

Customer Case Study

# Capitol Reef Field Station

## Environmental Research Station Battles Epic Hardness

**Industry:**

 Education/  
Science

**Category:**

Water Quality

**Location:**

Central Utah

**Installation:**

OneFlow



**CUSTOMER:** A solar-powered village in central Utah, Capitol Reef is a place for researchers to study the natural and cultural history of the area. The facility is a joint effort of Utah Valley University and the U.S. National Park Service.

**SCOPE:** The site consists of two dormitories, a multi-purpose building, site manager's home and maintenance building—all "off-the-grid" and resource-challenged.

**CHALLENGE:** Address astronomical (86 GPG) hardness levels in the park's water.

**SOLUTION:** Watts OneFlow® Anti-Scale System, Model # OF1465-50 (50 GPM).

**RESULTS:** The site has been able to meet the hard water challenge, while being conservative with natural resources, avoiding the need for electricity and producing zero waste water or chemical waste.

*"With... very reliable, smart [OneFlow] technology, we're able to meet [the] challenge and also to be a great deal more conservative with our natural resources."*

*-Frank Young,  
Utah Valley  
University*

Nestled into a canyon fold within a 378-square mile national park, the Capitol Reef field station is surrounded by vivid, red and white rock formations. Centuries ago, native Indians named the area "land of the sleeping rainbow." Every living organism inside the park is well adapted to the desert climate, making the most out of seven inches of annual precipitation. The few human inhabitants have learned to do the same: conserving natural resources and creatively solving problems that arise from the beautiful, but harsh, landscape.

One such problem is hard water—very hard water. Plumber Jared Anderson measured samples there at an exceptionally hard 86 grains of hardness per gallon. "That's all but unheard of—even in this area," said Anderson. Water is considered hard at 1 GPG, and anything above 18 GPG is considered "extremely hard", which can cause harmful mineral scale build up in capital equipment. In addition to a harsh environment, the research site has limited electrical power from the solar array that powers it and the park service had strict requirements that forbade distribution of harmful sodium or other chemical discharge into the local ecosystem.

"If we had made an attempt to solve water quality issues there with a traditional water softener, the ranch would've needed a tri-axle load of salt every month," said Anderson. "Fortunately, there's a product that offers everything the field station calls for." That low impact, zero energy solution was OneFlow®, from Watts, which controls scale without discharge, and creates zero pollution while minimizing installation and maintenance costs.

The water at the Capitol Reef Field Station is also high in sulfate and ferrous iron, so OneFlow was installed as part of a complete water system that included pre-filtration, macro and micro filtration, a nanofilter and an inline chlorine injection device. "Harvesting water in the desert is a challenge," said Frank Young, senior director of planning and development at UVU. "But with [...] some very reliable, smart technology, we're able to meet that challenge and also to be a great deal more conservative with our natural resources."