

THE WOODS UTILITY COMPANY

January 16, 2020

FILED 1/16/2020
DOCUMENT NO. 00352-2020
FPSC - COMMISSION CLERK

Office of Commission Clerk
Florida Public Service Commission
2540 Shumard Oak Blvd.
Tallahassee, FL 32399-0850

Re: Docket No. 20190125-WS - Application for staff-assisted rate case in Sumter County by The Woods Utility Company – *Response to Staff's Third Data Request*

Dear Commission Clerk:

The Woods Utility Company (The Woods) hereby submits its response to Staff's Third Data Request dated January 14, 2020 in the above referenced docket.

- Explain how the utility has or plans to address each of the concerns raised by customers at the meeting including:
 - a. Discolored water
 - b. Water pressure concerns
 - c. Other water quality concerns

Water Quality (discolored water)

The water issues historically experienced in this water system is due to several factors. These issues have existed since the original water utility was first placed into service. The Commission previously addressed these issues in Order No. 25129, issued September 30, 1991. Thus these issues have existed for over eighteen (18) years. The raw water source for The Woods' water system contains high levels of naturally occurring constituent of iron (Fe), total dissolved solids (TDS), and total organic carbon (TOC), which at times can cause undesirable color and taste. The Florida Department of Environmental Protection (FDEP) allowable limit for iron is 0.3 mg/l. The source water for The Woods is over ten times this amount or approximately 3.0 mg/l. This has been an issue in The Woods since the utility began providing water service.

The Woods' water treatment plant (WTP) previously utilized a sand filtration (Filter-Ag media) to remove iron from the well water. This system was installed by previous owners of the utility, prior to The Woods acquiring the utility system. This previous treatment system required

oxidation of the iron by utilizing free chlorine prior to filtration. In addition, to ensure proper treatment, the filters had to be backwashed to remove the iron build-up in the sand media. In order to address the water quality concerns and maintain the minimum chlorine residual in the distribution system, The Woods utilizes flushing of the distribution systems to maintain water quality. Due to the naturally occurring high iron content in the wells, the water also had to be circulated in the distribution system to maintain the proper chlorine residual as required by the FDEP.

The use of free chlorine to oxidize the iron in the ground water caused The Woods to exceed the maximum contaminant levels (MCL) for Total Trihalomethanes (TTHMs) and Haloacetic Acids (HAA5s). The FDEP requires disinfection of drinking water to inactivate possible pathogens, because the health benefits of disinfection far outweigh its risks. However, when used in the treatment of drinking water, some disinfectants combine with organic and inorganic matter present in the water to form chemicals called disinfection byproducts (DBPs). This water system historically experienced exceedances of these DBPs dating back to 2007 – again under the previous owner.

The water treatment modifications permitted and constructed in 2007 under the former owner to reduce the disinfectant byproducts were not successful in reducing the disinfectant byproducts below required maximum contaminant levels. Additionally, subsequent operational adjustments to reduce bypassing of iron oxide added to the disinfectant byproducts exceedances.

Due to these exceedances, The Woods entered into a Consent Order with FDEP to address these issues. The Woods recently completed installing the necessary modifications to the existing water treatment plant in order to address these concerns pursuant to the Consent Order. These modifications include:

- 1) Installation of a 3” turbine flow meter at the well head to monitor the raw water production and filtered water quantities.
- 2) Installation of the proposed injection point and stenner series 85MHP chemical feed relocated filters.
- 3) Modification of the piping to relocate the iron filters prior to the ground storage tank as depicted by the attached site plans.
- 4) Replacement of the Filter-Ag media with GreensandPlus within the existing three pressurized filters specifically designed for the removal of iron prior to the ground storage tank;
- 5) Addition of a second high service pump also rated for 100 GPM at TDH of 135 feet; and
- 6) Relocation of mag-meter to plant effluent line, and Post-Chlorination system at the high service pumps.

The Woods Utility Company
Response to Staff Third Data Request

Under the Consent Order, The Woods installed the necessary water treatment equipment to address the iron removal and the exceedance of the DBP. The previous Filter-Ag media was previously selected by the former owner for iron removal. However, this sand media is not manufactured specifically with the intent to remove iron. The replacement media GreensandPlus is specifically designed, and manufactured for the removal of soluble iron, manganese, hydrogen sulfide, arsenic and radium from groundwater supplies. On March 19, 2018, The Woods received its construction permit from the FDEP to proceed with the water treatment plant modifications. Under the existing FDEP Consent Order, The Woods had 365 days to complete the agreed upon plant modifications. The Woods received its Final Clearance from FDEP on February 7, 2019 and the system is currently operational.

After the installation and operation of the new iron removal media, the iron levels leaving the WTP at the point of entry (into the distribution system) dropped significantly. During the first month of operation, February 2019; the iron levels in the well averaged 2.37 mg/l while the iron levels (post filters at POE) averaged 0.0 mg/l or non-existent. This same trend continued until late October 2019. During this period, the water quality had improved significantly. Beginning in late October 2019 the Iron levels at the POE increased slightly to approximately 0.5 mg/l. This trend continued into mid-December 2019 with the iron levels increasing to just over 1.0 mg/l leaving the plant. We discovered mechanical issues with the filters which reduced the efficiency of the iron removal. The Woods contacted the manufacturer of the filters who came out in January 2020 to make the necessary replacements and adjustments. Also discovered during the time period was an issue with the stenner pump for the potassium permanganate used during the backwash process. These issues have also been addressed. After these maintenance issues, the filtration has returned back to normal and again the iron levels leaving the plant (POE) are back down below the MCL.

The Woods has also increased operator time at the plant. According to the operating permit issued by FDEP on March 19, 2018, the required number of visits by a Class D or higher operator is 3 visits per week on nonconsecutive days for a total of 0.6 hour/week. However, The Woods has its operator conducting six (6) visits a week – or twice the required visits. The Woods has also implemented improved maintenance schedules, as well has conducted additional operator training. In addition, The Woods has had managers visit the water plant. Some of the recent issues experienced were mechanical in nature, such as a stuck filter valve, clogged piping, and tripped electrical breakers. Once reported or discovered, each item has been addressed. Unfortunately, this water system is complicated for a system this size and is subject to mechanical failures, especially when the operator is not on-site. With the increased operator time, it is expected that any future items may be addressed in an expedient manner.

The treated water leaving the water treatment plant after the new filtration is clear, odorless, and has had significant or all soluble iron removed. However, although the iron is now being removed at the source (treatment plant), there is still residuals throughout the distribution system,

The Woods Utility Company
Response to Staff Third Data Request

as well as inside customers' homes and hot water heaters. This has accumulated over the period of numerous years – again prior to the installation of the new treatment process being placed into service. It will take time for these residuals to be removed throughout the distribution system, as well as inside the customers' homes. Flushing of the customers' hot water heaters will also assist in this removal process once the new system is operational. This residual removal will not be instantaneous.

The Woods continues to re-evaluated its flushing plan in order to efficiently flush the distribution system. The utility several automatic flushers throughout its distribution system. It is believed that the changes in pressure due to flushing is causing compression / relaxation of the distribution pipes causing the residual iron and sediment to slough off the inside lining of the pipes. A re-evaluation of the flushing process is on-going to reduce the frequency and impact of this compression/ relaxation of the piping system. Also during the flushing events, the pressure in the system drops. The Woods has installed a second high service pump to assist in providing enough water velocity and pressure to accomplish the necessary flushing maintenance. However, the system is only supplied by one well so a balance must be struck between water supply, flushing requirements, and pressure.

Flushing is recognized as a normal maintenance practice of utilities to address water quality concerns throughout distribution systems in the United States. This is also recognized by the FDEP as a common utility practice to address distribution system maintenance. Flushing is the most common and cost effective method of mitigation for this phenomenon. It is accomplished by flushing of the distribution system through blow-offs at dead ends or from flushing hydrants. In addition to regular flushing, upon complaints from specific areas, The Woods may institute some emergency flushing that can provide immediate relief. Although flushing is the most immediate response to these issues, it only scours the build-up of naturally occurring minerals in the distribution system.

The Woods has also added a sequesterant that coats the water lines as an additional effort to address the residual iron that remains in the system. The Woods received clearance from the FDEP to begin utilizing an orthophosphate blend to sequester the iron residuals in the lines as well as coat the inside of the distribution piping. This new Orthophosphate treatment began operation on August 16, 2019. This will take time to evenly distribute throughout the distribution system. This will also assist in the removal of residuals and coating of the customer's piping, both from the utility's meter up to the residence as well as inside the customers' homes. Again, this process will take time. Flushing of customers' homes and hot water heaters will assist in this process.

The Woods believes that part of the issues with pressure is due to the circumstances of the one general service customer, Snooze & Scoot. The FDEP required minimum pressure in the distribution system is 20 psi. The water pressure leaving the water treatment plant is

The Woods Utility Company
Response to Staff Third Data Request

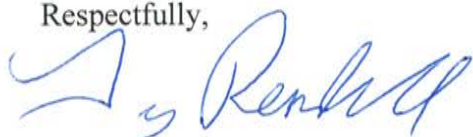
approximately 56 psi. The Snooze & Scoot is at the end of one of the distribution lines. In addition, this RV park is required to have an back flow prevention device called a reduced pressure zone device (RPZ). An RPZ is a type of backflow prevention device used to protect water supplies from contamination. However, and RPZ also reduces pressure. Typically, an RPZ can reduce delivered pressure between 10 – 12 psi going through the device. In addition, this customer recently installed a point of use filtration system within the RV park at the customer's point of delivery. This filtration system will also reduce the amount of pressure within the park – which is beyond the point of connection (water meter). The most recent loss of pressure was caused by an electrical failure at the water treatment plant. This caused an electrical breaker to trip. The operator responded and the water pressure leaving the plant dropped to approximately 28 psi. Although this is above the required FDEP pressure, this is lower than normal and believed to cause a significant reduction within the park past the water meter.

The most reliable solution to further improve water quality would be a complete replacement of the entire water distribution system. However, this would be cost prohibited without government assistance. It is estimated that to replace the entire water distribution system would cost between \$300,000 to \$400,000. The Woods is a small utility system with approximate 65 customers. IN addition, this system is already receiving subsidies in its operating costs by U.S. Water Services Corporation. Taken into consideration the small amount of customers, the economic situation of the customers, and the high cost of water treatment, this solution would not be possible. Many of the customers within The Woods are at or below the poverty level with a significant number of tenants (renters). The historical Bad Debt Expense of The Woods is significantly higher than normal.

Taking all of these circumstances under consideration, The Woods intends to coordinate with the Florida Rural Water Association and/or the FDEP for possible funding for the distribution replacement. The Vice President of Operations and Maintenance with U.S. Water Services Corporation has been assigned to pursue possible consideration of grants, low interest loans, and loan forgiveness. Without assistance, this solution would be cost prohibited and not economically feasible.

If you have any questions, please do not hesitate to contact me at (727) 848-8292, ext. 245.

Respectfully,



Troy Rendell
Vice President
Investor Owned Utilities
// for The Woods Utility Company