



P.O. Box 226 • Seneca, KS 66538 • 785/336-3760
FAX 785/336-2751 • <http://www.krwa.net>

June 8, 2010

Brian McCarty
City of Hardtner
PO Box 217
Hardtner, KS 67028

Dear Brian,

It was good to meet with you concerning the daily operation of the water system.

DAILY CHLORINE RESIDUALS: The Kansas Department of Health and Environment require all public water supply systems in Kansas to maintain daily chlorine residuals in all public water supply systems. The residuals must be checked and recorded daily and be maintained from .2 to 4.0 mg/l. These daily records must be kept on file for public inspection for ten years. Your daily chlorine residuals have been running from 1.5 to 2.2 mg/l.

ROUTINE BACTERIOLOGICAL SAMPLING: KDHE also requires your system to collect two samples each month from locations on your sampling site plan that are free from any bacteria. Any positive sample will require you to take additional samples to determine the source of the problem. Your routine samples have been negative and the city has no monitoring violations at this time.

TOWER MAINTENANCE: The city's elevated storage tank needs to be routinely cleaned and inspected. You are having problems with the float level; this could be repaired during routine cleaning maintenance. From our testing we determined that the tank overflows at 42 psi on the pressure gauge in the pump building. This converts to 97 feet of water, as we discussed. What we do not know is the how deep the tank itself is, minus the height of the riser pipe. This is important to know because when draining the tank it will drain slow until it hits the top of the riser and then you have only a few seconds before the pressure goes to zero. Any time pressure drops to zero KDHE may require you to take several additional bacteriological samples to determine if contamination entered the system. We estimated the tank bowl to be 20 feet deep. If that is correct then the pressure at the top of the riser would be 33.3 psi or 77 feet of head.

TANK DRAINING PROCEDURES: A pressure relief valve will have to be installed in the system on a fire hydrant. We discussed various methods for installing a drain system on the tank. A tap will have to be made in the line between the tank and the tower valve for the tank to be drained without going to zero pressure in the distribution system. The pumps should be shut off the day before to allow as much water as possible to be used out of the tower with as little waste as possible. Early the next morning before the tank company arrives you should have the pressure relief valve ready to go. The pressure could be to as low as 35 psi without risking the bowl being completely empty and the water level being at the top of the riser pipe and losing pressure to zero as mentioned earlier. At 35 psi most of the water will be used out of the tank with minimum waste. At that point the well should be turned on manual and then the tower

valve closed in that order. This will allow the system pressure to be maintained at all times. Once the work is complete in the tank the tower valve should be opened slowly and partially to avoid an extreme pressure drop. Once the pressure has increased to 35 psi you know you have reached beyond the riser pipe and into the tank bowl. At that point you could open the valve. Actually upon start up I would use both pumps to fill the tank faster. You should also time the work so as to avoid times of peak demand.

The tank company will disinfect the tank when the cleaning is completed. It is always a good idea to fill the tank and turn the valve off, and allow the water to remain in the tank for 24 hours. Then, take a bacteriological sample of the water in the tank to make sure it is free of any bacteria before putting the tank back into service. One pump and the pressure relief system will have to remain in tack and operational while you are waiting the results of the bacteria test.

Please call if you have any questions or wish to discuss this further.

Sincerely,

Jon Steele
Circuit Rider

C: Vickie Wessel, KDHE