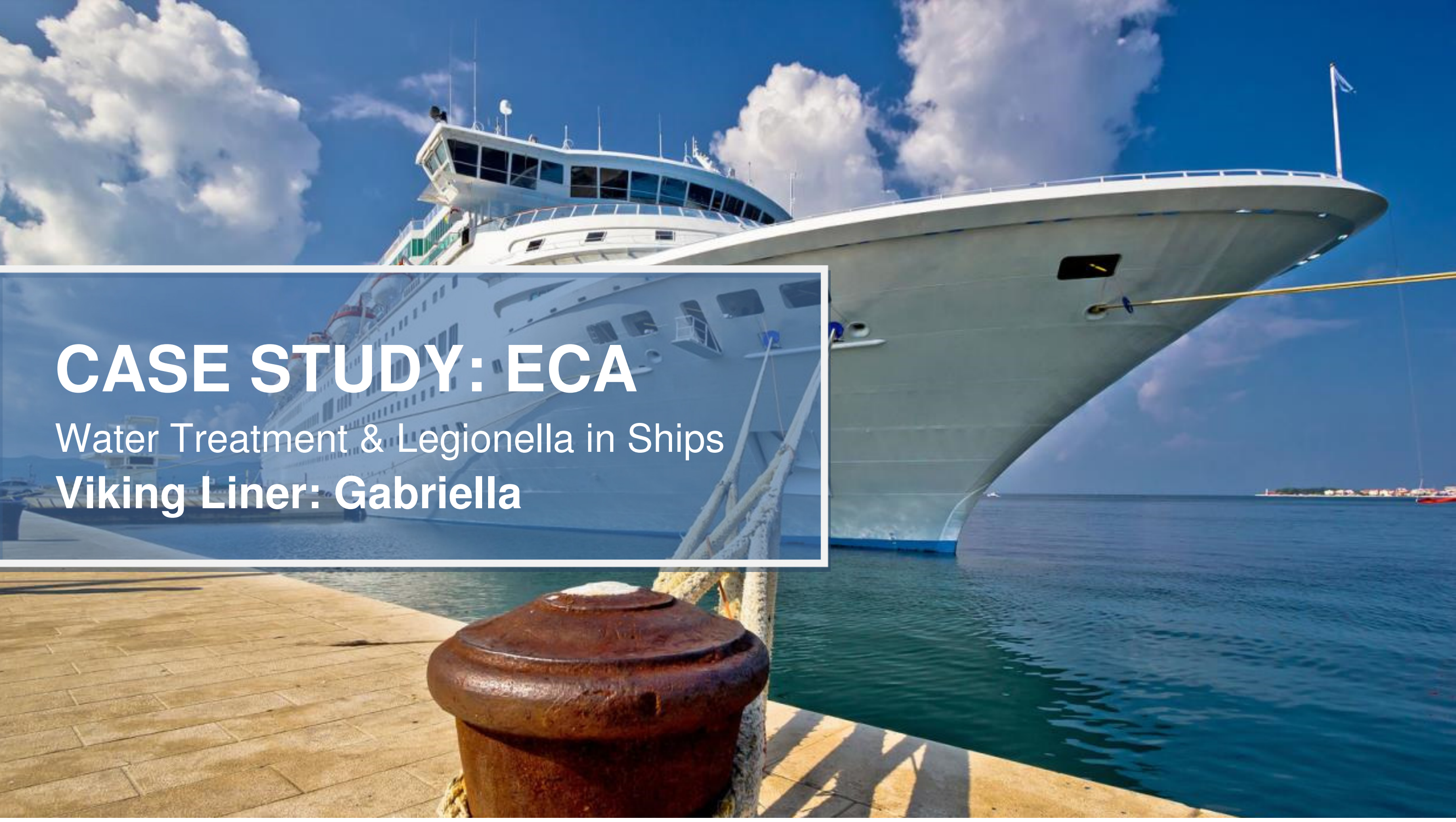

CASE STUDY: ECA

Water Treatment & Legionella in Ships

Viking Liner: Gabriella

REFERENCE

VIKING LINE

www.vikingline.com

Viking Line is a public limited company and a market-leading brand in passenger traffic on the northern Baltic Sea.

It offers passenger services, recreation and cargo carrier services on the vessels Gabriella, Mariella, Amorella, Rosella, Viking Cinderella, Viking XPRS and on the new flagship Viking Grace.

For further information find Radical Waters

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Executive Summary

Viking Line ships sail several times daily between Finland and Sweden as well as Finland and Estonia. The Åland Islands (Finland) are accessible from both Turku and Helsinki on the Finnish mainland and in Sweden from Stockholm and Kapellskär.

The Gabriella cruises the Stockholm - Helsinki route and departs every other day from Stockholm, Stadsgården and arrives in Helsinki. Every second day the departure is from Helsinki with arrival to Stockholm the following day. The ferry was built in 1992. • Length: 171,2 m • Width: 27,6 m • Passengers: 2 420 • Beds: 2 402 • Cars: 400

Challenges

Viking Lines had problems with high bacteria count on board the ships. They therefore decided to take a new initiative to reduce the bacteria counts on first Viking Gabriella and then on all other six ships. After two months of extensive trials with anolyte being delivered to the ship in canisters and verification of the results the German accredited laboratory Viking Lines ordered the installation of an **ECA N.O.W** (**Neutral Oxidized Water) Anolyte Generator** unit on board of Viking Gabriella.

Legionella can be a problem on liners that lives in the water supply:

- Under 20°C low Legionella risk
- 33- 42°C ideal reproduction range
- 42-50°C reproduction no longer possible
- 50-60°C Legionella are killed
- 60-70°C Legionella are killed within seconds

How did ECA help ?

Eliminate bacteria

The fresh water tank is approximately 250 m3. Daily water consumption is up to 50 m3.

The accepted bacteria count: Less than 1 Cfu / 100 ml. (In practice = 0 Cfu / 100 ml

In June 2013 the Anolyte unit was installed and only 2 weeks later the Viking Gabriella was declared free from bacteria.

Peace of Mind: Human Safety

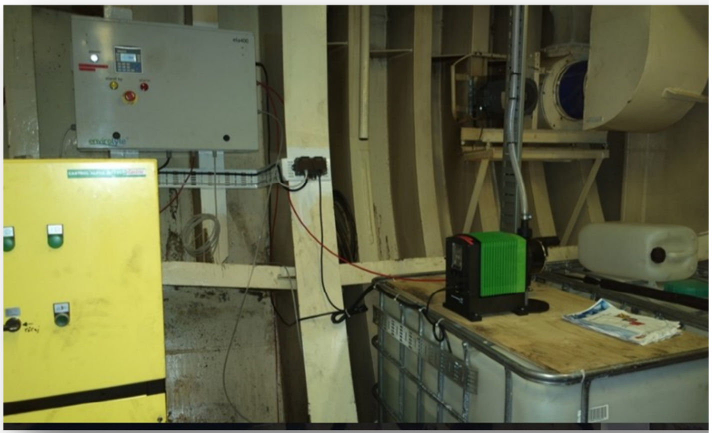
Our **ECA N.O.W** generators can be installed on board the ship and treated the water system on a continual basis not only to remove the infection but to eliminate the risk of reinfection.

Our anolyte generators give the **Viking Gabriella** operators peace of mind that they are doing everything possible to protect the ship passengers from infection and consequently minimize the financial and legal risks to themselves.

Eco-friendly technology

ECA N.O.W Anolyte is produced using natural ingredients. Non -Toxic

Anolyte generator on board the Viking Gabriella



Result

"In June 2013 the Anolyte unit was installed and only 2 weeks later the Viking Gabriella was declared free from bacteria".

Industry Facts on Legionella

Legionella has been identified as a major problem in multi-occupancy buildings such as hotels, **ships**, hospitals, hostels, schools, military establishments, nursing homes and office blocks.

Worldwide thousands of people become seriously ill or die through infection by this potentially deadly disease. The costs if a ships water system becomes infected can be substantial not only in terms of human suffering but also financially. If a hotel is identified as a source of infection it can result in forced closure whilst the problem is treated plus possible lawsuits if people are infected.

RADICAL WATERS
Natural Hygiene Solutions