



“ With the installation of the ozone water treatment system we now have safe and excellent tasting drinking water without using chlorine ”

Joe Doe, Owner, St.Clair Lodge

## Customer Profile

The Lodge used rainwater for its domestic supply, but wished to supplement it with bore water because of the unreliability of the rainwater supply at certain times of the year.

Water test showed that the bore water was heavily contaminated with bacteria and coliforms, and fell well outside the NZ Health Department recommendations for potable water.

The bore was suspected of being periodically contaminated by septic tanks in the area.



## Business Situation

- Water Source:** Rain water, supplemented by bore water
- Storage capacity:** 5,000 gallon concrete tank (raw water)  
3,000 gallon fibre glass tank (treatment water)
- Daily usage:** About 2,500 litres (average)
- Equipment used:** Novozone 'skid-pack' water treatment system comprising of:
- Novozone CD-1000 corona discharge ozone generator
  - 1 HP Monster self priming pump
  - Mazzei 1-1/2" injector
  - 750 sqft cartridge filter

## Solution Overview

### Customer Name:

St Clair Lodge

### Customer Profile:

St. Clair Lodge is an up-market lodge on a beautiful island in the Hauraki Gulf

### Location:

Vivian Bay, Kawau Island, New Zealand

### Industry:

Hospitality

### Business Situation:

The Lodge wanted to use bore water for its domestic supply. Water tests showed that this water was heavily contaminated with bacteria and coliforms and fell well outside the Health Department standards for potable water.

### Application:

Domestic water supply for St Clair Lodge

### Solution:

The Lodge contacted Novozone for a cost effective solution.

A Novozone ozone water treatment system was installed. Test showed that the ozone system proved very effective in eliminating the microbial contamination.





## The Solution

Water supply was arranged so that the rain water and bore water was pumped from the lodge up to a 5,000 gallon concrete storage tank on top of the hill behind the lodge, and from there gravity fed back down.

Because of the unavailability of a power supply at the storage tank, a site was prepared and a 3,000 gallon fibreglass tank (Ribtec) was placed beside a unit approximately half way down the hill, and this was set up as the ozone treatment tank. This tank was fed via a strainer (to remove organic debris) and ball cock, and the skid-pack was located alongside the unit, with the generator attached to the inside of the unit wall (to ensure dry conditions).

The suction was connected via the isolating valve and 40mm pipes to an outlet point near the bottom of the tank. The return line was plumbed in the top of the tank with a 45° elbow half way down to circulate the returning water in the tank.

The system was installed and run continuously during the day until the water was cleaned up. This took about three days. A time clock was then fitted to the pump and the system set to run for about four hours per day.

## The Microbial Tests

After about three weeks running, a water sample was taken from the kitchen tap in the lodge and tested as follows:

	UNITS	BEFORE OZONE	AFTER OZONE	NZ STANDARD
SPC/22°C	cfu/100mL	> 1,000,000	27	< 10,000/100mL
SPC/37°C	cfu/100mL	> 1,000,000	730	< 1,000/100mL
Total Coliforms	/100mL	> 130	Negative	<3/100mL
Feecal Coliforms	/100mL	3	Negative	<1/100mL

Test reports: Pro-Test Laboratories Ltd, Report # 2187, dated 23/07/93, Alpha Biologicals Ltd, Report # 94/06252, dated 08/03/94

## Conclusions

For St Clair Lodge the results clearly demonstrate the effectiveness of ozone for the treatment of water containing bacteria and coliforms. The treatment was simple once a treatment tank with an available power supply was installed and the use of a pre-plumbed skid-pack proved its value in a remote site such as this.

Despite the Ribtec tank having been used before, and not in a very clean state when installed, the combination of the ozone and a cartridge filter has been satisfactory in achieving a good level of water quality

This installation would appear to permit the likelihood of re-infection in the lines between the treatment tank and the Lodge. Water test samples were taken at the Lodge, so they show that this in fact is not happening, but the ideal installation would be where the water is treated as close as possible to the point of use (POU). The results therefore show that even if the ideal situation is not possible, good results may still be obtained.



### Product:

Novozone Ozone Generator  
Model CD-1000

### Benefits:

- Prevents fungus attack
- Prevents bacteria attack
- Kills Pythium and Phytophthora
- Whiter & stronger roots

The plants get stronger and better roots making them more healthy

### • Better plants

It has been observed that the uptake of calcium and manganese is increased

### • Cost of investment

Typical yearly running costs including depreciation and regular servicing are 1-5% of purchase price

### • Environmentally friendly

No harsh chemicals are used with Ozone treatment. No need to store dangerous chemicals on site. Used ozone reverts back to oxygen

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