DESALINATION

Potabilization Plant Scale Protection Case Study Poggibonsi, Italy

*Hydro*FLOW® unit helped protect RO membranes and plant infrastructure from high hardness water, improving efficiency and reducing chemical and maintenance costs in a potabilization plant.

840ppm	↓	↓	↑
Water Hardness Treated	Chemical Consumption	Maintenance Costs	System Longevity

⇄ BEFORE & AFTER

BEFORE

- ✕ High hardness caused scaling risk
- ✕ RO membranes at risk of fouling
- ✕ Chemical use required for control

AFTER

- ✓ Reduced encrustation in system
- ✓ RO membrane performance improved
- ✓ Reduced chemical use and maintenance

OVERVIEW

Acque SpA operates a potabilization plant in Poggibonsi, Tuscany, treating water from the Elsa River. Extremely hard water at around 840 ppm $CaCO_3$ created scaling risks across the plant.

⚠ CHALLENGE

Very high water hardness created scaling risks, impacting RO membranes and plant efficiency.

- Water hardness approx. 840 ppm $CaCO_3$
- Scaling risk to RO membranes
- Chemical dosing required for control
- Risk to pipes, tanks and equipment

SOLUTION

1x *Hydro*FLOW® iCustom 16″ unit was installed on the 400 mm main delivery pipe to protect the plant from encrustations.

UNIT INSTALLED	PIPE SIZE
1x *Hydro*FLOW® iCustom 16″	400 mm main delivery pipe

APPLICATION	INSTALL DATE
Potabilization plant (RO system)	May 2023

INSTALLATION

16″ unit on main pipe

INSTALLATION

Unit on 400 mm line

RESULTS

Reduced Maintenance Costs
Lower maintenance related to encrustations.

No Softening Required
No Additional Softening Required.

Reduced Chemicals
Lower use of flocculants and antiscalants.

System Protection
Improved protection of pipes, tanks and equipment.

Improved Efficiency
More efficient plant operation.

Extended Lifespan
Longer life of plant sub-systems.

KEY TAKEAWAY

Summary

*Hydro*FLOW® unit installed at Poggibonsi plant operated effectively at 840 ppm hardness, protecting RO membranes, reducing chemicals and maintenance, and improving efficiency.

840ppm	↓	↑
WATER HARDNESS	CHEMICAL USE	SYSTEM LIFE

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