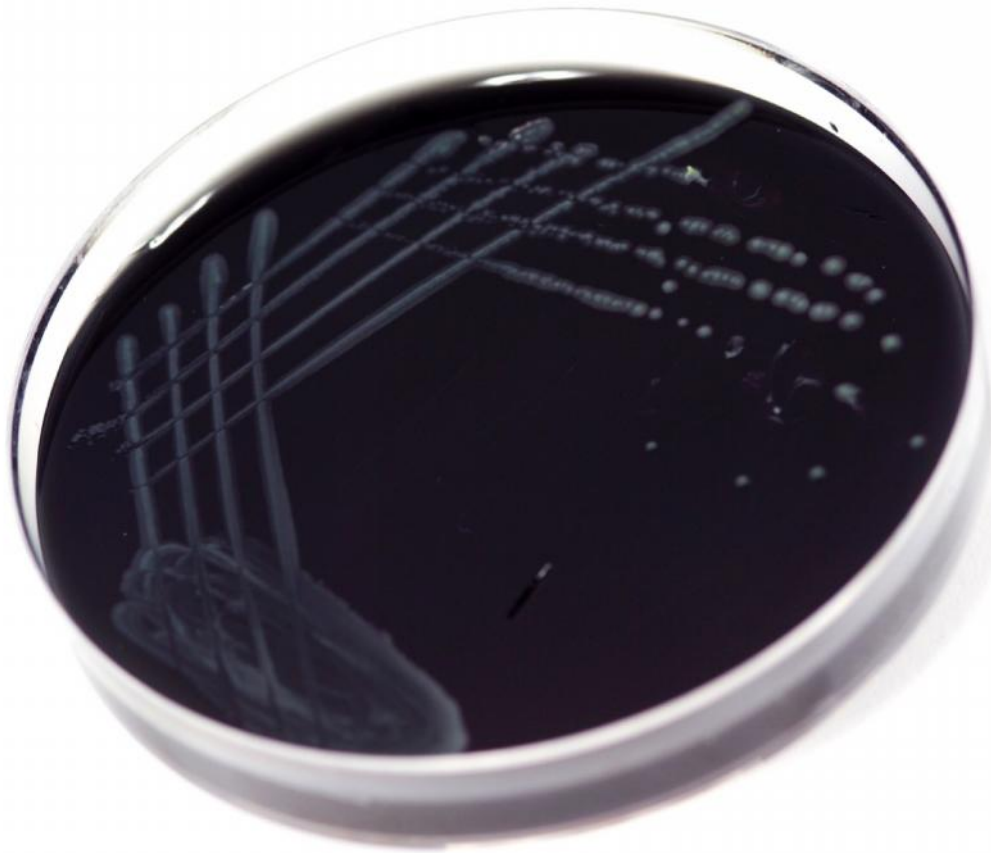




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The World's Leading Laboratory Network



Legionella

Industry

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Introduction

Eurofins ELS is one of New Zealand's leading experts in the areas of:

- Air quality monitoring
- Boiler water
- Environmental water
- Landfills
- Meat industry services
- Potable water for councils
- Sample Integrity
- Swimming pools
- Biological fluids
- Ceramicware and metal food containers
- Food and Dairy Products
- Legionella
- Metals
- Potable water for small communities
- Sewage and effluent
- Trade waste

The company has its origin as part of the Hutt City Council Laboratory and became a private enterprise in 1994. We grew through natural growth as well as the acquisition of local laboratories until in December 2012 we were acquired by Eurofins - the largest laboratory network in the world.

Eurofins Scientific is an international life sciences company which provides a unique range of analytical testing services to clients across multiple industries. The Group is the world leader in food and pharmaceutical products testing. It is also number one in the world in the field of environmental laboratory services, and one of the global market leaders in agroscience, genomics, pharmaceutical discovery and central laboratory services.

We are based in a purpose built facility of 1450 m² at 85 Port Road, Lower Hutt. Eurofins ELS is comprised of four separate laboratory areas – Instrumental Chemistry, General Chemistry, Biological Fluids, and Microbiology. The latter is further split into three separate rooms with clean, cleaner and ultra clean capabilities. The ultra clean lab is used for pathogenic bacteria determinations.

In mid-2016 Eurofins-ELS opened satellite laboratories in Auckland and Christchurch. These laboratories offer full scope testing and sampling services.

Who should read this brochure?

This brochure has been prepared for all people working with cooling towers, potting mix, and swimming pools, as well as people associated with hospitals and elderly care centres.

Legionella is a greater risk to people with lung problems, such as smokers and the elderly.

If you consider there is a risk, then regular Legionella testing should be performed.

Who should be testing for Legionella?

In the summer of 1976, an outbreak of pneumonia occurred among persons who attended an American Legion convention in Philadelphia. These individuals who developed illnesses were said to have 'legionnaires' disease. There were 182 documented cases, with 29 deaths. By early January 1977, the etiological agent was isolated and a new family of bacteria, the Legionellaceae, was discovered. In 1979, the bacterium that caused the Philadelphia outbreak of legionnaires' disease was classified as *Legionella pneumophila*.

Legionella pneumophila has been responsible for illnesses linked to air conditioning systems in buildings.

Another species called *Legionella longbeachae*, which occurs in soils, composts and potting mixes, has recently been found to cause illness in some people.

Legionella species also live happily in warm water circulation systems found in retirement homes, hospitals, and swimming pool complexes. It can also live in domestic and hotel spa pools, as well as hot water cylinders that are not set at the correct temperature.

We routinely test Legionella in the following matrices:

- Cooling Tower water
- Recycled warm water systems
- Soils and compost
- Swimming Pools

We recommend that all air conditioning systems are analysed monthly as required by the BIA standard.

Producers and sellers of potting mix and compost should strongly consider a regular testing program in order to monitor the risk your product is posing to you're the purchasers of your product.

We also urge the regular testing of warm water circulation systems in retirement homes and hospitals and for operators of swimming pools to consider this test also.

How to arrange a test

Give us a call and we will send to you the sample bottles and equipment you need. We will perform the analysis in a purpose built biohazard cabinet housed inside our pathogen laboratory. Because, the bacteria are very slow growing the test can take up to 10 days to complete.

We will let you know if Legionella is found when it is not expected.

Legionella and cooling towers

New Zealand has concentrated on the testing of cooling towers associated with air conditioning systems as the primary source of Legionella related illness and in April 2004 the Building Industry Authority (BIA) (now part of the Department of Building and Housing) amended the draft compliance schedule in the New Zealand Building Code handbook.

This more rigorous testing regime for cooling towers is based on the current Australian-New Zealand Standard, AS/NZS 3666.3. It expands on the current requirement of a monthly bacteriological testing of water in cooling towers, by also requiring a specific Legionella bacteria test each month. Legionella testing was previously required six monthly. This assists building owners to demonstrate their buildings' compliance for their building warrant of fitness and hence demonstrate their ongoing compliance to councils.

Environmental Laboratory Services is IANZ accredited to perform Legionella in Cooling Towers. We are also accredited to perform Heterotrophic Plate Count (pour plate) tests for cooling towers.

Our Legionella methodology follows the method published by the N.Z. Communicable Disease Centre, and the joint Australian/New Zealand Standard AS/NZS 3896: 2008.

Sampling Cooling Towers for Legionella

Safety Precautions

A facemask and other protective clothing as required are to be worn when collecting water samples from cooling towers. The condition of the tower should be recorded to include the presence of biological growths and sludge.

Sample Collection from Cooling Towers

Obtain water samples from incoming supply to tower from the header tank or the ball valve in the tower.

Collect samples in 100mL sterile containers from pond water furthest away from the make up and from the water return line of the circulation system to the tower. If this is not practical, take samples from cooling tower pond. Sludge and biofilm material can also be analysed.

Samples that cannot be processed immediately should be kept in a refrigerator for not more than 24 hours.

Legionella and circulated water systems

Legionella may contaminate and grow in other water systems such as hot and cold-water services. They survive in low temperatures and thrive at temperatures between 20 degrees centigrade and 45 degrees centigrade if the conditions are right, e.g. if a supply of nutrients is present such as rust, sludge, scale, algae and other bacteria. Because high temperatures kill them, the BIA recommends water has to be stored at temperatures greater than 60°C (irrespective of whether a mixing device is installed) and delivered at not more than 45°C in elderly people's homes, early childhood centres, etc and not more than 55°C for other building uses, including housing.

Samples from chlorinated sources are diluted and do not therefore require a neutralising agent in the sample container. We provide sample containers, as well as sterile swabs for use around shower heads and taps.

There are two techniques to collect Legionella samples from within a building system.

Collection of Samples from Water Services within Buildings

- The external surface and rim of the outlet being sampled should be clean and free of deposits.
- Samples should be collected before and after outlets are flushed and from the distal point of each service.
- Pour the samples from cisterns, calorifiers, hot water cylinders, and showers directly into 100mL sterile containers provided.

Collection of samples from Shower Heads and taps.

- Remove showerhead etc from the fixture or pipe and allow a little water to drip out.
- Moisten a sterile swab with water and thoroughly swab the inside of the pipe, showerhead etc.
- Break the swab aseptically into a 100mL sterile bottle containing not more than 10mL of water.

Legionella and potting mix

Samples of potting mix can be collected in plastic bags and sent directly to us.

We recommend and can provide suitable bags that can be zip locked.

Legionella questions we are often asked

How often should I sample my cooling tower?

The most recent building act requires new cooling towers to be sampled monthly - leaving older towers on the previous 6 monthly requirement. We recommend you consider sampling monthly as it provides a better indication of your cooling towers performance, and also ensures a greater level of safety for everybody living and working around the tower.

What is Legionellosis?

Legionellosis is a bacterial disease that is common in adults over the age of 50 and is extremely rare in those under age 20 and most cases occur in males. It is a chest condition similar to pneumonia and can appear as a mild flu-like illness or a more severe respiratory condition.

Common early symptoms include loss of appetite, muscle pains, headache, abdominal pains and diarrhoea, and fever. A dry cough can develop as the disease progresses.

Some people are more at risk than others. Smokers and other people prone to lung disease are particularly susceptible.

How is it treated?

A course of antibiotics is usually recommended, with rapid health improvement.

Can I become immune to it?

Yes. If you are exposed to Legionella you can contract a mild form of the disease that your body builds up antibodies to, providing immunity to future infection. This immunity is specific to the species you were exposed to.

What should I do if I think I'm affected?

See your medical practitioner immediately. The sooner you are treated the quicker you can recover.

How soon do I see symptoms?

The incubation period for Legionellosis is two to 10 days, usually five to six days.

Am I Infectious?

Legionella is not transmitted person-to-person.

How can avoid catching the disease?

If you work in a building with a water-circulation type of air conditioning system, ask if that system has been tested?

When handling potting mix, take care when opening and do all you can to avoid inhaling dust and aerosols.

Wash your hands carefully after handling all soil.

Contact Details

Please feel free to contact us by any one of the methods shown below.

Main Lines

Wellington	Main Telephone	(04) 576-5016
Christchurch	Main Telephone	(03) 343-5227
Auckland	Main Telephone	(09) 579-2669

Direct Lines

	Accounts	(04) 568-1205
Rob Deacon	General Manager	(04) 568-1203
Sunita Raju	Microbiology Lab Manager	(04) 568-1206
Tracy Morrison	Chemistry Lab Manager	(04) 568-1200
Sharon van Soest	Chemistry Lab Manager	(04) 568-1200
Deb Bottrill	Sample Logistics Manager	(04) 576-5016
Dan Westlake	Christchurch Lab Manager	021-242-2742
Ralph Veneracion	Auckland Lab Manager	021-242-2711

Email can be directed to staff using "first name last name"@eurofins.com

Courier

Wellington: 85 Port Road, Seaview, Lower Hutt, New Zealand 5010

Auckland: 35 O'Rorke Road, Penrose, Auckland 1061

Christchurch: 43 Detroit Drive, Rolleston 7675

Mail

P.O. Box 36-105, Wellington Mail Centre, Petone, New Zealand 5045.

Email

General Information: eurofinswellington@eurofins.com

WEB

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Legionella v5

IANZ Accreditation Numbers:
Biological 639, Drinking Water 787,
Chemistry 414, RLP 1140