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Timeline of Events

October 7-11 – Custodial services performed a deep cleaning of L23 and study area spaces as part of their regular routine.

Oct 10-11 – HVAC box filters were changed out in JFK air handlers as part of regular preventive maintenance rotation (filters are changed semiannually).

October 14 – Student Employee #1 reported developing a rash shortly after setting up L23 classroom.

October 15 – Employee #1 reported symptoms consistent with an allergic reaction- itchy eyes, sneezing, and coughing that developed about 10-15 minutes after entering JFK.

October 16 – Employee #2 reported itchy skin, eyes, nostrils, scratchy throat/loss of voice while working in L23 on Oct 3, Oct 4 and Oct 11.

October 16 – Custodial services performed another deep cleaning of L23 in response to initial safety reports.

October 17 – EH&S staff and the Director of Risk Management met with approximately 20 workers in JFK and gathered details about health symptoms (e.g. skin reactions and breathing issues) and specific locations in JFK where the symptoms occur most frequently. Based on the nature of the reports and on previous experiences, EH&S suspected that glass fibers were the cause and developed a sampling plan for surfaces and air in JFK.

October 17-18 – EH&S performed assessments of workspaces including interviews with many JFK workers. EH&S also completed visual inspections, HEPA filter checks, and collected tape samples from surfaces. Surface samples were then sent to lab.

October 18 – EH&S provided and set up 30+ additional HEPA filter devices in JFK areas identified by JFK staff. More than 70 HEPA units are now in operation in JFK.

October 21 – Student Employee #2 reported experiencing hives since October 2.

October 28 – Employee #3 reported a reaction (headache, coughing, congestion) from sitting near the main level periodicals (study carrels)

November 7 – Air sampling completed by EH&S; samples sent to lab.

November 7 – Student Employee #3 reported itchiness and a rash after being near the equipment checkout area.

November 19 – Student Employee #1 reported feeling extremely sick and experiencing a rash after sitting in U20 study room for 30-50 minutes.

November 20 – Lab results received.

December 10 – Meeting with JFK employees.

Test Results

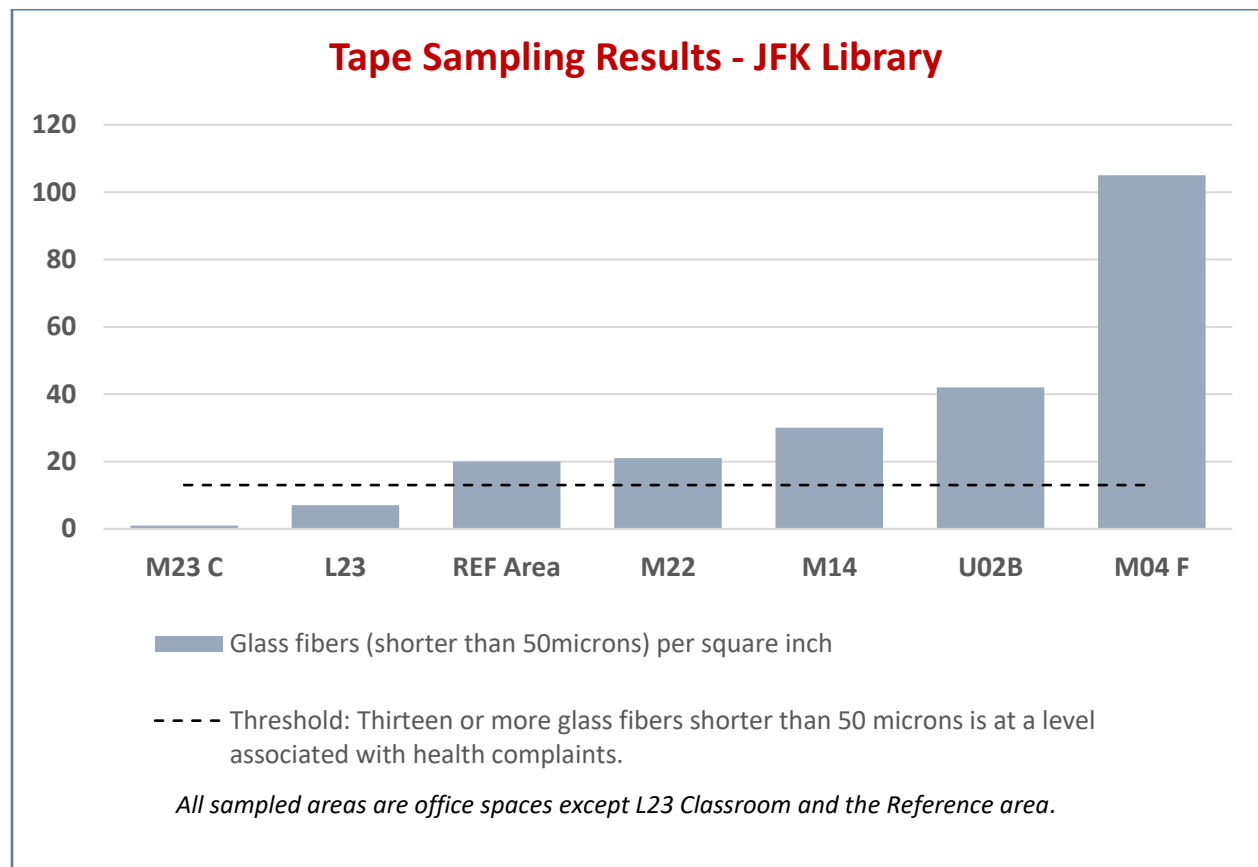
Tape Sampling

Tape lift sampling provides a short-term historical analysis of what has settled on surfaces between dustings.

Tape lift sampling was conducted in JFK on October 17-18 with follow up samples collected as new reports were made. Samples were submitted to Microlabs Northwest for analysis.

Results

- Tape lift sampling indicated the presence of normal surface particles (e.g. clothing fibers, skin flakes, ink, spores, etc.) These materials are not considered major allergens.
- Elevated glass fibers (<13 fibers per square inch) were found in rooms M04F, M14, M22, U02B and the JFK Reference area. Samples with more than 13 glass fibers (less than five hundred micrometers in length) are associated with allergen complaints.
- Sample M23C had low particle loading and only one glass fiber per square inch.
- Sample L23 had seven glass fibers per square inch, just below the allergen threshold. However, phytoliths (another contact allergen) were identified. The lack of glass rods in L23 is likely due to the area being cleaned thoroughly right after the first reported skin reaction. Sampling was done sometime after that cleaning.



Tape lift sampling results provide the best indicator of what may be causing allergen issues.

Glass fibers concentrations found with tape lift sampling are a contact allergen. They will settle on contact surfaces. As an individual works within an area, the fibers will collect on their hands and clothes. When touching sensitive skin areas, the individual can be exposed to the allergen.

Residual glass fibers can also be floating in the air. Unfortunately, there is no acceptable sample test that can be used to determine glass fiber loading in the air at this time. Air samples for airborne particle identification did not identify glass fiber counts. However, if there were high concentrations of glass fibers in air sampling, some fibers should have been found. All past investigations at other JFK room locations do indicate that the route of exposure is contact (hand to face, arm/shirt to face). The glass rods are statically charged and tend to stick to contact surfaces.

Symptoms reported that may be associated with exposure to short glass fiber include sinus congestion, sinus headache, dry-irritated eyes, sore throat, chest tightness, nausea, malodor, general fatigue, and skin rashes. These symptoms may occur in any combination and any individual may report only one or two of the symptoms. Not all people are affected by this allergen.

The origin of the glass fibers is from ceiling tile abrasion that occurs naturally with building and equipment vibration. Phytoliths are silica structures that form in grasses. Fires will release the phytoliths and the wind will carry them away to be deposited. Therefore, the origin of the phytoliths is from outside of the building.

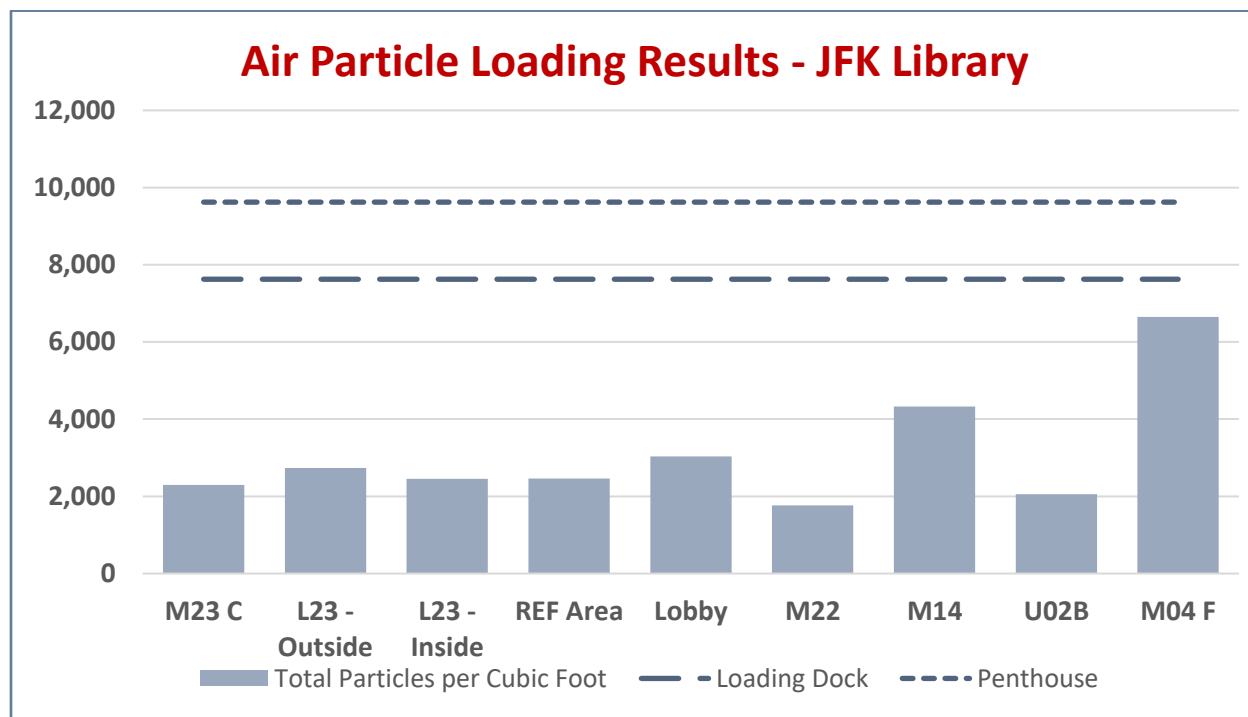
Air Sampling

Air sampling was conducted on November 5 in L23, M04F, M14, M22, M23C, U02B and the JFK reference area. Air sampling was conducted using Air-o-cell samplers. The Air-o-cell samplers are used for non-viable mold spores and debris collection. Air-o-cell samples give a snapshot in time for what may be in breathable air. Samples were sent to Eurofins EPK Built Environment Testing, LLC of Portland, Oregon for analysis.

A Lighthouse 3100 particle counter was used for real time analysis of particle size range materials floating in the air. Particle sizes recorded were 0.3, 0.5, 1, 2.5, 5, and 10 microns. The smaller the number the smaller the particle.

Results

- Interior air samples were compared to outside air samples collected from the back-loading dock air intake area and the rooftop penthouse air intake area. Results from the areas sampled did not find any indications of elevated mold that would indicate a mold/fungus problem. Background debris was low indicating relative clean air. The highest concentration of particles were skin cells and cellulose fibers.
- Particle sampling did not indicate excessive particle loading. Particle counts were on average less than 5,000 particles per 0.1 cubic foot, except for M04F. This is normal for buildings on campus when particle levels outside would be low.



Assumptions

The test results demonstrating elevated glass fibers in certain locations are similar to test results from previous samplings in these spaces in 2018 and 2019. Previous external consultants have indicated the glass fibers found in the Library are consistent with fibers found in acoustic ceiling tile.

Environmental Health & Safety actively monitors all incident reports and safety concerns. Prior to the current situation, EH&S had not received any incident reports of this nature in over three years.

Based on these recent reports, it is clear that something happened near the beginning of October that caused people to begin experiencing symptoms similar to the symptoms reported in 2017-2018. It is likely that the precipitating event was some disturbance that dislodged the particles. Based on a comparison of the tape and air samples, these particles are located on surfaces.

Ongoing Efforts and Recommendations

Environmental Health & Safety, Custodial Services, and Facilities Maintenance will continue to provide increased support to Library cleaning and maintenance. Other efforts will include:

- Scheduling HVAC filter replacements during academic breaks or other times of low building use.
- Increased frequency of deep cleanings by custodial services.
- Assist JFK workers in monitoring/maintaining HEPA filtration devices.
- Maintain increased custodial services support in surface cleaning.

Frequent cleaning of surfaces where particles collect is the most effective method we have for keeping the glass fibers under control. Custodial Services cleans the library on a regular basis but does not clean personal work areas.

JFK workers can help by:

- Be aware of your personal workspaces and, if necessary, regularly clean surfaces in your individual workspace.
- Talk to your supervisor if you need disinfectant wipes or electrostatic dust wipes.
- Dust surfaces before handling and moving items
- Regularly wash hands and face

EH&S will continue to monitor the situation and perform additional testing. Additional test results will be posted on the EH&S website.