

Well sealing creates research opportunity

ROCHESTER
– A Clean Water Fund-supported project to seal a 1,000-foot-deep well in Olmsted County and install monitoring wells in



its place is poised to provide valuable data about groundwater quality and quantity in four aquifers located beneath the Jordan Aquifer.

Rochester Public Utilities (RPU) Well No. 16 was drilled in 1958, 12 years before state well codes went into effect. It's located in northwest Rochester's Judd Park.

"Anytime you have an open, unsealed, inactive well, you're at risk for contaminants," said Todd Osweiler, RPU environmental and regulatory affairs coordinator. "If you get a contaminant, there's potential for it to contaminate all five aquifers. The true benefit of sealing (this well) is to seal off those lower aquifers to protect them as best we can."

Contaminants can include excessive nitrates, radium and metals such as arsenic and manganese. The Minnesota Department of Health (MDH) has linked nitrates to blue baby syndrome. According to MDH, people who drink water contaminated with radium every day for many years are at higher risk for developing certain cancers.

"We have this problem in the southeast (region of Minnesota) where we know we have nitrate



contamination, but when you drill a well lower, it's not necessarily better because (other contaminants such as) radium can be present in the lower reaches," said Caitlin Brady, Olmsted Soil and Water Conservation District (SWCD) water resources coordinator.

Brady said private wells serve more than 9,000 addresses in Olmsted County.

"Rochester has 32 municipal wells," Brady said. "Protecting the Jordan (Aquifer) and any aquifers below it and making sure those are clear of contaminants is in the best interest of the city of Rochester."

In addition to sealing the original well, project partners installed four new monitoring wells. Referred to collectively as a well nest, they will be used to collect data about water quality and the water levels' stability. Working with the Olmsted County Water Testing Lab, partners plan to obtain quarterly water chemistry tests that can provide data about potential contaminants. Monitoring also will provide modeling data about groundwater flow – which can help government agencies assess where to drill new wells as the need arises. Osweiler said RPU, which will oversee

Workers with Traut Companies work to seal the 1,000-foot-deep well in December 2021. Four monitoring wells were installed on the site of the sealed well this spring. All construction was complete in mid-June.

Photo Credits: Rochester Public Utilities

monitoring, plans to produce an annual report to share with local and state government agencies.

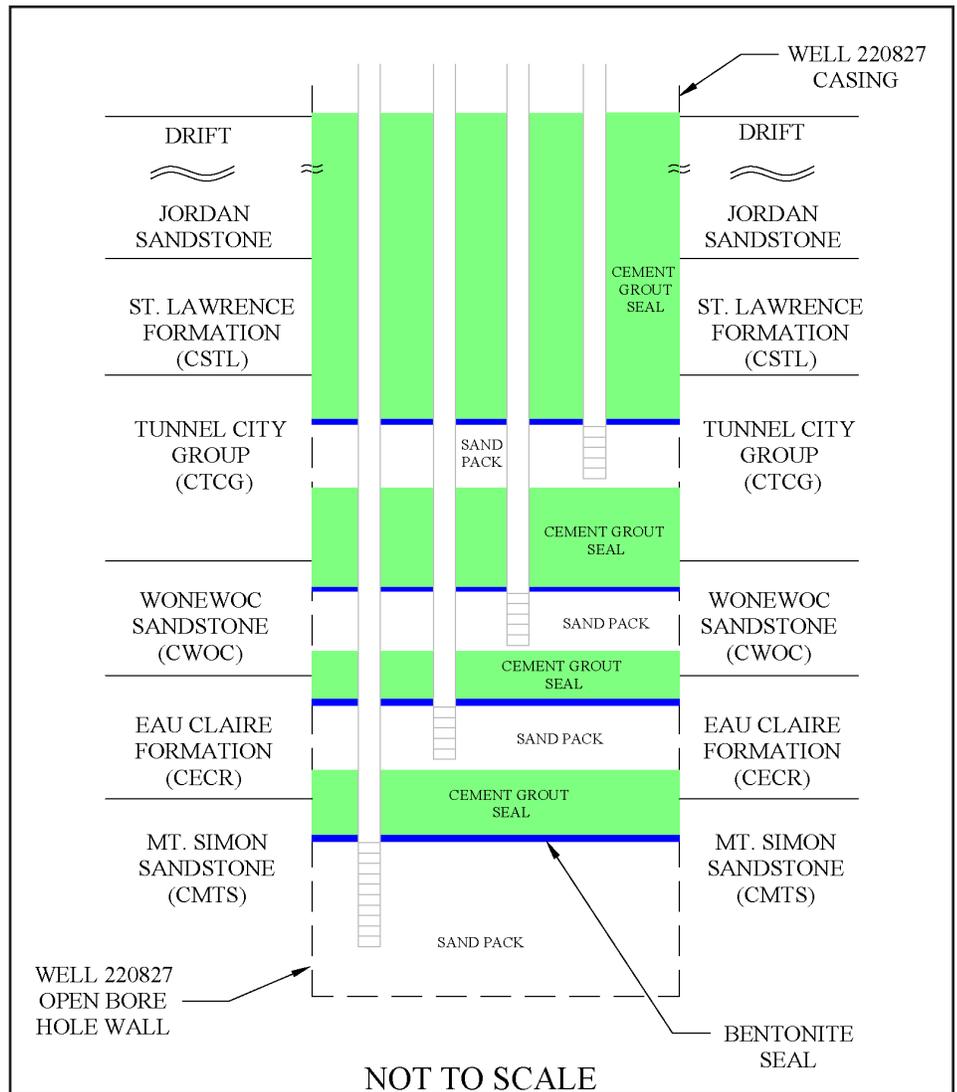
A \$165,000 Clean Water Fund grant the Minnesota Board of Water and Soil Resources (BWSR) awarded to Olmsted County in 2020 supports the project. To date, the city of Rochester has contributed \$132,000 via the RPU. Olmsted SWCD (via Olmsted County) contributes in-kind staff time to administer the grant and works with the RPU on educational components. The RPU is responsible for all monitoring work. Traut Companies sealed the original well and installed the monitoring wells.

The project was completed in mid-June. While sealing the well, contractors discovered a 17-foot submersible pump 850 feet below ground, which was added to the original well structure in 1972. The pump needed to be removed to meet state well codes before the original well could be fully sealed with concrete. Contractors retrieved the pump, but the added step delayed the project slightly.

With construction complete, the RPU plans to install a well house over the project, which could include signs and other educational components. Osweiler said outreach and education efforts could include field trips and tours for the public.

“We’ve been brainstorming about what kind of educational materials we can have there to help people visualize what things look like below their feet,” Osweiler said.

Brady said data generated by the monitoring wells could have far-reaching benefits for local governments’ water planning



This schematic diagram depicts four new monitoring wells (referred to collectively as a well nest) located on the site of the now-sealed RPU Well No. 16 in Rochester. The well nest will be used to collect data about water quality and water levels' stability in four aquifers.

Graphic Credit: Rochester Public Utilities

efforts conducted through BWSR’s One Watershed, One Plan program. Olmsted County has been involved in developing three separate comprehensive watershed management plans through 1W1P.

“I see a lot of opportunity for this data to be applicable as we go

through the One Watershed, One Plan process,” Brady said, referring to implementation of the Greater Zumbro Comprehensive Watershed Management Plan. “This will be really important information to have across the whole southeastern part of the state.”