



Selecting Environmental Consultants for Legionnaires' Disease Investigations

The New Jersey Department of Health (NJDOH) recommends that facilities experiencing an outbreak of Legionnaires' disease to engage a qualified environmental consultant or consulting firm to help them investigate the root causes of *Legionella* growth and transmission, and how to prevent them. This document outlines how to select a suitable consultant and their roles during an investigation.

Preferred Credentials and Experience

Ideally, the consulting firm should have at least one staff member with a relevant license or certification, such as:

- Licensed Professional Engineer (PE) in New Jersey
- Certified Industrial Hygienist (CIH)
- Certified Water Technologist (CWT)

Moreover, it is recommended that consultants or consulting firms have professional experience in conducting risk assessments and recommending effective remedial strategies as they pertain to Legionnaires' disease investigations.

Choosing the Right Environmental Consultant

When selecting a consultant, consider the following key areas:

1. **Expertise in Building Water Systems:** The consultant should understand complex building water systems, including their components and how they function.
2. **Understanding of Water Flow:** The consultant should be skilled in evaluating how water flows through the building's distribution system. This includes understanding how water enters, is heated, filtered, and treated, and how it is distributed throughout the building to various points of use. Additionally, they should be capable of identifying multiple hot water zones and understanding their interconnections. Proficiency in reviewing and interpreting plumbing blueprints is also essential.
3. **Risk Assessment Skills:** The consultant must be able to assess environmental risks in water systems to identify conditions that could promote *Legionella* growth and recommend effective control measures.
4. **Knowledge of Water Quality Monitoring:** The consultant should be skilled in developing water quality profiles for building water systems, including temperature, pH, and disinfectant residuals.

5. **Experience with Environmental Sampling:** The consultant should be able to collect environmental samples for *Legionella* testing in adherence with NJDOH's environmental sampling guidance.
6. **Experience with Remediation:** The consultant should have a proven track record of successfully remediating *Legionella* from building water systems, demonstrated by elimination of *Legionella* without rebounding. This includes selecting the right disinfectants (chemicals), determining proper concentrations, and ensuring safety for building occupants.
7. **Familiarity with Testing Laboratory Requirements:** The consultant should understand the requirements for *Legionella* testing laboratories, including accreditation standards and sample handling procedures.
8. **Water Management Program Expertise:** The consultant should have experience in creating Water Management Programs tailored to specific facilities, following industry standards and guidelines such as ASHRAE Standard 188 and Guideline 12.
9. **Up-to-date Knowledge:** The consultant should stay current with CDC and NJDOH guidelines, building codes, regulations, and industry standards and best practices.

Roles and Responsibilities During an Outbreak Investigation

1. **Expert Support:** Provide guidance to facility management according to NJDOH guidelines throughout the investigation.
2. **Coordination:** Help manage communication with public health authorities and other relevant parties. This may involve coordinating with the Water Management Program Team, including facility staff, maintenance workers, and vendors.
3. **Risk Assessment and Hazard Analysis:** Evaluate building water systems to identify potential *Legionella* sources, such as maintenance issues, poor water quality parameters, improperly maintained water system components, low disinfectant residuals, permissive water temperatures, accumulation of scale and sediment, water stagnation, changes in water pressure, presence of dead-legs, and non-potable water systems' cross-connection controls. Report written findings to facility management.
 - a. **Note:** The onsite environmental assessment conducted with local and state public health officials is not a comprehensive risk assessment and should not be considered equivalent to the consultant's risk assessment.
4. **Control Recommendations:** Recommend evidence-based control measures to minimize the risk of *Legionella* growth and transmission.
5. **Infrastructure Advice:** Recommend plumbing or system changes to prevent future issues.

6. **Environmental Sampling:** Develop environmental sampling plans based on plumbing blueprints and collect environmental samples for *Legionella* testing and water quality parameters in adherence to NJDOH guidelines.
7. **Remediation:** Safely perform chemical shock treatments and other remedial actions to reduce *Legionella*.
8. **Post-Remediation Monitoring:** Monitor and test after remediation to confirm effectiveness and recommend further actions if *Legionella* is still detected.
9. **Ensure compliance:** Ensure all procedures for sampling, testing, and remediation meet industry standards and health department recommendations.
10. **Documentation:** Keep detailed records of the investigation, including findings and actions taken.

Note: Larger facilities might already have staff experienced in managing *Legionella* risks in their water systems. In these cases, the consultant's role is to address any gaps in the facility's expertise and provide additional support. It is crucial to involve the consultant throughout the entire investigation for thorough and comprehensive assistance. Depending on your facility's specific needs, you may need to engage multiple consultants to ensure a multidisciplinary approach.