

Forest View Acres Water District

Operations Report – November, 2010

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Treatment Plants:

Arapahoe Water Plant:

Work has started per RG engineers to put the well in automatic mode based on tank level. Ran into a snag when it was determined that the well would not continue operation through a backwash if the tank level warranted an automatic shutdown. We do not feel comfortable that the treatment process will continue normally if this is not remedied and the plant is put into automatic mode. This can be remedied by installing a relay to continue well operation if a backwash is initiated and the tank calls for the well to shut off.

To prevent an over feed of chemicals to the water if the well production dramatically declines, we have connected the chlorine analyzer to the PLC and if a high chlorine alarm is detected, the PLC will automatically shut the well off, and the auto dialer will call out, alerting the operators of the problem.

When the well shuts off, the filters are draining back into the well. This may be due to a faulty check valve in the well, or check valves/ cla-valves within the plant piping. This is causing a buildup of air in the filters and associated piping when the well is turned on. The air relief valves (ARV's) are not working properly to clear the air from the piping and filters. I have cleaned the ARV's and will continue to monitor their effectiveness in relieving the filters and associated piping of air. If the cleaning does not ultimately solve the problem, I recommend that we replace the ARV's with a model that is adequate for the type of pressure the vessels are experiencing.

There is a noticeable amount of gas (oxygen, CO₂, sulfur compounds or a combination thereof) present in the water coming from the aquifer. This also heightens the necessity of functioning ARV's.

See the attached production spreadsheet for depth to water (DTW) readings for the well.

Transmission Line/Booster Station

Booster station has been working properly in automatic mode.

The recycle function has not been put into operation yet.
Transmission line has been holding pressure when the AWP is off.

Surface Water Plant:

See attached production spreadsheet for particulars on water production.

Backwashes are initiated when the pressure differential exceeds 11 psi.

Slow and Steady vs. Fast/Slow

During reduced flow operation via feathered incoming and outgoing valves, the secondary filters will get "clogged" to a point where production declines, even though flow through the feathered valves is increased. A slow and steady rate for the filters seems to work well, given the many factors at play and parameters the plant must comply with. I have reviewed charts from previous months/years when the slow steady rate was not applied, and production will begin at 50+ gpm at the start of a filter run, then rapidly decline to <20 gpm at the end of the run. A typical filter run during this type of operation was 12-24 hours. With the slow and steady approach, we are getting filter run times of 3-7 days. Each backwash uses approximately 4500 gallons of treated water. Given some time, a full production analysis of each approach will become clear which one is more efficient.

The breaker box was not replaced. Upon arrival, the electrician determined that his bid would not cover

the costs associated with the full replacement. Instead, the breaker was removed and reinstalled in a different location along the bus within the panel. This did not "solve" the problem as the breaker did trip again after the reinstallation. However, it has not been tripping as frequently as it had before. A proper fix would be to install bolt in type bus and breaker combination to withstand the climate in the SWTP.

We have been relying on the constant operation of the SWTP to continuously feed the tank and curb demand from the AWP. We lose valuable production days to a simple problem (control breaker) due to the inability to see if the plant is on remotely. Many trips are made to the District just to determine if the plant is on. An autodialer will allow for some comfort in knowing if the plant is #1 operating and #2 operating correctly.

Action Items:

SWWC is requesting that the relay be installed at the AWP for the automatic operation of the well during a backwash.

SWWC is requesting that the bid for replacing the breaker box at the SWTP be accepted or an amount "not to exceed \$X" be established

SWWC is requesting that the district obtain telephone service at the SWTP for the reconnection and/or replacement of the autodialer.

SWWC is requesting some leeway when determining that required preventative maintenance items

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