



## Site Water Analysis for Protection and Profit

Conducting a water site analysis is vital for installing the most cost-effective fire protection solutions in new structures and for protecting existing buildings from fire hazards. Yet all too often, building owners lack the necessary information to make the right decisions.

Incorrect decisions about water availability can result in building owners spending hundreds of thousands of dollars in unnecessary pump and tank equipment. And incorrect decisions put existing facilities at risk of destruction in case of an emergency.

Common wisdom holds that a reading from a water flow test provides adequate information on water supply availability. Unfortunately, this method is seriously flawed.

Numerous variables prevent accurate readings during a water flow test. Here are just a few examples of external factors that can significantly skew results:

- Time of day: Water pressure can vary greatly depending on the time of day. For example, pressure can be significantly lower in the morning or evening hours because of increased consumer usage.
- Seasonal: Resort towns, for example, can have significantly higher water usage patterns during summer months than in winter months.
- Neighboring facilities: A large water consumer in the immediate area that uses water during a particular time of day (for example, a factory conducting a back-flushing operation) can affect readings.
- Utility activities: The local water utility could be selling water to a neighboring town, conducting routine tests, or undertaking other activities that prevent accurate readings.

Does this mean that water flow tests are useless? Or that sprinkler contractors, developers, and building owners are doomed to live in ignorance about the water available for their facilities?

Water flow tests, of course, are an important piece of the puzzle, but they do not provide sufficient information to make smart decisions. The key to reaching accurate – and cost-effective – conclusions is to do some significant sleuthing.

Start by contacting your local water jurisdiction and identifying the individual who is responsible for monitoring water usage. The director of public utilities is generally knowledgeable about the nuts and bolts of water usage, but since this varies from utility to utility, you may have to do some detective work before you find the right individual. Your fire marshal is another individual who might have valuable information.

Here are key questions that you will want to ask this individual:

- How does the water system operate?
- What are the times of peak usage during the day? How do they affect water supply to your site?
- Would your water utility suspend all operations to an adjacent community in case of a fire?

Once you have answers to these questions, you'll want to conduct a site analysis of your facility. As part of the site investigation, find the answers to these questions:

- What is the availability of water?
- How much water do you think you'll need in an emergency?
- Where are the mains that are near your property? Can you switch to a better main if the one on your site is inadequate?
- How much water does your sprinkler system need?
- How much water might the fire department need?

Once you have answers to all of these questions, you can be confident that your facility will be protected in most scenarios.

All of this work may seem burdensome, but there is a tangible and significant payoff: you can save having to purchase tanks and pumps, which can involve an investment of several hundred thousand dollars.

Work we recently performed for a national retailer proves the point. Site readings revealed that there was poor availability. The sprinkler contractor recommended that a water tank and pump be installed at a cost of approximately \$100,000.

We contacted the local water jurisdiction and, after some research, found that nearby mains offered excellent water pressure. This incongruity made us suspicious, so we continued researching until we found a long-forgotten valve next to the retailer. Even the water department did not know of the main, as it had not been included on its maps and was then paved over.

We informed the local jurisdiction of the valve, and a crew was sent to examine it. They discovered that it was 75 percent shut. It was restored quickly, providing the retailer with more-than-adequate water supply and saving it the cost of a water tank and pump.

The old saw that an “ounce of prevention is worth a pound of cure” holds true for site water analysis. It’s one of the best ways to protect your existing facility and to make sure that a new one is designed cost effectively. So take the time to do it right.

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