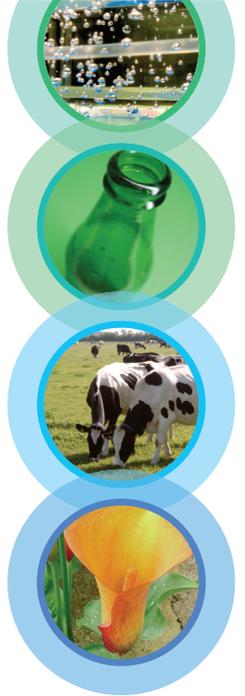


GeoSIL[®]

Universal Disinfectant



Totally Chlorine Free Water Treatment

For Rural Water Storage Tanks

Treatment Application Profile

Treatment of a “typical” rural rainwater storage tank was carried out in accordance with the standard recommendations for the application of **GeoSIL[®]** and **GeoSIL[®] 150**

The tank selected was a standard concrete 22,000 litres (5000 gallon) tank supplied with roof water from a group of 6 aircraft hangars. The general area around the tank was either grassed or concrete, with no dirt roadways or farm tracks likely to deposit dust on the roof, and no trees likely to deposit leaves.



The roof area was generally clean, but the gutters had not been cleaned for some time prior to the tests, and were known to be dirty. A buried section of pipe connecting the downpipes to the tank inlet was fitted with a drain fitting, but this had not been cleared for at least 12 – 18 months.

Test Method

At the start of the test, the water in the tank was observed to be very clear, the tank was full, and the bottom of the tank was clearly visible.

(*Sample # 1.0*) A water sample was collected in a sterile bottle provided by the testing laboratory, and the tank was dosed with 660ml **GeoSIL[®]**, in accordance with the dosing chart. (*This equates to approximately 4.4 litres of **GeoSIL[®] 150***) The **GeoSIL[®]** was applied by pouring into the tank through the cover opening and the water stirred briefly.

(*Sample # 2.0*). The **GeoSIL[®]** residual was checked after 24 hours and another water sample taken.

(*Sample # 3.0*) A further check of the **GeoSIL[®]** residual, and another water sample taken after 7 days, and recorded.

(*Sample # 4.0*) The water was sampled 29 days after the initial dose, and the sample tested. The water was then re-treated at the previous dose rate.

(*Sample # 5.0*) The water was again sampled and tested the day following the second treatment.



Results

The following are the results obtained.

Time	Sample	Coliforms MPN / 100 ml		Bacteria	GeoSIL
		Total Coli	E. Coli	HPC	ppm
Start	H 1.0	>2420	610	180	0
24 Hours	H 2.0	1	1	5	50
7 Days	H 3.0	<1	<1	8	20
28 Days	H.4.0	24	<1	140	<1
29 Days	H 5.0	<1	<1	35	20

Refer Laboratory tests: Aqualab (N.Z) Ltd., Reports dated 18 & 21 April, and 15 May, 2006

Comments

While the initial appearance of the water was good, the very high readings recorded at the start are not untypical of bacteria and coliform levels present in many domestic water storage tanks in rural New Zealand. High coliform readings are almost certainly the result of bird droppings in the roof of the building, and the accumulation in pipes supplying the tank will contribute to the ongoing contamination of the water. An ongoing regime of roof, gutter and tank cleaning, together with regular dosing of **GeoSIL®**, would no doubt ensure that the improved quality of the water obtained by the treatment, could be maintained.

Decaying organic debris in the tank would result in a lowering of the oxygen levels in the tank, but regular **GeoSIL®** application would tend to minimise this effect, and make the water fresher and healthier. Because the treatment is totally chlorine free (TCF), the organic contaminants cannot form dangerous carcinogenic "chlorinated organics" (THM's) in the water, and odours and unpleasant tastes caused by bacteria in the water, will be eliminated.

The results obtained in this test were significant, and while the water at the start of the test would constitute a "Serious Transgression" under the requirements of the Drinking Water Standards for N.Z. 2005, after little over 24 hours contact, the water meets the requirements of these standards for low bacteriological contamination. After a further 4 weeks, the water was still free of E.Coli, and following the second treatment, the small number of coliforms that had re-established, were destroyed.

Tests carried out on water storage tanks overseas have indicated that the **GeoSIL®** residual can remain for up to 14 days, and indication are that the disinfection action can continue for up to 28 days, depending upon conditions.



Product Reference info;

GeoSIL IDS 13.3, GeoSIL 150 IDS 12.4, Water Tanks IDS 8.2,
Pathogen Tests IDS 10.6, Legionella IDS 11.2, Silver in Drinking water IDS 7.3

GeoSIL

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