

Grand Opening of Benson's New Water Treatment Plant

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Benson, Saskatchewan

With the opening of their new water treatment plant the residents of Benson could not be more satisfied with their water. "People in the community love the water. Many of them have gotten rid of their water coolers. As a matter of fact some of the farmers in the surrounding area fill their water jugs here. This was unheard of before", says Gail Frasz, water treatment plant operator.

The small hamlet north of Estevan is home to 95 people. Their water is drawn from a dugout that is notably high in turbidity. The community's previous chemical-based treatment system could not treat the water adequately to meet the upcoming more stringent provincial water standards prompting the search for a solution. Benson considered a few options including going to a hygienic-use system before deciding on the system installed and manufactured by Mainstream Water Solutions Inc. from Regina. The Mainstream biological slow sand and activated carbon treatment system provided the community with a simple and cost-effective solution. These systems use naturally occurring microorganisms to purify the water.

With financial assistance made available through the Canada-Saskatchewan Infrastructure Program construction of the hamlet's BioClear 10,000 gallon per day treatment plant began in June and was completed in July 2006. The new treatment system utilized the existing building and some of the components of

the previous plant. The system consists of ozone pre-treatment to break up contaminants and deactivate pathogens such as *E.coli* and *Giardia*, a roughing pre-filter to remove large suspended solids and biological slow sand filters to remove contaminants. The biological slow sand filters are most responsible for purifying the water. The top several inches of the sand is colonized by microorganisms that digest contaminants as the untreated water flows through the system. For additional treatment of colour and odour and removal of organics, biological carbon filters were also installed. Microorganisms that populate the outside of the carbon feed on the trapped contaminants.



83" Biological Activated Carbon Filters

The Mainstream system is simplistic in design with minimal maintenance requirements which consist of periodic backwashing by bringing air and water up through the filters to remove some of the top biological layer. "I love it", says

Frasz, plant operator. “It is simple to operate and there are no chemicals other than chlorine.”

After several months of operating, the new Mainstream water treatment plant has proven itself to work. Gail Frasz states, “Trihalomethanes are now low. This was a problem with the old plant. Our chlorine use is also down significantly. Before we were going through it by the barrel, now we have cut back to using just 5-gallon pails. And the people really like the water. It is clean, tastes good and there is no smell. It’s nice.”



The new Mainstream BioClear 10000 SCOR (Sand, Ozone, Roughing, Carbon) Water Treatment Plant

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