: Michigan - two cases; Pennsylvania - one case; New Jersey - one case; and Mississippi - three cases. I have qualified to testify by the Supreme Court of Virginia, reversing exclusion after voir dire. This exclusion itself followed a denial of a motion in limine to exclude in the first place. In Maryland, a case of some notoriety, Chesson, is one in which two motions to exclude were denied, followed by a limited remand by the Supreme Court of the State back to the Circuit Court solely for the purpose of Frye. The Frye hearing was in late February 2008. No decision is made as yet.

I have testified over challenge in Colorado, North Carolina, Maryland, Michigan, Delaware, New Jersey, Mississippi, Virginia, Maine, Oregon and California.

I have been excluded in Florida in 2002 (my first case) in which my patient’s attorney (mistakenly in my view) didn’t introduce the concept of differential diagnosis. I was excluded in Ohio when the defense was able to persuade the judge that mycotoxins must

be demonstrated to be present in an ill patient to confirm illness. This is the so-called Geffcken approach, named for a case in California. Recently I was asked to submit an affidavit in another California case, Kerbs v. PUC, in which the defense asked for summary judgment based on Geffcken. My affidavit showed over 25 academic papers that refuted the defense idea that molds can simply be little warm fuzzy critters that never hurt anyone. More data coming from Sweden have reinforced this concept in that when researchers using sophisticated methods actually looked for mycotoxins in WDB, they not only found them, but found many kinds.

I have been excluded in Washington DC (Wright v. Fort Lincoln) when a defense consultant persuaded a judge that the lab findings I use could be caused by stress. This is simply and totally wrong. The judge then decided that my conclusion didn't pass Frye and therefore I was excluded. I have met no one else in the legal arena who feels that Frye applies to conclusions. Finally, I was excluded, also in Washington DC (Young), when a judge didn't question the defense consultant's allegation that no genetic information was relevant in these cases and that mold made people sick only following ingestion of a massive dose. This judge's decision is a classic example of why Daubert is illogical, asking a judge to be a gatekeeper regarding science she didn't understand. Her statements regarding science are so wholly flawed that her opinion has been appealed.

#### **Absence of thoroughness and presence of bias of the FAA report:**

I have previously discussed the individual and epidemiological significance of the density of positive findings in your cohort in this current report. I have presented objective data that are overwhelmingly confirmatory for the presence of illness in you and your co-workers. There is no logical objection to the validity of the confirmation of illness in this cohort. Not even defense consultants can sully the truth of the illness parameters your co-workers have. As you have already read in this report, the Big Tobacco mentality of the defense consultants will surely bring some counter argument of no significance; please don't forget to look for their stock phrases – the mantra of deception - that I invariably see in litigation.

Regarding bias, as you know, I live in Pocomoke, Maryland, a small town, where “every one knows” who is lying or not about items that involve many of the townsmen. I am accustomed to people telling the truth or being “outed” for public lying as only a small town can do. I guess my idyllic country life is different from yours because you are dealing with people who don't have the discipline of small town living when it comes to telling the truth.

Please ask your FAA administrators how they can **honestly say** (we will hold them to a Pocomoke standard of honesty) that *no illness in no employees is caused* by the building.

Can they **cite any data** to support their aberrant opinion? If they are saying that no illness occurred, then where is the transparent documentation of that statement? Saying “I don't see any illness,” when the FAA has their collective eyes closed isn't hard

evidence to support their opinion. Where is their data? What is the data? Why won't they come forth with data?

The answer to these questions is simple: the FAA has no data. Perhaps the FAA administrators feel its stature as a Federal agency provides them with some *carte blanche* to arbitrarily trample the rights of your cohort to work in a safe environment. Given the essential issues of public safety in this matter, all of this must see the sunshine of public awareness.

We may not accept the opinion of the defendant that "everything is fine in the building," when so many objective measures of human illness are present in your cohort and when any modicum of attempt to find reservoirs of microbial growth, as was done beginning 12/8/08, will be rewarded with finding what you and Dr. Pinto have been saying is true since 2005.

Given the **absence** of any health survey of all the potentially exposed workers and given the **absence** of any reasonable evaluation of the affected cohort, I am amazed that the FAA can make any statement at all about the health effects of exposure to the work environment of your cohort. You and others must ask – "what can the FAA cite as confirmation that the Tower does not cause this proven illness in so many of its workers?"

I am concerned that the concept of "thorough" is being ignored in this case. My definition of thorough involves concepts like "complete, comprehensive and considered," as an indicator of an attempt to look at an issue from all sides.

I have reviewed the comments made by Dr. Pinto in his letter to you of 11/24/08. I have reviewed the letter of Congressman Dingell to RA Sturgell, Acting Administrator of the FAA, dated 12/5/08. Taking all of my comments and theirs together, there is no question but that the FAA has failed in their duty to the Tower cohort and therefore to the American public who use the services of the Tower daily.

I submit this report to you with reasonable medical certainty. Should you need access to copies of over 1000 peer reviewed academic papers that support my opinion regarding the science in this issue, please contact me promptly so that my staff can start the copying process. In the mean time, here are two Exhibits of the annotated references (Exhibits 10, 11; Current WDB References, Volume I and II).

Please contact me if you have additional concerns that I can address in a supplement to this report.

Sincerely,

Ritchie C. Shoemaker, MD

## Curriculum Vitae

1/3/09

Ritchie C. Shoemaker, M.D.  
DOB: 06-13-51 Charlotte N.C. US Citizen  
Home address: 2448 Lakeland Drive, Pocomoke, Maryland 21851

### Current Employment

Ritchie C. Shoemaker MD. PA. DBA Chronic Fatigue Center  
President, Chronic Neurotoxins, Inc  
Medical Director, Center for Research on Biotxin Associated Illnesses (501-c-3, non-profit corp.)

**College: Duke University 1969-1973 Magna Cum Laude**  
Major in Molecular Biology, Zoology. Minor in Philosophy.

### Theses:

- Microtubule control of phototactic responses in *Euglena*, 1971.
- Localization of DNA replication sites in *Tetrahymena* by electron microscopy, autoradiography and tritiated thymidine counts, 1972.

### Medical School: Duke University 1973-77

Editor – “First Contact” Medical Student Primary Care Journal

#### Theses

- Molecular basis for muscle injury and repair 1974
- Ventilation-perfusion abnormalities in chronic lung disease 1975
- Epidemiology of *streptococci* 1976

### Residency 1977-80

Family Practice Residency, The Williamsport Hospital, 777 Rural Ave, Williamsport, PA 17013

### Board Certification ABFP 1980

MD License 1980 to present. D24924

### Professional Memberships

- AMA 2001-present
- ACSM 1977-1996
- American Society of Bariatric Physicians 1998-2001
- American Academy of Family Physicians 1999-2001
- American Society for Microbiology 1999-present
- American College of Occupational and Environmental Medicine 2/6/05-2/6/06
- American Society of Tropical Medicine and Hygiene 11/05-present
- American Industrial Hygiene Association 2008-present
- International Lyme and Associated Disease Society (ILADS) 2000-2003
- International Association for Chronic Fatigue Syndrome 4/05-present
- Maryland Medical Chirurgical Association (Med Chi) 1980-present

- Maryland Academy of Family Physicians 1999-2001

#### **Practice Experience**

- 7/1980-9/1982 NHSC Pocomoke, Maryland.
- 10/1982 to present, Private Practice, Pocomoke, Maryland  
Outpatient Family Medicine  
1604 Market St 10/1982-5/2002  
500 Market Street, Suites 102,103 5/2002-present  
Pocomoke City, Maryland 21851

#### **Teaching Appointments**

- Milton Hershey Medical School 1980-90, Physician Assistant Preceptor;
- Johns Hopkins Medical School 1981-86;
- Duke University Medical School 1983-85;
- Wilmington College Nurse Practitioner Program 1996-1997;
- University of Maryland Medical School 1997-present.

**NB: These appointments are for community preceptorships only and are not salaried**

**Hospital Affiliation**, Active Staff, McCready Hospital, Crisfield, Maryland 1980-1986; 1997-6/2003, courtesy 1986-1997; and 7/2003-present, pure outpatient practice (no demands to reduce privileges).

#### **Medical Society**

- President, Somerset County 1982-86
- Member, Worcester County 1986-1997
- President, Somerset County 1998-present

#### **Credentialed By**

- Medicare, Medicaid, BCBS, MDIPA, DHP, Alliance, Prudential, Principal, Aetna American Health Care, Infor Med, PHCS, Trigon, many others.
- Never denied credentials

#### **Additional work experience**

Shoemaker's Bench, Antique Refinishing and Restoration 1966-present. Historic Remodelers of the Eastern Shore 1981-present. Wetland Consultant 1983-present. Visiting Medical Lecturer 1991-present.

#### **Website**

[www.chronicneurotoxins.com](http://www.chronicneurotoxins.com) 4/00-present

[www.moldwarriors.com](http://www.moldwarriors.com) 10/04-present

#### **Books published**

- Pandora Boxer (philosophy) 1972 (out of print)
- Hematology for Residents 1978 (out of print)
- Weight Loss and Maintenance; My Way Works, Does Yours?
  - First printing 1996; Second printing 1998.
- Pfiesteria: Crossing Dark Water
  - First printing 1997; Second printing 1998
- Desperation Medicine
  - 1/15/01 Second printing 6/06
- Lose the Weight You Hate
  - First printing 2/02; Second printing 10/05
- Mold Warriors 4/05; second printing 12/2007
- Discovery Nature Trail, Pocomoke City Maryland: A Guide for Walkers 1/09
- Books in preparation:

From Farm to Estuary; A Chesapeake Bay Ecology Cookbook  
Surviving Mold: Life in the Era of Dangerous Buildings

**Columnist** Worcester County Messenger weekly newspaper; “What’s Cooking” 1994-2001

**Editorials Published**

Daily Times of Salisbury (many), Maryland Environmental Health Newsletter, Outlook (op-ed) Washington Post, Baltimore Sun, Multiple Florida Newspapers, Runoff Magazine, CCA Journal, Feature article with Duke Alumni Magazine, Family Practice News, Internal Medicine News, OB-GYN News, Delmarva Farmer (many), Asbury (NJ) Press (Op-ed).

**National television appearances**

Good Morning America, BBC, Australian Broadcasting System, NBC News, CBS News, Discovery Health Channel: “Dangerous Catch” and “Is Your House out to Get You;” CNN, ABC News; Discovery Health Channel Planet Green; filmed three pilots 12/08 on red tide; ciguatera; water-damaged buildings.

**Local TV stations**

Multiple: Salisbury, Md., Washington, DC, Baltimore, Md, Stuart, Florida, Philadelphia, Pa, Leesburg, Florida, New Orleans, Louisiana

**Publications:**

- “The Death of Edgar Allen Poe” What Really Happened MMJ 4/97
- Diagnosis of *Pfiesteria* Human Illness Syndrome, Maryland Medical Journal 1997; 46(10): 521-3.
- Treatment of Persistent *Pfiesteria* Human Illness Syndrome, MMJ 1998; 47(7): 64-66.
- Co-author, Grattan et al, Lancet 1998; 352: 532-41. Learning and memory difficulties after environmental exposure to waters containing *Pfiesteria* or *pfiesteria-like* dinoflagellates.
- Hippocrates 2000; February, Viewpoint Housecall: A crisis in the air restores a physician’s faith in medicine
- Possible Estuary-Associated Syndrome, Environmental Health Perspectives 2001; 109(5): 539-545. Grand Rounds in Environmental Medicine
- Residential and Recreational Acquisition of Possible Estuarine Associated Syndrome: A New approach to Successful Diagnosis and Therapy, Environmental Health Perspectives, Special CDC *Pfiesteria* Supplement, 2001; 109S5; 791-796.
- How Sick is Your Building and What You can do About it, Filtration News, June, 2001
- Getting Inside Sick Building Syndrome, Filtration News, July, 2001
- American Diabetes Association, Diabetes 2002; 51(2) Supplement: A133. Use of pioglitazone to prevent intensification of persistent symptoms following cholestyramine treatment of patients with Post-Lyme syndrome
- A Primer in Sick Building Syndrome: Lessons from the Somerset County District Court, Filtration News June, 2002
- Lyme Times 2002; 33: 13-16. Lyme, an Infectious Disease and a Neurotoxin Illness.
- Lyme Times 2002; 33: 38-40. Someone Has to Tell; a patient’s story.
- Environmental Health Perspectives 2002; 110: A121-A123, letter. Visual contrast sensitivity, response.
- Environmental Health Perspectives 2003; 111(1): A18-19, letter. Neuropsychologic Testing versus Visual Contrast Sensitivity: Response.
- Medical Conditions Arising From Environmental Conditions, interview, Filtration News, July 2003
- Moldy buildings: It’s a jungle in there. Filtration News, Nov 2004
- Neurotoxicology and Teratology, January 2005. R. Shoemaker and D. House, A time-series of sick building syndrome; chronic, biotoxin-associated illness from exposure to water-damaged buildings. Neurotoxicology and Teratology 2005; 27(1) 29-46.
- Sick Building Syndrome in water-damaged buildings: Generalization of the chronic biotoxin-associated illness paradigm to indoor toxigenic fungi; 5/2005; Pg 66-77 in Johanning E. Editor, Bioaerosols, Fungi, Bacteria, Mycotoxins and Human Health. R Shoemaker, JM Rash, EW Simon.
- To Build a Safe House, Filtration News, June 2005

- Defining Sick Building Syndrome in adults and children in a case-control series as a biotoxin-associated illness: diagnosis, treatment and disorders of innate immune response, MSH, split products of complement. IL-1B, IL-10, MMP9, VEGF, autoimmunity and HLA DR; American Society of Tropical Medicine and Hygiene; 12/14/05
- C3a and C4a: complement split products identify patients with acute Lyme disease; ASTMH, 12/4/05
- MMP9, visual contrast sensitivity, C3a, C4a and HLA DR: New diagnostic aids in acute and chronic Lyme disease, ASTMH, 12/14/05
- Atovaquone plus cholestyramine in patients co-infected with *Babesia microti* and *Borrelia burgdorferi* refractory to other treatment, *Advances in Therapy* 2006; 23(1): 1-11. Shoemaker RC, Hudnell KH, House DE, van Kempen A, Pakes GE for the COL 40155 Study Team.
- American Society for Microbiology Biodefense Research meeting 2/16/06 Hyperacute physiological changes following prospective exposures to environmental sources of trichothecene toxins in water-damaged buildings (WDB): a Stealth toxin is revealed.
- SBS and exposure to water damaged buildings: time series study, clinical trial and mechanisms; submitted, *Neurotoxicology and Teratology* 3/27/06, accepted for publication 7/31/06. R Shoemaker, D House. Internet location: doi: 10.1016/j.ntt.2006.07.003. Published as *NTT* 2006; 28: 573-588.
- Mold Illness after Katrina: The truth you haven't heard. *Filtration News*, May, June 2006
- AAAAI; rebuttal to Bush position paper, endorsed by >100 PhD and MDs; submitted 5/06, accepted 7/8/06, *JACI* 2006; 118: 764-766. Co-authors: Harriett Ammann PhD; Richard Lipsey PhD; and Ed Montz PhD.
- ASTM International, Section D22, Boulder Colorado 7/27/06. Bringing science to bear on moisture and mold in the built environment. "Defining causality of a biotoxin-associated illness by exposure to water-damaged buildings: a case control series."
- ASTMH 11/06 Defining chronic ciguatera illness by abnormalities in innate immune responses: final common pathways of biotoxin-associated illnesses
- ASTMH 11/06 Eight year follow-up of patients with Possible Estuarine Associated Syndrome (PEAS): symptom reduction didn't result in cure
- International Association for Chronic Fatigue Syndrome 1/14/07. Treatment of elevated C4a in patients with CFS using low doses of erythropoietin safely reduces symptoms and lowers C4a: a prospective clinical trial.
- International Association for Chronic Fatigue Syndrome 1/14/07. Treatment of CFS patients with elevated C4a using low dose erythropoietin corrects abnormalities in central nervous system metabolites and restores executive cognitive functioning.
- International Association for Chronic Fatigue Syndrome 1/14/07. Treatment of CFS patients with low levels of vasoactive intestinal polypeptide (VIP) and shortness of breath with tadalafil improves exercise tolerance and pulmonary artery pressure responses to exercise.
- Inside Indoor air quality 4/15/07, with King-teh Lin PhD. *Filtration News* May/June 2007.
- Sonoma CFS symposium 8/12-16/07. Shoemaker for dummies.
- 10/3/07 Allergy Clin Immunol Int: J World Allergy Org 2007 Supplement 2. C3a and C4a: Complement split products identify patients with hyperacute Lyme disease.
- 10/14/07 IAQA, Las Vegas, Nevada. Sequential activation of innate immune elements: a health index for people re-exposed to water-damaged buildings.
- ASTMH 11/07. Correction of central nervous system metabolic abnormalities, deficits in executive cognitive functioning and elevated C4a: a clinical trial using low dose erythropoietin in patients sickened by exposure to water-damaged buildings.
- ASTMH 11/07. Sequential upregulation of innate immune responses during acute acquisition of illness in patients exposed prospectively to water-damaged buildings.
- ASTMH 11/07. Defining mold illness in children: a chronic inflammatory illness with distinctive biomarkers.
- International Archives of Allergy and Immunology, 2008; 146: 255-261. C3a and C4a define acute Lyme disease. Shoemaker RC, Giclas P, Glovsky M.
- Indoor Environmental Communications 1/08. Shoemaker RC and Lin, Kin-the. The ever-expanding data base on pathophysiology of illness caused by exposure to water-damaged buildings.

- Characterization of chronic human illness associated with exposure to cyanobacterial harmful algal blooms predominated by *Microcystis*. Shoemaker RC and House D, in cyanobacterial Harmful algal blooms: State of the Science and Research Needs, edited by HK Hudnell, US EPA; ISOC HAB. Advances in Experimental Medicine and Biology, volume 619, 2/08.
- Sonoma CFS symposium 9/24-9/28/08 Innate immune responses define pediatric illness in patients sickened by exposure to water-damaged buildings.
- Sonoma CFS symposium 9/24-9/28/08 TGF beta-1 in treatment of autoimmunity in chronic inflammatory illness acquired following exposure to water-damaged buildings associated with HLA DR by PCR.
- IACFS 3/09 (accepted); Innate immune responses define pediatric CFS.
- IACFS 3/09 (accepted); TGF beta-1 in treatment of autoimmunity in CFS associated with HLA DR by PCR.
- AIHA 6/09 (accepted); ERMI correlates with Abnormalities in Innate Immunity. Toronto, Ontario.
- ASTM 7/09 Johnson conference; (submitted) Genomics and proteomics of patients with illness acquired following exposure to water-damaged buildings (WDB): differential gene activation leads to a definable inflammatory illness in acute and chronic cases
- ASTM 7/09 Johnson conference; (submitted) Innate immunity, MR spectroscopy, HLA DR, TGF bet-1, VIP and capillary hypoperfusion define acute and chronic human illness acquired following exposure to water-damaged buildings.

#### Peer reviewer:

Environmental Health Perspectives; Special CDC *Pfiesteria* issue, 2001; comment on fungal illness 2007  
 Environmental Research; 2003, 2004  
 Journal of Nutritional and Environmental Medicine 2007 (small colony variants. MARCoNS)  
 Heart and Lung 2007 (*Babesia* as FUO)  
 Health Policy. 2/08. The relationship between sick building syndrome and perceived indoor environmental quality in apartment buildings

#### Graduate degree examiner

University on Newcastle, Australia 10/04. Delta hemolysins production of long-term *Staphylococcus epidermidis* cultures. Hai Lin, Environmental and Life Sciences.

#### Presentations:

- 4/10/00 Regional Meeting American Society of Microbiology, Lewes, Delaware.  
A new approach to diagnosis and treatment of chronic Lyme disease: vision, cytokines, and cholestyramine.
- 5/10/00- Chico, Calif. Lyme disease as a Neurotoxin and Cytokine-Mediated Illness
- 9/21/00 Lewes, Delaware. Center for the Inland Bays “*Pfiesteria* Human Illness Syndrome and Blue Green Algae Syndrome: Emerging Estuarine Health Threats”
- 9/24-25/00 Tallahassee, Florida. Florida Department of Environmental Protection Diagnosis and Treatment of a chronic neurotoxin-mediated illness from an unknown microbe at the Casteen Roads.
- 11/4/00, Princeton, New Jersey. Annual Scientific Conference of the Lyme Disease Association Hypoperfusion of retina and neural rim of optic nerve head as biomarker for the chronic neurotoxin-mediated illness of Lyme disease.
- 10/25/00 American Psychiatric Association, Annual Meeting, Philadelphia, PA. Environmental Acquisition of Psychiatric Illness
- 10/30/00 Annual Meeting of American Society of Tropical Medicine and Hygiene, Houston, Texas.  
A new approach to diagnosis of chronic *ciguatera* illness and successful treatment with cholestyramine
- 6/01/01 Delaware Medical Society, Lewes, Delaware. Approach to Diseases Caused by Neurotoxins
- 11/09/01 Lyme Disease Association, Princeton, NJ. Acute Lyme Disease
- 11/10/01 ILADS. Princeton, NJ, Co-infection with apicomplexans and Lyme, role of extrachromosomal plastid DNA and persistent symptoms
- 11/30/01 International Society of Neurobiology, Seattle, Washington. Neurotoxins and solutions to questions raised by chronic fatiguing illnesses



- **2/14/02** American Academy of Environmental Medicine, St. Louis, Missouri, an 8 hour tutorial. Challenges to Clinical Paradigms: Cytokines, neurotoxins and vision
- **6/24/02 8th** International Symposium of Neurotoxicology, Brescia, Italy. Co-Chair (with Ken Hudnell, Ph.D.) of Biotoxin Session. Three lectures: Sick Building Syndrome: Possible Association with Exposure to Mycotoxins from Indoor Air Fungi (to date, the largest study on SBS in the world's literature, 103 patients and 43 buildings); Use of pioglitazone to prevent intensification of persistent symptoms following cholestyramine treatments of patients with Post-Lyme Syndrome: the multisite trial. Metallic Taste, a marker of neurotoxicity.
- **9/17/02** Environmental and Occupational Health Sciences Institute, Occupational Medicine Residency Program, Robert Wood Johnson Medical School, Piscataway, NJ; Neurotoxin mediated illnesses: A new approach to medically unexplained symptoms.
- **9/20/02** International College of Integrative Medicine, Grand Rapids, Michigan. Neurotoxins, hypothalamic hormones and chronic fatiguing illnesses
- **11/15/02 ASTMH** Denver, Colo, Use of atovaquone and cholestyramine in patients co-infected with *Borrelia burgdorferi* and *Babesia microti*, refractory to all antibiotic regimens (GlaxoSmithKline funded research).
- **12/6/02** Faculty member, National panel, Wright State University, Michigan. Interim clinical guidelines for the diagnosis and treatment of mold associated medical disorders; presented, "A new paradigm for diagnosis and treatment of Sick Building Syndrome, a biotoxin associated illness."
- **2/20/03 Univ Connecticut**, Pathobiology seminar, "Biotoxins, vision, inflammatory cytokines and hypothalamic hormones in primary care medicine: From Post-Lyme Syndrome to Sick Building Syndrome, a new paradigm for medically uncertain symptoms.
- **7/11/03 Harris Chain of Lakes Restoration Commission**, Lake County, Florida. St. John's River Water Management District, invited lecture: Human health effects following exposure to toxigenic cyanobacteria: diagnosis, treatment and environmental implications
- **9/10/03 5th International Conference on Bioaerosols, Fungi, Bacteria, Mycotoxins and Human Health**, Saratoga Springs, NY (peer reviewed). Sick building syndrome in water damaged buildings: Generalization of the chronic biotoxin associated illness paradigm to indoor toxigenic fungi (156 patients in 150 buildings).
- **9/25/03 13th annual Environmental Information Association. Myrtle Beach, SC**, keynote. The clear link between mold exposure and human health: What you need to know
- **10/30/03 Mold 5 National Institute of Building Sciences, Building envelope and thermal environment committee**, San Diego, Cal, keynote, Human health effects from exposure to toxigenic fungi: The proof of causation is here.
- **11/25/03 Crossing boundaries: Medical Biodefense and Civilian/Military Medicine; First International conference, sponsored by George Mason University, National Center for Biodefense and Georgetown University**, Arlington, Va. Diagnosis and Treatment of Biotoxin Associated Illnesses: Learning for the future from Today's Example
- **12/02/03 Special Report to the Federal Research Committee on Gulf War Illness**. Gulf War Illness as a Biotoxin Illness: Report of a cohort of exposed veterans.
- **1/10/04 Invited speaker, National Center for Biodefense, George Mason University**. Physiology of chronic biotoxin illness.
- **4/30/04 American Society for Microbiology, Integrating Metabolism and Genomics**, Montreal, Quebec. Linkage disequilibrium of HLA DR genotypes, autoantibodies and wingspan/height ratios in patients with environmentally acquired toxigenic illness
- **5/25/04 104<sup>th</sup> General meeting of American Society for Microbiology**, New Orleans, Louisiana. Melanocyte Stimulating Hormone (MSH) Deficiency in Chronic Fatigue Syndrome Associated with Nasal Carriage of Coagulase Negative Staphylococci
- **6/22-23 2004 Mealey's National Mold Litigation Conference**, Orlando, Florida. Invited speaker, Emerging medical issues in mold illness.
- **10/8/04 American (now International) Association for Chronic Fatigue Syndrome**, Madison, Wisconsin. Chronic Fatigue Syndrome: Lessons from the Biotoxin Pathway
- **12/4/04 Johns Hopkins University, Occupational and Environmental Medicine Conference**, Chronic Illness from Water-Damaged Buildings: Just Another Stop Along the Biotoxin Pathway

- **12/9-10/04 Mealey's Construction Defect and Mold Litigation Conference, Las Vegas, Nevada,** Why the Institute of Medicine Report is Stale
- **9/6-10/05 International Symposium on Cyanobacteria and Harmful Algal Blooms, US EPA** Research Triangle Park, NC. Characterization of chronic human illness associated with exposure to cyanobacterial harmful algal blooms predominated by *Microcystis*
- **11/2/05 Mid-Shore Lyme Disease Association,** Acute and chronic Lyme disease: lessons from the Biotoxin Pathway. Easton, Maryland.
- **2/16/06 Drexel University School of Medicine, Philadelphia, Pa. Visiting professor series.** It's a Long Way from Pocomoke
- **3/4/06 CAM Expo East, NYC, NY.** Physiology of fibromyalgia and Chronic Fatigue Syndrome
- **3/25/06 Mid-Shore Lyme Disease Association,** Easton, Md. Rise of the innates; Lyme disease 2006: lessons from a billion years ago
- **4/1/06 Third Annual Mold Conference,** Houston, Texas. Mold Illness: So What do We Really Know?
- **5/6/06 American College for Advancement in Medicine,** Dallas Texas. Lyme disease update: Rise of the innates
- **6/28/07 Quarterly Medical Director's Conference;** Department of Mental Health Services, State of Virginia, "Inflammatory central nervous system illness caused by environmental exposures presenting as psychiatric illness."
- **8/6/07 International CFS leaders conference,** Sonoma County, California. "Shoemaker for dummies."
- **12/6/07 National Toxicology Program NIEHS, RTP, NC.** Physiologic disturbances and causality in patients with illness acquired following exposure to water-damaged buildings
- **4/12/08 Lyme and autism, LIA Foundation,** "What biotoxins do to inflammation and brains." Fort Lee, NJ
- **6/2/08 AIHA continuing education program Round Table,** Minneapolis; Steve Vesper, Greg Boothe, Gil Cormier King teh Lin co-panelists. Integrating Field, Laboratory and Clinical data for the IAQ investigation. Comparison of indices of human health and building healthy: SAIIE meets ERMI.
- **6/15/08 7<sup>th</sup> International Conference on Neurotoxicology, Costa Rica.** Human health effects of acute and chronic exposure to toxigenic cyanobacteria. EPICOH-NEUREOH.
- **10/4/08 ICIM XLIX Congress,** Pittsburgh, Pa. When Hygeia meets Panacea.

#### Posters:

- |                 |   |
|-----------------|---|
| <b>12/10/98</b> | Georgetown Center for Food Policy, Washington, D.C.<br>1. <i>Pfiesteria</i> ; Diagnosis and Treatment<br>2. Environmental Factors Contributing to <i>Pfiesteria</i> Blooms  |
| <b>6/15/99</b>  | Maryland Academy of Family Practice Annual Meeting<br>1. <i>Pfiesteria</i> Human Illness Syndrome<br>2. Use of Troglitazone in Treatment of Hyperinsulinemic Obesity  |
| <b>5/01/00</b>  | Association of Research in Vision and Ophthalmology, Fort Lauderdale, Florida.<br>1. Use of Contrast Sensitivity in Diagnosis of Chronic Neurotoxin-Mediated Illness  |
| <b>6/4/00</b>   | US EPA National Health and Environmental Effects and Research Lab<br>1. Human Health and Environmental Indicators<br>2. Possible Estuarine Associated Syndrome, Diagnosis and Treatment   |
| <b>10/18/00</b> | CDC National Pfiesteria Conference Stone Mountain, Georgia<br>1. Evidence of Successful treatment of the chronic neurotoxin-mediated illness of Possible Estuarine Associated Syndrome<br>2. Possible <i>Cylindrospermopsis</i> Associated Human Illness Syndrome |
| <b>6/20/01</b>  | 81 <sup>st</sup> Meeting of Endocrine Society, Denver, Colorado<br>1. Use of Rosiglitazone in Treatment of Hyperinsulinemic Obesity (SmithKlineBeecham funded research)   |
| <b>6/15/02</b>  | San Francisco, American Diabetes Association<br>1. Use of Pioglitazone to Prevent Intensification of Persistent Symptoms following Cholestyramine Treatment of Patients with the Post-Lyme Syndrome (Takeda Pharmaceuticals North America, funded research)       |
| <b>11/15/02</b> | Denver, Colorado, ASTMH   |

1. Differential Association of HLA DR by PCR Genotypes with Susceptibility to Chronic, Neurotoxin-Mediated Illnesses
- 9/10-9/12/03 Saratoga Springs, NY 5<sup>th</sup> International Conference on Bioaerosols, Fungi, Bacteria, Mycotoxins and Human Health.
1. Sick Building Syndrome, diagnosis and treatment of a biotoxin associated illness with multiple biomarkers: prospective confirmation of causation in 156 patients from 150 buildings using 11 different biomarkers
- 10/8/04 American Association for Chronic Fatigue Syndrome, Madison, Wisconsin
1. Chronic Fatigue Syndrome: Lessons from the Biotoxin Pathway;

**CME Speaker:**

- 6/20/00 Maryland Academy of Osteopathic Physicians, Ocean City, Maryland Annual Meeting.
1. A physician's approach to diagnosis and treatment of chronic neurotoxin-mediated illnesses.

**American Society of Bariatric Physicians:**

- 4/10/99 Phoenix, Arizona Regional Meeting
1. Use of troglitazone in treatment of hyperinsulinemic obesity.
- 10/30/99 Las Vegas, Nevada. Annual Meeting
1. Rational use of the Glycemic Index
- 5/10/00 Portland, Oregon, Regional Meeting
1. Environmental acquisition of defects in insulin receptor physiology
- 10/4/00 Washington, D.C. Annual Meeting
1. Hypoperfusion, tumor necrosis factor alpha and environmental acquisition of diabetes and obesity
- 4/15/01 Houston, Texas.
1. Use of Rosiglitazone in treatment of Hyperinsulinemic Obesity in Non-Diabetics
- 4/15/99 WV Academy of Physician Assistants, Davis, WV.
1. The No-Amylose Diet

**Congressional testimony:** House of Representatives 9/22/04 staff briefing and press conference Member John Conyers; Health effects of exposure to water-damaged buildings; US Senate staff meeting 1/12/06, Human health effects of mold exposure, Senator Edward Kennedy.

**Maryland Senate testimony:** Commentary on indoor air quality task force at invitation of Senator Rob Garagiola 3/29/06

**IRB Studies**

- a. SmithKline Beecham 9/99 IRB: Quorum  
Use of rosiglitazone in treatment of hyperinsulinemic obesity.
- b. Glaxo Wellcome 10/00 IRB: Copernicus Group  
Use of Mepron (atovaquone) in patients with *Borrelia burgdorferi* coinfecting with *Babesia microti* refractory to antibiotics and cholestyramine.
- c. Protocol IND 63,993 Use of Melanocyte Stimulating Hormone in Patients with Chronic Fatigue
- d. Protocol SBS 51326 Use of visual contrast sensitivity testing and cholestyramine therapy in diagnosis and treatment of environmentally-acquired, chronic, neurotoxin-mediated illness from indoor exposure IRB Copernicus 7/23/02
- e. SPL-CFS 123 Treatment of Chronic Fatigue Syndrome in patients with nasal colonization of multiply antibiotic resistant, biofilm-forming species of coagulase negative Staph using nasal instillation of diluted Staphage Lysate® IRB Copernicus 11/27/03
- f. Retrospective use of laboratory results in a report of group results: Complement split products C3a, C4a, MMP9 and visual contrast sensitivity are markers for acute acquisition of Lyme disease. IRB Copernicus Group, 9/8/05
- g. Retrospective use of individual laboratory results in a report of group results: Defining Sick Building Syndrome in adults and children as a biotoxin-associated illness. IRB Copernicus Group 10/20/05

- h. Retrospective use of individual laboratory results in a report of group results: Eight-year follow-up of Possible Estuarine Associated Syndrome cases and controls. IRB Copernicus Group 11/7/05
- i. Erythropoietin lowers C4a, corrects refractory symptoms and normalizes selected abnormal brain chemistry in patients with illness acquired following exposure to water-damaged buildings. IRB Copernicus Group CFS 50-2006 10/18/06.

**Lecturer** Medical Mutual Insurance Company 2/00 Risk Management in Primary Care

#### **Awards**

- American Academy of Family Practice, Finalist, National Family Practice Physician of the Year, 2002
- Maryland Family Practice Doctor of the Year 2000, MAFP
- Maryland Governor's Volunteer of the Year for the Environment, 4/97
- Local Governor's Advisory Committee for Innovation and Restoration of Chesapeake Bay 1994
- State of Maryland Bill Jones Environmental Award 1995
- Maryland Dept. Agriculture Conservator of the Year 1994
- Good Neighbor Award 1993
- Dr. Henry P. and M. Page Laughlin Award for Distinguished Authorship/Editorial Award 5/98
  - (Maryland Medical Journal)

#### **Commencement Speaker**

- Malcolm Grow Medical Center (Andrews AFB 6/98)

#### **CME Speaker**

- Audio Digest Vol. 47 No. 22 6/99 Washington D.C.
- Audio Digest Vol. 48 No. 14 12/99 Washington D.C.

#### **Internet links**

- <http://www.ImmuneSupport.com/library/showarticle.cfm/id/4291/searchtext/neurotoxins/>.
- <http://www.ImmuneSupport.com/library/showarticle.cfm/id/3990/searchtext/neurotoxins/>.

#### **Patents applications, provisional**

- PAI-1 and TNF as markers for the inflammatory basis of type II diabetes, obesity and atherosclerosis. US Provisional patent Serial no 60/356,541
- Use of alpha melanocyte stimulating hormone to treat patients with chronic fatigue syndrome. US Patent Provisional Serial no.: 60/356/539.
- Use of thiazolidinediones as an adjunct to diet in treatment of hyperinsulinemic obesity; importance of the No-Amylose diet. US Patent Provisional Serial no.: 60/356,690
- Pretreatment of patients with Post-Lyme Syndrome with pioglitazone before use of cholestyramine prevents intensification: Vision, neurotoxins and cytokines. US Patent Provisional Serial no.: 60/333,335

#### **Completed Patent application**

- "Methods for treating or inhibiting Sick Building Syndrome, Post-Lyme Syndrome, and/or Chronic Fatigue Syndrome." Inventors Ritchie Shoemaker MD and H. Kenneth Hudnell, Ph.D.  
PCT Patent application no PCT/US03/04137

#### **Health Investigations and treatment, cohorts of patients exposed to toxigenic fungi (> 4 patients)**

- Wabash Valley Surgical Center, Terre Haute, Indiana. 2/08. 9 patients.
- FAA Air Traffic controllers, Metro Tower, Detroit, Michigan. 7/07. 17 patients
- Glenwood Springs, Colorado. Robert Cordova, leader of cohort. 7/28/06 14 patients.
- Fraternal Order of Police; Queen Anne's County, Maryland 5/06 8 patients
- St. Bernard Parish, Louisiana, on the Scotia Prince 2/06; with Richard Lipsey, PhD; firefighters, homeless adults and children, Parish employees, ship's crew and health care workers. 212 patients.

- Residences at the Ritz; Ritz Carlton 1155 and 1111 23<sup>rd</sup> St NW Washington DC 10 patients
- Newmarket Courthouse, Toronto, Ontario, Canada. 12/04-present; 300 employees at risk
- International Marine Terminal, Portland, Maine. 11/05. 16 patients.
- Topsail (NC) School District. 9/04. 260 patients.
- Prince Georges County Fraternal Order of Police; Oxon Hill, Md. 6/03. 52 patients.
- Hampton Bays United Free Elementary School, Long Island, NY. 5/03. 44 patients.
- State Iowa Dept Corrections, Davenport, Iowa. 1/03. 10 patients.
- Baltimore-Washington Conference United Methodist Church, Columbia, Md. 12/02. 55 patients
- Eastern Correctional Institution, Westover, Md. 5/02. 11 patients.
- Accomack County (Virginia) Social Services Building. 4/02. 11 patients.
- Multi-Services Building 201 Baptist St., Salisbury, Md. 4/02. 20 patients.
- Police Department Berlin, Md. 4/02. 5 patients.
- Somerset County Library, Princess Anne, Md. 2/02. 13 patients.
- Somerset County Circuit Court, Princess Anne, Md. 10/01. 5 patients.
- Somerset County District Court, Princess Anne, Md. 6/01. 12 patients.
- Worcester County Board of Education Newark, Md. 5/99. 8 patients.
- Wicomico County Sheriffs Department, Salisbury, Md. 2/99. 25 patients.

#### **Papers in preparation**

- Biofilm formation makes multiply antibiotic resistant coagulase negative staphylococci pathogens in low MSH patients
- HLA in illness and disease: equilibrium dissociation and biotoxin illness susceptibility

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11/19/08

Dear Mr. Sugent,

I am accustomed to seeing half truths, deliberate mis-statements, deletion of pertinent facts and outright lies made by defense interests in mold litigation. I did not expect such behavior to be replete in a document written by a Federal agency to the Office of Special Counsel. I found ample evidence of such unacceptable behavior in documents you asked me to review. What a disgrace.

Earlier this week, you have asked for a detailed rebuttal of several areas of concern in documents filed with the Office of the Special Counsel by representatives of the FAA. Today you asked that I briefly identify such distortions of truth, understanding that I will be writing to you in detail next week. You supplied me with a letter to you from Kevin Wilson, OSC, dated 11/6/08; a letter to OSC from Mary Peters, Secretary of Transportation dated 10/22/08; a response from the FAA dated 9/17/08 (Zaidman), complete with two attachments; and a copy of the OST Investigative report dated 8/21/08. This document includes the Cecil IAQ report from May 2008.

I am not aware of any other of the more than 10,000 documents regarding this case that I have reviewed personally having been submitted to the OSC. I see no medical evidence submitted by the FAA to refute my findings previously submitted. I do not find any attempt by the FAA to obtain direct medical evidence from on-site investigation regarding the health of their employees in this case.

I find a litany of statements that must be rebutted in this short response.

My specific comments are as follows:

1. Wilson provided an extension to December 5 to complete my final comments.
2. Peters readily admits ongoing moisture and "mold" problems in the Detroit Metro Tower (Tower). She admits that over four and one half years of attempted correction of water intrusion has not been successful without detailing the trivial nature of such attempts and the intransigence of those responsible for building envelope maintenance, the first line of defense against water intrusion, to admit the existence of a health risk to employees who occupy the building.
3. Peters fails to acknowledge the opinion in 2008 of essentially every Federal agency regarding exposure to water-damaged buildings: If you can see mold, clean it up or get out. There is no room for negotiation with that dictum. All she

would have needed to do was to look at the mold sections of the CDC, EPA, or HUD websites to access such information rapidly. She could have looked at the comments of NIEHS, the Minister of Health of Canada or the World Health organization if she chose to do so. All concur: fix the mold. The FAA has seen the mold in the Tower since 2004; still sees the mold in the Tower but (1) hasn't ever removed its personnel from harm's way and (2) hasn't corrected the moisture intrusion problem that is the source of the health concern despite admittedly spending over \$1,000,000 in "remediation." What did they accomplish for the million dollars? Nothing. There still isn't any reasonable health survey done on the entire cohort of workers. No one would tolerate such incompetence in private industry.

4. Peters ignores what actually is known to make people sick in water-damaged buildings (WDB). She would have us ignore what is standard in the field on indoor air quality and human illness: the sources of illness aren't just a few mold spores floating around waiting to be sampled. The source of illness are toxigenic microbes including, but not limited to fungi, bacteria, actinomycetes and mycobacteria; as well as inflammagens including but not limited to beta glucans, mannans, glycosylated proteins, VOCs, proteinases, hemolysins and spirocyclic drimanens. Failure to discuss the elements of fragments of such microbes ignores the fact that **99.8%** of toxigenic and inflammatory substances are found in such fragments as compared to **0.2 %** of such compounds found on intact spores. Peters would lead the unknowing reader of her comments to think that measuring mold spores has relevance to human health. That is a fabrication of enormous importance in this field, invariably used by defense interests in litigation. For Peters to suggest to a body such as the OSC that spore counting provides a basis for assurance of safety to exposed people is beyond comprehension. Imagine a military commander trying to defend his actions by saying that his troops were protected from injury because 0.2% of the weapons shot at them were shown to be harmless by his consultants. One could reasonably ask about the effects of the other 99.8% of the sources of injury. I would ask the Honorable Ms. Mary Peters if she is knowingly deceiving the OSC or is she being naively manipulated by unnamed others into trying to deceive the OSC.
5. Peters confabulates that no recordable injuries have occurred since July 2006. I have personally submitted documents to FAA health personnel on many patients affected by illness and have submitted a comprehensive report to the Union on 5/14/08 on a cohort of 15 patients with such illness. Furthermore, the report contained the results of a prospective acquisition trial in three employees that proved beyond any reasonable doubt and to a medical degree of certainty that exceeds 99% that re-exposure to the interior working environment of the Tower *caused* a recrudescence of their illnesses, treated successfully earlier, within *three days*. I have emphasized the word *caused* as that word may be used in prospective trials such as this one and then three days, as the illness is not subject to any monotonic dose response relationship ever discussed in peer-reviewed literature.
6. Peters suggests a way out of the problem by suggesting we believe that the FAA will now provide comprehensive indoor air quality services to survey every wall

- cavity and fix all aspects of the Tower. I am reminded of the concept embodied in: "Fool me once, shame on you. Fool me twice, shame on me."
7. Peters suggests that proper isolation and containment techniques be used when she cites the EPA approach to remediation but then when she suggests the roof be replaced, she somehow isn't aware that the work plan in place for such removal and replacement does not contain any isolation and containment to protect the workers. I cannot agree that her absence of such discussion about the roof is either candid or forthcoming.
  8. Peters fails to discuss on-site health evaluations, including before- and after work-exposure parameters for the Tower cohort, yet she then suggests that the flawed designs for Towers be assessed for moisture. Wouldn't it make sense to look for sickened people in the other Leo Daly Towers? Screening for the illness is incredibly quick, taking less than 10 minutes per person to assess if they need more studies, such as lab testing or not. I suggest to you that an honest approach from Ms. Peters would be to ask if the people are sick and not question whether or not the building alone is sick. If the FAA finds people are sick and since they have a duty to the personnel and the public both, wouldn't it make sense to safeguard the public by protecting the personnel?
  9. Peters attempts to outline the next steps of remediation are less than authoritative. No one in actual real world practice would suggest such trivial attempts at building study. Finding six bulleted goals sounds like a thorough approach to building health, but Peters forgot the people; she forgot to mention the value of an ERMI test (EPA Relative Mold Index); she forgot about particle counting; she forgot about the EPA Microbial Research Lab just down the road in Cincinnati has shown the validity of testing for the inflammagens I discussed earlier.
  10. Peters failure to bring 2008 standards of building evaluation and 2008 standards of human health evaluation into this cohort is indefensible.
  11. The FAA 9/17/08 report (called Zaidman here) is even worse than Peters. He suggests that the mere expenditure of huge sums of money is relevant to what we expect in the private venue: results. Zaidman deceives the OSC by suggesting that asking 45 people to work on a project makes a difference. Did the \$1,000,000 make a difference in prevention of water intrusion and microbial growth in 2008? No. I have a different term from the FAA idea of "diligently pursued the remediation" for the manpower and money used in the Tower. I would call it wasted time, wasted money, and the result is wasted human health.
  12. Zaidman would have us believe that his "strong" belief is persuasive that the building is safe. He forgot to include any human health data; any thorough assessment of what is in WDB that makes people sick and he chose to ignore the volumes of data compiled by Dr. Pinto. I don't see what gives him the basis for believing strongly that the building is safe as he has presented nothing to convince anyone of the factual basis for his comments.
  13. Zaidman didn't find elevated indoor spores either. See #4 above. What difference does a nice comfy 0.2% of findings being normal provide when 99.8% of the problem isn't assessed? I will review the further fallacy of using spores traps for any decision making in my additional discussion of this case.



14. How can Zaidman defend his sanctimonious comment about the FAA being dedicated to providing a safe environment? Just look at what the employees have had to do to even try to bring some attention to their plight.
15. I remain concerned that Zaidman refers to Attachment 1 where he endorses "assessment" of removal of affected carpet in the Tower. No one in the real world assesses carpets in WDB: they get rid of them in densely sealed bags to prevent contamination of others indoors and then the carpets are put in a landfill or burned. What basis does the FAA have to "assess" carpets when everyone else alive in the field says the carpets are trash?
16. It is this fundamental lack of trust engendered by similar comments made by similar Zaidman-types from the FAA, and I have read a lot of similar ridiculous comments over the years, that make me apprehensive that the FAA has lost all touch with both truth and integrity regarding the health of its employees.
17. Zaidman says the FAA will develop plans to improve communication between management and the Union, and then takes away the medical from one of the people made the most ill by the Tower. Is that an example of good communication? I don't think so.
18. When Zaidman says that he will encourage employees to report illness, will Zaidman's good communication come into effect then as well as in 17 above?
19. Zaidman's most reprehensible comment is that the roof and water damaged materials will be removed immediately. Aren't remediation teams supposed to remove water-damaged materials safely?
20. The FAA attachment 2 continues his deliberate misrepresentation. I will rebut use of old ideas as pertinent in 2008 (they are not) and the reliance of *medical record review* by NIOSH in 2006 as an indicator of *current* health status of the employees. The FAA can cite no objective health parameters to show the employees who say they are ill actually aren't.
21. The discussion of the use of the Dri-Eaz has no foundation to support it and is contrary to documents supplied in January 2005. In point of fact, the sudden creation of massive bioaerosols in the building concomitant with the use of Milgo SR may be more pertinent than the actual chemical itself.
22. I will particularly discuss item three in attachment 2 in my detailed report. I will particularly attack the deception of Zaidman in presentation of acceptance of my work in courts around the country. Zaidman presents limited information from two cases in Washington DC, one from 2006 (Wright) and one from 2008 (Young).
23. Zaidman conveniently forgets to note that the logically flawed decision he cites in Young has been appealed. The appeal is based on the series of errors made by the judge in her interpretation of the science. Perhaps the most egregious is the assumption by the judge that the opinion of the defense consultant, one that is based on the premise that all mold illness comes from ingestion, is correct. That opinion is shared only by small group of defense consultants and not by anyone in government, practice of medicine involved with treating such patients or industrial hygiene. Accepting the defense testimony about ingestion, and not inhalation, as is accepted by all experts in the field, in Young is like agreeing that one plus one is three. If you agree that the math is correct, then there is no limit

to what can be proven. The judge also ignored the (over 1000) academic papers submitted to her that support my methods and opinions. He further forgets to note that in Wright the judge accepted a defense consultant confabulation, made under oath, that "stress causes lab changes in innate immunity identical to those of affected patients." That statement is nothing other than a lie.

24. Zaidman suggests that "while the FAA commissioned the inspection, we now believe that Dr. Shoemaker's methodology (sic) and work to be unreliable." I am at a loss to see what they actually mean here. I didn't inspect anything. The FAA never commissioned me to do anything. Since Zaidman didn't know anything about me, accepted as true a flawed analysis from two judges and never even mentioned the prospective exposure clinical trials performed on three patients that *prove causation* of illness, I suggest that his comments be given incredibly little weight.
25. Zaidman in his omniscience decides that my work is unreliable. He has no foundation for that assumption, just an arbitrary and indeed, capricious decision. The process of decision making must be transparent. His is not.
26. My work has been peer-reviewed and published, with a double blinded, placebo controlled clinical trial. I have treated over 5000 patients with illnesses similar to those of the Tower cohort. I have been invited to national and international conferences on WDB. I have testified in the US House and the Senate. I have written numerous papers and six books in the field.
27. My testimony has been challenged on 29 occasions. It has been accepted 25 times in Daubert, Frye and various other named state standards for admissibility.
28. My opinion has been validated by the State Supreme Court of Virginia (Odaris; 9/08).
29. The Cecil report does not present any ERMI testing and solely relies on trivial fungal cultures obtained from air sampling. These data have no meaning except that they are being used to shade the truth.
30. The above opinions are submitted to a reasonable degree of medical certainty and without bias.

Ritchie C. Shoemaker, MD



**2**



November 24, 2008

Mr. Vince Sugent  
7768 Pleasant Lane  
Ypsilanti, MI 48197

RE: Factual Errors in DOT Mold Report  
Wonder Makers Environmental project GC08-7927

Dear Vince:

In conjunction with our recent discussions we reviewed the report provided by the Department of Transportation (DOT) entitled *Investigation of Mold and Moisture at the Federal Aviation Administration Detroit Metropolitan Air Traffic Control Tower Facility*. This report is dated August 21, 2008, although we just received it from you on November 12, 2008. Four appendices were included with the FAA report, including a copy of the report prepared by the industrial hygienist hired to assist the DOT inspector.

While a more comprehensive evaluation of the document and the FAA's response will be forthcoming, you asked for a specific list of items that we deem to be factual errors. The items on the following pages include specific statements from the document and explanatory information that shows why they are false. The information is presented in the order in which the statements appear in the report.

The attached sheets document 22 instances in the report and appendices where factual errors are identified. Please note that we also found a number of errors in the report relating to the omission of critical information. Although intentional omission of relevant data is also a serious error, we only included examples of stated problems with the contradictory facts in this letter.

Sincerely,

Michael A. Pinto, CSP, CMP  
CEO

## **Review of Department of Transportation Mold Report for Items that are Not Factual**

Each false statement is reprinted in italic type, followed in regular typeface by the facts that support the conflicting position.

Page 2

*The highest indoor concentrations of airborne fungal spores were noted in the unoccupied rooms 928 and 428 of the tower. This correlation is likely due to the air monitoring occurring after the wall cavities were cut open and molded materials observed.*

The second sentence in this statement is not factual as all invasive activities, including the removal of the wall panels, were conducted after the morning walkthrough visual inspection and sampling had been completed. This sequence of events can be verified by other participants in the investigation.

Page 3

*Other measured air quality data for temperature, relative humidity, carbon monoxide, carbon dioxide, and airborne particles, did not reveal any indicators of poor indoor air quality in either the tower or base building.*

This is inaccurate as Table 3 of Appendix D provides particle count information. The afternoon monitoring in the TRACON revealed particulate counts substantially higher indoors than out-of-doors (counts were 21 to 320 times greater indoors depending on the particle size range). The TRACON airborne particulate counts in the afternoon were between 110 and 558 times greater than corresponding particulate counts from that morning. Numerous studies have shown that elevated dust levels contribute to indoor air quality problems both as an irritant and as a vehicle for bacteria and other contaminants to stay suspended in the air.

Page 4

*The visual inspection included an invasive inspection of the wall cavities using a borescope, and a visual inspection of the elevator shaft from the roof of the elevator car. Although it was reported that the DOT contract industrial hygienist had a borescope present it was never used during the investigation. This observation is supported by the inspection description found on page 7 of Appendix D which states: "Drywall panels were physically removed from the fourth and ninth unoccupied levels corresponding to the discolored or cleaned areas in the elevator shaft."*

Page 6

*For a time FAA did conduct inspections of the elevator shaft liner for the return of moisture and mold growth.*

Although the short lived elevator shaft inspection process did involve a visual review for mold growth, no moisture meters or other testing equipment necessary to determine the moisture content of the porous materials was ever utilized. In fact, on numerous

occasions the Agency specifically prohibited NATCA's experts from collecting moisture measurements during the inspections.

Page 10

*A visual inspection of the tower elevator shaft revealed no visible mold growth.*

On page 1 of Appendix C, the photo log and visual observations from the site visit, it states, "Areas where mold had been cleaned away from the wall board liner were lighter in color than areas where past mold growth was present." These two statements are logically inconsistent. If there was no visual evidence of mold growth then how could they tell where past mold growth was present? Visual observations by other members on the inspection team confirmed areas of staining and/or mold growth on the elevator shaft liner. The lack of thoroughness of the elevator shaft inspection would also support the contention that visible evidence of fungal contamination was identified since on page 7 of Appendix D it states that the "elevator car was stopped at every other level." Since each level in the center of the tower is approximately the height of two typical building stories, this means that the inspectors were looking for signs of fungal growth 30-40 feet above them.

Page 10

*The shaft did not appear to be a conduit or active pathway for mold spores to travel within the facility.*

The erroneous nature of this statement is supported by information elsewhere in the report. The investigators identified fungal growth on the back side of the elevator shaft liner boards (page 9). The investigators identified areas in the elevator shaft where cleaning of fungal growth had been completed (page 10). The investigators identified areas of the elevator shaft where evidence of moisture tracking was present (page 10). The investigators' photographs show that the elevator liner panels are held in place by metal tracks with no caulking or other sealing to prevent air from inside the wall cavity from migrating into the elevator shaft (page 1 of Appendix C). The investigators identified the presence of air supply and return vents in the elevator shaft (page 1 of Appendix C). The investigators were aware of the concept of the "stack effect" and that it can move contaminants throughout the building through the elevator shaft. (page 2 of Appendix A). Obviously, the weight of this collective information confirms the inaccuracy of the statement.

Page 10

*The concentration of airborne fungal spores detected was considered insignificant and do not indicate elevated mold spore concentrations within the tower or base building that would be likely to adversely impact employee health.*

This statement is in direct contradiction to the conclusion offered by the same investigators on the previous page where they state, "this investigative team is in agreement with the findings in the July 24, 2006, hazard evaluation by the National Institute for Occupational Safety and Health (NIOSH) which states: ...Mold contamination on drywall resulted in employees' health concerns." This situation has existed since some time in 2004 (possibly earlier), and can be expected to continue or recur until all leaks have been repaired, HVAC deficiencies corrected, and all mold

sources located and successfully remediated. Until this remediation takes place, the employees who experience upper airway symptoms when exposed to mold may continue to experience them.

In addition, a number of facts from other sections of the report support the conclusion of employees being harmed by mold and other contaminants in the building:

- The DOT's contract hygienist confirmed the presence of mold growth in the structure. (See page 8 of Appendix D)
- Over 50% of the reported injuries and illness are related to respiratory and allergic reactions. (See Appendix B)
- The occupants report relief when they are absent from the building for a period of time. (See page 7)

Page 10

*Likewise, if the elevator shaft was an effective pathway for mold spores to spread, it could be concluded that the disturbed Stachybotrys spores would have spread between other floors or other areas of the facility. Spread of Stachybotrys spores was not observed or concluded from the air monitoring results.*

As noted previously, the air monitoring was conducted prior to disturbing wallboard which may have liberated *Stachybotrys* spores. This statement ignores evidence from previous air monitoring reports which the investigative team had available to them that showed *Stachybotrys* concentrations in other parts of the building.

Page 10

*While the finding of Stachybotrys spores is significant because it is an indicator that there is or has been a chronic moisture problem in the tower, it does not pose a health hazard more than any other mold or fungal spore that individuals can become sensitized to.*

This is a factually incorrect. Experienced professionals are aware that certain fungi have been shown to produce mycotoxins, poisonous compounds that are found in or on various parts of fungal organisms. The American Conference of Governmental Industrial Hygienists uses the distinction of fungi that produced mycotoxins as the basis for their definition of "toxigenic fungi". Their book, *Bioaerosols: Assessment and Control*, is recognized as a core document in the mold remediation industry and states that "the most frequently studied mycotoxins are produced by species of *Aspergillus*, *Fusarium*, *Penicillium*, *Stachybotrys*, and *Myrothecium*. (*Bioaerosols: Assessment and Control*, section 24.1.4)

Page 11

*All recorded measurements were within legal, regulatory limits and within or insignificantly below ASHRAE recommended ranges.*

Seven average relative humidity measurements inside the building are provided on page 10 of Appendix D. Not one of the indoor measurements is within the ASHRAE recommended range for the season (40-60%). The closest indoor measurement was 23% below the ASHRAE recommended lower limit with most of the samples more than one

third lower than the recommended value. Obviously, this data set would *not* be considered “insignificantly” outside the recommended values.

Page 11

*Detected airborne particle counts were insignificant for each size range and not significant when compared to outdoor levels.*

As noted for the comment from page 3 of the report, the data in Appendix D does not support this statement.

Page 1 of Appendix A

*Summary of Past Recommendations*

Even the title of the appendix is in error as the group did not include an evaluation of recommendations made by the engineering group DMJMH+N that the FAA had hired to evaluate moisture problems in the Detroit tower.

Page 2 of Appendix A

*Utilizing a HEPA vacuum, vacuum all surfaces under negative pressure and monitor for new occurrences of fungal growth. ...Status - Complete 6/26/2006.*

Despite NATCA’s request that the cleaning of the elevator shaft be conducted in a manner consistent with current industry practices, no negative pressure engineering controls or large HEPA filtered air scrubbing units were utilized during the cleaning of the elevator shaft.

Page 2 of Appendix A

*To reduce the potential for microbial growth in the facility, the relative humidity should be adjusted and maintained within the ASHRAE recommended range of 30% to 60%. Status – Complete. Temperature and relative humidity sensors were activated in the elevator shaft and tower floors on 5/19/2008. The documented average relative humidity levels during the site survey was within or insignificantly below the ASHRAE recommended range of 40% to 60% for summer.*

See response for the first item from page 11 for specific refutation of this item.

Page 4 of Appendix A

*Clean the interior elevator shaft wall surfaces by wet-wiping with a bleach solution.*

*Status – Complete. The shaft cleaning was completed on 5/26/2006.*

The documentation from the May 2006 cleaning stated that a dish detergent was utilized. Even this was foolish as the residue from the detergent can serve as a nutrient source for mold. The recommendation for wet-wiping with bleach also points out the limited knowledge of the Agency’s consultant since current scientific evidence has shown that such a recommendation is not appropriate. Bleach is ineffective at removing mold from surfaces. Recent studies have shown that bleach washing kills as little as 50% of the active mold colonies on porous materials. Additionally, introducing chlorine into a critical use facility with sensitized individuals is fraught with health implications.



Page 4 of Appendix A

*Modifications have been made to the building's HVAC system and temperature and relative humidity sensors have been installed in the tower elevator shaft and in some unoccupied rooms of the tower. FAA is monitoring the data obtained from the sensors.*

Page 1 of Appendix C, Visual Observations from Site Visit on May 19-20, contradicts the second part of the above information. It notes, "The elevator shaft had devices installed to measure temperature and relative humidity. FAA had not been using the sensors, but decided to activate them during the investigation. There are 9 moisture monitors in total; some are outside the elevator shaft in unoccupied tower space." How could the FAA be "monitoring the data obtained from the sensors" if the sensors were not in use?

Page 3 of Appendix D

*The only connection would be the air moved through the piston action of the elevator car in the elevator shaft which contains relief vents allowing air to be discharged at the top and bottom of the shaft.*

This statement about relief vents conflicts with the statement on page 1 of Appendix C which states, "The elevator shaft had air supply and return vents."

Page 4 of Appendix D

*The remediation must be conducted in a similar manner as asbestos abatement and as previously performed on the third, fourth, and ninth unoccupied levels of the ATCT.*

The statement implies that the previous remediation was performed in a manner similar to asbestos abatement projects. Numerous documents have been submitted by NATCA indicating that the previous work did not even meet the standard of care for mold remediation, let alone asbestos abatement. For example, a three-stage decontamination unit with a shower is required for asbestos abatement work within a negative pressure enclosure. No such decontamination unit was used on any of the previous remediation projects.

Page 5 of Appendix D

*The elevator shaft (central to the tower) is constructed with four layers of gypsum wallboard; the inner shaft is lined with two layers of fire-rated gypsum wallboard on metal framework and the outer shaft (unoccupied levels) is lined with two layers of gypsum wallboard.*

This description of the construction of the elevator shaft conflicts with information presented on page 1 of appendix C, which states that the shaft is constructed of 1-inch wallboard to form a liner, metal studs (with paper backed fiberglass insulation), and two layers of ½-inch drywall to form the outer layers.

Pages 8 and 9 of Appendix D

*The detected fungal concentrations for the first sampling period were insignificant.*  
and

*The detected fungal concentrations for the second sampling period were insignificant.*

On the previous page the report author notes that "interpretation of such sample results depends on professional judgment as to whether types and amount of organisms are comparable to normal background and the likelihood that the identified organisms will

cause allergic reactions or infections.” When coupled with the numerous reports of allergy type symptoms (and worse) from the building occupants while they are in the structure and submitted medical evidence that connects the problems to mold exposure, the author’s own evaluation criteria indicates that his interpretation of the results is false.

Page 10 of Appendix D

*The average relative humidity was within or insignificantly below the ASHRAE recommended range of 40 – 60% for summer.*

See response for the first item from page 11 for specific refutation of this item.

Page 11 of Appendix D

*The particle count for each size range and at each location was not significant when compared to the outdoors.*

See response for the first item from page 3 for specific refutation of this item.



WONDER MAKERS  
ENVIRONMENTAL

November 26, 2008

Mr. Vince Sugent  
7768 Pleasant Lane  
Ypsilanti, MI 48197

RE: Factual Errors in FAA's Response to DOT Mold Report  
Wonder Makers Environmental project GC08-7927

Dear Vince:

On Monday, November 24, 2008, we submitted information regarding factual errors in the Department of Transportation (DOT) inspection report relating to mold the Detroit tower (*Investigation of Mold and Moisture at the Federal Aviation Administration Detroit Metropolitan Air Traffic Control Tower Facility*). That letter detailed 22 different sections in the report and appendices that contained contradictory or clearly inaccurate information. The earlier letter was submitted in order to meet your specific request for a listing of errors within a tight time frame.

The information in this letter should be considered an adjunct to our November 24 correspondence. It contains a similar analysis of the FAA's response to the DOT mold inspection report. As such, this review addresses concerns related to the September 17, 2008, memorandum from Robert Sturgell to Linda Washington and the September 22, 2008, letter from Mary Peters to Scott Bloch. An overall critique of the DOT report and FAA response that provides comments on their tone, selective use of data, and glaring omissions will be provided in a separate letter.

The format used for the attached critique is the same as presented in the previous letter. The items on the following pages include statements from the FAA responses and attachments. For convenience, specific sections of the FAA information are reproduced in italics with comments following in regular type. The comments are presented in the order that the items of concern appear in the letter from Secretary Peters and the memo from Administrator Sturgell.

Please let us know if you have any questions.

Sincerely,

Michael A. Pinto, CSP, CMP  
CEO

## **Review of FAA Responses to DOT Mold Report for Items that are Not Factual**

Each false statement is reprinted in italic type, followed in regular typeface by the facts that support the conflicting position.

Peters letter, page 1

*Specifically, the investigation found visible mold growth in unoccupied floors of the air traffic control tower, indicating that moisture intrusion returned despite past remedial efforts by the FAA.*

The scope of the DOT investigation was limited by the attitude of some of the inspectors. During the time on site there was a cursory review of the area above the ceiling tiles in the base building and other parts of the structure. Substantial evidence was presented to the investigators in the form of verbal reports and laboratory documentation that visible mold growth had been identified on numerous occasions in *occupied* areas of the building since the FAA reported that their remediation was complete. In fact, over 20 water-damaged ceiling tiles were removed from the structure (without any analysis or engineering controls) the day before the inspectors arrived! This Sunday work was passed off as a “standard response” to water intrusion in the building despite claims and countervailing evidence that indicated it was a last ditch attempt to improve the appearance of the structure and remove possible sources of fungal contamination. To make matters worse, the DOT inspectors refused to conduct a critical evaluation of the removed tiles and restricted NATCA’s consultant, who was on site as an observer, from collecting any samples from the damaged tiles.

Peters letter, page 1

*Regarding adverse health effects, the investigation indicated that approximately 15 employees, including the whistleblowers, continue to experience adverse health effects which they believe is caused by exposure to mold and moisture in their work environment. However, there have not been any new Occupational Safety and Health Administration (OSHA) recordable employee injuries or illnesses related to mold or air quality since July 2006.*

Anyone who has even a passing knowledge of the situation at DTW knows that this statement is an intentional misdirection by the Agency. Substantial evidence has been presented by NATCA and medical professionals that documents continued and increasing health problems for occupants in the building. It is the responsibility of FAA management to properly record this information on the OSHA logs. To ignore the medical facts, violate OSHA recording standards, and then use the reported lack of OSHA cases to imply that conditions in the building had no negative impacts on the occupants over the past two years is both duplicitous and unconscionable.

Peters letter, page 1

*In addition, the measured airborne fungal spores detected within the facility do not indicate elevated mold spore concentrations that would be likely to adversely impact employee health.*

Although the limited sampling conducted during the limited DOT inspection did show that overall airborne spore concentrations in the building were less than those found out-of-doors, the second part of the sentence is not justified. Even the DOT inspectors agreed that occupants who were suffering from mold-related health effects would likely continue to suffer until proper remediation was completed (page 9, DOT report). The simple fact that employees are reporting health symptoms when in the building and substantiating those claims with medical records which indicate that their problems are linked to mold makes the FAA's assessment (that fungal spore levels in the building are not likely to adversely impact health) false and misleading.

Unfortunately, this is one of many statements made by the FAA and DOT that confirms a narrow view of the situation at DTW, and a parsing of information to justify a preconceived notion that the building is safe. This attitude and approach has been consistently used over the past 4½ years to cover up management mistakes rather than address the real issues.

Sturgell memo, page 1

*Since the discovery of mold at DTW in 2004, the FAA has diligently pursued the remediation of mold and elimination of water intrusion at the tower and base building to ensure that both facilities provide a safe and healthful workplace for our employees.*

The overall facts of the situation are in direct contrast to the Administrator's statement that the Agency *diligently* pursued remediation to provide a safe and healthful workplace. If they were diligent in addressing the issue, the DOT investigation would not have "substantiated the allegations that mold and moisture problems at the air traffic control facility have not been fully remediated" (Peters letter, page 1).

Since the discovery of mold at DTW the FAA has worked diligently to deflect and deny that there is mold in the building. The safety and health of the employees (and by extension the flying public) has been the lowest priority for the Agency. First, they denied there was mold, and then they insisted on calling it a "moisture issue". Nor did the FAA's efforts in addressing mold suffer from a mere lack of vigor. For years, the Agency has expended considerable effort to deny that a problem exists and restrict the air traffic controller union from conducting its own detailed investigations. Had the Agency been diligent in addressing the problems they would not have fought tooth and nail to keep NATCA from implementing additional safety controls during remediation or completing a detailed inspection of the facility – two recommendations that are now validated by the DOT report.

It is also important to note that NATCA is not the only group that has been calling for a comprehensive inspection of the facility. A January 2005 summarizing of the events that led to the evacuation of the tower (DTW ATCT MOLD REMEDIATION LESSONS LEARNED) offers a number of recommendations, including the following:

"If mold in a sensitive facility is suspected, hire a CIH to do a complete building inspection and make recommendations on how to accomplish remediation and/or cleanup as necessary."

Given that it is nearly four years since the recommendation was offered and that it took a Department of Transportation investigation in response to a whistleblower claim to get the FAA to agree to conduct a comprehensive inspection, using the term diligent to describe their efforts is clearly misguided.

It is truly disheartening to realize that the FAA's intransigence contributed to many of the problems documented in the DOT inspection report. Worse yet, the FAA continues to ignore the harm done to the occupants' health by their "diligent" attempts to provide a safe and healthy workplace.

Sturgell memo, page 1

*Based on the corrective actions that the FAA has taken at these facilities, and the sampling and testing, which have been conducted by FAA and independent third parties, we strongly believe that both facilities provide a safe and healthful work environment for our employees. We hope that by accepting all your recommendations, this will further demonstrate FAA's commitment to ensure that DTW and the base building contain no health hazards for our employees.*

If they were safe and healthful work environments there would be no need for the Agency to accept the DOT recommendations. For years the FAA has been provided with ample evidence from multiple internal and external sources that the structure at DTW has been the source of numerous serious health problems. Their refusal to admit that a problem exists has been one of the major factors in prolonging the problems.

Sturgell memo, page 1

*We note that your investigation did not find any indicators of poor indoor air quality and did not detect elevated mold spore concentrations.*

Although the Department of Transportation investigators may not have understood their own data, a number of results presented in their report (e.g., fungal species identified indoors, relative humidity levels, particulate levels, etc.) are clear indicators of indoor air quality problems. The specific explanations of these items were contained in our November 24, 2008, letter and attachments.

Sturgell memo, page 1

*In fact, indoor concentrations were consistently lower than outdoor concentrations.*

The FAA and DOT investigators continue to place inordinate emphasis on the overall comparison of mold spore levels inside the structure to the number of spores identified outside the structure. Although this is an appropriate starting point, even a cursory review of the documents that are considered authoritative in the industry shows that it is not an ending point for the analysis of data related to potential fungal contamination and indoor air quality problems. Of primary concern is the fact that every major document that suggests a comparison of indoor an outdoor contamination levels states that a review should be done of the *types* of spores that are found inside and outside. By its statements the Agency is misrepresenting the facts. For example, the FAA would like to ignore that spore types were found inside the building that were not recovered from out-of-doors such as:

- *Stachybotrys* that was identified in four samples collected in room 928 and in one sample collected in room 428.
- *Aspergillus versicolor* found in the base building 1<sup>st</sup> floor office
- *Ulocladium* on samples collected in rooms 928 (2 samples), 428 (2 samples), and the TRACON.

In addition, this repeated emphasis on the overall indoor/outdoor comparison ignores the fact that many occupants have probably developed sensitization to specific molds found inside the structure. This long-term exposure and resultant sensitization means that even a very small quantity of the offending organism(s) can cause significant reactions. Despite the fact that this medically recognized phenomenon has been clearly demonstrated by the controllers' medical reports and acknowledged in a number of previous FAA-sponsored investigations, the Agency conveniently ignores this reality in its interpretation of sampling results.

Sturgell memo, page 1

*... our review of the report disclosed information that we believe is inaccurate or misleading and does not correctly identify the existing conditions or the efforts that FAA has taken to protect its employees.*

This is actually a true statement, but not in the way that the FAA implies in the memo. The statement is offered by the Agency to indicate that conditions are better inside the facility than documented by the DOT. As shown in our previous letter, the DOT inspection does not correctly identify the existing conditions, primarily because the report skews the data to the positive side rather than being negative. In actuality, conditions inside the building related to indoor air quality are objectively worse than the DOT inspectors conclude.

Nor does the DOT inspection correctly identify the efforts that the FAA has taken to *endanger* the health of its own employees. For years the occupants, both individually and through their union, have begged their employer to conduct a detailed health survey and comprehensive inspection of the facility—and even offered to cover the cost of such an inspection. That the Department of Transportation now concludes that a “comprehensive inspection of the tower’s elevator shaft and wall cavities on all floors to determine the full extent of the moisture and mold problem” is necessary is a serious indictment of the FAA’s actions “taken to protect the employees”. (Peters letter, page 2; Sturgell memo, page 1)

Sturgell memo, page 2 (Attachment 1)

*C. OST Recommendation (ATCT): Develop a mold remediation project communication plan for the facility to improve communication efforts between FAA management and union employees.*

*FAA Response: The FAA will develop a plan to improve communication. Action: Project communication plan implementation date is October 1, 2008.*

If anything, communication related to mold and other indoor contaminants has deteriorated since October 1, 2008, not improved. NATCA specifically requested that

their outside experts be allowed to attend a pre-construction meeting to discuss the replacement of the base building roof that was held on November 5, 2008. NATCA's rationale was based on concerns about potential disturbance of fungal contamination, as well as the types of chemicals that would be used during the project. Having a union trusted expert to ask appropriate questions and interpret the responses from the Agency's safety and health experts would have been an important step in reestablishing trust and improving communication between management and employees. Instead, the FAA denied the union's request and perpetuated the hostility that has developed in regards to IAQ and fungal remediation projects. This is just one example of how the Agency gives lip service to improving communication but has taken no substantive action despite the commitment of the Administrator to do so.

Sturgell memo, page 3 (Attachment 1)

*F. OST Recommendation (ATCT): Continue efforts to prevent moisture intrusion into the air traffic control tower and prevent condensation from forming.*

*FAA Response: ...corrective measures identified were completed... Action: Monitoring is on-going...*

The FAA has committed to conducting monitoring in the past, but monitoring by unknowledgeable and ill-equipped individuals is often worse than no monitoring at all. Such pseudo-inspections, like the moisture inspections of the elevator shaft that were conducted for months by individuals who had no moisture measuring equipment and who prevented union representatives from using such equipment, contribute to the problems in the building by covering them up.

Even the DOT inspector documented Agency efforts at falsifying monitoring efforts related to moisture and mold. Page 1 of Appendix C of their report notes, "The elevator shaft had devices installed to measure temperature and relative humidity. FAA had not been using the sensors, but decided to activate them during the investigation. There are 9 moisture monitors in total; some are outside the elevator shaft in unoccupied tower space."

It is important to note that the Sturgell memo was dated September 17, 2008. NATCA has repeatedly requested copies of the data from the monitoring units for review, including through a freedom of information request. To date, no information has been provided. The Agency has a clearly established track record of conducting intentionally ineffective monitoring inspections in order to show paper compliance while hiding the true facts. The installation of monitoring equipment without activating the devices is another example of the FAA's willingness to spend taxpayers' dollars in order to show how much they have spent to remedy the problem without utilizing the monitors to benefit the occupants. This history of bogus monitoring and refusal to share information appears to be continuing, which contradicts the commitment made in the Sturgell memo.



Sturgell memo, page 3 (Attachment 1)

*G. OST Recommendation (ATCT): Actively monitor moisture in the elevator shaft and unoccupied areas of the air traffic control tower and implement corrective actions as necessary.*

*FAA Response: The monitoring is currently in progress. To date, there are no indications of excessive moisture and/or humidity. Action: The monitoring is on-going and will be documented for historical recordkeeping.*

See response to item F above.

Sturgell memo, page 4 (Attachment 1)

*L. OST Recommendation (Base Building): Develop a roof project communication plan for the facility to improve communication efforts between FAA management and union employees.*

*FAA Response: Local FAA management will develop a communication plan... Action: Roof replacement efforts... will be coordinated with facility management and employees... by October 1, 2008.*

Whatever communication plan the FAA has for this re-roofing project it has *not* been coordinated with employees. The answer to item C on page 2, described above, illustrates how the FAA's plan for communication is to deny entry into the building for anyone who could help the employees actually understand the issues being discussed.

Another tactic that the Agency uses to subvert communication despite their commitment to improve it is the selection of what information they share with the occupants. Something as simple and non-controversial as sharing material safety data sheets (MSDS's) for chemicals that will be used on the re-roofing project has been used to frustrate legitimate project input from the employees. FAA managers initially provided NATCA with four MSDS's (compressed air, acetylene, welding rods, and developer) that they indicated would be part of the project. Then, at the pre-construction meeting, they offered a sampling plan that did not address potential hazards associated with the materials for which they provided data sheets. When questions were raised about the proposed sampling scheme the FAA provided different MSDS's, including dozens for materials that they did not expect to use but "could be on the truck". When the sequence of events is combined with the fact that NATCA's experienced safety and health professionals were excluded from the meeting it is clear that the Agency does not feel compelled to live up to the commitment that its Administrator made to the Secretary of Transportation.

Sturgell memo, page 5 (Attachment 2)

*2. Page 5, 3<sup>rd</sup> paragraph, 2<sup>nd</sup> sentence and page 8, 1<sup>st</sup> paragraph after bullets, 2<sup>nd</sup> sentence—You state that the FAA was advised to clean visible mold from the elevator shaft liner using a biocide chemical. The FAA took a conservative approach and did not use a biocide. We used a deodorizer called Dri-Eaz Milgo SR.*

Although this statement about Dri-Eaz Milgo SR being the product used during the cleaning of the elevator shaft liner is correct, the statement that the FAA took a

conservative approach and did not use a biocide is false. There is ample evidence from the records of the FAA and the contractor that proves the Agency requested their contractor to spray an anti-microbial chemical as part of the remediation process. For example, the general work authorization from Coaches Catastrophic Cleaning dated 1/22/05 and signed by Randy Grant of the FAA clearly shows that the contractor was authorized to conduct “biohazard cleaning” with “anti-microbial spray/HEPA vacuum”. An undated statement titled “Work performed at DTW by TEOC and Coach’s” by Ned Gibson (SUP SMO Environmental Protection Specialist) declared “Coaches Catastrophic Cleaning sealed the areas of exposed mold left by the initial contractor on the fourth and ninth floors and applied a deodorizer/biocide in the affected areas”. The MSDS for the Milgo-SR product supplied by the contractor at the time of the work showed both isopropyl alcohol and gluteraldehyde as hazardous ingredients.

In a broader sense, the logic behind the FAA’s statement that spraying a deodorizer as a conservative or safer alternative to the recommended product is twisted. The FAA is admitting that instead of using an EPA-approved biocide as recommended by an industrial hygienist they used an unapproved chemical in a manner inconsistent with the label directions. Perhaps if an Agency representative had looked at the label directions they would have thought twice before characterizing the use of Milgo-SR in an active air traffic control center as a conservative approach. The label for the product clearly states

“All application personnel should have complete respiratory protection. Evacuate all others (including pets) from the area. Treated areas should be adequately ventilated and not to be re-entered for at least one hour after treatment.”

Sturgell memo, page 5 (Attachment 2)

*It is not marketed or approved by the EPA as a biocide. It is primarily used as a spray to deodorize residential carpets by carpet cleaners and is suitable for use as a residential laundry aid. The only hazardous ingredient listed in the MSDS is isopropyl alcohol (3-6 percent). The manufacturer recommends the addition of 8 ounces per gallon for wall applications.*

This post-incident spin on a situation that was totally mishandled by the Agency is ludicrous. The MSDS that was provided to the FAA by the contractor listed both isopropyl alcohol and gluteraldehyde as hazardous ingredients. It was not until several days after the tower evacuation that a more current version of the data sheet was brought forward.

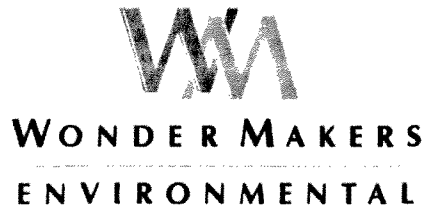
It is clear from a careful review of all of the documents related to that incident that the Agency’s second attempt at mold control was as haphazardly managed as the first attempt. To this day, the FAA does not know with certainty what was in the sprayer that was used or what concentration was mixed. Even after the Agency had a sample of the material that was reported to have been in the sprayer analyzed for chemical content the project managers could not verify that the material used was Milgo-SR. The results of the chemical testing revealed 28 separate compounds. Most of the reported compounds are considered to be hazardous materials, including benzene and octanol.

Sturgell memo, page 5 (Attachment 2)

*The FAA contractor added approximately 2 ounces per gallon. Once this dilution was completed, there was less than 0.5 percent alcohol in the liquid being sprayed. Common isopropyl alcohol in first aid kits is used at 70 percent strength.*

This statement is in conflict with the information from a variety of sources. As noted in the answer to the previous item it is clear that the Agency does not know what was applied to the elevator shaft liner and other areas of the building. The Gibson document cited previously states that the contractor brought premixed materials into the building. One of the recommendations in the LESSONS LEARNED document that was prepared shortly after the tower evacuation states, "Have contractors bring any chemicals in their original containers and do any dilution or mixing on site where it can be observed".

A more serious falsehood in this statement is related to the FAA's comparison of the material applied as part of the mold remediation process to the application of isopropyl alcohol for first aid measures. The picture that the Agency wants to paint with this comparison is that the material used so haphazardly in January 2005 was safe, and by extension that the injuries suffered by the workers that day are somehow mitigated. Still, no amount of reinterpretation can change the facts of the incident. The FAA's own SER report filed shortly after the tower evacuation notes that spraying stopped at 12:50 and the complaints of illnesses from seven tower employees began at 1:05. The illnesses were significant enough to send a number of people to the hospital and cause a five-hour ground stop, but all of that has to be excused because isopropyl alcohol is used to treat wounds in a stronger concentration than what the Agency claims was in the mix being sprayed.



December 8, 2008

Mr. Vince Sugent  
7768 Pleasant Lane  
Ypsilanti, MI 48197

RE: General Comments Regarding DOT Mold Inspection Report and FAA Response;  
Wonder Makers Environmental project GC08-7927

Dear Vince:

On Monday, November 24, 2008, we submitted information regarding factual errors in the Department of Transportation (DOT) inspection report relating to mold at the Detroit tower (*Investigation of Mold and Moisture at the Federal Aviation Administration Detroit Metropolitan Air Traffic Control Tower Facility*). That letter detailed 22 different sections in the report and appendices that contained contradictory or clearly inaccurate information. On November 26, 2008, we submitted a second letter that contained a similar analysis of the FAA's response to the DOT mold inspection report (*October 22, 2008, letter from Secretary of Transportation Mary E. Peters to Scott J. Bloch and September 17 2008 memo from Robert A. Sturgell to Linda Washington*). That second correspondence documented an additional 15 factual errors. Those two letters were submitted in order to meet your specific request for a listing of errors within a tight time frame.

Although similar in nature, the material presented as an attachment to this letter represents a broader review of the documents analyzed in our earlier correspondence. Rather than focusing on factual errors this document provides an overall critique of the information presented by both the DOT and the FAA in response to your whistleblower claims of continuing mold and indoor air quality problems at the Detroit tower and base building.

It is important to note that the critique is not completely negative. However, the information does contain a great number of factual errors and apparent bias toward the FAA's viewpoint. For example, in several areas of the report the DOT investigator concludes "that FAA employees are not exposed to significant bioaerosol concentrations". This is pure speculation that is based on a narrow interpretation of the data and ignores credible reports of continuing illness from the occupants. It does not factor in that the corrective actions were not conducted in a manner consistent with the industry standard of care and, therefore, were likely to have spread mold throughout the structure. The conclusion ignores the fact that fungal growth was seen on previously

remediated surfaces and that a number of fungal types were observed in the structure that were not found in comparison out-of-doors samples. It also overlooks the fact that over 50% of the reported injuries and illness are related to respiratory and allergic reactions. Further, it ignores the firsthand accounts of the occupants who report relief when they are absent from the building for a period of time. As such, it is clear that a better interpretation of the available data suggests that until the occupants can enter the facility and not experience symptoms it is likely that they are being exposed to bioaerosol contamination.

Even so, the report from the DOT is another independent source that confirms that mold and indoor air quality problems still exist at the Detroit facility.

While it is heartening that the DOT “has substantiated the whistleblowers allegations that there continues to be a mold and moisture problem at the facility” it is equally discouraging that the FAA still clings to the fantasy “that both facilities provide a safe and healthful work environment for our employees”. This refusal on the part of your employer to admit that problems have occurred in the past and continue to create significant health problems, not just for the whistleblowers but other occupants as well, is the primary roadblock to successfully dealing with the situation. Unfortunately, this obsession to justify past actions keeps the FAA managers from learning from their previous mistakes and almost guarantees that they are condemned to repeat similar errors in the future.

Please let us know if you have any questions.

Sincerely,

Michael A. Pinto, CSP, CMP  
CEO

## **Critique of DOT Mold Inspection Report for Detroit Metropolitan Airport Tower and FAA Response**

Comments are grouped by document. For convenience, individual sections of the DOT or FAA documents are reproduced in italics with comments following in regular type.

### **Letter from Secretary of Transportation Mary Peters to Scott Bloch dated October 22, 2008**

Peters letter, page 1, paragraph 2

*The Assistant Secretary's investigation has substantiated the allegations that mold and moisture problems at the air traffic control facility have not been fully remediated.*  
NATCA has been telling the Agency about mold and IAQ problems for nearly four years, ever since the first remediation project was "completed" in a manner that was clearly outside the industry standard of care. Since January 2005 NATCA has expended considerable effort and cost in order to assist the Agency in providing a safe and healthful workplace. The union has done that by offering constructive comments prior to the implementation of various suggested remediation procedures and by evaluating the remediation contractors' inadequacies after the fact. Rather than utilizing the information and perspective provided to them by union members and the union's contract experts, the FAA has continued a campaign of denial and retribution against the occupants who have been sickened by conditions in the building. Rather than conducting a comprehensive investigation, including a health survey of the occupants, and fixing the problem correctly the first time, the Agency has repeatedly wasted money on ill conceived projects that have sacrificed the health of the employees rather than protected it. The fact that it took a whistleblower complaint to confirm union allegations is a serious indictment of the management capabilities of the FAA in Detroit.

Peters letter, page 1, paragraph 2

*Specifically, the investigation found visible mold growth in unoccupied floors of the air traffic control tower, indicating that moisture intrusion returned despite past remedial efforts by the FAA.*

This is confirmation of information that has repeatedly been provided to the Agency by NATCA. Unfortunately, it does not convey the fact that the FAA has been actively suppressing information regarding building conditions by denying entry to NATCA's experts and limiting their activities when entry was forced by court mandate.

Peters letter, page 1, paragraph 2

*In addition, while FAA has made significant efforts over the last few years to remediate the mold and moisture problems, some key expert recommendations for remediation have not been completed.*

The past FAA efforts have not been completed or effective because the Agency has consistently viewed the situation as a structural issue rather than a health issue. The Agency managers have failed to identify starting and ending points for their projects. In

addition, they have improperly prioritized a number of projects, resulting in the expenditure of considerable taxpayer funds without substantially improving the situation for the building occupants. This waste was compounded by the fact that the FAA spent considerable time and effort to discredit NATCA's investigative and remediation recommendations even though they were clearly based on the current industry standard of care. These Agency efforts to intimidate the occupants put their employees and the flying public at risk.

Peters letter, page 1, paragraph 2

*Regarding adverse health effects, the investigation indicated that approximately 15 employees, including the whistleblowers, continue to experience adverse health effects which they believe is caused by exposure to mold and moisture in their work environment. However, there have not been any new Occupational Safety and Health Administration (OSHA) recordable employee injuries or illnesses related to mold or air quality since July 2006.*

The number of impacted individuals could be much greater but the reputation the Agency has developed for bullying occupants who complain about building conditions or health problems has created a substantial "chilling effect" on many of those suffering health problems when at work. Despite the verification of continuing health problems in the DOT report the FAA is still trying to minimize the actual impact of the building problems on the occupants by pointing to OSHA injury logs which are maintained by the very individuals that are trying to diminish the concerns.

Peters letter, page 1, paragraph 2

*In addition, the measured airborne fungal spores detected within the facility do not indicate elevated mold spore concentrations that would be likely to adversely impact employee health.*

The fact that employees are continuing to experience ill health effects in the building indicates that either the mold spore concentrations or other contaminants are having an adverse impact on their health.

Peters letter, page 1, paragraph 3

*Based on the findings that the mold and moisture problems have not been fully remediated, the Assistant Secretary made several recommendations in the investigative report to remedy the mold and moisture problems at the air traffic control facility.*

The recommendations from the DOT include six points that are variations of the concerns that NATCA has expressed over the past 4½ years. Based on their past response to similar recommendations it is doubtful that the FAA will be any more pro-active with these items than they have been with past suggestions for addressing the employees' health concerns.

Peters letter, page 2, paragraph 7

*We have reviewed the FAA's Action Plan and believe that the FAA's planned actions address the report findings and recommendations.*

As noted above, the past history of the FAA's actions at Detroit and other problem facilities around the country indicates that the Agency is not capable of properly

implementing the recommendations unless there is a complete change in their attitude toward the situation. The response from Acting Administrator Sturgell to the DOT makes it clear that the FAA has *not* changed its approach to the problems at Detroit as they continue to deny and minimize potential health impacts to the occupants. (See next section for additional details regarding the current FAA mind-set on the situation.)

**Memo from Acting Administrator Robert A. Sturgell to Linda Washington dated September 17, 2008**

Sturgell memo, page 1, paragraph 2

*Since the discovery of mold at DTW in 2004, the FAA has diligently pursued the remediation of mold and elimination of water intrusion at the tower and base building to ensure that both facilities provide a safe and healthful workplace for our employees. See November 26, 2008, letter for specific details regarding the false aspects of this statement. Overall, the actions of the Agency have shown that the safety and health of the employees (and by extension the flying public) has been the lowest priority for the Agency.*

Sturgell memo, page 1, paragraph 2

*To date, the FAA has expended in excess of \$1 million for remediation and modification efforts...*

The approach that the FAA has taken on denying the problem and then implementing piecemeal solutions before they remedied the source of the problem has led to the wasteful expenditure of tax dollars. If the FAA **had been** pro-active at determining the source of the moisture and logically following a course of action within the industry standard of care, the outlay of tax dollars could have been significantly less.

Sturgell memo, page 1, paragraph 2

*Based on the corrective actions that the FAA has taken at these facilities, and the sampling and testing, which have been conducted by FAA and independent third parties, we strongly believe that both facilities provide a safe and healthful work environment for our employees.*

This is a bit surprising since both facilities have active mold problems and ongoing water issues. How can it be safe if hazards still exist and there are sensitized employees present in the building?

Sturgell memo, page 1, paragraph 4

*We note that your investigation did not find any indicators of poor indoor air quality and did not detect elevated mold spore concentrations.*

See November 26, 2008, letter for specific details regarding the false aspects of this statement. Whether the interpretation of the DOT inspection data was intentionally skewed to present a more favorable view of the conditions in the building or just a result of a very narrow view of the data collected is irrelevant. The problems with the DOT report and the FAA's eagerness to proclaim that no IAQ issues exist is symptomatic of the long term predicament. The many building investigations and remediation projects



directed by the Agency and other government entities have been conducted with the attitude that mold/IAQ problems do not exist or are not as bad as the employees indicate. As such, the FAA has never made a diligent attempt to identify and resolve the problems that are actually impacting the building occupants.

Sturgell memo, page 1, paragraph 4

*In fact, indoor concentrations were consistently lower than outdoor concentrations.*

Even though the Agency would like to ignore that mold spore types were found inside the building that were not occurring out-of-doors, the fact remains that the DOT samples recovered tertiary colonizers in both buildings, indicating the presence of a mold source inside the structure. *Stachybotrys* spores were identified in four samples collected in room 928 and in one sample collected in room 428, and *Ulocladium* was recovered on the ninth floor, fourth floor, and TRACON. In addition, elevated levels of *Aspergillus/Penicillium*-like spores were detected in the sampling conducted during the morning compared to out-of-doors. The cultured samples recovered *Aspergillus versicolor* from the base building first floor office even though none was found out-of-doors.

Sturgell memo, page 1, paragraph 5

*...our review of the report disclosed information that we believe is inaccurate or misleading and does not correctly identify the existing conditions or the efforts that FAA has taken to protect the employees.*

Until a comprehensive inspection is conducted utilizing engineering controls to protect the occupants, “the efforts that the FAA has taken to protect the employees” is just rhetoric.

Sturgell memo, attachment 1, page 2

*A. OST Recommendation (ATCT): Conduct a comprehensive inspection of the wall cavities on every floor of the air traffic control tower, making sure to inspect the wall cavity from the unoccupied room side of the elevator shaft.*

*FAA Response: The FAA will retain a Certified Industrial Hygienist experienced with mold and indoor air quality issues to complete the recommended action. Action: Project completion date is December 31, 2008.*

The union has requested a comprehensive inspection of the wall cavities on every floor for over three years. We strongly urge that the inspection be conducted utilizing appropriate engineering controls including mini-enclosures and negative pressure in order to protect the occupants from the contaminants that are contained within those wall cavities. A purchase order for this inspection does not delineate the number of samples that the inspector expects to collect from the wall cavities. Does the Agency intend for the “comprehensive inspection” to consist only of visual observations? This sort of limitation in past inspections has played a large part in the problem of continual discovery of mold growth in the tower.

Sturgell memo, attachment 1, page 2

*B. OST Recommendation (ATCT): Based on the comprehensive inspection, remove all visibly contaminated (molded and water-damaged porous materials) from the air traffic control tower.*

*FAA Response: The FAA will develop and implement projects to remove molded and water damaged porous materials identified from the inspection. Action: Design and engineering will begin immediately upon completion of the inspection with contract work following as soon as possible.*

The Agency has contracted to have molded and water-damaged porous materials removed in several unsuccessful projects since January 2005. Given the history of problems and the fact that the efforts at Detroit have national implications, a task force of all affected parties should be assembled to guide the remediation process so that the project is conducted according to the industry standard of care. The occupants have already experienced the results of ill health effects from too many ill-conceived and badly executed projects.

Sturgell memo, attachment 1, page 2

*C. OST Recommendation (ATCT): Develop a mold remediation project communication plan for the facility to improve communication efforts between FAA management and union employees.*

*FAA Response: The FAA will develop a plan to improve communication. Action: Project communication plan implementation date is October 1, 2008.*

If the meetings that have taken place in October and November 2008 are an indication of the FAA's improved communication, then the union can only expect more of what they have experienced since 2004. For example, during a November 5, 2008, meeting regarding mold and roof repairs, the Agency knew they were moving forward with the intrusive inspection of other parts of the building (the purchase order is dated September 22, 2008), yet the inspection was not mentioned by any of the attendees. If the Agency is sincere about improving communication and providing a safe workplace, they will avail themselves of the union's experts at the meetings and as participants in a task force. The occupants and the flying public deserve to have the safest approach to mold remediation planned and successfully executed. That can only be accomplished by including all of the stakeholders in the process.

Sturgell memo, attachment 1, page 2

*D. OST Recommendation (ATCT): Remove all unnecessary wallboard and carpeting from unoccupied areas of the air traffic control tower and remove any wallboard currently in contact with concrete floors.*

*FAA Response: The FAA will assess which wallboard and carpeting is not needed in the unoccupied areas of the ATCT. A project will be developed to remove these items. Action: This effort will be included in the work to be accomplished under Recommendation B.*

The task force should be in place prior to the removal of the wallboard and carpeting. The removal plan should include appropriate procedures to ensure that the occupants are not impacted by the removal of these materials.

Sturgell memo, attachment 1, page 2

*E. OST Recommendation (ATCT): Evaluate the fire rating of cement backer board and mold resistant/paperless wallboard.*

*FAA Response: The FAA will evaluate wallboard that needs to be replaced in the ATCT and attempt to substitute with fire-rated, mold-resistant products. When the wallboard is replaced, a gap will be left between the concrete floor slab and new wallboard to prevent wicking of moisture into the panel. Action: This effort will be included in the work to be accomplished under Recommendation B.*

This recommendation was offered by NATCA years ago and ignored by the Agency, which is a contributing factor of the regrowth of mold on the “new” drywall on the 9<sup>th</sup> and 4<sup>th</sup> floors.

Sturgell memo, attachment 1, page 3

*F. OST Recommendation (ATCT): Continue efforts to prevent moisture intrusion into the air traffic control tower and prevent condensation from forming.*

*FAA Response: ...corrective measures identified were completed... Action: Monitoring is on-going...*

Our November 26, 2008, letter details serious problems with the FAA’s monitoring, even when they have the appropriate monitoring equipment. (The letter notes that the FAA had devices installed to measure temperature and relative humidity but were not using the sensors. They decided to activate them during the DOT investigation.) This is another example of the disconnect between the FAA’s statements and their actions. The FAA is willing to spend taxpayers’ dollars in order to make a show of how much they have done to remedy the problem, but they didn’t use the purchased monitors to benefit the occupants until “caught” during an inspection. A definitive plan of what type of monitoring is being conducted, by whom, when, and some accountability measures should be implemented.

Sturgell memo, attachment 1, page 3

*J. OST Recommendation (Base Building): Replace the leaking base building roof.*

*FAA Response: Action: A new roofing membrane will be installed by March 30, 2009.*

The FAA’s approach to this re-roofing project has increased the potential risk to the occupants. Since all the sources of potential contaminants have not been identified (during the DOT visit only one ceiling tile was lifted for observation, previous tests confirmed the presence of fungal materials, and no one has checked to see if the roof insulation boards are moldy) and there are numerous penetrations between the roof and the interstitial space, it is logical that the re-roofing may dislodge contaminants and deposit them into the occupied space. The union has requested that the FAA use proper engineering controls and the Agency’s stance is that further inspection and engineering controls are unnecessary. This reluctance to include reasonable protection, such as a plastic barrier under the interior ceiling tiles, is even more puzzling given the history of building contamination problems the FAA has experienced with roofing projects across the country over the past three years. In fact, the FAA’s *Indoor Air Quality Implementation Guidance* dated September 25, 2006, was developed primarily in response to IAQ incidents from roofing projects. The Agency would do well to review that document in light of NATCA’s request and read again where it states:

Contaminants can also migrate from the work area through any openings such as pipe chases, abandoned duct, or holes in walls, floors, and ceilings. Any opening will convey contaminants if not sealed. Pay particular attention to the barrier between the construction area and the adjacent non-construction areas. For some renovation projects, the contractor may need to build an extensive barrier wall system between the occupied and construction areas. (page 32, item B),

Sturgell memo, attachment 1, pages 3 & 4

*K. OST Recommendation (Base Building): Continue to immediately remove and replace water damaged building materials as necessary.*

*FAA Response: When such incidents arise, an investigation shall be made to identify the moisture source and correct it.*

Despite reports to the DOT inspector which indicate that such activities are completed on a regular basis, the experience of the individuals in the tower is that wet or stained building materials are often left in place until an inspection or other event is scheduled.

Sturgell memo, attachment 1, page 4

*L. OST Recommendation (Base Building): Develop a roof project communication plan for the facility to improve communication efforts between FAA management and union employees.*

*FAA Response: Local FAA management will develop a communication plan... Action: Roof replacement efforts... will be coordinated with facility management and employees... by October 1, 2008.*

See the November 26, 2008, letter for a detailed response to this item.

Sturgell memo, attachment 2, page 5, paragraph 1

*These comments are based on a thorough review of the report.*

The controllers have been waiting for a thorough review of the *facility* for four years!

Sturgell memo, attachment 2, page 5, paragraphs 2, 5 and 6

*The report states that FAA employees attributed a variety of symptoms to their exposure to mold and moisture at the Detroit Tower and that NIOSH's medical review failed to establish a link between the mold/moisture and many of the symptoms.*

*In the interest of completeness and accuracy, we believe the following would be more appropriate wording for your report:*

*As part of a Health Hazard Evaluation, NIOSH conducted a medical review. They reviewed the written symptoms profile and medical records provided by site employees. They were unable to find an association between the Detroit Tower moisture/mold issues and many of the symptoms experienced by the employees.*

This link, or association, between conditions in the building and the deteriorating health of many of its occupants has been confirmed in medical documents presented to the Agency. The FAA refuses to objectively consider specific information submitted by recognized medical experts and instead relies on information from older investigations

and research reports to justify their belief that the building conditions are not impacting the controllers' health. This denial of current information is coupled with the Agency's refusal to conduct an anonymous health survey—a step that is recommended in the FAA's own Indoor Air Quality Guidelines.

Sturgell memo, attachment 2, page 5, paragraph 7

*You state that the FAA was advised to clean visible mold from the elevator shaft liner using a biocide chemical. The FAA took a conservative approach and did not use a biocide. We used a deodorizer called Dri-Eaz Milgo SR. It is not marketed or approved by the EPA as a biocide. It is primarily used as a spray to deodorize residential carpets by carpet cleaners and is suitable for use as a residential laundry aid. The only hazardous ingredient listed in the MSDS is isopropyl alcohol (3-6 percent). The manufacturer recommends the addition of 8 ounces per gallon for wall applications. See the November 26, 2008, letter for a detailed response to this item.*

**Department of Transportation's Investigation of Mold and Moisture at the Federal Aviation Administration Detroit Metropolitan Air Traffic Control Tower Facility dated August 21, 2008**

DOT report, title page

The first item of interest is the lack of authorship. It would be helpful to know who created this document. Also, the report is dated August 21, 2008, although NATCA did not receive it until November 11, 2008. This is disturbing given that the concern of information availability was specifically raised during the May 20 out-briefing meeting. Thomas Black, the lead investigator for DOT, indicated that the report by the contract industrial hygienist would be provided to all participants within two to three weeks of the investigation. He also stated that sample results would precede the report as soon as they were available from the laboratories. Instead, important information regarding conditions in the building was withheld from the occupants for nearly three months.

DOT report, page 2, paragraph 2

*As discussed below, our investigation has substantiated the whistleblowers' allegations that there continues to be a mold and moisture problem at the facility and that, although FAA has made significant efforts to remediate the mold and moisture intrusion, it has not followed through on several key recommendations to correct this ongoing problem.* This is an important statement that defends many of NATCA's positions and findings of the union's experts.

DOT report, page 2, paragraph 2, bullet 2

*... visible mold was small, less than 10 square feet.*

The investigator is minimizing the potential problems as the amount of visible mold is only what was found during the investigation of previously abated wallboard. The true emphasis should be on the fact that fungal contamination was found in areas the FAA had repeatedly declared safe even while they were denying NATCA's request to inspect those

areas and that the pattern of observed mold growth clearly indicates there are floors and areas where additional contamination is likely.

DOT report, page 2, paragraph 2, bullet 4

*All wallboard was observed to be dry...the tower continues to have a chronic moisture problem.*

This is another important statement that supports the contention of the whistleblowers that the problems in the building have not been properly addressed. Nevertheless, concerns regarding the inspection process are also evident. Was the moisture content of the wallboard observed or measured? If measured, with what? No moisture meters were observed in use during the inspection. Most moisture mitigation and mold remediation professionals will verify that it is difficult to tell the moisture content of gypsum board materials by just seeing or touching one side of the material. Pin style moisture meters are generally used to verify the condition of the materials during such inspections.

DOT report, page 2, paragraph 2, bullet 7

*Approximately 20 stained ceiling tiles were observed to have been recently removed from the base building. These tiles had become wet from base building roof leaks. FAA management indicated that stained/wet ceiling tiles are removed and replaced as a part of routine maintenance.*

See the November 24, 2008, letter for a detailed response to this item.

DOT report, page 2, paragraph 2, bullet 8

*The measured airborne fungal spores detected within the facility does not indicate elevated mold spore concentrations that would be likely to adversely impact employee health.*

This statement is a serious misrepresentation of the collective facts. Sensitized employees need only a small exposure to have a reaction, and target spore types were found in both buildings. See the November 26, 2008, letter for a detailed response to this item.

DOT report, page 2, paragraph 2, bullet 9

*The highest indoor concentrations of airborne fungal spores were noted in the unoccupied rooms 928 and 428 of the tower. This correlation is likely due to the air monitoring occurring after the wall cavities were cut open and molded materials observed.*

The purported correlation between higher spore counts and invasive inspection techniques may have been logical had the finish materials been disturbed during the sampling sequence. However, the investigation of the wall cavities was completed after the morning samples had been collected. Just as important, had engineering controls been used even this potential correlation could have been avoided. NATCA has requested permission to conduct sampling of the tower shaft and elevator shaft incorporating the use of engineering controls to eliminate this type of contamination, yet permission was repeatedly denied. Given all this information, especially the sensitivity of the occupants and relative severity of their reported illnesses, the type of inspection done by the DOT team was negligent.

DOT report, page 3, bullet 1

*The spore Stachybotrys was detected within unoccupied areas of the tower facility, but not in outside air samples. Stachybotrys is a mold that is not commonly found indoors and is an indicator of chronic moisture intrusion.*

NATCA has provided multiple sampling reports since 2004 that confirmed the continuing presence of *Stachybotrys* in the facility, even after the FAA's attempts at remediation. Although this sampling episode only recovered *Stachybotrys* in unoccupied areas, other investigative efforts have shown that *Stachybotrys* and other target spore types were present in occupied areas of the facility. The investigator's emphasis on the spores being present in unoccupied areas is an attempt to diminish the importance of the findings and the fact that such contamination could help to explain the reported illnesses suffered by the occupants.

DOT report, page 3, bullet 6

*FAA failed to perform a detailed inspection of wall cavities within the air traffic control tower or allow the union to conduct wall cavity inspections of the elevator shaft walls. Subsequent wall cavity inspections performed as part of this investigation did indeed reveal visible mold. Such inspections should have occurred at the facility years earlier.*

Earlier in the report (page 2, paragraph 1) the DOT inspector recognizes that the FAA's denial of the union's request for invasive testing is one of the three key elements of the whistleblowers complaint that was to be investigated. This statement, when coupled with the DOT inspector's first recommendation to the FAA that they perform a comprehensive investigation of the elevator shaft and wall cavities, indicates that the Agency's denial of NATCA's efforts for nearly two years was detrimental to understanding and resolving the contamination problems in the building. More important, this denial subjected ill occupants to conditions that have continued to deteriorate their health for many unnecessary months.

DOT report, page 5, paragraph 2

*The majority of the tower shaft is unoccupied areas with no storage inside.*

Although this was a correct statement at the time of the 2008 investigation, this was not the case in 2004. The NATCA offices were housed on the 10<sup>th</sup> floor and many of the floors were used for storage. The contents on these floors were potentially contaminated and were not cleaned before they were moved. Unfathomably, the FAA refused NATCA's request to have the contents of their tenth floor union office cleaned by a professional mold remediation contractor, even though the cleaning would have been done at the union's expense.

DOT report, page 5, paragraph 2

*FAA was advised to clean visible mold from the elevator shaft liner using a biocide chemical and on January 22, 2005, employees were evacuated from the facility due to the strong chemical odor.*

The primary reason for the evacuation was the onset of symptoms including upper respiratory distress, nausea, eye irritation, headaches, and other conditions that seriously jeopardized the safe movement of aircraft.

DOT report, page 5, paragraph 3

*Since 2005, numerous agencies and contractors including the Occupational Safety and Health Administration, National Institute for Occupational Safety and Health, and Federal Occupational Health have visited the site or conducted a review of documentation related to the facility and employee health issues. The conclusions of these experts generally indicated that the air traffic control tower building did have evidence of moisture intrusion and mold growth, that employees may be experiencing health effects, and that actions were necessary to stop moisture from entering the structure, that visible mold needed to be remediated, and that improvements must be made to the tower's heating, ventilation, and air conditioning systems to prevent moisture condensation.*

This summary of past reports fails to mention that the Agency was directed to fully assess the situation. Not only did the FAA fail to do so, they prevented NATCA and their experts from undertaking a comprehensive inspection (at no cost to the Agency).

DOT report, page 5, paragraph 4

*During that time, the union was prevented from conducting intrusive wall cavity inspections or conducting air monitoring and industrial hygiene samples within the facility.*

The FAA's reluctance to fully investigate and deal with problems continues to this day. Their denial and efforts at obstruction have direct detrimental impacts on many of the occupants in the facility.

DOT report, page 6, 4<sup>th</sup> bullet

*At the time of the site visit FAA installed a "memory card" into the HVAC controls to allow long-term data collection of the humidity and temperature sensors in the tower. It is unclear why the data logging was not activated sooner, seeing the importance in monitoring the temperature and humidity levels in the tower to help identify and prevent condensation.*

If this were an isolated incident it could be dismissed as an oversight. However, this is another grievous example of the FAA's efforts to control the situation by refusing to collect information that could be potentially damaging. Obviously, installing monitors was for show, and neglecting to activate them fits the pattern of denial that includes the restriction of NATCA's experts from entering the building and/or collecting appropriate samples, ignoring medical data from industry experts, refusing repeated requests to conduct an anonymous health survey, and controlling the OSHA injury/illness log to ensure that no cases related to the building air quality were included.

DOT report, page 8, paragraph 2

*The most recent OSHA recorded case related to mold or air quality was reported on July 24, 2006, so there has been no new related case for two years. This could be an indicator that air quality within the facility has not caused new respiratory illness cases in 2007 or 2008. Alternately, the possibility exists that air traffic controllers are not reporting air quality or mold related cases due to fear that they could lose their jobs or for other reasons.*



The overall body of evidence included in the DOT report and information provided to the investigators (including the statement found in the footnote at the bottom of page eight of the report) provides compelling evidence that existing problems are being exacerbated and that new problems are being experienced by occupants of the Detroit tower that can reasonably be linked to their time in the structure.

DOT report, page 8, footnote 2

*On June 9 -12, 2008 FAA conducted its own inspection of the Detroit air traffic control tower wall cavities and has identified additional locations that have mold contamination.* Even though the DOT inspectors were aware of results from a subsequent inspection where mold was found in other locations, they still characterized the mold contamination as “small”. As noted previously, an ongoing problem at this facility has been that inspectors (including the DOT inspectors) are looking too narrowly at the information collected during their investigation and the information available from multiple other parties. Such parsing of the data will not result in a comprehensive understanding of the building problems and the impact those problems are having on the occupants.

DOT report, page 10, 5<sup>th</sup> bullet, paragraph 4

*The shaft did not appear to be a conduit or active pathway for mold spores to travel within the facility. ... If the tower elevator shaft were effective in disbursing fungal spores, higher concentrations of mold spores would have been evident in the tower cab, junction level break room, or inside the base building.*

This is an opinion that is not supported by facts. See the November 24, 2008, letter for a detailed response.

DOT report, page 10, paragraph 2

*Air monitoring results revealed that indoor fungal concentrations were insignificant when compared to concentrations outdoors.*

See the November 24 and November 26, 2008, letters for detailed responses.

DOT report, page 11, paragraph 2

*Mold spore and air quality measurements were collected in the following locations:* Only seven indoor locations were chosen for sampling despite the fact that the tower has 13 levels (including the mechanical areas above the cab) and the base building has three levels. Drawing building-wide conclusions, particularly about sampling data patterns, when a comprehensive sampling plan was not undertaken can easily lead to a misinterpretation of the situation.

DOT report, page 13, item J

*Replace the leaking base building roof. Ensure adequate control measures are in place (such as de-energizing air handlers and sealing outside air intakes) to safely prevent infiltration of airborne chemical contaminants from outside the building.*

The DOT inspector recognizes that the roof project may involve chemical contaminants infiltrating from the outside but failed to appreciate the potential for contaminants in the interstitial space above the ceiling tiles that might also infiltrate into occupied areas of the building.

DOT report, page 13, item J

*A thorough pre-construction survey and written safety control plan shall be conducted to identify any ways that the roofing project could negatively impact FAA employees working within the air traffic control tower or base building...*

At the pre-construction meeting the Agency limited the discussion and was unwilling to discuss safety measures that would protect the occupants from contaminants entering the work space. They refused to complete their own FAA required risk assessment checklist in a logical fashion and refused admittance to NATCA's safety experts.

DOT report, pages 13 and 14, item L

*These meetings will give employees an opportunity to voice their concerns, and allow FAA management to demonstrate that efforts are being implemented to ensure the safety and health of all working within the facility.*

As noted previously, the FAA has refused the union's request to have a safety and health expert present at meetings related to the roof replacement project. When the occupants are in these meetings they are unfamiliar with the terminology of construction projects and, therefore, are at a disadvantage.

DOT report, appendix A, page 2, item 2

*All HVAC systems should be operated to keep the facility under positive pressure to prevent infiltration of unconditioned air. Pressurizing the lower floors will help minimize the stack effect in the elevator shaft and middle tower area.*

This recommendation was from a 2006 OSHA report and the DOT's positive assessment of the FAA's response conflicts with an earlier statement made in the report. It is illogical for the DOT inspector to include this item and then make the following statement in a number of places in the report:

“The shaft did not appear to be a conduit or active pathway for mold spores to travel within the facility.”

DOT report, appendix A, page 2, item 4

*Utilizing a HEPA vacuum, vacuum all surfaces within the elevator shaft under negative pressure...*

Negative pressure was not used during the elevator shaft cleaning. See the November 24, 2008, letter for a detailed response.

DOT report, appendix A, page 2, item 5

*Educate and inform employees of ongoing fungal abatement activities within the facility. Status – Incomplete. Communication between FAA management and employees is strained. A large amount of distrust between both groups was observed. Additional efforts need to be made to bridge the communication and trust gaps.*

After four years of strained relations it will take significant efforts to bridge the gaps. One avenue that should be undertaken is to institute a task force that includes all parties, including the union's experts.

DOT report, appendix A, page 3 item 11

*Conduct routine visual mold inspections. Status – Incomplete. At one time FAA performed frequent inspections of the elevator shaft for water incursion and mold growth. FAA has since stopped the process after finding that mold and moisture did not recur. Periodic inspections should be resumed and documented.*

It is not enough that the inspections be reinstated if they **are** going to be done poorly. The previous inspections were simply window dressing. The inspector carried a flashlight and a digital camera. It is impossible to conduct a competent moisture survey without a moisture meter.

DOT report, appendix A, page 4, item 12

*Clean the interior elevator shaft wall surfaces by wet-wiping with a bleach solution. Status – Complete. The shaft cleaning was completed on 5/26/2006.*

See the November 24, 2008, letter for a detailed response.

DOT report, appendix A, page 4, item 13

*During periodic inspections, indentify sources of moisture and correct to prevent reoccurrence. Status – Complete. Except for the discontinued elevator shaft inspections, the facility is checked for sources of moisture on an ongoing basis.*

Although the FAA stated that they are conducting regular inspections, occupant reports indicate that water-damaged materials are removed infrequently. It is clear that the elevator shaft has not been included in regular inspections.

DOT report, appendix A, page 4, item 18

*Eliminate situations where moist, warm air is allowed to contact cool surfaces. Status – Incomplete. Modifications have been made to the building's HVAC system and temperature and relative humidity sensors have been installed in the tower elevator shaft and in some unoccupied rooms of the tower. FAA is monitoring the data obtained from the sensors. The fact that mold has returned in areas where it was previously abated indicates that moisture and condensation problems may remain.*

This is a brief synopsis of the situation at DTW after four years of work and millions of dollars spent—the source of the mold has not been identified and new mold growth is flourishing in areas that were remediated.

DOT report, appendix B, general comment

The appendix lists 27 incidents of OSHA recordable injuries and illnesses from 2004 to 2008. The list includes 15 entries that appear to be attributed to the environmental conditions in the building (e.g., exposure to chemical used for removal of black mold, allergic reaction and respiratory distress, irritation of **the** left eye due to excessive dust in the tower cab). As noted previously, there is compelling evidence that suggests that FAA management has discouraged proper injury and illness reporting and recordkeeping over the past two years. If, over the course of the last four years, more than half of the reported incidents could be attributed to environmental conditions many employers would take notice of those statistics and take appropriate action to locate the source of the concern. That the FAA has instead spent considerable effort denying the connection between the building and the occupants health and punishing the ill employees is disgraceful.

DOT report, appendix C, page 1, 6<sup>th</sup> bullet

*The elevator shaft had devices installed to measure temperature and relative humidity. FAA had not been using the sensors, but decided to activate them during the investigation. There are 9 moisture monitors in total; some are outside the elevator shaft in unoccupied tower space.*

Why did the FAA go through the expense of installing nine sensors but not utilize them until an outside inspector showed up? It appears that this is another case of the Agency using the veneer of implementing processes that would assist in resolving the problems but not wanting to solve the problem. In the FAA's rebuttal they state they are gathering historical data. It would be helpful to activate these nine monitors in order to collect the data.

DOT report, appendix C, page 3, 7<sup>th</sup> bullet

*Visible mold area was less than 10 square feet and to be considered a Level I, small isolated area according to the NY City and EPA Mold Guidelines.*

Although this statement is technically correct it does not describe the whole situation. This description is used in an effort to downplay the significance of finding active mold growth in previously remediated areas. Although the FAA references the New York City and EPA mold guidelines the Agency conveniently leaves out the discussion in those documents that warns mold investigators to incorporate the amount of hidden mold into their project planning. Given the various locations where the mold has been found, the uninspected areas where it is likely to be present, the air patterns in the building, and the sensitized occupants it is clear that any mold remediation project in the tower should be described as a level IV, large project.

DOT report, appendix C, page 7, 1<sup>st</sup> bullet

*Approximately twenty ceiling tiles were observed to be stacked in the ESU building. FAA management indicated that the tiles had been removed over the weekend of 5/17/08 and 5/18/08 as a normal operational practice. ... The ceiling tiles are fiberglass insulated, foil backed, and vinyl faced tiles that do not offer a good food source for mold growth.*

This photo description contained several misstatements. Despite the FAA's description of the removal being a normal operational practice there was substantial evidence that the tile removal was done specifically to improve the appearance of the structure for the inspectors. In addition, a third of the tiles were not the fiberglass tiles described by the inspector but the more standard ceiling tiles which are composed of clay and cellulose. At least one industry publication has indicated that over 80% of all such tiles that are water stained support fungal growth. Neither the DOT inspector nor their contract hygienist bothered to examine the tiles in detail or collect any samples. Following these reasonable procedures might have confirmed that the tiles were the source of some of the mold spore types that were recovered inside the base building but not out-of-doors.

DOT report, appendix D, page 1, 1st line

*June 9, 2008*

As noted previously, the DOT inspector informed the individuals that were present for the physical inspection that laboratory data and the industrial hygiene report would be

provided to the participants as soon as it was available. Instead, the FAA and DOT reneged on their assurances and did not release the information to the union participants for five months (*i.e.*, from its availability on June 9 until its distribution through the Office of Special Counsel on November 11, 2008).

DOT report, appendix D, page 3, paragraph 2

*The likely scenario is that water pooled on a given level's concrete floor and through wicking action was taken into the drywall thus allowing mold colonization. Furthermore, it is likely that the introduction of moisture laden air into the tower environment caused condensation to occur and further add moisture to the drywall. The surface mold previously observed and subsequently removed from the elevator shaft liner could have been due to condensation and/or poor moisture/temperature control of the elevator shaft environment.*

The hygienist hired by the FAA offers three possibilities for the source of the moisture and resultant mold. In essence, he is admitting that after four years of effort and millions of dollars of expenditures the Agency still does not have a clear understanding of what is causing the problems in the building.

DOT report, appendix D, page 3, paragraph 4

*Based on the corrective actions completed thus far, the bioaerosol sampling obtained during this survey, and the apparent mold growth it is suspected that FAA employees are not exposed to significant bioaerosol concentrations.*

This is pure speculation that is based on a narrow interpretation of the data and ignores credible reports of continuing illnesses from the occupants. It does not factor in that the corrective actions were not conducted in a manner consistent with the industry standard of care and, therefore, were likely to have spread the mold throughout the structure. The conclusion ignores the fact that fungal growth has returned on previously remediated surfaces and that a number of fungal types were recovered from the structure that were not found in comparison out-of-doors samples. It also conveniently overlooks the fact that over 50% of the reported injuries and illness are related to respiratory and allergic reactions. It further ignores the firsthand accounts of the occupants who report relief when they are absent from the building for a period of time. As such, it is clear that a better interpretation of the available data suggests that until the occupants can enter the facility and not experience symptoms it is likely that they are being exposed to bioaerosol contamination.

DOT report, appendix D, page 4, 1<sup>st</sup> bullet

*Proceed with the base building roof replacement. The roof must be replaced as it is the major source of water intrusion remaining. Ensure adequate control measures are in place and implemented to prevent infiltration of airborne volatile organic compounds likely to be generated from the roof replacement process. Consideration should be given to conducting the roof replacement during night hours.*

The current work scope does not even provide the basic level of engineering controls suggested in the FAA's indoor air quality guidance document. It cannot be stressed enough that engineering controls must be in place prior to the start of the roof project so that the occupants are not impacted by any of the processes, chemicals, or biological

contaminants that may be within the interstitial space or on the insulation board under the roof membrane.

DOT report, appendix D, page 5, paragraph 5

*Bioaerosol sampling was performed using a single stage SAS Bioaerosol Sampler. ... Their numbers give an indication of the airborne concentration of viable fungi and bacteria.*

Observation of the sampling procedures utilized by the DOT's contract hygienist revealed a number of deviations from practices that are considered standard for the collection of bioaerosol samples for cultured analysis. In particular it was noted that:

- The inspector did not wear gloves while sampling and change gloves between every sample to prevent cross contamination. This is especially important when collecting bacteria samples as occupants are the leading source of many types of bacteria found in a building.
- The inspector did not sterilize the SAS sampling head between mold and bacteria samples; although he did sterilize the sampling unit when moving from area to area.
- Two different types of sampling agars were used even though the report seems to indicate that he used just one agar (MEA) for both bacteria and mold.
- The report does not document the flow rate, sample duration, what lab analyzed the samples, or what specific methods were used to analyze the mold and bacteria samples. This is critical information necessary to evaluate the accuracy of the samples.
- The report does not include a sample collection log or the actual results from the lab that analyzed the samples. This information is necessary to ensure that there were no errors in the data presentation.

DOT report, appendix D, page 6, paragraph 1

*Microbial spore sampling was performed by drawing air through an AeroTrap spore sampler.*

As with the bioaerosol sampling there are a number of deficiencies with the documentation of this activity including:

- Sampling time was not noted in the report
- The identity of the lab that analyzed the samples was not noted
- The report does not include a sample collection log or copy of the results from the lab that analyzed the samples

DOT report, appendix D, page 7, paragraph 1

*Apparent mold growth on elevator shaft drywall was cleaned.*

Mold should be removed from porous surfaces, not cleaned. The contractor utilized water and detergent to "clean" the drywall, thereby providing additional moisture and a food source for the mold to encourage its growth.

DOT report, appendix D, page 7, paragraph 1

*An appropriate response plan has been implemented for leaks in general in the tower and base building.*

This response plan has not been shared with the union.

DOT report, appendix D, page 7, paragraph 2

*The inspection of the elevator shaft was conducted from the roof of the elevator car. ... There were no current signs of moisture intrusion or apparent mold growth in the elevator shaft.*

See the November 24, 2008, letter for a detailed response.

DOT report, appendix D, page 7, paragraph 3

*Drywall panels were physically removed from the fourth and ninth unoccupied levels corresponding to the discolored or cleaned areas within the elevator shaft.*

The wall cavities in a facility with sensitized occupants that are still complaining of symptoms that can reasonably be associated with mold exposure were opened, again without proper engineering controls. The contract hygienist for the DOT later indicates that disturbance of the wall cavities may have created higher spore concentrations in some of the rooms. Being aware of this possibility (even though the removal of the wall panels did not occur until after the sampling), why did he risk further contamination of the building by utilizing such poor inspection practices?

DOT report, appendix D, page 7, paragraph 3

*Apparent mold growth was identified on the backing of drywall located at the perimeter wall.*

Why were samples not collected so that the mold growth could be verified?

DOT report, appendix D, page 7, paragraph 3

*Minimal apparent mold growth was noted only on the back surface of the inner layer of fire-rated drywall (inner layer of shaft liner) which corresponded specifically with an area of discoloration at the front corner (at floor level) of the elevator shaft liner.*

After four years of requesting a logical investigation of the facility to match staining and pathways, finally an industrial hygienist has noted that there is a pattern to the mold and moisture intrusion.

DOT report, appendix D, page 7, paragraph 5

*Many of these particles have been implicated in human respiratory and skin allergies, hypersensitivity reactions and toxic effects.*

These are exactly the types of symptoms experienced by the building occupants.

DOT report, appendix D, page 7, 6<sup>th</sup> paragraph

*Fungal spores and other viable particles may enter a space through the outside air intakes and due to their small size, are not effectively eliminated from the air stream by the air filtration system. Once they have settled out of the air stream, the spores may grow almost anywhere within a building where conditions permit.*

The primary factor to control mold growth inside buildings is to manage moisture infiltration. Since moisture continues to enter the Detroit tower there are many locations in the facility that have the right conditions for mold to flourish. Until the Agency identifies and corrects all of the moisture intrusion/condensation issues mold growth is likely to occur. However, identification and remediation of existing mold is just as important as mitigating the water infiltration sources since occupants are suffering from exposure to mold and other biological contaminants.

DOT report, appendix D, page 8, paragraph 2

*Generally there is insufficient evidence to show that bacteria are a cause of allergies. Exposure to significant concentrations of airborne bacteria could challenge an individual's immune system. However, bacterial byproducts (proteins and endotoxins) have been suggested as causative agents for occupant illnesses such as Monday morning fever. Monday morning fever is an allergic reaction to endotoxins produced by Gram negative bacteria...*

Recent medical reports indicate that there may be a synergistic effect between bacteria and mold contamination, which creates conditions for exposed individuals that are worse than what would be expected from either of the contaminants individually.

DOT report, appendix D, page 8, paragraph 3

*Fungi (molds and yeast) produce spores during their growth or reproductive cycle. The asexual and/or sexual spores are often considered allergens. It is known, that individuals exposed intermittently to significantly elevated levels of allergens or moderate levels continuously for a time period (months or years) may become sensitized.*

There is compelling evidence that the controllers have been exposed to fungal contamination for four years and that many of the controllers have become sensitized.

DOT report, appendix D, page 8, paragraph 3

*An individual sensitized to an allergenic agent is said to have developed an allergy to that agent. Once sensitized, the individual experiences an allergic reaction at each time of exposure. The degree and extent of the reaction is dependent on the exposure concentration, the length of exposure, and the individual.*

This explains why the controllers feel better when they are away from the facility and as the exposure continues it takes the controllers more time before they feel better away from the facility.

DOT report, appendix D, page 8, paragraph 3

*Therefore, a sensitized individual may react to relatively low and in some cases undetectable concentrations of allergens while a non-sensitized or less sensitized individual in the same indoor environment will not experience any symptoms.*

The controllers have seen examples of co-workers who are not sensitized as well as those who have been in the facility for a short time that have become sensitized. Controllers who have been hired since January 2005 have also experienced sensitization, although many are reluctant to submit an official complaint or illness report.



DOT report, appendix D, page 8, paragraph 4

*Interpretation of such sample results depends on professional judgment as to whether types and amount of organisms are comparable to normal background and the likelihood that the identified organisms will cause allergic reactions or infections.*

Interpretation of sample results should not be done in a vacuum. The best professional judgment as to whether the particular organisms in a structure will cause allergic reactions includes integrating all the contributing factors such as the possibility of occupant sensitization and complaints of symptoms reasonably attributed to mold. It is bewildering that the investigator understands these concepts yet does not apply them to his analysis of the situation at the Detroit tower.

DOT report, appendix D, page 8, paragraph 5

*However, the fungus, Stachybotrys, was detected on the ninth and fourth unoccupied levels. Although this fungus is common in the environment it should not be present in the indoor environment. If detected, it is an indicator of chronic water intrusion and colonization of cellulose based building materials. The detection of Stachybotrys could have been due to the disturbance created during drywall panel removal to facilitate wall cavity inspections.*

The removal of the drywall panel should have been conducted under negative pressure. If the material behind the drywall is harboring *Stachybotrys*, it is imperative that the invasive inspection slated for December be conducted with proper engineering controls, especially utilizing negative pressure.

DOT report, appendix D, page 8, paragraph 5

*Stachybotrys produces a sticky spore that does not readily become airborne unless physically disturbed. Exposure to Stachybotrys would not present any more of a health hazard than [sic] exposure to any other fungus in [sic] which an individual has become sensitized.*

See the November 24, 2008, letter for a detailed response.

DOT report, appendix D, page 8, paragraph 5

*The detected environmental bacteria concentrations were insignificant.*

As noted previously, in situations where there are a number of individuals apparently being impacted by contaminants in the building, it is important to review bacterial concentrations in conjunction with mold and other pollutants because of synergistic effects.

DOT report, appendix D, page 9, paragraph 2

*The detected fungal concentrations for the second sampling period were insignificant. Two colonies of Stachybotrys were detected on the fourth level.*

There are a number of problems with this statement, both in what it says and what it does not say. A close review of the information presented in table 1 shows that *Stachybotrys* mold was recovered in the samples from room 928 in the morning (7 colonies which equates to 49 colony forming units per cubic meter of air), room 428 in the morning (1 colony which equates to 7 colony forming units per cubic meter of air), and room 928 in the afternoon (2 colonies which equates to 14 colony forming units per cubic meter of

air). As such, either the statement of *Stachybotrys* being detected on the fourth level in the second sampling is incorrect or the information presented in table 1 is incorrect as the only *Stachybotrys* found on the fourth level was in the morning sample. To make matters more confusing, the only location where two colonies of *Stachybotrys* were detected was on the ninth level, not the fourth level.

In addition to the error in the actual data presentation, the inspector attempts to minimize the importance of the *Stachybotrys* by only reporting the actual number of colonies recovered from the sampling media rather than the concentration of colony forming units per cubic meter of air. Since sampling times and flow rates vary from project to project it is standard practice to present the sampling data in the form of a concentration of spores per volume of air. This allows comparison between projects and gives a truer picture of the situation. However, it appears that the DOT inspector is trying to bias the reader toward his interpretation that the sample results are “insignificant” by only quoting the colony count on the Petri dish.

The presence of *Stachybotrys* in a number of the cultured air samples is surprising since the malt extract agar used by the inspector is not considered by many mold remediation professionals as a suitable media for the growth of *Stachybotrys*. Generally, in facilities where *Stachybotrys* is suspected the preferred media choice for cultured samples is cornmeal extract or other agar specifically designed to recover that fungal type.

The statement about fungal concentrations being “insignificant” is further dashed by a critical review of the other types of organisms that were recovered. *Ulocladium*, another tertiary mold colonizer similar to *Stachybotrys*, was recovered in a number of samples including one collected from the occupied TRACON. In addition to the *Stachybotrys* and *Ulocladium* a number of species were recovered in occupied and non-occupied areas of the building that were not found in either of the out-of-doors comparison samples. These include *Coelomycete*, *Rhodotoru*, *Penicillium*, *Rhizopus*, and *Aspergillus versicolor*. Finding seven separate species of mold inside a building that are not recovered from out-of-doors comparisons samples is significant regardless of the amount recovered and is strong evidence of internal fungal sources.

The FAA has had documented evidence of the presence of mold contamination in the building and in the building air for four years. This report provides another confirmation of the fact that fungal contamination exists in the structure. As such, the types and concentrations of mold spores detected in the air are not “insignificant”. The source of such contamination should have been identified and properly remediated years ago.

DOT report, appendix D, page 9, paragraph 3

*Indoor spore concentrations were lower than the outdoor concentration.*

This summary of the spore trap sampling is also misleading. Four different types of spores were recovered at various locations in the building that were not detected in the out-of-doors sample. *Stachybotrys* was confirmed in the building air by this sampling method as well. This information confirms the seriousness of the fungal contamination in the building.

DOT report, appendix D, page 10, paragraph 5

*The average carbon monoxide concentrations at each sampling location (identical to carbon dioxide locations) were consistently less than 5.0 ppm.*

It is interesting to note that there is no table for the carbon monoxide readings taken in the DTW ATCT. This appears to be in direct contrast to the tables shown on page 9 that illustrate the CO<sub>2</sub> levels in the building and the table on page 10 that describes the average temperature and humidity measurements taken in the tower. Why didn't the author use a table in this instance that shows each CO<sub>2</sub> measurement taken on each level? Is it possible that some readings taken in the tower exceeded recommended levels? The word "average" implies that individual measurements were grouped together to form a common value.

DOT report, appendix D, page 10, paragraph 7

*The average relative humidity was within or insignificantly below the ASHRAE recommended range of 40- 60% for summer.*

See the November 24, 2008, letter for a detailed response.

DOT report, appendix D, page 11, paragraph 1

*The particles count for each size range and at each location was not significant when compared to the outdoors.*

See the November 24, 2008, letter for a detailed response.

DOT report, appendix D, page 11, paragraph 6

*Based on the corrective actions completed thus far, the bioaerosol sampling results obtained during the survey, and the location of the apparent mold growth it is suspected that FAA employees are not exposed to significant bioaerosol concentrations.*

This conclusion is ridiculous given the information presented in the report. All the inspector needed to do to properly evaluate the situation is look at his own data in a comprehensive fashion. Had he done that he could have constructed the following logical chain of information:

1. The elevator shaft is central to the tower. (page 5)
2. There is a "piston effect" associated with the elevator shaft which can move air from unoccupied areas to occupied areas of the tower. (page 3)
3. Ventilation system deficiencies were corrected to allow for sufficient airflow and conditioning of supply air to positively pressurize the tower in order to minimize the "stack effect" which also moves air from unoccupied to occupied areas of the tower. (page 6)
4. There is poor moisture and temperature control in the elevator shaft causing surface condensation. (page 5)
5. There have been numerous water intrusion episodes reported in the building. (page 5)
6. Previously identified mold growth was removed from the third, fourth, and ninth floors and cleaned from the elevator shaft liner. (pages 6 & 7) (This does not even include concerns about the reports of improper remediation activities that resulted

- in the evacuation of the tower and likely cross-contamination of large areas of the building.)
7. Inspection of the wall cavities on a number of levels has confirmed the presence of additional mold growth even in previously remediated areas. (page 3)
  8. A large number of water-damaged ceiling tiles were removed from the structure one or two days before the inspection. (page 7 of the photographs)
  9. The *Stachybotrys* detected in the indoor air should not be present in the indoor environment and is an indication of chronic water intrusion and colonization of cellulose based building materials. (page 9)
  10. Due to their small size fungal spores are not effectively eliminated from the air stream by the air filtration system. (page 7)
  11. Since spores are only released into the air intermittently, any visible growth, water-damage, or excessive dust may be considered an indication of potential bioaerosol problems, even where air sampling results are negative. (page 8)
  12. It is not known what concentration of spores is required to evoke an allergic reaction. (page 8)
  13. It is known that individuals exposed intermittently to significantly elevated levels of allergens or moderate levels continuously for a time period (months or years) may become sensitized. (page 8)
  14. Several FAA employees report that they have experienced illnesses related to their occupancy in the tower. (page 5)
  15. Injury and illness logs over the past few years verify 50% of the illnesses as respiratory and allergic type of symptoms. (DOT report appendix B)

With all of this information available in his report (and much more in the DOT report and other documentation shared by NATCA) it is logical to draw the conclusion that the FAA employees *are* exposed to significant bioaerosol concentrations.

DOT report, appendix D, page 11, paragraph 6

*The identified apparent mold growth was located between layers of intact drywall and in unoccupied areas.*

NATCA offered this scenario to the FAA in 2006 as one of the reasons for requesting invasive sampling. Instead of acting on this logical suggestion and identifying the problem years earlier the Agency chose to deny reasonable investigative efforts. Because of the limited nature of the DOT inspection (no invasive sampling in occupied areas) the investigator cannot rule out that fungal contamination sources are in areas of the building closer to the occupants than those identified during the May inspection. As such, their continual reliance on statements about the mold being found in unoccupied areas shows their bias toward minimizing the problem rather than seriously trying to find the contamination sources that are impacting the occupants so seriously.

DOT report, appendix D, page 11, paragraph 6

*The unoccupied areas are not serviced by existing ventilation systems currently servicing occupied levels of the tower and totally independent from the base building ventilation systems.*

The implication from this statement that the spores from the observed fungal contamination are not reaching the occupied areas of the facility is without support. The primary refutation is the fact that occupants continue to experience health effects when in the facility. The potential of the elevator shaft spreading contamination through both the piston effect and stack effect has been detailed previously. In addition, there is confusion in the report about the operation of the air handling system. On page 1 of Appendix C the investigator states that “the elevator shaft had air supply and return vents.” In other areas of the report the vents in the elevator shaft are referred to as pressure relief vents. There is no confirmation or explanatory data to clear up this confusion or justify the statement that the air handling system servicing the areas where fungal contamination was observed is completely independent of the occupied areas—particularly areas separated from the cab and junction levels.

DOT report, appendix D, page 12, paragraph 1, 1<sup>st</sup> bullet

*Perform comprehensive inspection of the elevator shaft drywall liner to identify mold contamination.*

The comprehensive inspection must be conducted utilizing proper engineering controls, including the use of negative pressure enclosures so that the building occupants are not impacted by the uncontrolled release of *Stachybotrys* into the facility.

DOT report, appendix D, page 12, 2<sup>nd</sup> bullet

*Clean remaining non-porous substrates, and replace building materials as necessary. A water/detergent solution with a stiff bristle brush is sufficient followed by rinsing with water/detergent solution.*

The industry standard of care does not recommend adding water to a mold remediation process nor the use of detergent.

DOT report, appendix D, page 12, 2<sup>nd</sup> bullet

*The remediation must be conducted in a similar manner as asbestos abatement and as previously performed on the third, fourth, and ninth unoccupied levels of the ATCT.*

The remediation should not be conducted as previous projects. There were numerous serious deviations from the industry standard of care documented during the previous projects.

DOT report, appendix D, page 12, 2<sup>nd</sup> bullet

*The collection of spore trap samples can be used for containment clearance purposes...*

Clearance criteria should be established prior to the beginning of the project. There are published criteria that can be utilized including a conservative process published in the November 2004 issue of *Professional Safety* magazine.

DOT report, appendix D, page 12, 3<sup>rd</sup> bullet

*Evaluate material safety data sheets for all materials to be used for the roof replacement and ensure adequate control measures are in place and implemented to prevent infiltration of airborne volatile organic compounds likely to be generated from the roof replacement process.*

The DOT hygienist recognizes that volatile organic compounds are likely to be generated and he recommends that adequate control measures are necessary. The union has requested engineering controls such as a canopy or even six-mil poly erected to protect the occupants from airborne contaminants that may be dislodged from the interstitial space during the roofing project. The Agency has refused all suggestions for engineering controls. The memo from Joe Figliuolo dated November 17, 2008, states that air monitoring will be conducted for hydrogen chloride, methanol, and carbon dioxide. This brief list does not include the variety of chemicals that are included in the 48 pages of MSDSs submitted for the project. Once again it appears that the Agency is willing to risk the occupants' health for the Agency's own agenda.

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**3**



U.S. Department  
of Transportation  
Federal Aviation  
Administration

Office of Air Traffic Organization  
Central Terminal Operations

Fort Worth, TX 76193

JUN 06 2007

Mr. Patrick Forrey  
National President  
National Air Traffic Controllers  
Association  
1525 Massachusetts Avenue, NW  
Washington, DC 20005

Dear Mr. Forrey:

In your letter dated May 16, 2007, to Administrator Marion C. Bliley, Federal Aviation Administration (FAA), you raise an issue concerning a visual inspection for mold at Detroit Metropolitan Wayne County (DTW) Airport Traffic Control Tower (ATCT).

In fall 2004, mold was identified on an exterior wall in the ninth and fourth floor storage areas of the DTW ATCT. During 2005, affected areas of drywall were removed from the fourth and ninth floors. Additional moisture was identified behind the drywall. Certified Industrial Hygienists (CIH) performed assessments, and an engineering evaluation was conducted by Jacobs Engineering to identify potential areas of water intrusion. A two-phased approach (short and long term) was planned to address the moisture and remaining mold in the ATCT. Phase one of the plan was to remediate mold in the tower shaft. Phase two addressed remediation of the elevator shaft. Phase one was completed in May 2005 with the remediation of the third, fourth, and ninth floors. In May 2006, phase two of the FAA's removal plan was completed with the remediation and cleaning of the elevator shaft. All project work associated with facility corrective actions to resolve moisture issues were completed in February 2007.

In December 2006 and January 2007, in response to an information request, the National Air Traffic Controllers Association (NATCA) consultant Wonder Makers Environmental was allowed access to the DTW ATCT facility for the purposes of conducting a visual assessment and collecting samples. In mid-April 2007, the FAA received a letter and sampling data from NATCA alleging there was evidence of mold growth in the facility based upon Wonder Makers' visual assessments and sampling data.

All project work to remediate/resolve previously identified mold and moisture issues at the DTW ATCT has been completed. Other than the concerns and allegations raised by NATCA, there has been no indication or evidence of mold growth in the facility since completion of remediation and corrective actions in 2006 and 2007. However, the FAA will investigate and address the concerns raised by your letter and the data received in April 2007.



In accordance with "Guidance for the Management of Mold in FAA Facilities," dated September 25, 2006, a comprehensive visual assessment of the facility will be conducted. The assessment will be conducted by an outside consultant retained by the FAA and is scheduled for the night of May 31, 2007. Additionally, a second independent consultant has been retained to conduct a technical review of the Wonder Makers Environmental sampling data provided by NATCA. This review will be completed by June 8, 2007.

The findings and recommendations from the visual assessment and the technical review of the sampling data will determine if additional investigation and/or sampling will be conducted in the facility. If any additional mold growth is identified from the above actions, prompt action will be initiated to address the matter.

These actions are consistent with the above-referenced FAA guidance for managing mold in FAA facilities, and are in accordance with current guidelines published by the Occupational Safety and Health Administration and the Environmental Protection Agency.

We trust this adequately addresses your concerns. If you or your staff require further assistance, please contact the Manager, Executive Operations at 844-294-7231.

Sincerely,

Bobby Sturgell  
Acting Chief Operating Officer

cc: AOA-2, AHR-1, AGC-1, RMC-1, Detroit ATCT



U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

**RECEIVED**

JUL -9 2007

800 Independence Avenue, SW  
Washington, DC 20591

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LR  
SAT

JUL 6 2007

Mr. Patrick Forrey  
President, National Air Traffic  
Controllers Association  
1325 Massachusetts Avenue, NW  
Washington, DC 20005

**NATCA Exec Ofc**

Dear Mr. Forrey:

Thank you for your letter of May 16 about a visual inspection for mold at Detroit Metropolitan Wayne County (DTW) Airport Traffic Control Tower (ATCT).

In fall 2004, mold was identified on an exterior wall in the fourth and ninth floor storage areas of the DTW ATCT. The following year, the affected areas of drywall were removed from the fourth and ninth floors; however additional moisture was identified behind the drywall. Certified Industrial Hygienists (CIH) performed assessments, and an engineering evaluation was conducted by Jacobs Engineering to identify potential areas of water intrusion. A two-phased approach (short and long term) was planned to address the moisture and remaining mold in the ATCT. Phase 1 of the plan was to remediate mold in the tower shaft. Phase 2 addressed remediation of the elevator shaft. Phase 1 was completed in May 2005 with the remediation of the third, fourth, and ninth floors. In May 2006, Phase 2 of the FAA's removal plan was completed with the remediation and cleaning of the elevator shaft. All project work associated with facility corrective actions to resolve moisture issues were completed in February 2007.

In December 2006 and January 2007, in response to an information request, the National Air Traffic Controllers Association (NATCA) consultant Wonder Makers Environmental was allowed access to the DTW ATCT facility to conduct a visual assessment and collecting samples. In mid April 2007, the FAA received a letter and sampling data from NATCA alleging evidence of mold growth in the facility based upon Wonder Makers' visual assessments and sampling data.

All project work to remediate and resolve previously identified mold and moisture issues at the DTW ATCT has been completed. Other than the concerns and allegations raised by NATCA, no indication or evidence of mold growth has been evident since completion of remediation and corrective actions in 2006 and 2007. However, the FAA will investigate and address the concerns raised by your letter and the data received in April 2007.

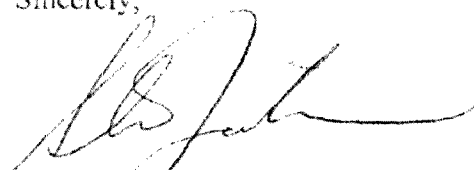
In accordance with "Guidance for the Management of Mold in FAA Facilities," dated September 25, 2006, a comprehensive visual assessment of the facility was conducted on May 31 by an outside consultant retained by the FAA. Additionally, a second independent consultant has been retained to conduct a technical review of the Wonder Makers Environmental sampling data provided by NATCA. This review will be completed soon.

The findings and recommendations from the visual assessment and the technical review of the sampling data will determine if additional investigation or sampling will be conducted in the facility. If any additional mold growth is identified from these reviews, prompt action will be initiated to address the matter.

These actions are consistent with FAA guidance for managing mold in FAA facilities and are in accordance with current guidelines published by the Occupational Safety and Health Administration and the Environmental Protection Agency.

If I can provide further assistance, please feel free to call me.

Sincerely,

A handwritten signature in black ink, appearing to read 'Steve Zaidman', written over a light blue horizontal line.

Steve Zaidman  
Vice President, Technical Operations Services



U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

Technical Operations Services

800 Independence Avenue, SW.  
Washington, DC 20591

DEC 7 2007

Mr. D. R. Churchill  
Executive Vice President-Professional  
International Federation of Air Traffic Controllers Associations  
1255 University Street, Suite 408  
Montreal (Quebec) H3B 386 Canada

Dear Mr. Churchill:

Thank you for your letter of October 22 concerning mold in certain Air Traffic Control facilities and specifically in the Detroit Airport Traffic Control Tower (ATCT) and the Atlanta Air Route Traffic Control Center (ARTCC).

The Federal Aviation Administration has a deep commitment to the safety, health, and well-being of each of our employees. In the absence of Federal regulatory standards regarding mold, we developed and issued the guidance for the management of mold in FAA facilities on September 25, 2006. This guidance was developed with input from several Certified Industrial Hygienists, and was coordinated with the National Air Traffic Controllers Association (NATCA) and the Professional Airways Systems Specialists. The document provides a comprehensive plan to protect employee health, and enable our field facilities to address mold issues quickly and effectively when they occur. In general, if mold contamination is suspected, the guidance provides for a visual inspection. If mold is confirmed, the mold is remediated and the water source is eliminated. The guidance also includes proactive measures to prevent mold contamination.

#### Detroit ATCT

Mold in the Detroit ATCT was initially identified in 2004. Extensive mold and moisture remediation projects were completed in February 2007. These projects consisted of remediating the mold in the elevator shaft, elimination of the moisture source, and upgrading the heating, ventilating, and air conditioning system to correct humidity levels and airflow. An FAA review and assessment in June 2007 indicated no further mold issues exist in the facility. Despite these efforts, and third party review of our actions, NATCA continues to disagree with our approach and claims that the FAA is not providing a safe and healthful working environment.

#### Atlanta ARTCC

Several extensive projects are either planned or underway to improve the condition of the facility which houses the Atlanta ARTCC. Two of these projects involve the remediation of mold in the Control Room and the Administrative Wing of the facility.

## 1. Control Room

Two air quality surveys performed since 2006 showed that the air quality in the control room was within industry standards but provided recommendations to improve the air quality. As a result, we implemented enhanced cleaning and maintenance procedures and installed portable air-purifying units in each controller bay. In addition, a recently performed visual inspection of the ventilation system ducts revealed the presence of Scopulariopsis, a mold that is common, and can be found on soil, plant material, house dust, and old carpets. Based on these findings, an action plan to improve the air quality and remediate the mold in the control room is being implemented as follows:

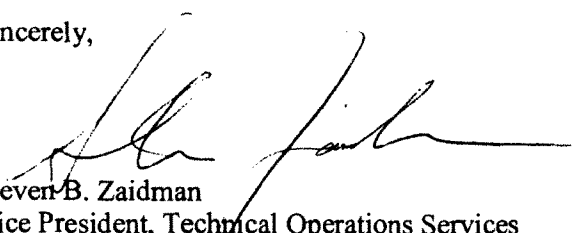
- The temperature has been lowered and the air flow reduced in the control room in incremental stages, which has reduced relative humidity, thereby creating conditions to inhibit mold growth.
- Federal Occupational Health, a component of the United States Public Health Service, is providing periodic health briefings to facility occupants regarding mold.
- A contract to clean the supply and return air handling system ducts for the Control Room was awarded on November 2, 2007, and the contractor began work on November 3, 2007. This phase is expected to be completed during December 2007.
- A request for proposal for cleaning underneath the raised floor in the control room, which serves as an air handling system duct, will be issued on December 10, 2007.

## 2. Administrative Wing

A survey in 2002 identified fan coil units as a possible contributor to mold growth. The old tilt-in windows throughout the Administrative Wing leak during heavy rains, potentially contributing to mold growth. In addition, during the mini-modernization project of the Administrative Wing, mold was discovered on walls near the cafeteria. An action plan to remediate the mold in the Administrative Wing is being implemented as follows:

- The fan coil units in each office were replaced in 2003. The remaining fan coil units are being replaced under the mini-modernization project, which is anticipated to be completed by July 2008.
- Carpeting in affected areas was replaced throughout the Administrative Wing during 2004 – 2005 to mitigate mold growth.
- Mold found in plaster in the Administrative Wing near the Control Wing and cafeteria has been removed.
- During the mini-modernization of the Administrative Wing, a better seal will be provided on the old tilt-in windows.

Sincerely,



Steven B. Zaidman  
Vice President, Technical Operations Services

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**4**



**WONDER MAKERS**  
**ENVIRONMENTAL**

December 18, 2008

Mr. Vince Sugent  
7768 Pleasant Lane  
Ypsilanti, MI 48197

RE: Substantial Deficiencies with the Invasive Mold Inspection at DTW  
Wonder Makers project GC08-7927

Dear Vince:

During the week of December 8–12, 2008, the FAA contracted for an inspection to identify sources of fungal contamination in the Detroit Metro Air Traffic Control Tower. This inspection was in response to recommendations made after a Department of Transportation investigation of the facility following employee complaints of indoor air quality problems and significant health problems attributed to mold and other contamination.

The inspection protocol was developed by Ms. Barbara Hebert, a Certified Industrial Hygienist, and focused on identifying fungal contamination sources inside wall cavities. The site work was conducted by Mike Cecil, also a Certified Industrial Hygienist, with the assistance of Eric Saunders. The FAA refused NATCA's request to have their contract mold remediation expert accompany the inspectors while they were in the building. Instead, NATCA members acted as observers during the process although they were frequently called away to handle normal air traffic duties.

This document details a number of serious problems with the inspection process developed and implemented by the FAA. The information presented here is taken from reports of the inspection process provided by NATCA members and the information provided to the building occupants in the daily Read and Initial (R&I) binder.

Eleven violations of the industry protocols governing such inspections are presented in the attached summary. They range from the most basic (*e.g.*, refusal to use disposable suits to minimize transference of dust and cross contamination of fungal spores from one area to another) to the most dangerous (*e.g.*, "cleaning" the HEPA-filter of the shop vacuum used for controlling dust during the removal of drywall by banging it on the floor so that the inside of the filter became contaminated and subsequent use of the vacuum dispersed contaminants at high velocity). Each problem identified with the inspection process is summarized with an indication of the source of the information. A brief description explaining why the item violates industry standards is also presented, followed by specific references to documents accepted as

authoritative by mold inspection and remediation professionals which support the description of the deficiency.

That this sham of an inspection actually contributed to problems in the structure rather than identified them is clear from the fact that occupants have filed reports of illnesses related to being in the tower during the time that inspection was conducted. It is also important to note that the filing of illness reports was not prompted by NATCA officers at the facility.

The problems documented by the NATCA observers and summarized here are so numerous and severe that they call into question the competency of the individuals who designed and implemented the process. As such, the gross violations of industry protocols indicate that the FAA was either intentional in conducting another inspection that minimized problems at the facility or that the Agency management is so inept in matters related to employees' health and environmental contamination that is not capable of selecting qualified contractors and supervising such critical operations.

Do not hesitate to contact us if you have any questions regarding these concerns. Given the past incompetence related to mold in your building and based on the performance of the FAA contractors and project managers demonstrated last week, we fear that any future mold inspection or remediation efforts will put the occupants of the Detroit tower at grave risk.

Sincerely,

Michael A. Pinto, CSP, CMP  
CEO

Enclosure: Summary of Substantial Deficiencies with the Invasive Mold Inspection



## Summary of Substantial Deficiencies with the Invasive Mold Inspection

### 1. Reported Item:

Engineering controls were not used to minimize exposure to mold-contaminated materials. Source: 12/08/08 V. Sugent email, 6<sup>th</sup> paragraph and generally discussed throughout the inspection process.

### Deficiency:

Rather than following the sampling strategy submitted by NATCA which included the use of a mold remediation contractor to isolate areas of drywall that would be disturbed and keep it under negative pressure, the FAA's experts chose to disturb large amounts of building finish materials containing fungal contamination without the benefit of critical barriers over supply and return ductwork, isolation barriers at doorways, drop cloths under areas where walls were being cut or the establishment of negative pressure in order to prevent the migration of disturbed spores and other contaminants. This is especially egregious given that the FAA's inspector was the same individual who wrote in an earlier report about the Detroit tower that "the airborne *Stachybotrys* recovered from various rooms was a result of their disturbance of the wall."

### Industry References:

- AIHA: Recognition, Evaluation, and Control of Indoor Mold, page 78, Section 6.7, which states: "Extracting several wall plugs in an enclosed indoor environment may pose sufficient hazard to warrant the assistance of a remediation contractor in containing the inspection sites and accessing the inspection area. An alternative would be to use a glovebag or mini-enclosure with an attached HEPA vacuum and/or a negative air machine with HEPA filter. Either type of engineering control would minimize any disruption of mold particulate secondary to the investigation. Particular caution should be taken in high rise buildings, where stack and/or other pressure effects can cause significant airflows inward from openings in wall cavities to occupied areas."
- IICRC: S520 Standard and Reference Guide for Professional Mold Remediation, Standard page 36, section 10.4, which states: "Where visible or suspected mold growth is present or potentially disturbed, immediate containment, other engineering controls and personal protective equipment should be considered during the inspection process."
- RIA: Recommended Professional Practice for Remediation of Mold Contamination in Building Interiors, item 9, which states: "Invasive inspection procedures that involve cutting, drilling, or demolition may release airborne contaminants. This hazard should be reflected in the inspection procedures. Protections include isolating the inspection area, directing the HEPA vacuum to the target area during invasive procedures, and properly sealing penetrations after inspection. A general HEPA vacuuming of the inspection area may be appropriate if the inspection uncovers high mold concentrations."
- Health Canada: Fungal Contamination in Public Buildings, page 39, which states: "Larger inspection holes, especially where mold contamination has been determined to be extensive, requires containment or other protective measures if the space is to be re-occupied before doing repairs."

## 2. Reported Item:

Falsification of observations. Source: 12/10/08 R&I mold memo and 12/15/08 V. Sugent memo.

### Deficiency:

During the course of the inspection the inspectors removed different sized pieces of drywall from the wall surrounding the elevator shaft. This was done to **provide access** to wall cavities surrounding the elevator shaft to determine if materials inside the wall cavity (second layers of drywall, fiberglass insulation, and green board used to create the shaft liner) were contaminated with visible mold. Even after the inspectors and observers verbally agreed on a quantity of mold that was present or a description of its extent (*e.g.*, severe, moderate, limited, etc.), those determinations were not accurately reported in the R&I binder. In one instance, the NATCA observer viewed a large opening in the wall cavity as 100% covered in mold, which was in stark contrast to the inspectors' view that the mold growth was only on a one-foot by six-foot portion of the exposed wall. There are numerous other incidents where the NATCA observer saw contamination on different wall cavity items and the inspector was not going to record it until challenged by the NATCA observer.

### Industry References:

- Health Canada: *Fungal Contamination in Public Buildings*, page 38, factor 5, which states: "An accurate survey of the extent of the contamination and moisture or damage is required to document and remediate the affected area".

## 3. Reported Item:

Inappropriate use of an air filtration device (AFD) in the inspection area. Source: 12/11/08 M. Bird e-mail near the top of the 9:45 a.m. entry.

### Deficiency:

The inspectors' attempt to use an air scrubber to capture spores, drywall dust, and other contamination created by their work was rendered ineffective and dangerous by their careless use of the equipment. Since they did not have the benefit of a negative pressure enclosure the position of the air scrubber in each inspection area was critical. On many occasions the air scrubber was positioned near the work. However, there were times when the scrubber was in the way of the work performed by the inspectors so it was pushed out of the way. In these instances there appeared to be no regard for the direction of the exhaust from the machine. In some instances the exhaust was directed toward, rather than away from, the contaminated areas, including wall cavities and recently removed materials that were resting on the floor. This caused an uncontrolled dispersal of contaminated dust into the atmosphere of several rooms throughout the tower.

### Industry References:

- IICRC: *S520 Standard and Reference Guide for Professional Mold Remediation*, Standard page 41, section 12.1.4, which states: "When using an AFD as an air scrubber, care should be taken to prevent positive pressurization of the contaminated area thereby causing a release of contaminants into unaffected parts of the building."

4. Reported Item:

Use of a shop vacuum to collect dust created during the inspection process. Source: 12/10/08 M. Pinto e-mail response to the Tuesday update, item 2.

Deficiency:

Using a RIDGID shop vacuum with an auxiliary HEPA filter rather than a HEPA vacuum is not recommended for mold inspection or remediation purposes. Air from a professional HEPA vacuum is discharged back into a room after it is filtered through a series of filters, including a HEPA filter. The canister of a professional HEPA vacuum is sealed so that air exhausts only through the filter system. Canisters on a typical shop vacuum are not sealed in this fashion. As a result it is likely that spores and contaminated dust were being dispersed by, rather than captured in, the shop vacuum used by the inspectors.

Industry References:

- IICRC: S520 Standard and Reference Guide for Professional Mold Remediation, Standard page 42, section 12.1.5, which states: "Only well constructed professional HEPA vacuums should be used in mold remediation projects. Regular shop-type or standard consumer vacuums should not be used for remediation, because they are not designed to prevent mold spores and fragments from passing through the equipment and re-entering the air."
- IICRC: S520 Standard and Reference Guide for Professional Mold Remediation, Reference Guide page 114, section 12.1.4, which states: "Some units marketed to the general commercial or residential markets as containing HEPA filters do not achieve HEPA levels of filtration, due to leakage around filters or seals."

5. Reported Item:

Visible sources of potential fungal material were not tested to confirm the inspectors' determination that they were not mold or to correlate source materials with previous air sampling data. Source: 12/08/08 V. Sugent e-mail, 4<sup>th</sup> paragraph and generally discussed throughout the inspection process.

Deficiency:

No air or surface sampling was conducted during the inspection as source materials were found. This should be done to determine if the target organisms found in previous sampling by the inspectors was related to the contamination found on the drywall and green board. In addition, source materials should be sampled because individuals have medical diagnoses related to mold exposure.

Industry Reference:

- OSHA: A Brief Guide to Mold in the Workplace, pp 8 & 9 of 14, section entitled *Sampling for Mold*
- Health Canada: Fungal Contamination in Public Buildings: Health Effects and Investigation Methods, Section 3.3, item 6.

- New York City Department of Health: Guidelines on Assessment and Remediation of Fungi in Indoor Environments, Section 2.2 b.

6. Reported Item:

The inspector used his ungloved finger to wipe across potentially contaminated surfaces as a means to determine if suspect materials were mold or not. Source: 12/11/08 M. Bird e-mail, last third of 9:45 a.m. entry and generally discussed throughout the inspection process.

Deficiency:

At various times this same technique was used to classify whether the material was actively growing or dormant, as well as whether it was old or new mold. This ridiculous “inspection technique” was not even applied consistently. At one point the inspector declared that because the suspect material did not smear it was not mold, and later said that because some material did smear it was not mold.

Industry Reference:

- EPA: Mold Remediation in Schools and Commercial Buildings, page 4, first bullet point, which states: “Do not touch mold or moldy items with bare hands.”
- New York City Department of Health: Guidelines on Assessment and Remediation of Fungi in Indoor Environments, Section 2.2 c

7. Reported Item:

The inspectors appeared to be misrepresenting the amount of hidden mold found inside wall cavities during the inspection. Source: 12/11/08 M. Bird e-mail, last third of 9:45 entry and generally discussed throughout the inspection process.

Deficiency:

The inspectors were quantifying the amount of observed fungal contamination. However, according to NATCA observers, the inspectors limited the quantity to only the amount observed on the materials they removed. There was no indication that they used these representative materials to estimate the total amount of mold that was likely to be found behind the wall cavities.

Industry Reference:

- EPA: Mold Remediation in Schools and Commercial Buildings, page 8, last sentence, which states: “If you discover hidden mold, you should revise your remediation plan to account for the total area affected by mold growth.”
- OSHA: A Brief Guide to Mold in the Workplace, page 2, paragraph 6.
- AIHA: Report of Microbial Growth Task Force, page 8, section 3.

8. Reported Item:

Numerous reports throughout the week confirmed that the inspectors did not wear personal protective equipment. Source: 12/11/08 M. Bird e-mail, noon entry, middle of first paragraph.

Deficiency:

Individuals conducting a mold inspection that involves invasive activities to determine the extent of hidden fungal contamination must wear personal protective equipment. The minimum PPE recommended by numerous sources is full-body coverings, gloves, and respiratory protection. The purpose of the PPE is twofold: to protect the inspector and to prevent cross contamination. Personal protective equipment should be changed as an inspector moves from an area in order to avoid cross contamination.

Industry Reference:

- EPA: *Mold Remediation in Schools and Commercial Buildings*, page 4, section entitled *Safety Tips While Investigating And Evaluating Mold And Moisture Problems*.
- ACGIH: *Bioaerosols, Assessment and Control*, Section 4.6.1.
- OSHA: *A Brief Guide to Mold in the Workplace*, page 8, section entitled *Personal Protective Equipment (PPE)*.

9. Reported Item:

Intentional cross-contamination of numerous areas of the building. Source: Generally discussed throughout the inspection process.

Deficiency:

As noted previously, the inspectors did not employ personal protective equipment such as disposable suits to minimize the potential for widespread contamination. By their own observation the inspectors disturbed and handled hundreds of square feet of building materials with visible fungal growth. Eyewitness descriptions and photographs show that the Agency inspectors cross contaminated other work areas because they did not decontaminate themselves as they moved from room to room and floor to floor. In addition, drywall dust and other contaminants were observed on equipment used during the inspection as well as trash bags that were moved from room to room and floor to floor.

The Agency experts had little or no regard for the standard of care in the mold remediation industry. Several documents within the standard of care note that drywall removal during inspections could disperse large quantities of spores in the affected building, causing high levels of exposure to the inspectors and building occupants. In one instance the observer noted that one inspector had to vacuum the back of the other inspector's blue flannel shirt because it looked like he had "rubbed against freshly sanded drywall." It appears that the inspectors also have no knowledge of common decontamination procedures used in other industries (e.g., radiation, asbestos, lead, and arsenic) to prevent cross contamination of unaffected areas.

Industry Reference:

- EPA: *Mold Remediation in Schools and Commercial Buildings*, pp 8, section entitled *Hidden Mold*.
- ACGIH: *Bioaerosols, Assessment and Control*, Section 4.6.1.
- AIHA: *Recognition, Evaluation, and Control of Indoor Mold*, Section 2 Building Evaluation, page 64.

- OSHA: A Brief Guide to Mold in the Workplace, section entitled *Personal Protective Equipment (PPE)*, page 7.

10. Reported Item:

Decontamination of equipment was conducted in an uncontrolled manner. Source: 12/10/08 M. Pinto response #2. 12/1/08 V. Sugent e-mail, 4<sup>th</sup> paragraph.

Deficiency:

- The Agency inspector “cleaned” the HEPA filter for the shop vacuum by banging the filter on the floor. Although he knocked the thick layer of dust off in front of the AFD, the action certainly allowed contamination to enter the inside of the filter and likely damaged its integrity. The result of the cross contamination of the filter is that subsequent uses of the vacuum spew microscopic debris into the area where the machine is utilized.

Industry Reference:

- EPA: Mold Remediation in Schools and Commercial Buildings, pp 17, section entitled *Method 3: HEPA Vacuum*.

11. Reported Item:

Inappropriate use and decontamination of power tools to cut contaminated drywall. Source: 12/08/08 V. Sugent e-mail, 6<sup>th</sup> paragraph and 12/11/08 M. Bird e-mail, second half of 9:45 a.m. entry.

Deficiency:

The Roto-zip cutting tool used by the inspectors was attached to the shop vacuum with duct tape. This was done in an attempt to capture dust generated during the drywall cutting conducted by the inspectors. The preferred method of capturing dust at its source is to install a dust cowl at the end of the tool and attach the cowl to a HEPA vacuum with a vacuum hose. The problem of cross contamination from use of the Roto-zip was further exacerbated by the inspector’s servicing of the bit. Observers watched the inspector bang the tool on the floor to knock excessive dust and debris out of the unit.

Industry References:

- IICRC: S520 Standard and Reference Guide for Professional Mold Remediation, Standard page 48, section 12.2.10 which states: “Vacuum and damp wipe tools, HEPA vacuum cleaners, and AFDs before they are removed from the containment area.”

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**5**



June 9, 2008

**VIA EMAIL & U. S. MAIL**

Gene S. Davis, Esq.  
Mancini, Schreuder, Kline & Conrad, P.C.  
28225 Mound Road  
Warren, Michigan 48092-3498

**Teresa Bennett v. MIS Corporation et al  
Case No. 5:07-cv-14005**

Dear Mr. Davis:

Along with all of the defense counsel, I was surprised to receive your email dated June 6, 2008, complaining that Ken Fischer, our expert, was somehow involved in secret meetings and testing with the FAA and the DOT. Nothing could be further from the truth.

On May 28, 2008, three representatives of the plaintiffs (Gretchen McMullen, Vincent Sugent and Michael Pinto) were permitted to attend the inspection and sampling that was conducted by the Office of Special Counsel. All of the defendants collectively were only permitted one representative (Kenneth Fischer). The day began with an 8 am meeting in the Base Building Conference Room. Following introductions and a short briefing, both sides were permitted to observe all of the sampling that was conducted throughout the day and were provided the same access to FAA facilities. At the end of the day, all observers and FAA officials returned to the conference room where everyone had first assembled. The afternoon session between the FAA, your representatives and Mr. Fischer was interrupted when Ms. McMullen, Mr. Pinto and Mr. Sugent decided to leave the conference room to confer in private. There were no further inspections conducted.

Apparently, your two clients and your expert have now complained that the discussions in the conference room continued after they unilaterally decided to leave. What this all means is that unless we are missing some critical facts, your complaint is unfounded and self-serving. We had enough trouble obtaining access to the facility in the first instance – at a time when your side was enjoyed carte blanche privileges. To suggest that we have now moved from parties with no rights to the FAA's secret confidants is ludicrous. If you truly believe that secret discussions are taking place between the FAA and the defendants – which they are not – then schedule a hearing and present your complaints to the Court. In the interim you may want to instruct your



Gene S. Davis, Esq.  
Mancini, Schreuder, Kline & Conrad, P.C.  
June 9, 2008  
Page 2

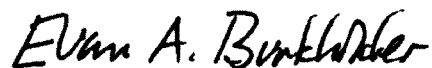
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representatives to stay with the group and refrain from taking your own samples (the record is clear that you have conducted improper sampling on two separate occasions).

The FAA is not conducting "further inspections possibly with some of the defendants" as you suggest in your email. On Saturday evening I was contacted by Jeff Klang, the FAA's regional counsel. He explained to me that further sampling was going to take place on Monday, June 9, 2008, beginning at 2 pm. He informed me that plaintiffs' counsel were also contacted (your Saturday voicemail to me confirms as much) and that the same procedures for access and observation would be followed for *both* sides. When you counsel Mr. Sugent against taking further samples on his own, you should consider informing him to stay with the group and remain in the conference room during morning and afternoon sessions.

I hope this letter addresses your concerns. Please let us know immediately if you have a different understanding of the May 28 inspection. Thank you for your courtesy on this matter.

Very truly yours,



Evan A. Burkholder

EAB:amm

cc: All Counsel of Record  
Peter Caplan  
Jeff Klang

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**6**

**Air Monitoring Plan**  
**Detroit Metropolitan Airport (DTW)**  
**Base Building Roofing Project**

**FAA Cleveland ARTCC District**  
**Technical Support Center**  
**November 5, 2008**

**Revision 2**

**Purpose:** This is a plan to monitor airborne vapor concentrations during roofing activities on the DTW Base Building and inform FAA management of the findings. Also, the goal is to advise FAA project and SSC management if vapor levels appear to be significantly increasing above background or established concentrations so they can adjust their activities accordingly to prevent unsafe occupant exposure.

**Background:** The FAA has been using a lot of resources and interim measures to prevent moisture from entering the Base Building. If these roof leaks continue unabated, not only will it cost the FAA additional resources to continue repairing leaks, but mold growth could take place.

Because this work is confined to the exterior of the facility, materials inside the building are not expected to be disturbed. Vapors from some of the roofing activities, however, have the potential to penetrate the building envelope and cause indoor air quality issues.

Engineering Services has researched roofing methods and materials and developed specifications designed to cause the least possible impact to the employees and still maintain a reliable weatherproof roof. The first step in this construction is the removal and disposal of the top layer of the existing roof. Next large sheets of insulation material are applied over the roof. These insulation sheets are secured with screws that extend through the insulation and fasten into metal deck below. Then rolls of PVC laminate material (membrane) are unrolled over the surface of the insulation so their edges are overlapping. This membrane is also fastened with screws. To create a water tight seal between the unrolled PVC laminate roofing, the overlapping portion is heated until the sections bond to each other. No vapor-producing adhesives are used to bond the roofing materials, which reduces potential indoor air quality issues. In areas on the roof where obstructions like ductwork, roof vents and piping are encountered, caulking is applied to seal around them.

Although the mechanical means to secure the roof will greatly reduce the possibility of air quality issues within the building, there is a potential for vapors to enter the facility. This monitoring plan is developed so roofing and building management will be able to address vapor issues before they negatively effect employees and/or air traffic operations.

**Materials:** The Material Safety Data Sheets (MSDSs) were submitted for the materials to be used on-site during this project. The following is an evaluation of the materials that may have a potential to produce vapors.

1. **Roofing Membrane-** This is an 80 mil thick PVC laminate that is delivered in rolls to the project site. The membrane is unrolled over the surface of the roof so their edges overlap. The edges are sealed by heating the overlapping sections until they bond. The MSDS for this material indicates that hydrogen chloride (HCL) gas may form when it is heated to high temperatures. OSHA (Z-1 Table) has established a ceiling limit for this gas at 5 ppm. Although the generation of

significant amounts of HCL gas is not expected, testing will be conducted during this process using colorimetric detector tubes. Also, wind direction will be checked before the membranes are heated to determine if the vapors will be directed toward an HVAC outside air inlet and so adjustments can be made accordingly.

2. **Duro-Caulk Plus** – This is a caulking sealant that will be applied around the roof penetrations at the roofing boots. Per the MSDSs, this produces Methyl Ethyl Ketoxime (MEKO) and methanol when exposed to water or humid air. Since the areas being caulked are small, there is a low percentage of MEKO in the material, and MEKO has a lower vapor pressure, it is unlikely there will be any issue with this component. As a precaution, methanol will be monitored/screened with colorimetric detector tubes to ensure significant amounts of vapors are not entering the facility. Applied smoke tests will be conducted to determine the wind direction. Project management will be advised of possible entrance points for vapors.
3. **Other Materials:** Poly Plates, Duro-Last Insulation Plates, Poly Plates, Expanded Polystyrene Foam. These materials are solids like the fiberglass mat faced gypsum board and plastic plates that act as washers for the screws that secure the insulation and roofing to the roof.

**Controls:** When work is being conducted in the vicinity or up wind of the HVAC outside air intakes, they will be sealed with polypropylene and duct tape to prevent it from drawing vapors into the building.

**Odors:** Odors may be present well before monitoring equipment can detect any contaminant levels. At this point, the Resident Engineer will be notified and an investigation into the cause will initiate. Changes in procedures or safeguards will be instituted to reduce the odor. If the odor continues to be a nuisance, vapor producing operations will cease and further modifications to the roofing activities will be made to address the issue(s). Ventilation of the space may be required to reduce the odors.

**Monitoring Plan:** Air monitoring will be conducted while the membrane is being heated and during caulking activities. Also monitoring for a build up of carbon dioxide in the occupied space will be conducted while the outside air intakes are sealed. Background samples will be collected prior to the roofing work for comparison with levels during the work.

An air quality log will be kept to document the conditions of the work area, nature of work, unusual occurrences and safeguards, direction of wind, time, date, and air monitoring readings.

The monitoring will take place at various locations on the 2<sup>nd</sup> floor and outside on the roof. Readings will be documented each half hour during the membrane heating and caulking operations and one half hour afterwards. Results will be compared with the background data and established levels. If there is not a significant deviation from the background level after the first hour of sampling, the recording frequency will be

changed to hourly. Carbon dioxide monitoring will occur hourly only while the outside air intakes are sealed. If an issue is found, the Resident Engineer will be advised to stop work and investigate the cause. The Resident Engineer will be advised to resume operations when monitoring indicates that the issue has been resolved.

**Monitoring during Membrane Heating:** Since hydrogen chloride (HCL) gas may be released when the membrane material is heated, colorimetric detection tubes will be used to monitor for it. Since OSHA has a ceiling limit of 5 ppm for HCL, detector tubes will be selected to detect HCL in that range.

If HCL levels rise to 1 ppm inside the building, the Resident Engineer will be advised to stop work and building management will evaluate the HVAC effectiveness. Air monitoring will be conducted on 15 minute intervals until the vapor levels are below 1 ppm. If the level continues to increase to 4 ppm, building management will be advised of a possible health issue with the building air quality and to prepare for evacuation. All construction will continue to cease and further precautions and ventilation will occur. If levels continue to rise to 5 ppm (the OSHA ceiling limit for HCL), employees in the area will be advised to evacuate. The building occupants may reoccupy when levels drop below 2 ppm.

**Monitoring during Caulking:** If methanol levels rise to 20 ppm inside the building, the Resident Engineer will be advised to stop work and building management will evaluate the HVAC effectiveness. Air monitoring will be conducted on 15 minute intervals until levels fall below 20 ppm. If the level continues to increase to 100 ppm, building management will be advised of a possible health issue with the building air quality and prepare for evacuation. If levels continue to rise to 200 ppm (OSHA PEL), employees in the area will be advised to evacuate. The building occupants may reoccupy when levels drop below 40 ppm.

One hour after the membrane heating and/or caulking operations are completed and there is no further evidence of vapors being generated, the safeguards such as sealed roof penetrations will be removed.

**Monitoring while HVAC Outside Air Intake Vent is Sealed:** Monitoring for carbon dioxide buildup in the occupied space will occur hourly during the time that the outside air intake vents are sealed. The results will be compared with the carbon dioxide content of the outside air and project management will be advised when the level gets to 700 ppm above the outside air concentration. Considerations will be given to adjusting work activities and/or providing outside air to the occupied space will be made.

During the work activities, the HVAC computer controller will be set to record the temperature, and humidity of the workspace and printouts will be obtained after the membrane heating and caulking operations are completed.

**Monitoring Equipment:**

1. Nextteq pump model GV-100 with Gastec tubes number 14L for HCL with a range of .2 to 76 ppm
2. MSA pump Kwik-Draw Delux with MSA tubes for carbon dioxide with a range of 100 to 3,000 ppm.
3. Smoke tube kit and smoke tubes for evaluating wind direction relative to work area and HVAC roof intakes.
4. 2 - BW Micro 5 PID portable gas detectors; These detectors will be on site in case they are needed. The 4 gas analyzer detects oxygen level, carbon monoxide, lower explosive level and hydrogen sulfide gas. These parameters are not expected to be effected with the roofing operations but will be available on site for use. The PID portion of the detector does not detect gases that are expected to be encountered during construction but it will be available in case it is needed.

**Air Monitoring Plan**

**Detroit Metropolitan Airport (DTW)**

**Base Building Roofing Project**

**FAA Cleveland ARTCC District  
Technical Support Center**



**Purpose:** This is a plan to monitor airborne concentrations of construction fumes from roofing activities on the DTW Base Building and inform FAA construction management of the findings. Also this is to advise FAA project and SSC management if fume levels appear to be increasing over background so they can adjust their activities accordingly to prevent unsafe occupant exposure to the fumes.

**Background:** Historically, the Air Traffic Controllers stationed at DTW have been sensitive to air quality issues within their workspace. These employees have elevated issues regarding mold growth in the Airport Traffic Control Tower (ATCT), a separate facility from the base building, to a national level.

The FAA has been using a lot of resources recently at the DTW base building to repair roof leaks before moisture allows mold growth inside the building. If these roof leaks continue unabated, not only will it cost the FAA additional resources to continue repairing leaks, mold related labor-relations issues similar to the ones at the ATCT may begin at this facility.

Because this work is confined to the exterior of the building, if any mold that may exist inside the building is not expected to be disturbed. However fumes from the roofing activities may penetrate the building envelope and cause air quality issues.

Engineering has researched roofing methods and materials and developed specifications designed to cause the least possible impact to the employees and still maintain a reliable weatherproof roof. The first step in this construction is the application of large sheets of insulation material over the exterior surface of the existing roof. These insulation sheets are secured with screws that extend through the insulation and fasten into metal deck below. Then rolls of PVC laminate material (membrane) are unrolled over the surface of the insulation so their edges are overlapping. This membrane is also fastened with screws. To create a water tight seal between the unrolled PVC laminate roofing, the overlapping portion is heated until the sections bond to each other. Thus no fume-producing adhesives are used to bond the roofing materials. This eliminates issues with fumes from adhesives entering the building and affecting the employees within. In areas on the roof where obstructions like ductwork, roof vents and piping are encountered, caulking is applied to seal around them.

Although the elimination of adhesive fumes greatly reduces the possibility of air quality issues within the building, some fumes are unavoidable. This monitoring plan is developed so roofing and building management will react to fume issues before they get to a level where the health of the employees are negatively effected and air traffic operations are impacted.

**Materials:** The MSDSs were submitted for the materials to be used on site during this project. The following is an evaluation of the materials that may have a slight potential to produce fumes.

1. **Roofing Membrane-** This is an 80 mil thick PVC laminate that is delivered in rolls to the project site, The membrane is unrolled over the surface of the roof so their edges overlap. The edges are sealed by heating the overlapping sections until they bond. The MSDS for this material indicates that hydrogen chloride (HCL) gas may form when it is heated to high temperatures. This is the main fume producing activity in this project and sampling for Hydrogen Chloride (HCL) gas will be conducted while the membrane is being heated. OSHA (Z-1 Table) has established a ceiling limit for this gas at 5 ppm. Testing will be conducted for this using detector tubes. Also, wind direction will be checked before the membranes are heated to determine if the fumes will be directed toward an HVAC outside air inlet and adjustments can be made accordingly.
2. **Duro-Caulk Plus** – This is a caulking sealant that will be applied around the roof penetrations at the roofing boots. Per the MSDS sheet this produces Methyl Ethyl Ketoxime (MEKO) and methanol when exposed to water or humid air. Since the areas that are being caulked is small, there is a low percentage of MEKO in the material, and MEKO has a lower vapor pressure it is unlikely there will be any issue with this material. However, when this is applied smoke tests will be conducted to determine the wind direction and project management will be advised of possible entrance points for fumes.
3. **Other Materials:** Gas detector tubes, pumps and miscellaneous materials for the testing the air, Poly Plates, Duro-Last Insulation Plates, Poly Plates, Expanded Polystyrene Foam, The other materials are solids like the fiberglass mat faced gypsum board, plastic plates that act as washers for the screws that secure the insulation and roofing to the roof.

**Fume Elimination Plan:** The operation with this project that may allow fumes to migrate into the work area are when the overlapping PVC laminate seams are heated.

To eliminate fume migration into the building during these operations, the facility plans to pressurize the floor below the roof by adjusting the Heating Ventilation and Air Conditioning (HVAC) units that service the area to take in outside air away from the work area. When work is being conducted in the vicinity or down wind of the HVAC outside air intake to the HVAC unit will be set to minimum opening. If the fumes persist they will be completely isolated until the roofing is complete in the area.

**Basic Fume Detection:** The first threshold level for fumes is where an odor from roofing operations is detected inside the building. This may happen well before instrumentation can detect any level of a contaminant. At this point the Resident Engineer will be notified and an investigation into the cause will initiate. Changes in procedures or safeguards will be instituted to reduce the odor. If the odor level continues to increase, fume producing operations will cease until they disperse and further modifications to the roofing activities will be made to eliminate the issue. Ventilation of the space may be required to reduce the odors.

**Fume Monitoring Plan:** Air monitoring will occur the membrane is being heated and prior to and roofing work to obtain background readings for comparison with fume levels during the work. Also, FAA EOSH personnel will be stationed inside the building and on the worksite during caulking operations to detect odors and inform project management of issues.

An air quality log will be kept during fume producing operations that will document the area of work, nature of work, unusual occurrences and safeguards, direction of wind, time, date, and air monitoring readings.

Air analysis will be taken using detector tubes on the 2<sup>nd</sup> floor of the building at a location where fumes would most likely first occur with matching manual pumps. Also they will be taken outside the building close to the roofing operations. Sampling will be recorded each half hour during the fume producing operations and one half hour afterwards. The results will be compared with the background sampling analysis and if there is not a significant deviation from the background after the first hour of sampling the recording frequency will be changed to hourly. If an issue is found, the Resident Engineer will be advised to stop work until the source can be located and further measures taken to eliminate the issue. The Resident Engineer will be advised to resume operations when monitoring indicates that the issue has been resolved. After the implementation of the precautionary measures, sampling will resume on a half hour basis for one hour and will continue hourly afterwards.

Since the fume issue is with Hydrogen Chloride (HCL) gas that may be released when the membrane material is heated, the detection tubes will be selected to detect HCL gas. OSHA has a ceiling limit of 5 ppm for HCL so the detector tubes will be selected to detect HCL in that range.

If Hydrogen Chloride (HCL) fumes rise to 2 ppm inside the building, the Resident Engineer will be advised to stop work and the building management will decide if ventilation of the building is appropriate. Air monitoring will be conducted on 15 minute intervals until the fumes fall to 1 ppm. If the level continues to increase to 4 ppm building management will be advised of a possible health issue with the air quality in the building and to prepare for evacuation. All construction will have ceased at 2 ppm and further precautions and ventilation will occur. If it continues to rise to 5 ppm (the OSHA ceiling limit for HCL) the employees in the area will be advised to evacuate. The building occupants will reoccupy when the level drops below 4 ppm and appears to continue dropping.

One hour after fume producing operations are complete and there is no further evidence of fumes in the construction area, the safeguards such as sealed roof penetrations will be removed.

During the work activities the HVAC computer controller will be set to record the temperature, and humidity of the workspace and printouts will be obtained after fume producing operations are completed.

**Monitoring Equipment:**

1. Nextteq pump model GV-100 with Gastec tubes number 14L for HCL with a range of .2 to 76 ppm
2. MSA pump Kwik-Draw Delux with MSA tubes number HCL-1 with a range of 1 to 30 ppm.
3. Smoke tube kit and smoke tubes for evaluating wind direction relative to work area and HVAC roof intakes.
4. 2 - BW Micro 5 PID portable gas detectors; These detectors will be on site in case they are needed. The 4 gas analyzer detects oxygen level, carbon monoxide, lower explosive level and hydrogen sulfide gas. These parameters are not expected to be effected with the roofing operations but will be available on site for use. The PID portion of the detector does not detect gasses that are expected to be encountered during construction but it will be available in case it is needed.

PART I - SECTION B

DTW TOWB Roof Replacement  
JON 60684  
PERFORMANCE OF WORK ITEMS

05/17/07

The Contractor shall provide all labor, materials, and equipment in accordance with the contract provisions, specifications and drawings included herein. The work shall include, but not be limited to the following:

- A. Remove and dispose of roofing membrane to the top layer of the built-up roofing material. Remove all materials over the side of the building. **Do not** use the interior roof access at any time and keep the roof access hatch closed at all times.
- B. Remove all lightning arrestors, associated cables, clamps etc. and all lighting conduit. Re-install in their original positions after new membrane is in place
- C. Clean and prepare the existing built up roof layer for the installation of the new roofing system.
- D. Furnish and install a caged fixed ladder with security cover for base building roof access (approximately 30').
- E. Furnish and install a caged fixed ladder with security cover for (terminal to the tower) link roof access (approximately 30').
- F. Furnish and install a caged fixed ladder for (tower to base building) link lower roof access (approximately 15').
- G. Clean the drains until they are free of all contaminants.
- H. Furnish and Install an 80-mil PVC polyester feltback, mechanically attached roofing membrane with a loose polyester lining, 3/8" minimum underlayment, flashing, counter flashing, sealant, adhesives and other components to comprise a complete roofing system.
- I. Restore metal flashing.
- J. Furnish and Install single-ply walkway-pad as shown on the drawings.
- K. Furnish and install fixed guardrail on top of the parapet wall adjacent to roof mount HVAC equipment as shown on the drawings.
- L. Ensure that all roof or wall penetrations are properly flashed and sealed where the ladders are installed.
- M. Provide cover to exposed areas of the roof and equipment during inclement weather during the re-roof work.