



Legionnaires' remains a deadly threat throughout the U.S.

New York City suffered the worst outbreak of Legionnaires' disease in its history this summer and the deadly bacteria-caused illness is showing up in increasing numbers across the country. The bacteria develop in water – often in cooling towers and other systems related to air conditioning in large buildings – which makes monitoring and maintenance of these systems a high priority.

The disease is caused by the Legionella bacteria, first identified in 1976 at a Philadelphia convention of American Legionnaires. Cases are more common in the summer when it is more difficult to keep water in large, industrial cooling systems at temperatures that don't promote growth of the bacteria. Potential sources of Legionella are cooling tower water systems, decorative water features, fountains, and firewater storage tanks.

In June, the ASHRAE 188-2015 Standard, "Legionellosis: Risk Management for Building Water Systems" was released. This involved document will have a profound impact on management and operations of potable and utility water standards in commercial, industrial and institutional facilities. The purpose is to create minimum standards to reduce risk. For detailed information, visit <http://www.techstreet.com/ashrae/products/1897561>.

Compliance with the standard will require building owners and facility managers to establish a multi-disciplined team with assigned responsibilities and accountabilities.

Once established, the team will need to prepare a comprehensive Water Management Plan (WMP) of all potentially hazardous potable and utility systems.

There are multiple factors that can influence risk of illness. These factors include, but are not limited to, strain virulence, host susceptibility, and how efficiently the organisms are aerosolized to the small particle size required to reach the deep portion of the human lung and remain viable. The ideal temperature range for the bacteria is 68 degrees to 122 degrees Fahrenheit. Legionella testing should be performed and interpreted within the context of a properly designed Legionella Water Management Plan, but testing is not a substitute for sound mechanical and operational maintenance.

Best practice for eliminating potential Legionella sources include:

- Clean and disinfect potential sources twice a year.
- Regular on-site testing of bacteria using dip slide method by a certified water treatment company.

How Strong are the Levees?

New Orleans is in better shape – but the city hasn't faced as large a hurricane since Katrina.?

The 10-year anniversary of Hurricane Katrina's devastation of New Orleans in August was commemorated in several ways, including with an assessment of improvements to the levee system that failed during the storm and allowed 80 percent of the city to be flooded.

The system – made up of 104.8 miles of levees and floodwalls, 200 floodgates, 103 flood valves, and two flood control structures -- had not been substantially improved since 1965. In the aftermath of Katrina, the U.S. Army Corps of Engineers formed an Inter-agency Performance Evaluation Task Force of 150 members to analyze the more than 50 levee failures.

What is a levee? In this case, a levee is an embankment built to prevent the overflow of a river. New Orleans is a city built below the water level near the spot the Mississippi River empties into the Atlantic Ocean. The levees that broke had been holding back the river.

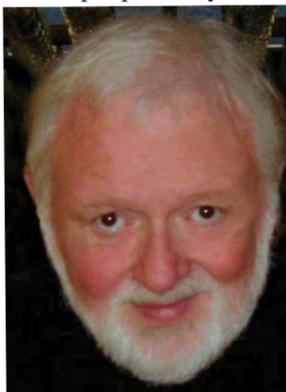
The task force found that four of the levee breaches resulted from foundation-induced failures. The rest were caused by a combination of overtopping and scour, the erosion of an earthen levee by wave and water friction. Some levees and floodwalls have been raised and widened. Scour protection, called armoring, was added to some levees, often in the form of grass seeding or rip-rap, turf-reinforced mats or concrete.

Overall, the Corps spent \$14 billion to repair and rebuild levees and add flood walls, including the largest flood barrier it has ever built, a concrete wall nearly two miles long that stretches across the convergence of three major waterways that connect to the Gulf of Mexico. The wall obviously is designed to prevent a repeat of what happened during Katrina.

Mulvaney Pipeline Loses Great Friend

Jim Oberndorfer, former Safety Director at Perkin-Elmer, created the Mulvaney Pipeline in the 1990s, giving it his creative all. Jim found great pleasure using his creative talents preparing these newsletters that lightened people's days.

The holiday themes that he included in the issues added to its visual appeal and impact. We recently lost Jim to cancer after being our dear friend for more than 30 years. Jim was brilliant and one of the nicest people we've ever had the pleasure of knowing. He will be sorely missed.



Jim Oberndorfer

Email Pipeline to You

Continue to receive the print version of the Pipeline every quarter. If you want to get an email version, send your request to janette@mulvaneyinc.com



Moon and Tides

Tides are the result of the gravitational attraction of the moon and to a lesser extent the sun on the oceans of the Earth. As the moon travels around the Earth and together they travel around the sun, the combined gravitational forces cause the world's oceans to rise and fall. This happens about twice a day.

At times when the sun and moon are aligned, the gravitational pull of both are combined, causing very high and very low tides. This occurs when the moon is full or new.

One rare, unusually high tide is called the Proxigean Spring Tide. This very high tide occurs when the moon is both unusually close to the Earth (at its closest perigee, called the proxigee) and in the New Moon phase.

When the sun and moon are perpendicular to one another with respect to the Earth, gravitational forces are canceled out and tides are not as high or low. This occurs each quarter moon.

To determine whether a tide is rising or falling, learn the trick ancient sailors used to predict tides in the northern hemisphere. Face south. If the moon is on your left hand (called east of south) the tide is rising. If the moon is on your right hand (called west of south) the tide is falling.



Cow Fact

When grazing or resting, cows tend to align their bodies with the magnetic north and south poles.

TRIVIA ROCKS

- Eleven percent of people are left-handed.
- August has the highest percentage of births.
- An ostrich's eye is bigger than it's brain.
- Most lipsticks contain fish scales.
- No two corn flakes look the same.
- Lemons contain more sugar than strawberries.
- Eight percent of people have an extra rib.
- Eighty-five percent of plant life is found in the ocean.
- The Hawaiian alphabet has 13 letters. The apostrophe, okina, is the 13th.
- A lobster's otherwise colorless blood turns blue in air.
- Unless food is mixed with saliva you can't taste it.
- The average person falls asleep in seven minutes.
- A bear has 42 teeth. (Adult humans have 36 teeth. Among these teeth are 8 incisors, 4 canines, 8 premolars, 12 molars with 4 wisdom teeth.)

What the heck is that tool?

If you can name this tool, you may win a Mulvaney Mechanical Leather Jacket.

We list the winner(s.) If there is more than one correct answer, a winner will be chosen at random.

To email your entry, you must write "NEWSLETTER CONTEST" in the subject line to avoid our spam filter. Mail your answer to janette@mulvaneyinc.com.



JUST LIKE THIS ONE



Last Quarter's Contest Winners

Jake Madeson, Town of Ridgefield.
Joan Orzech.

Last Quarter's Puzzle
Saw Tooth Setting tool



"If I had my life to live over, I'd be a plumber,"
Albert Einstein



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