

ONE PROCESS REMOVES ARSENIC & IRON FROM WATER IN SMALL UTAH TOWN



Located near Escalante National Monument and Bryce Canyon National Park, the town of Cannonville shares some striking terrain and similar drinking water challenges.



The Safe Drinking Water Act brought with it tough arsenic compliance standards, forcing cities large and small to comply with a maximum contaminant level of 10 parts per billion (ppb) or face stiff fines and even the potential shutdown of wells. Smaller towns such as Cannonville, Utah, face the most difficult challenge, due to manpower and budget constraints. Cannonville turned to Filtronics, Inc., of Anaheim, California, and its unique proprietary arsenic removal process.

Filtronics provides systems that process up to 29 million gallons per day, but it was naturally one of their more compact FV series vertical filters-equipped with Electromedia®I that helped Cannonville and its population of just 200 people. Located near Bryce Canyon National Park, Cannonville is a small community with an understandably small public service budget. “We looked at some other ways to remove arsenic,” said Mayor Al Fletcher, “but disposal was costly.”

The city found that the initial cost of the Filtronics plant was competitive with other systems on the market, but because Filtronics' filter media is permanent, operation and maintenance costs are significantly lower than that of many other arsenic removal methods. Granulated ferric oxide (GFH) filters, for example, are very expensive to run: the media itself is costly, and when exhausted, must be replaced. And if the used media contaminated with a high concentration of arsenic isn't properly, it is considered hazardous waste. There are no such worries with Filtronics Electromedia®I. Filtronics' granular media is extremely efficient, accommodating a very high 10 gpm/sq. ft. flow rate, and the backwash to filtration ratio is less than 2 percent. Because the arsenic is removed from the media more frequently and in lower concentrations than GFH filters provide, it can be disposed of in a sanitary sewer, or the sludge can be collected and sent to a sanitary landfill.

Treatment for Cannonville has been very successful, particularly in light of the fact that the city's well also has a high concentration of iron in the raw water. Removal of iron is also a common application for Electromedia®I. “We have a 1300 foot deep well and pump about 300 gpm,” said part-time plant manager Larry Fletcher, who is also the mayor's brother. “Arsenic in the raw water is about 40-45 ppb, which is reduced essentially to zero with the filter. But there is also a lot of iron, it's not very nice water. Treatment is kind of a two-prong approach, because it takes out the iron and the arsenic in the one process.” Mayor Fletcher added “The system makes very good water.” In terms of maintenance, the system has also proven successful, needing very little attention since its 2003 installation. “I check on the system once per day, but it pretty much takes care of itself,” said Larry Fletcher.

Today, Cannonville not only meets the arsenic standards with an easy to maintain automated Filtronics Electromedia®I system, but they also enjoy clean, good tasting water at a very low cost.

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