



STATE OF TENNESSEE  
**DEPARTMENT OF ENVIRONMENT AND CONSERVATION**  
**KNOXVILLE ENVIRONMENTAL FIELD OFFICE**  
3711 MIDDLEBROOK PIKE  
KNOXVILLE, TN 37921-6538  
PHONE (865) 594-6035 STATEWIDE 1-888-891-8332 FAX (865) 594-6105

September 11, 2023

Mr. Derwin Hagood, P.E.  
Senior Vice President, Operations  
e-copy: derwin.hagood@kub.org  
Knoxville Utilities Board  
PO Box 59017  
Knoxville, TN 37950

RE: **Compliance Evaluation Inspection**  
Knoxville Utilities Board Loves Creek STP  
NPDES Permit #TN0021822  
Knox County

Dear Mr. Hagood:

On July 25 and 26, 2023, Sarah Snyder and Jenna Williams from the Division of Water Resources (The Division) performed a routine compliance inspection at the Knoxville Utilities Board Loves Creek Wastewater Treatment Plant to evaluate compliance with NPDES Permit TN0021822. This inspection covered the time-period from the previous inspection in August 2021 through June 2023. The Division thanks KUB personnel for their courtesy and assistance during the inspection and timely responses to Division requests. As a result of the inspection, the following comments, deficiencies, and recommendations have been noted.

### **I. Permit**

Loves Creek WWTP is authorized to discharge municipal wastewater to Mile 5.0 of the Holston River via outfall 001 under NPDES permit TN0021822. This permit was issued October 1<sup>st</sup>, 2019 and will expire November 30<sup>th</sup>, 2024.

### **II. Records/Reports**

A review of Loves Creek's Monthly Operations Report (MORs) and Discharge Monitoring Reports (DMRs) were conducted prior to the inspection. There was only one effluent violation in the inspection period, an E. coli exceedance in December 2021. Investigation of this exceedance was able to identify it occurred due to one of the UV disinfection channels malfunctioning and going offline. KUB staff is commended in their efforts in notifying the Division when an effluent exceedance occurs, and for conducting a thorough investigation afterwards to address the circumstances that led to the exceedance.

### **III. Facility Site Review, Operations, and Maintenance**

The Loves Creek WWTP operates as an activated sludge facility with mechanical aerations with a 10.3 million gallons per day design capacity. Treatment at the plant consists of screening, grit and grease

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removal, clarification, and UV disinfection prior to discharge. The facility had previously used sodium hypochlorite as the primary disinfectant method and part of that system remains in place to be used as a secondary disinfectant if needed, or to be used in the event of UV light failure. The switch to hypochlorite in the event of UV failure is tested regularly to ensure process is functional. Overall, the plant was in good condition and fully operational at the time of inspection.

KUBs routine and preventative maintenance procedures were highlighted by personnel while on site. Cleaning of aeration basins and clarifiers occurs when units can be taken offline due to low flows, and additional maintenance at the plant occurs at set reoccurring time intervals based on the needs of the specific item. Division staff were very impressed by these efforts, as it shows the care and dedication KUB performs to operate efficient facilities to protect waters of the state. Electrical system upgrades at the plant were discussed while onsite. In 2022 and 2023, the WWTP experienced a power failure during storms where the back-up power system did not activate, resulting in an overflow at Manhole-1 entering the facility. Electrical work is on-going with the generator system to address these events.

### **IV. Collection System**

KUB is commended for their extensive work completed in the collection system under the consent decree to reduce the number of sanitary sewer overflows in the system. From the last inspection, seven overflows have occurred in the Loves Creek collection system.

The recently completed Whalen Road pump station was visited during the inspection. The new station provides additional capacity in the area and will assist in addressing reoccurring overflows at Manhole 40-2 located near the station.

### **V. Laboratory**

Dissolved oxygen and pH are analyzed at the plant laboratory due to short hold times. All other parameters (except for biomonitoring) are analyzed offsite at KUBs central laboratory. Both lab facilities were clean and well organized. Documentation of standard operational procedures for analysis, quality assurance and control practices, and use of 40CFR136 approved methods were detailed and completed and on site at both locations. The transfer of results from the plant and lab to the MOR/DMR were discussed while onsite.

### **VI. Biosolids Handling/Disposal**

Waste sludge is sent via the collection system to the Kuwahee WWTP and processed at that facility. Handling processing and biosolids testing will be evaluated during Kuwahee's CEI.

### **VII. Pretreatment**

KUB operates an extensive pretreatment program with 25 industries in the program. A pretreatment compliance inspection was completed in January 2023 with no major deficiencies noted. A local limits evaluation and Industrial Waste Survey were submitted to the Division pretreatment program coordinator in February 2023 in accordance with section 1.1.3 of the reissued NPDES permit.

Singular event pass-through limit exceedance for copper on the WWTP plant effluent was noted in both the October 2022 and April 2023 pretreatment semi-annual reporting periods. Additional testing on both the influent and effluent in those periods did not indicate an increased amount of copper entering the plant nor did additional pass-through limit exceedances occur. The cause of these incidents is still unknown,

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but the Division commends KUB laboratory and regulatory compliance staff for their efforts in trying to identify and address the two pass through events.

### **VIII. General Observations, Comments, and Other Recommendations**

I again want to thank KUB staff for their courtesy during the inspection. It takes extensive efforts to operate and maintain a system of this size, and I am always impressed with the care and dedication KUB personnel put into maintaining compliance. Ms. Leslie Glover facilitates an open line of communication with the Division notifying myself of work being performed at the treatment plants or when effluent exceedances occur. I commend her for her efforts as this highlights KUBs commitment to operate efficiently and protect waters of the state.

If you have any questions or need assistance, please contact me at (865) 347-4849 or [Jenna.Williams@tn.gov](mailto:Jenna.Williams@tn.gov) in the Knoxville Environmental Field Office.

Sincerely,

A handwritten signature in black ink, appearing to read "Jenna Williams". The signature is fluid and cursive, written in a professional style.

Jenna Williams, Environmental Protection Specialist 2

Knoxville Environmental Field Office

Division of Water Resources

cc: Ms. Leslie Glover, Industrial Pretreatment Coordinator  
Mr. Kevin Keaton, Laboratory and Regulatory Compliance Manager  
Mr. Chris Thomas, KUB Plants Manager