STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
Division of Water Resources
Knoxville Environmental Field Office
3711 Middlebrook Pike
Knoxville, Tennessee 37921

November 18, 2019

The Honorable Mike Miller
Mayor, City of Rockwood
110 N. Chamberlain Avenue
Rockwood, Tennessee 37854

RE: Filter Backwash Compliance Evaluation Inspection
Rockwood Water, Sewer & Gas
NPDES Permit # TN0059676
Roane County

Dear Mayor Miller:

On October 24, 2019, Division of Water Resources staff conducted a Compliance Evaluation Inspection of the Rockwood Water, Sewer & Gas water treatment plant filter backwash discharge. This inspection period covers the time period from May 2017 to October 2019. Rockwood Water Department's approval to discharge filter backwash water falls under the National Pollution Discharge Elimination System (NPDES) permit number TN0059676 for discharge into the King Creeks embayment of Watts Bar Reservoir. The Division would like to thank Ms. Bonnie Fugate and Mr. Jimmy Crabtree for their courtesy and providing information on the water treatment plant's discharge process.

Permit

A copy of the water system's current NPDES permit was available at the water treatment plant at the time of the inspection. Permit# TN0059676 for the water treatment plant is set to expire in August 2020. A renewal application must be submitted 180 days prior to the expiration date. In the permit, the Division has required that Rockwood Water, Sewer, & Gas grab sample for Total Suspended Solids (TSS), pH, iron, aluminum, total chlorine residual, and settleable solids at least once a month during times of discharge. Instantaneous flows are required to be reported as well, however, there is no current meter in place to measure flow. Pumpage data is based on pumping capacity of the effluent discharge pump and the amount of time that the pump operates.

Site Review

On the day of the inspection, the water treatment plant was in operation and Division staff did observe backwash being sent to the backwash basin during the on-site inspection. The water filtration plant has a design capacity of 5,000,000 gallons per day. A coagulant, zinc corrosion inhibitor, sodium hypochlorite disinfectant, potassium permanganate, and fluoride are the only chemicals added during the water treatment process. Captor, calcium thiosulfate, is added at the effluent discharge to the backwash basin to remove chlorine. Filter backwash and filter rewash water from both sides of the water treatment plant are discharged to a common concrete basin for settling. Filter backwash water enters the basin on the same end that a pump is located for discharging purposes. Backwash water cannot be discharged unless the pump is engaged. A second concrete basin exists to hold sludge that is removed from the backwash settling basin.

Records & Reports

Rockwood Water, Sewer, & Gas has been reporting all monthly sample results via NetDMR for the inspection period. All NetDMR reports were submitted in a timely manner. Monthly worksheets used in completing the discharge monitoring report (DMR) were available on-site and well organized. A review of the NetDMR submittals showed that Rockwood water treatment plant is meeting all permit limits for filter backwash discharge for the inspection period.

Effluent & Receiving Waters

Division staff viewed the permitted outfall on the day of the site visit. No flow was occurring from the outfall at the time of the inspection. However, Division staff did not observe any indication of unauthorized discharges or signs of solids or other debris at the outfall location. A NPDES discharge sign was posted at the outfall site.

Sludge Handling

Water treatment plant by-product is periodically removed from the backwash water basin and moved to the sludge basin. Sludge is then removed and sent through a sludge press Monday through Friday each week. The de-watered sludge is held in a hopper until it can be sent to a landfill for disposal.

Laboratory & Self-Monitoring Program

Rockwood Water, Sewer, & Gas did not exceed any permit limits for this inspection period. Backwash water samples are either ran in house, sent to the wastewater treatment plant, analysis, or sent out to a certified lab for analysis. All pH and total chlorine residual tests are conducted in house at the water treatment plant and again at the wastewater treatment plant with the highest monthly readings being reported in NetDMR. Samples for iron and aluminum are sent off to a certified lab for analysis in accordance with EPA methods. The remaining tests are run at the wastewater treatment plant. All laboratory equipment used at the water treatment plant was well

maintained and all reagents were in date. The Division would like to commend Rockwood Water, Sewer, and Gas for conducting daily calibration of their pH meter at the water treatment plant.

Conclusion

Based on the file review, on-site inspection, and sampling results, Rockwood Water, Sewer, & Gas provides adequate treatment of their filter backwash water. The Division would like to once again thank Rockwood Water Department for their continued effort in ensuring that clean water is being returned to the environment after treatment. If you have any further questions or comments regarding the Compliance Evaluation Inspection, please do not hesitate to contact me at (865) 594-5564.

Sincerely,

Erich Webber, Environmental Consultant
Division of Water Resources
Knoxville Environmental Field Office

e-copy: Ms. Kim Ramsey, General Manager, Rockwood Water, Sewer, & Gas
Ms. Bonnie Fugate, Chief Operator, Rockwood Water, Sewer, & Gas