

Water softener replacement with improved RO water quality

An express tunnel car wash operated without traditional water softening after CRS installed NanoSoft™ on the mainline and a CRS538 on the RO feed. Bay-measured RO permeate TDS fell from 3.9 ppm to a reported 0 ppm by three months and remained at 0 ppm at the nine-month check. Measured hardness remained 11-11.5 grains per gallon.

3.9 → 0 ppm

Bay-measured permeate TDS

11-11.5 GPG

Measured water hardness

9 months

Field observation period

RO performance at a glance

Recorded metric	Baseline	~2 weeks	~3 months	9 months
Bay permeate TDS	3.9 ppm	3.3 ppm	0 ppm*	0 ppm*
RO machine TDS	4-9 ppm	1 ppm	1 ppm	1 ppm
Water hardness	11 GPG	11.5 GPG	11.5 GPG	11.5 GPG
Permeate flow	3.8 GPM	3.8 GPM	3.8 GPM	3.8 GPM
Reject flow	4.6 GPM	4.6 GPM	4.6 GPM	4.6 GPM

*A reported 0 ppm is the field meter reading, not proof of zero dissolved solids. The RO machine separately displayed 1 ppm at the final check. TDS = total dissolved solids; GPG = grains per gallon; GPM = gallons per minute.

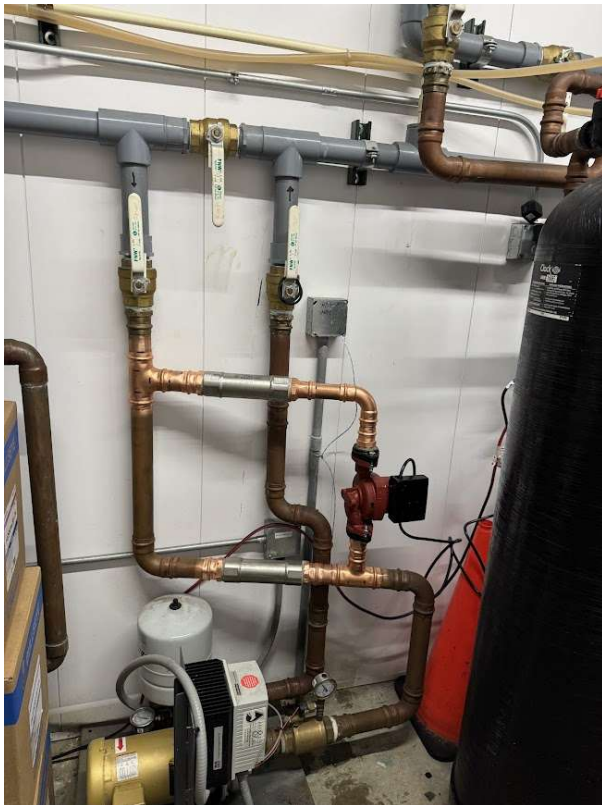
What this meant for the wash

The site reported maintained or improved wash quality, chemical-panel performance and car wash system operation without traditional softening. The nine-month readings confirmed that RO permeate TDS, hardness, permeate flow and reject flow matched the three-month readings.

The operator has begun rolling out NanoSoft™ to eight additional locations as a replacement for their water softeners.

The installed configuration

The mainline NanoSoft™ assembly treated incoming wash water ahead of downstream uses. A separate CRS538 treated the dedicated RO feed. The site used a four-membrane commercial RO system rated at approximately 4,000 gallons per day to supply spot-free rinse water.



Mainline NanoSoft installation

Assembly serving the incoming wash-water line and pressure-boosting system.



Dedicated RO feed treatment

CRS538 installed upstream of the commercial RO machine.

How to interpret the results

These observations support further evaluation of this configuration for car wash softener replacement and RO pretreatment. This was a single-site before-and-after evaluation of **NanoSoft plus CRS538**; it does not isolate either device's contribution or establish longer membrane life, reduced scaling or cleaning-frequency savings.

Measurement context. Inlet pressure rose from 20 to 35 PSI between baseline and the two-week check. Three-month pressure readings were excluded because freezing had damaged the gauges. Flow figures are recorded spot readings, not continuous monitoring. Customer identity and location are withheld.