

CASE STUDY

Reverse Osmosis Pretreatment

Location: MORELIA, MICHOACÁN

Technology: Crystolite Filtration

WATCHER[®]
WATCH WATER
a Water Company



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BACKGROUND

Watch Water is a rapidly growing global leader in manufacturing Scale Prevention, Adsorbers, Filter Media, and Instant Dosing Solutions for the water and wastewater treatment industry.

This case study highlights the successful usage of Watch Water's **CRYSTOLITE** filtration media in the pretreatment of reverse osmosis, showcasing its impressive results and cost-saving benefits.

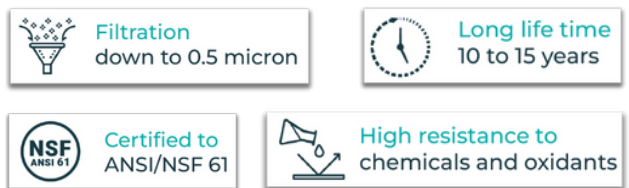


CLIENT PROFILE

In the city of Morelia, Michoacán, water treatment facilities faced the challenge of efficiently pretreating water for reverse osmosis systems, aiming to reduce maintenance costs and increase the lifespan of their membranes. To address this, our client the 'Water house group' adapted our **CRYSTOLITE** as a pretreatment for these RO systems and evaluated its performance in terms of cost savings over certain periods of time.

CRYSTOLITE FILTRATION

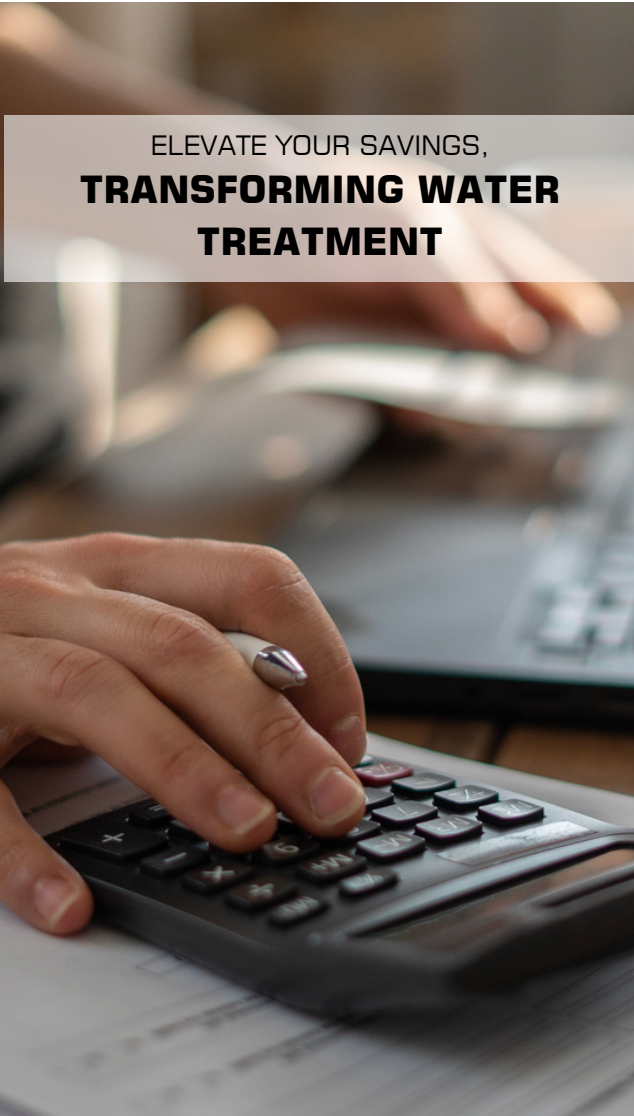
CRYSTOLITE is a unique filtration media that can perform filtration up to 0.5 microns. CRYSTOLITE is ideal for most industrial applications like for cooling towers, reverse osmosis protection, wastewater recovery, for process water, etc. CRYSTOLITE is very versatile and operates effectively within a pH range of 3 to 12. Some Unique features of crytolite media are:



TEST METHODOLOGY

For the evaluation, the installations were equipped with 12"x52" filters containing around 56 Liters of Crystolite each. Calculations were based on an exchange rate of 19 Mexican Pesos (MXN) per US Dollar at the time of testing and 1m3 of pipe costed around 55 MXN. Each system was run at 28 liters per minute (7.5 gallons per minute) or 1.7m3/h.





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TREATMENT**

RESULTS

A comprehensive cost analysis was conducted one month after the installation of **CRYSTOLITE** to compare maintenance costs with and without its use in reverse osmosis pretreatment. A substantial savings of up to **70%** in the maintenance of reverse osmosis were achieved with the use of **CRYSTOLITE**. This allowed our clients to recover their initial investment in approximately **4 months**.

1 MONTH	Without CRYSTOLITE		With CRYSTOLITE	
	UNIT	COST (MXN)	UNIT	COST (MXN)
Membrane Washing	2	800.00	0	
Filter Change 20Mc	4	224.20	0	
Filter Change 5 Mc	4	224.20	0	
Filter Change 1Mc	3	168.15	2	112.10
m3 pipe	37	2035.00	18	990.00
	Total	3451.55	Total	1102.10

CONCLUSION

Our client successfully demonstrated **CRYSTOLITE's** efficacy in reverse osmosis pretreatment, efficiently eliminating particles and lowering SDI. **CRYSTOLITE** implementation resulted in significant cost reductions, resulting in a four-month payback period. **CRYSTOLITE's** cost-effectiveness was further demonstrated by considerable reductions in water use for cleaning and backwashing. Furthermore, it assisted in the protection and expansion of membrane lifespans. This case study highlights **CRYSTOLITE outstanding benefits as a microfiltration medium for reverse osmosis pretreatment, providing both cost savings and increased system performance**. Because of its simplicity of use and maintenance, it is a significant addition to water treatment plants, assuring clean and efficient water output.