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Holy Grail of *Legionella* Bacteria Detection
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I've always believed in looking for a better way. So, every year when I attend the AWT, WQA and IWC conferences as an exhibitor, I also set off on the trail to find the Holy Grail of *Legionella* bacteria detection. My dream has always been to have cooling tower *Legionella* monitors that provide instant readouts on computers or cell phones for building owners, building managers, and water treaters.

This year, I have come the closest to finding that Grail. As of the AWT conference in September 2018, there are three approaches that come close to finding my dream solution. One approach measures the level of biocide in the cooling tower. The other is a more rapid detection of bacteria in the cooling tower water and the third is an onsite 25 minute *Legionella* detection device. WaterColor Management does not endorse any of the specific products, but clearly applauds the advancements in technology that lead to healthier environments for everyone.

Phigenics, www.phigenics.com originally from Naperville, IL with offices in Fayetteville, AR and across the U.S., has developed on online system of monitoring water quality. While the system does not detect *Legionella* bacteria, it will monitor levels of biocide in the water. Their program promises:

- To monitor water quality on the main line entering the facility
- To monitor water quality at strategic locations within potable water systems, such as recirculating hot water loops, cold water service lines and decorative fountains.
- To control the addition of supplemental disinfection where required.
- And provide instant online access to the monitoring information.

Luminultra www.luminultra.com is headquartered in Fredericton, Canada and has an office in Baltimore, Md. They have developed a process identified as ATP monitoring. ATP stands for Adenosine Triphosphate. ATP is the primary energy carrier for all forms of life – bacteria, algae, vegetable, animal cells – all of them contain ATP. As such, the measurement of ATP concentration in a sample provides a direct measurement of biological concentration and health. For applications such as drinking water, cooling towers, or oil & gas applications, Cellular ATP is measured directly. Cellular (cATP) provides a direct indication of living biomass energy level, or in other words, total living biomass concentration. While this technology is not the newest, the company has developed a 2nd Generation ATP testing system which produces test results in under 10 minutes. This is a "while you wait" operation.

Hydrosense https://hydrosense-legionella.com is headquartered in Scotland, and it is the world's only test that can detect Legionella pneumophila serogroup 1 on-site in 25 minutes (compared with 7-14 days for traditional methods) and yet can be performed by anyone with minimal training. The test can detect legionella at levels as low as a 100 CFU/L. However, other test kits, that offer lower detection rates such as 1000 CFU/L, 10.000 CFU/L and 100.000 CFU/L, are also available to help customers in meeting different action levels depended on a country or industry.

The convenience and incredible ease of use make Hydrosense tests the first choice for companies where reputation is crucial; where customer and employee safety are paramount; where clients are vulnerable and where facilities are in remote locations.Moreover, Hydrosense Test is supported by the Smartphone Reader App and an online portal, which make it easier to interpret test results and allow users to store data, manage results, print test certificates and send automatic notifications to responsible persons.

Hydrosense Test:

- Provides an immediate picture of Legionella contamination risk, which allows you to make **quicker, better-informed decisions** about improving water quality.
- Helps you to maintain high service standards and **protects you from reputational damage.**
- Helps to **reduce public and employee health risk** by minimizing the time taken to identify Legionella.
- Recording test information while analyzing data helps to create **a complete picture of Legionella contamination risk** and a roadmap to prevent future outbreaks.

I haven't found my Holy Grail for instant detection and reporting of Legionella bacteria, but these three products move the meter much closer to ending my search. They provide a process of constant water quality monitoring with online access on one hand; 10 minute bacterial detection; and finally 25 minute on-site Legionella test results.

Bravo!