



ozone

technologies ltd

protecting our environment

chemical free swimming
aquatic centres & community pools









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O3T

breathe easy water treatment systems for aquatic centres, commercial spas & larger pools

- Municipal, commercial & school pool treatment 
- Reduce ongoing running costs with proven system designs 
- Recover up to 90% of heat for indoor pool heating 
- Greatly reduce chemical purchase costs 
- Reduce the need to exchange water or refill 
- Eliminate microorganisms, protozoa & allergic reactions 
- Enjoy crystal clear water with no more sore eyes 
- Reduce cleaning & maintenance costs 

WRAC Main Pool filled June 21 2004, photo taken immediately after pool cleaning & filling from the town water supply. Taken from the service tunnel windows.



Second photo taken after 12 hours from filling after filtration and ozonation.

Low cost of ownership,
energy efficient, proven water quality improvements and effective disinfection.
O3T's proven process designs & installation history will ensure long term service and lifespan of your O3T system. We can offer a tailor made service and turn-key filtration plant with low running costs to ensure your recreational system runs smoothly.

swimming pools and aquatic centres breathe easy water treatment

All those who have swum in the ocean or paddled in one of New Zealand's many rivers can appreciate the difference between a natural place to swim and a man-made pool. Beaches and rivers have moving water and natural filtration to keep their water clear.

Water is precious. We have recirculating water pools to conserve this vital resource, and still be able to swim and play without having to go to the beach. There are alternative treatments to chlorine which can make this a healthier, safer and more pleasant environment to be in.

Swimming pool water pollutants

Swimming pool water pollution is mainly caused by swimmers. We tend to call this organic loading. These are divided into three groups: microorganisms, undissolved solids and dissolved solids.

Each swimmer carries a large number of microorganisms, such as bacteria, fungi and viruses. Some of these microorganisms may be pathogenic and can cause disease. No microorganism can survive cell lysing by the use of ozone as a primary disinfectant however.

Undissolved pollutants mainly consist of visible floating particles, such as hairs and skin flakes, but also of colloidal particles, such as skin tissues and soap remains.

Dissolved pollutants can consist of urine, sweat, eye fluids and saliva. Sweat and urine contain water, but also ammonia, nitrates and amino acids. When these substances are dissolved in water, they cannot harm swimmers. However, when these compounds combine with chlorine in pool water they create chloramines (odourous compounds, some of which are carcinogenic. This causes the so-called chlorine-scent, which irritates the eyes and respiratory system.

Improve water filtration with ozone based primary treatment

NZ Standards require a chlorine residual in swimming pools. However even without modifications to your chlorine system, ozone can be used to provide the main oxidizing and sanitizing function. Typically chlorine use drops by 60-80% when ozone is introduced correctly, and a balanced chlorine level has no odour. Ozone is the most powerful oxidizing agent in commercial use today. Crystal clear, odorless water is the best indicator of an ozone system in use. It does not leave swimmers with red eye, rashes, itching or other skin irritation problems (even in a combined system).

As problems with chlorine systems continue to be documented, most notably the production of carcinogenic by-products called chloro-organic compounds or trihalomethanes (THMs), ozone is becoming the sanitizer of choice for pool managers. It has lower running costs than UV treatment with many additional advantages, including clarity, odour, a fresher environment outside the pool and longterm algae reductions from tiles.



*Te Rauparaha Arena
Porirua Aquatic Centre.
Porirua water clarity lane pool*



*Wellington Regional Aquatic Centre,
Kilbirnie Crescent.*



Taranaki Thermal Spa

swimming pools and aquatic centres

Why use ozone?

Ozone kills bacteria, viruses and protozoa such as Giardia and Cryptosporidium which can cause severe gastrointestinal illness, and which chlorine is much less effective in killing. It prevents airborne endotoxins which occur in chlorine water treatment. These toxins can cause chronic coughing and wheezing among lifeguards called Hypersensitivity Pneumonitis (lifeguards' cough). Even in a Chlorine/Ozone pool, ozone reduces or eliminates the caustic gases formed by chlorine which helps to reduce or eliminate issues such as rusting, premature wear and other chlorine-related problems.

Ozone also kills molds and mildews and eliminates spores, yeasts and fungus. It is pH neutral, breaks down to oxygen and adds no contaminants to water. In fact, where pools use a dual system of sanitation (ie. Ozone and chlorine), Ozone actually inhibits the formation of chloro-organic byproducts and THMs.

Eliminate red eye, rashes

In swimming pools, chloro-organic compounds and THMs may accumulate to very high concentrations. Red eyes and rashes are the most instant and obvious effects and should be considered signals of a much more serious risk to human health. On average, the human body will absorb about half a litre of pool water every hour. Use ozone to avoid reactions.



ozone in your water filtration has many benefits:

- ✪ Reduced chemical costs. Chlorine can often be reduced up to 80 or 90 percent and still meet NZ safety standards for pools.
- ✪ Improved health of the filtration system, keeping this cleaner
- ✪ Improves the removal of suspended solids
- ✪ Improved swimmer health without the impact of chloramines
- ✪ Reduced power costs for ongoing running, our unique ERS (energy recovery system) can return up to 90% of energy consumed by an air compressor to heating the water in larger pools.
- ✪ Shorter cleaning time and less cleaning chemicals are involved in an ozonated pool. Ozone reduces staining of tiles and fittings.
- ✪ Ozone is generated on site, not stored, and has no consumables (like lamps in UV systems) to continually change. Efficient system design and process control means the equipment will run as needed to maintain a desired disinfection level without wasting energy.

Ozone Technologies can provide a system design just for you:

We can review your current system, and provide outlines and costings for an ozone based system perfectly suited to your pool. We have many years of experience and happy clients behind us to know we can offer you the correct solution for your needs.

We provide ongoing support to ensure your system remains in the best possible condition, and can offer service plans as required.