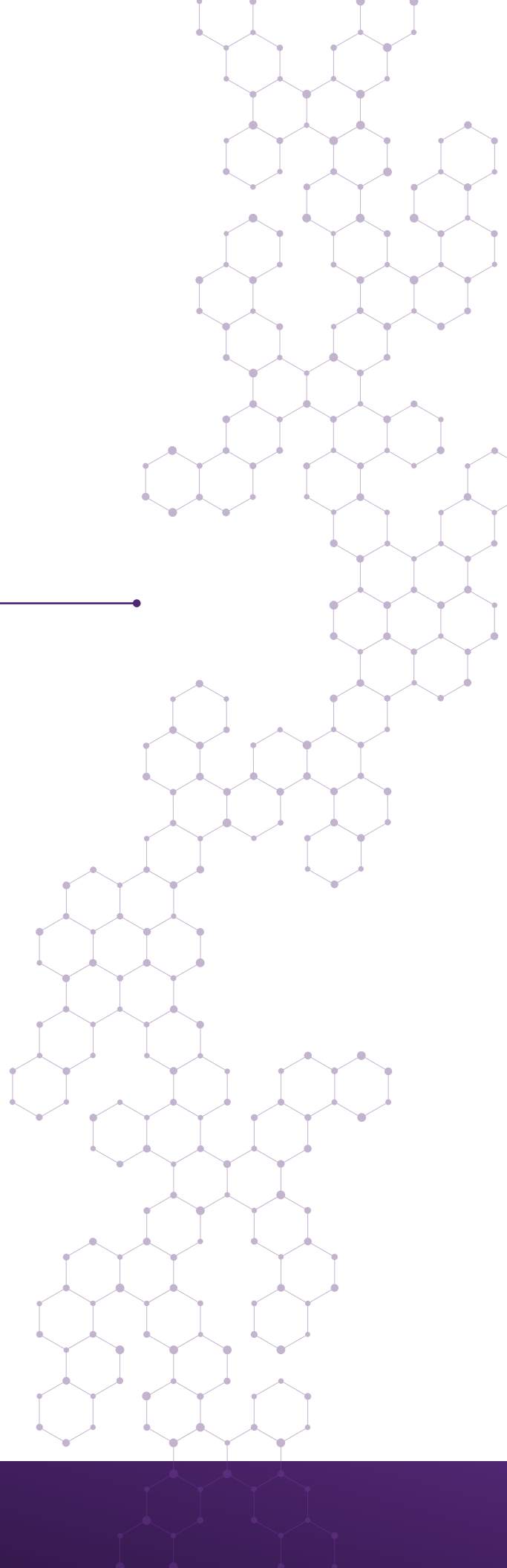




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# BEYOND THE SURFACE



# ABATEMENT VERIFICATION: WHEN “CLEAN ENOUGH” ISN’T CLEAN ENOUGH.

The Environmental Hygiene Services team at Pario Engineering & Environmental Sciences is very busy these days as they assist business owners facing the 2020 pandemic to certify that their facilities are not just superficially clean, but verifiably de-contaminated and reduced of potential hazards. How? This team often accompanies cleaning/janitorial service providers into worksites to identify areas of concern, adapt cleaning protocols (such as in the case of specialized equipment), and verify the results of a thorough clean.

What is clean? When a site is clean, it should be sanitized and free of biological matter, destroying all viruses and germs, and eliminating all of the biological matter that could harbour a virus and provide a place for it to replicate and spread.

Pario’s Environmental Hygiene Services team, made up of Industrial Hygienists, conducts on-site abatement verification assessments using an ATP test. This test detects adenosine triphosphate (ATP), a molecule found in living cells, by measuring the amount of light released through its reaction with a specific enzyme. The ATP test then, provides qualitative and real-time testing of surfaces, using surficial swabbing for residual organic material. If a surface is truly clean, then no biological matter should be found on any cleaned surface. The team can also perform additional laboratory analysis to specifically confirm the presence or absence of the COVID-19 virus or viruses in general. With three defined levels of clean, the team can define the level of cleanliness that is acceptable using site-specific information and initial qualitative testing results.

Testing performed varies for each client and is dependent on the probability of risk. For low risk situations, the Environmental Hygiene Services team typically uses in-field qualitative testing of surfaces. This includes using luminometers to test for residual organic material. These types of surface tests contain bioluminescent enzymes which release light in the presence of Adenosine Triphosphate (ATP) which is present in all manner of cells. A higher risk environment calls for third-party accredited laboratory analysis (via real-time PCR) of surficial swabs to confirm the presence or absence of COVID-19.



As part of their process, the Environmental Hygiene Services team identifies potential “hot spots” of contamination at a given site, doing pre-cleaning swabs to establish the starting levels of various contaminants. Once those areas have been cleaned, the team re-swabs the same spots in order to determine the efficacy of the clean. Comparing the pre- and post-clean results provides a clear indication as to the efficacy of the service. If the team detects results within the scientifically acceptable range of 10-20 RLU (Relative Light Units) after the cleaning, they can confirm a quality job and provide reassurance that the site is presently safe from viruses and germs.

Recently, in just this manner, the Environmental Hygiene Services team was called to assist an organization running multiple medical centres within the Greater Toronto Area (GTA). The organization conducted a variety of health assessments from its various facilities and needed to be secure in the knowledge that its environs were not only clean but safe. Medical service providers are rapidly modifying operational processes and procedures as part of their pandemic strategy, requiring them to adapt all their hygiene processes in a matter of weeks. When considering cleaning verification services, medical centres must weigh the cost of these services against the possibility of conducting business from a contaminated space. However, for many, the choice is clear.

Hired by the medical centre, the team arrived on site at the same time as the medical centre’s commercial cleaners. The team members explained their testing protocols to members of the cleaning crew, who were unfamiliar with the new practices. As the Environmental Hygiene Services team conducted the pre- and post-clean swabs and other tests, the cleaning crew grew to appreciate this means of verifying their work as the team analyzed data on site in just minutes. Pre-clean swabbing found RLUs in the hundreds, but after directing the cleaning crews, subsequent readings were most often zero, but always within the acceptable range.



Environmental Hygiene Services team members were researched in and familiar with sensitive equipment at the medical centre that required different handling in the cleaning process, highlighting their level of expertise. While conducting their work, the cleaning team came upon an otoscope (an implement medical personnel use to look inside a patient's ear canal). Realizing this instrument frequently came in contact with people, the cleaners were hesitant to use the same level of chemical disinfectant lest those chemicals came into direct contact with a person's skin. The Environmental Hygiene Services team was familiar with the equipment and the proper way to safely and effectively clean and disinfect it. The team members guided the cleaning crew through that process.

Likewise, the team detected areas that were more difficult to clean and recommended a new cleaning protocols, which, when implemented, allowed those areas to be thoroughly disinfected. However, because some surfaces allow contaminants to adhere more easily than others, even after several cleanings (such as the material and foam armrests on the chairs in the waiting area), the Environmental Hygiene Services team provided recommendations to remove or replace those items with different, more easily cleaned materials. This again, when considering the extent and use by the staff and patients, helped the facility further consider and maximize their overall cleanliness and safety.

This particular medical centre was located within a larger facility, comprised of a number of office spaces and a central common area, including an atrium. Therefore, considering that staff and patients would be passing through and interacting with the common space on their way into the medical facility, the Environmental Hygiene team extended their analysis, for comparison purposes, to the common areas outside of the medical centre itself. Team members swabbed areas such as the door handles from the main building entrance and the elevator buttons taking patients through the facility. Those readings were well outside the 10-20 range, often registering in the hundreds. For the reader, these findings should re-emphasize the importance of social distancing and, especially, handwashing as quickly as possible after spending time in a public space. For the facility, it identified the need to have staff and patients effectively clean their hands before contacting anything within the facility.



The next evening, the Environmental Hygiene team attended a cleaning at a second facility run by the medical services organization. That facility's cleaning was being conducted by a different commercial cleaning service, and the team noted that, while the objective was the same (to clean the facility), the second cleaning service took a different approach in their cleaning protocols. While this produced similar results, the results did vary in some key areas. This was not an unexpected outcome. With no formal standards or guidelines to follow, the commercial cleaning industry has myriad methodologies and techniques, which have varying levels of efficacy. In reaction to the different cleaning methods, and the available products, equipment and staff training, the team utilized their knowledge and scientific backgrounds to alter some of the cleaner's sanitization and cleaning protocols in order to help them provide a complete and thorough clean.

After reviewing the two cleaning procedures, the Environmental Hygiene Services team was able to confidently reassure the staff and the executive from the medical centres that its facilities were clean and presently free of potentially harmful contaminants. This provided them the confidence that their reopening to visitors was going to be safe and that the procedures they had in place would be effective in maintaining the high standard of care they were known for.

As a follow up to the initial assessments, the medical service provider has also engaged Pario's team to monitor the efficacy of their procedures, and their cleaning service providers. Over the coming months, the Environmental Hygiene Services team will complete a series of irregular and unscheduled assessments to test the facility and ensure that the health of their staff and patients remains secure. By continually verifying these cleaning protocols, the Pario team can keep the cleaning and janitorial services focused on their work, while helping the medical service provider control costs.

In summary, although a surface can "look clean," it may not actually be clean. Since not all forms of infection control are the same and there is no universal protocol for how a company can achieve a thorough clean, cleaning protocols need to be uniquely geared toward each specific environment to maximize their effectiveness. That is why verifying the cleanliness of a space is so important. The benefits of expert support far outweigh the risks posed by an unclean work environment.

*Pario's Environmental Hygiene Services team is available for protocol development and assessments, cleaning reviews, periodic facility check-ins, and all other professional and testing needs.*