

# Art Below Zero Goes Beyond Water

**W**ith a chainsaw, chisel and ice pick in hand, Max Bollkman Zuleta gives life to large blocks of crystal-clear ice. Zuleta moved from Caracas, Venezuela, to Chicago in 2001 with his wife Jeanne Marie Koivunen-Zuleta. In the last 20 years, his passion for ice sculpting has taken him all over the world. Today, Zuleta is the owner of Art Below Zero, a small ice sculpture business serving various corporate clients, country clubs, golf clubs and hotels in Chicago, Milwaukee and Lake Geneva, Wis.

Zuleta opened a small shop three years ago when he moved into his new home in Lake County, Ill. The property used well water and he thought it would be a great start for his business.

"When we first moved here my wife and I thought 'Great, we have water, we are ready to start working.' So we bought the ice machines and started making ice blocks, and they looked like they were made of chocolate water—it was horrible!"

Zuleta and his wife contacted Ronald Gagnon, owner of Aqua-Pure Water Conditioning in Zion, Ill.

"I had once before tested the water at the house where Max Zuleta had just set up his business, Art Below Zero. The previous homeowner was unwilling to spend the money necessary to fix the water problems that he had," Gagnon said.

He analyzed the water from the well and yielded the following results:

- 35 gpg of hardness
- 3.2 ppm of iron, both dissolved (ferrous) and precipitated (ferric)

iron were present

- 650 ppm of total dissolved solids (TDS)
- 0 ppm of hydrogen sulfide
- 0 ppm of nitrates

There was also evidence of the presence of iron bacteria.

## Water Softener Installation

Given the results from the water analysis, the yellowish-orange color present in the water and most importantly, in the ice blocks made from Zuleta's machinery, Gagnon decided to install a Sanitizer Series water conditioner from Water-Right.

"I felt comfortable that the zeolite media in this water conditioner would adequately treat the ferrous iron for the long term and would also address the iron bacteria problem," Gagnon said.

He still had to address the presence of ferric iron and there wasn't any water piped to the garage where Zuleta had set up his shop.

"Before we installed a Radial Flow Iron Reducing Cartridge to treat the ferric iron in the water that Max would make ice with, we had to get the water piped to the garage," Gagnon explained.

The nearest piping that could carry treated

By Neda Simeonova

Photo courtesy of Art Below Zero.

RO system helps production of crystal-clear ice blocks for ice sculpting

Ice sculptor Max Bollkman Zuleta has participated at various competition worldwide, including France, Holland, Belgium, Canada and the U.S.



Photos courtesy of Art Below Zero.

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imagination at work



*Water Quality Products* and Ronald Gagnon, owner of Aqua-Pure Water Conditioning, visited Zuleta at his ice carving shop in Lake County, Ill.

water from the conditioner was in the bathroom; therefore, Gagnon had to run  $\frac{3}{4}$ -in. copper piping through the wall from the bathroom into the office area, across two walls (on the surface of the wall in the least obtrusive manner), and finally, through two more walls to get into the shop area.

He was able to install the housing for the Radial Flow Iron Reducing Cartridge in the shop with a garden hose attachment on the outlet of the housing, so that Zuleta could use the hose to fill his ice-making machine with water.

Gagnon also suggested installing a reverse osmosis (RO) system because it would yield the best quality water after removing the hardness and the iron; however, Zuleta was just starting a new business and this type of system was a big expense.

"It was decided that he would try the water conditioner and filter at first to see how it worked and what quality ice it would provide," Gagnon said.

Gagnon also worked with Zuleta on the costs of the equipment. A decision was made that Zuleta would rent the water conditioner for the time being; however, Gagnon included a purchase option clause in the rental agreement that stated that if Zuleta decided to purchase the equipment within 12 months, 100% of his rental payments would apply to the purchase cost.

"By renting-to-own, Max would lose no money," Gagnon said.

With the conditioning system in place, analysis of the treated water yielded the following results:

- 0 gpg of hardness
- 0 ppm of iron
- 670 ppm (approx.) of TDS

Zuleta began making ice, but after a few blocks, he discovered that although the ice was clear enough at first, as it sat for a while or as he began to carve, fissures appeared in the ice. Gagnon determined that the problem was the slight amount of sodium and the TDS remaining in the water after the softening and iron removing process.

"I told Max that the only simple cure for this was an RO system," Gagnon said.

To help ease the burden of the expense, Gagnon offered to provide Zuleta with RO-treated water from his shop.

"I had an 800-gpd RO system in place at the shop, so for about six months, Max would use his van once or twice a week to haul about 8 to 10 carboys holding 14 gal of RO-treated water from my shop to his studio. We agreed that this was just a stopgap measure until he could afford the expense of having the RO system installed at his place of business," Gagnon said.

After about six months of the twice-a-week water haul, Zuleta decided that "enough was enough" and authorized the RO installation.

### RO Installation

According to Gagnon, Zuleta would need an RO system that would "hug" the wall because of limited space in the studio area. Gagnon located one produced by a Midwest manufacturer.

"It was a Reo-Pure 400-gpd system along with

a 250-gal atmospheric tank. I installed the huge 48-in.-diameter tank in a recessed area of the studio beneath the walk-in freezer's compressor unit," Gagnon said.

The RO system was installed on the wall above the chest-style freezer. As it turns out, the entire system didn't occupy any of the "useable" workspace in the studio—instead, it was successfully tucked into the nooks and crannies of the workshop. A delivery pump system was also needed to pump the RO water from the 250-gal tank to Zuleta's ice block making machinery. The pump was installed and works with the flip of a switch. As a result of the RO installation, the TDS of the final product water is approximately 15 ppm.

"The water softener installation and the RO system really got the quality of the water where we need it to be," Zuleta said. "After that the water was perfect."

Currently, Zuleta produces crystal-clear ice blocks, each weighing 300 lb at 20 x 40 x 10 in. in size, allowing him to produce some of the most intricate and beautiful ice sculptures.

"A lot of the ice sculptures I design are interactive. Probably 95% of what I do is custom-designed and functional," Zuleta said.

### Art Below Zero Today & Tomorrow

According to Zuleta, it took him three years to pay off all of the equipment, including the ice-making machinery. "Now I can start thinking about moving to a bigger shop and organizing the shop and the equipment much more effectively," he said.

Even with a future expansion, Zuleta plans to keep the shop and his business small. "I want to keep it creative and have the freedom to do interesting projects, not mass-produced sculptures," he said.

Today, Gagnon continues to provide Zuleta with periodic service on his water treatment systems, making sure that they are always in top-notch operating condition.

Because of Zuleta's plans to move and expand his business and possibly double or triple the number of ice blocks that he produces for sculpting, Gagnon is poised and ready to assist him in this transition and expansion.

"Max and his wife Jeanne have become more than just business acquaintances. They are friends," Gagnon said. "By being customers, their business has helped my business grow just as I have helped theirs grow and prosper. What more could a small businessman ask for?" *wqp*

### About the Author

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