

Common Operating Problems—Sodium Zeolite Softener**TABLE 4-6 Common Softener Problems**

<i>Observation</i>	<i>Possible Root Causes</i>	<i>Corrective Action</i>
Short runs	<ul style="list-style-type: none"> ■ Channeling due to accumulation of solids on bed surface, compromised inlet laterals, underdrains, or subfill ■ Poor regeneration (low brine concentration or dosage) ■ Change in influent water quality ■ Fouled resin ■ Loss of resin due to high backwash flowrate, compromised underdrains, or subfill 	<ul style="list-style-type: none"> ■ Inspect internals and bed surface at the end of the run ■ Confirm conformance of backwash flow and duration to OEM specifications ■ Confirm regeneration effectiveness by completing an elution study ■ Compare influent water quality to design basis ■ Analyze resin
Long fast rinse (Typical FR = 15–25 min)	<ul style="list-style-type: none"> ■ Poor regeneration ■ Compacted bed and channeling ■ Fouled or deteriorated resin 	<ul style="list-style-type: none"> ■ Confirm regeneration procedure by completing an elution study ■ Analyze resin
High hardness (> 2.0 ppm as CaCO ₃)	<ul style="list-style-type: none"> ■ Bypass of influent water ■ Poor regeneration ■ Compacted bed and channeling ■ Fouled or deteriorated resin ■ Previous hardness breakthrough (exhaustion) 	<ul style="list-style-type: none"> ■ Repair or replace inlet valve or multiport valves ■ Confirm conformance of backwash flow and duration to OEM specifications ■ Confirm regeneration procedure by completing an elution study ■ Analyze resin ■ Conduct a double regeneration

Under no circumstances should plant personnel allow softened water with more than 2.0 ppm as CaCO₃ total hardness¹ to be fed to the boiler; catastrophic failure can result! Obtain mobile water services to provide softened water until correcting the problem in the existing softeners.

¹The maximum concentration of total hardness in softened water depends on the percent dilution by condensate and boiler pressure; in all cases, ASME (American Society of Mechanical Engineers) guidelines apply.