



February 4, 2016

Milton Water Utility
Mr. Howard Robinson
710 S. Janesville Road
Milton, WI 53563

Subject: Well #6 Inspection Update

Dear Mr. Howard:

We removed the pumping equipment from Well #6 on 02/01/2016. Upon hitting the static water level, about 110' down, we discovered numerous holes in the column pipe as you saw on site. A brand new setting installed about 10 years ago should certainly not have these issues. Given the history of deteriorating pipe in Milton, I believe it is best to take immediate action to prevent problems in the future. There are a couple options to take a look at.

The first option is the "kick the can down the road" approach. This would involve installing untreated steel pipe like what was in there. This would be the most inexpensive, however I can almost guarantee that you'll have more issues in the same time frame. Unless absolutely necessary for your budget, I would not recommend it. If the pipe deteriorates all the way through and separates, you will be looking at much higher costs to remove the equipment, and it most likely won't be on your terms. It always seems to happen right in the middle of a summer drought when you need it most. To replace 145' plus the tailpipe with stainless strainer: \$5,700.

The second option is to replace the pipe with either epoxy coated steel pipe or stainless steel pipe. As we witnessed at Well #4 last year, the epoxy seems to work extremely well. We didn't need to replace any of the 400' of 10" pipe that we think is going on its third service interval. The NSF approved epoxy coating would be applied to all the pipe below the static level that we plan on replacing, 145'. This requires about a 4-week lead time to get the pipe from Texas. To replace 145' plus the tailpipe with a stainless strainer: \$11,295.

The final pipe option is stainless steel column pipe in lieu of steel pipe. As we've seen from the stainless steel shafting in Well #6 and the other wells, the stainless will remain in "like new" condition for many intervals. From a durability standpoint, the stainless pipe will last longer than epoxy coated pipe simply because it will resist corrosion through and through. To replace 145' plus the tailpipe with a stainless strainer: \$24,193.

For the other materials, the stainless steel shafting will be cleaned and rolled to verify straightness but will be re-installed. The bronze spiders were in good shape and will be reused with new rubber bearings to keep the pump running smoothly. The stuffing box is in good shape and will be rebuilt to manufacturer's specifications. We will replace the two airlines as described in the initial proposal. As you saw, there are two holes in the pump discharge, so we would feel it is best to replace just that portion with a new discharge case. The rest of the bowl castings were solid, new bowl wear rings and bowl bushings will be needed to bring the pump back to the manufacturers specifications. These costs, along with the labor to pull and reset as originally proposed would fall within the guided range at \$11,225.

I televised the well on February 4 with both Ron and Mike present. I am happy to report that the bedrock formation in the well is in fantastic shape- you'd be hard pressed to tell the difference between your well and a newly drilled well. The casing had some iron buildup on it, but is nothing to be too concerned about. If you do want that cleaned up, we can certainly run a brush down a well to clean the buildup off. To stay within that original purchase order amount, we could do this for \$775, but this is the least necessary work.

To summarize, for the original workscope of pulling, inspecting, rebuilding standard materials, and resetting, we will come in at \$11,225. We can brush the well casing to remove the minimal iron buildup for \$775 if you'd like, but is not a necessity. For additional work, my recommendation would be to replace the 145' with epoxy coated pipe. I believe this provides the best value for your money in terms of cost and longevity. At less than twice what standard pipe is, as soon as the pipe lasts past the second pulling, you'll be saving money (not to mention pipe prices are extremely low right now). As nice as stainless pipe would be, I just don't see justifying a cost that high. The recommended epoxy pipe and new strainer will cost an additional \$11,295.

Thank you for allowing CTW Corporation to work on Well #6 and continue working with the City of Milton. We're happy to have helped provide years of successful service to Milton's pumps and we really enjoy working with all of you.

Sincerely,

CTW Corporation
W. Hunter Cummens

Milton Well #6

Original

<i>Item</i>	<i>Qty</i>	<i>Unit Cost</i>	<i>Total Cost</i>
Pull, Repair, Reset	1	\$11,225	\$11,225
Televiser	1	\$875	\$875

New-Proposed

<i>Item</i>	<i>Qty</i>	<i>Unit Cost</i>	<i>Total Cost</i>
Pull, Repair, Reset	1	\$11,225	\$11,225
Televiser	1	\$875	\$875
145' 8" Epoxy Pipe, Strainer	1	\$11,295	\$11,295
		Total	\$23,395

Optional

<i>Item</i>	<i>Qty</i>	<i>Unit Cost</i>	<i>Total Cost</i>
Brush	1	\$775	\$775
145' 8" SS Pipe, Strainer	1	\$24,193	\$24,193
145' 8" Steel Pipe, Strainer	1	\$5,700	\$5,700