

Annual Progress Report

2021

Submitted to EPA on February 25, 2022

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering such information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.


Derwin Hagood

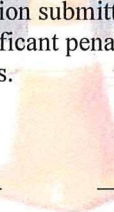
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Executive Summary

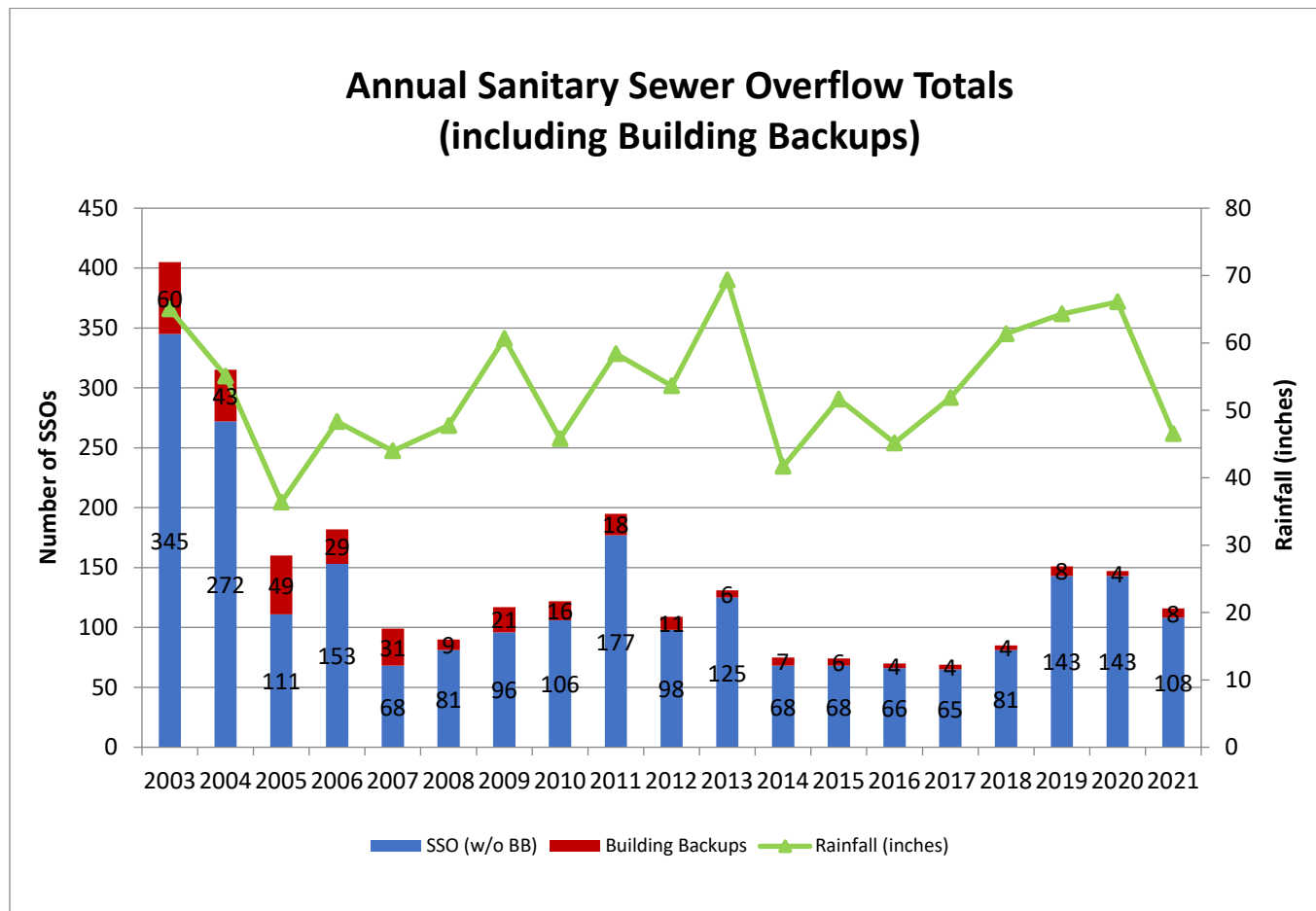
On February 11, 2005, the Knoxville Utilities Board (KUB) entered into a Consent Decree with the United States, the State of Tennessee, the Tennessee Clean Water Network, and the City of Knoxville. The Consent Decree and its First Amendment required KUB to achieve full Compliance with work required under Section VII *Performance of the Work* [except those obligations described in VIID.1.(a)(v)(Composite Correction Plan for WWTPs)] before December 31, 2016. KUB successfully completed all the required work described in Section VII *Performance of the Work* in addition to the work in Section VIII *Supplemental Environmental Project* ahead of the schedules outlined in the Consent Decree. This was communicated to the EPA on November 10, 2016. In this same communication, KUB requested a Non-Material Modification of the current reporting requirements, which is allowed under Section XIX.E and Section XXI, to report annually on the remaining Consent Decree work. After consultation with TDEC, the EPA agreed that less frequent reporting was now appropriate as a result of the narrower scope of remaining work to be performed. On December 13, 2016, EPA approved the revised Section XIX to the Consent Decree, authorizing the submittal of an Annual Progress Report incorporating all Section XIX reporting requirements into one annual report. Consent Decree revised Section XIX.B describes the required content of this report:

- B. *“Beginning on March 1, 2017, and every twelve (12) Months thereafter until termination of the Consent Decree, KUB shall submit to the Parties, and simultaneously place in the PDR, an Annual Progress Report. The Annual Progress Report shall cover the most recent Calendar Year. The Annual Progress Report shall not be subject to the Public Review Requirement of Section VI.A.2. However, KUB shall accept questions and comments from the public for KUB’s review for a period of twenty (20) Days following placement in the PDR. Each Annual Progress Report shall contain:*
- 1. A summary of compliance with and activities related to implementation of the CCP;*
 - 2. A summary of implementation of and compliance with the Process Controls Program;*
 - 3. A total amount of banked credits available by Sewerbasin for use in future development if capacity cannot be certified and any exceptions granted for connections for essential services under the Capacity Assurance Program.*
 - 4. Identification of any transfer of an ownership interest, operation, management, or other control of the Treatment Works, or any portion thereof.*
 - 5. A description of the status of compliance or non-compliance with the requirements of this Decree and, if applicable, the reasons for non-compliance, including a list of all violations that are subject to stipulated penalties under Section X of this Decree.*
 - 6. A spreadsheet and summary of all SSOs, Bypasses, Diversions and effluent limit violations that occurred during the previous Calendar Year. Information on Building Backups may be provided in separate spreadsheets and summaries from other SSOs. The spreadsheets and summaries shall identify:*
 - a. For all SSOs; the location, source, date, time, duration, pathway (if any), receiving water (if any), the identification of the treatment plant Sewerbasin in which each SSO is located, the reason for each SSO, the total SSO volume, the volume returned to the WCTS, the volume not captured, and category of corrective action planned, underway or completed with regard to the SSO (e.g, short term project, long term sewer basin project, blockage abatement, etc.);*
 - b. For all Bypasses and Diversions, the location, date, time, duration, volume and reason for each Bypass and Diversion; and the total Bypass and Diversion volumes;*
 - c. For all effluent limit violations, all information required to be reported on KUB’s Discharge Monitoring Reports.*
 - 7. The water quality monitoring data and other information required pursuant to Section VII.D.1.(e).(v).*

8. *Grease-Related Information.*
 - a. *A summary table identifying for the reporting period: (i) A listing of the number of grease related blockages causing or relating to SSOs; and (ii) corrective actions to address such grease related blockages causing or relating to SSOs.*
 - b. *A narrative summary of grease program activities for the reporting period.*
9. *A summary of MOM program implementation for the following Work:*
 - a. *A summary of Continuing Sewer System Assessment Program activities undertaken to assess the condition of the WCTS during the reporting period, including information on assessment of manholes, gravity mains, force mains, pump stations and laterals;*
 - b. *A summary of Infrastructure Rehabilitation Program projects, including a spreadsheet listing of projects for the reporting period and projects continuing from previous reporting periods but not yet completed;*
 - c. *An update on procedures, response times and public reporting information associated with SSOs that demonstrate continued effectiveness of the Sewer Overflow Response Plan; and*
 - d. *A summary table of Gravity Line Preventative Maintenance Program activities conducted during the reporting period including information regarding the cleaning and maintenance of the gravity collection system.*
10. *A representation that the Other MOM Programs continue to be implemented in substantially the same manner as represented in Appendix A and the documents identified therein.*
11. *A summary of Private Lateral Program activities undertaken during the reporting period including the number of Private Laterals repaired.”*

The following Annual Progress Report is submitted to fulfill the reporting requirements described in the revised Section XIX of the Consent Decree and demonstrate KUB's continued focus on MOM programs, Composite Correction Plan (CCP) plant upgrades, and system rehabilitation through its Century II program. As seen in Figure 1, system improvements have produced significant reductions in overflow frequencies and volumes since 2003. During this reporting period, KUB experienced a total of 116 SSOs, eight of which were building backups.

Figure 1. Sanitary Sewer Overflow Trend: 2003 through 2021



* Two SSOs also resulted in a BBU. This is noted on both the SSO and BBU appendices.

Section 1 Composite Correction Plan (CCP)

The CCP was submitted to the EPA on July 23, 2007. EPA rejected it on January 4, 2008. The Revised CCP was submitted to EPA on January 5, 2009, and subsequently approved on January 20, 2009. The CCP work on the final remaining Phase II project at the Kuwahee Wastewater Treatment Plant (WWTP) is complete.

Fourth Creek WWTP Phase I

Work was completed prior to the December 30, 2013, deadline.

Fourth Creek WWTP Phase II

Work was completed prior to the June 30, 2018, deadline.

Kuwahee WWTP Phase I

Work was completed prior to the December 30, 2012, deadline.

Kuwahee WWTP Phase II

Certification of project completion was submitted to EPA on November 15, 2021.

Section 2 Process Controls Program (PCP)

KUB continues to follow its Process Controls Program (PCP) during wet-weather operating conditions. During this reporting period, the PCP was initiated 40 times. Five Diversion events occurred. Please refer to Table 2 under Section 6 to view information related to these Diversion events.

Section 3 Capacity Assurance Program

The Capacity Assurance Program (CAP) was submitted to EPA for review on February 8, 2006. EPA reviewed and approved the program on April 7, 2006.

KUB manages its CAP using an Information Management System (IMS) that tracks rehabilitation credits earned through its Century II and Management, Operations, and Maintenance (MOM) program activities.

Table 1 below lists a total amount of banked credits available by sewerbasin for use in future development if capacity cannot be certified. There were no exceptions granted or needed for connections for essential services during this reporting period.

Table 1. CAP Banked Credits

Basin	Flow Credits (MGD)	Equivalent Homes
First Creek	20.81	31,156
Second Creek	12.50	18,716
Third Creek	14.01	20,974
Fourth Creek	4.98	7,461
South Knoxville	5.46	8,177
Loves Creek	2.91	4,357
Williams Creek	2.41	3,603
Eastbridge	0.12	174
TOTAL	63.20	94,618

Section 4 Transfers of Ownership

There has been no transfer of ownership interest, operation, management, or other control of the Treatment Works, or any portion thereof, during this reporting period as defined by Section III, Part C of the Consent Decree.

Section 5 Compliance and Non-Compliance With the Consent Decree

5.1 Submission of Deliverables

To date, KUB has submitted all deliverables in accordance with the schedule set forth in the Consent Decree. After consultation with TDEC, the EPA agreed that less frequent reporting was now appropriate as a result of the narrower scope of remaining work to be performed. On December 13, 2016, EPA approved the revised Section XIX to the Consent Decree, authorizing the submittal of an Annual Progress Report incorporating all reporting requirements into one annual report. The following sections detail all activity related to deliverables that occurred during the past year.

5.1.1 Status of Deliverables

Below is a list of dates on which KUB submitted deliverables to EPA or received approval for deliverables in 2021. Each submittal was available for public comment in the Public Document Repository (PDR) for a period of twenty (20) days. No comments were received for any of the following deliverables.

February 24, 2021

- Submitted to EPA – Annual Progress Report 2020

5.2 Violations Subject to Stipulated Penalties

During this reporting period, KUB incurred 50 Unpermitted Discharges. Appendix A lists any SSO that occurred during 2021 that resulted in an unpermitted discharge along with its cause, volume, one- and three-day rainfall totals, and rainfall intensity. Unpermitted discharges that were impacted by factors that were difficult to control or events that had minimal impact on the environment due to their low volume are also indicated in Appendix A.

Section 6 SSOs, Bypasses, Diversions, and Effluent Limit Violations

6.1 SSOs

Appendix B lists the location, source, date, time, duration, pathway (if any), receiving water (if any), the identification of the treatment plant sewer basin in which each SSO is located, the reason for each SSO, the total SSO volume, the volume returned to the WCTS, the volume not captured, and category of corrective action planned, underway or completed with regard to the SSO during this reporting period. During this period, there were 108 SSO events.

Of the 108 SSO events, 52 were in the 0 – 1,000 gallons volume range, 21 were in the 1,001 – 10,000 gallons volume range, 35 events totaled greater than 10,000 gallons, and the volume for zero events were unknown. Durations for events during this period are as follows: 58 ranged from 0 – 2 hours, and 22 ranged from 2.1 – 5 hours, 28 were greater than five hours, and the duration of zero events were unknown.

KUB experienced one rain event that qualified as greater than 2-year events. Twenty-three of the sewer overflows reported occurred in the greater than 2-year rain event that occurred between March 26th and March 28th. KUB requests this storm be recognized as a Force Majeure event with regard to stipulated penalties, although we did not submit a letter per the guidance we received from EPA on March 3, 2020.

One site became chronic in calendar year 2021, after experiencing five SSO events in less than a 12-month period. The site is 3148 Wilderness Rd. We are currently working on the design of a project to address this location. Chronic sites remaining from 2020 include 4100 Central Ave Pike, 7308 Rising Rd, 600 N Gallaher View Rd, 1408 Adair Dr, 1829 Wayland Rd. A project is been completed to address the 7308 Rising Rd events. We consider this site complete. Projects are underway to address 1408 Adair Dr and 1829 Wayland Rd; construction will be completed in the next few months. We will be bidding a project to address 4100 Central Ave Pike in the coming months, with the goal of completing by the end of 2022. We are further into the design process for 600 N Gallaher View Rd.

6.2 Building Backups

Appendix C lists the location, source, date, time, duration, the identification of the treatment plant sewerbasin in which each SSO is located, the reason for each SSO, the total SSO volume, the volume returned to the WCTS, the volume not captured, and category of corrective action planned, underway or completed with regard to the SSO during this reporting period. During this period, there were 10 Building Backups including two SSO events that also resulted in a BBU.

6.3 Bypasses

All Bypasses that occurred during this reporting period were in compliance with the Process Controls Program. For purposes of this report, any Bypass in compliance with the Process Controls Program shall be referred to as a “Diversion” (see below). All Bypasses not in compliance with the Process Controls Program shall be referred to as a “Bypass.”

Table 2 contains the location, date, time, duration, volume, and reason for each Bypass and Diversion event that occurred during the reporting period. For the year, there were five Diversion events: four at Kuwahee WWTP and one at Loves Creek WWTP. There were no Diversion events at Fourth Creek or Eastbridge WWTPs. No Bypasses occurred during this reporting period.

6.4 Effluent Limit Violations

Table 3 contains all effluent limit violations that occurred during this reporting period. The table contains the information as it is reported in KUB’s Discharge Monitoring Reports. During this reporting period, there were no effluent limit violations at the Kuwahee WWTP, two at the Fourth Creek WWTP, one at Loves Creek WWTP, and three at Eastbridge WWTP.

Table 2. Diversions

WWTP	Did a Diversion occur?	Date Diversion gate opened	Time Diversion gate opened	Date Diversion gate closed	Time Diversion gate closed	Date Diversion flow reported	Duration (hrs)	Volume (MG)	Total Event Duration (hrs)	Total Event Volume (MG)	Reason for Event
Kuwahee	Yes	3/18/2021	1135			3/18/2021			9.42	1.61	High flow event due to excess rainfall
				3/18/2021	2100	3/18/2021					
Kuwahee	Yes	3/25/2021	2019			3/25/2021	3.68	2.84	17.81	8.48	High flow event due to excess rainfall
				3/26/2021	1408	3/26/2021	14.13	5.64			
Kuwahee	Yes	3/27/2021	1610			3/27/2021	7.83	4.22	55.8	55.62	High flow event due to excess rainfall.
						3/28/2021	24	39.25			
				3/29/2021	2358	3/29/2021	23.97	12.15			
Kuwahee	Yes	3/31/2021	0904			3/31/2021	14.92	15.85	24.6	19.32	High flow event due to excess rainfall.
				4/1/2021	0941	4/1/2021	9.68	3.47			
Loves Creek	Yes	3/28/2021	1218			3/28/2021			7.45	0.35	High flow event due to excess rainfall
				3/28/2021	1945	3/28/2021					
Fourth Creek	No										
Eastbridge	No										

Table 3. Effluent Limit Violations

WWTP	Did an event occur?	Date	Parameter	Type	Limit	Value
Kuwahee	No					
Fourth Creek	Yes	11/19/2021	Daily Maximum	<i>E. coli</i>	487 MPN/100 mL	650 MPN/100 mL
Fourth Creek	Yes	11/20/2021	Daily Maximum	<i>E. coli</i>	487 MPN/100 mL	870 MPN/100 mL
Loves Creek	Yes	12/30/2021	Daily Maximum	<i>E. coli</i>	487 MPN/100 mL	1,600 MPN/100 mL
Eastbridge	Yes	3/1/2021	Daily Maximum	Total Suspended Solids	30 mg/L	37 mg/L
Eastbridge	Yes	3/1/2021	Daily Maximum	<i>E. coli</i>	487 MPN/100 mL	690 MPN/100 mL
Eastbridge	Yes	3/28/2021	Daily Maximum	Total Suspended Solids	30 mg/L	51 mg/L
SS - Settleable Solids	mg/l - milligrams per liter			MPN – Most Probable Number		
TSS - Total Suspended Solids	cfu –Colony Forming Unit					
ml/l – milliliters per liter	lbs - Pounds					

Section 7 Water Quality Monitoring Data

7.1 Sampling Conducted and Results

Appendix D lists all sampling that was conducted during this reporting period and the results thereof. This includes results associated with routine and investigative monitoring or unpermitted discharges that occurred in dry weather conditions.

7.2 Projected Data Collection

During 2021, KUB will continue to monitor 24 routine sampling locations in the sewerbasins of eight area creeks. KUB will collect samples from the following locations during 2021:

Sample Locations by Creek Mile or Site Number

Creek Name	Creek Mile #	Creek Mile #	Creek Mile #
First Creek	1.74	2.57	6.33
Second Creek	0.30	1.54	5.11
Third Creek	0.87	2.08E	4.80W
Fourth Creek	1.75	2.79	3.29
Baker Creek	0.36	1.45	2.00
Goose Creek	0.40	1.19E	1.80E
Loves Creek	0.85	1.89	3.45
Williams Creek	0.89	1.70	2.02

Section 8 Grease Control Program (GCP)

8.1 Food Service Facilities (FSFs) Compliance Activities

There are currently 910 permitted and active FSFs in KUB's service area that were inspected routinely in 2021 to assess compliance with KUB's Grease Control Program (GCP). KUB also inspected an additional 65 FSF locations at least once in 2021 that were inactive or closed to determine if food preparation had resumed or the facility had reopened under new ownership. During this reporting period, KUB conducted 1,653 inspections of all facilities combined to determine if their equipment was adequate and being maintained as required to prevent grease from entering the wastewater system. In addition, KUB required all newly constructed FSFs to submit a permit application to ensure their facilities would be equipped with appropriately sized grease control equipment (GCE) before opening.

KUB continues its emphasis on improving wastewater system performance and reducing grease related blockages by routinely inspecting FSFs and requiring them to replace aging and/or undersized GCE as needed. Traps and interceptors can develop cracks and corrosion over time, so their maintenance condition must be assessed during inspections. A total of 22 FSFs were required to submit a Corrective Action Plan (CAP) in 2021 demonstrating they would move forward with upgrading and/or installing GCE. There were 24 customers that installed GCE during the reporting period. A total of 18 grease interceptors and six grease traps were added to control grease as a result of program efforts and customer compliance. Zero FSF's were published this year in the local newspaper for noncompliance for failure to install the required grease control equipment. Zero FSF's were placed under an Administrative Order in 2021.

8.2 Grease-Related Overflow Response

When a grease-related overflow occurs, KUB initiates an investigation to identify any customer that could have contributed grease to the wastewater system and caused the blockage. Using an electronic mapping tool, Geographic Information System (GIS), KUB identifies all potential contributors upstream from the site of where a grease-related SSO occurred. KUB then inspects all commercial customers in the area to verify their compliance with the GCP, and educational program information is mailed to all residential customers contributing to the SSO. In 2021, KUB mailed grease letters, educational brochures, and grease can liners to 3,110 customers and conducted 56 inspections on commercial customers as a result of 23 grease-related SSO/BBU investigations. Appendix E lists the number of grease-related blockages causing SSOs and the corrective actions that were used to address such blockages.

Information about the GCP is also made available to our customers on KUB's website. There, customers can view material discussing the environmental risks associated with grease-related overflows and receive instruction on proper grease disposal methods. When feasible, KUB also provides GCP educational materials through customer newsletters, event promotions of the residential Can the Grease program in the local newspaper, and community events.

Section 9 MOM Program Update

9.1 Continuing Sewer System Assessment Program (CSSAP)

The CSSAP is a systematic evaluation of the entire wastewater collection and transmission system (WCTS) that also assesses capacity to support prioritization of the Infrastructure Rehabilitation Program (IRP). The CSSAP was approved on July 28, 2005 and system assessments began that same year. In February 2016, KUB completed its first assessment of the entire WCTS one year ahead of the required 12-year cycle period.

The following table shows the elements of the CSSAP assessment tools and performance goal periods associated with the second assessment which began in March 2016. A comprehensive force main assessment was last conducted in 2020 as required by the two-year assessment schedule:

Table 4. CSSAP Elements

Program Elements	Assessment Tools	Completed in 2021	Total Completed*	One Complete Cycle Period
Manhole Condition Assessment	Manhole Inspections Smoke Testing	8.7 percent	48.8 percent	12 Years
Gravity Sewer Condition Assessment	Flow Monitoring Smoke Testing Dye Testing CCTV	11.8 percent	52.9 percent	12 Years
Private Lateral Condition Assessment	Flow Monitoring Smoke Testing Dye Testing CCTV	8.4 percent	52.5 percent	12 Years
Force Main Performance Assessment	Corrosion Defect Identification	25 percent	100 percent**	2 Years
Pump Station Performance Assessment	Pump Station Performance and Adequacy	75 percent	75 percent**	2 Years

*Percentage completed in second 12-year cycle.

**Comprehensive inspections alternate each year between the Force Main Performance assessment and Pump Station Performance Assessment. 2021 Pump Station Performance Assessment is being completed at the time this report is being submitted.

9.2 Infrastructure Rehabilitation Program (IRP)

In 2021, KUB's IRP rehabilitated or replaced more than 38,000 ft (7.2 miles) of sewer gravity mains and 216 manholes and 14,000 ft (2.7 miles) of force mains. Appendix F lists the IRP projects for the reporting period and projects continuing from previous reporting periods but not yet completed. All of these projects are in addition to the previously completed CAP/ER projects and are included in KUB's Century II Program.

9.3 Sewer Overflow Response Plan (SORP)

KUB continues to place a high priority on maintaining and executing a SORP to help protect our community and our environment. This progress report includes an update on implementation of SORP procedures, training, and other areas of interest related to the program.

KUB makes all reasonable efforts to respond to an SSO within 45 minutes, taking into consideration the safety of the responder and the public as the first priority. In 2021, we had 113 SSO events in which KUB's Underground Construction (UGC) department responded, and our average response time was 56 minutes. KUB's prompt response time to SSO events is an essential element to the success of our SORP. It enables responding personnel to quickly assess the cause and environmental impact of an SSO to establish the best containment and remediation procedures. Quick response times also enable KUB to classify the majority of SSOs as having a short duration with a minimal impact on the environment.

KUB continues to provide an initial notice to TDEC and make public the date, time, volume, and location of each SSO (excluding building backups) on an SSO log accessed through KUB's website within 24 hours of the event. The SSO log also contains a link to a permanent archive of SSOs by month. To access the SSO log, go to www.kub.org and type "SSO Log" in the search bar at the top of the webpage.

KUB uses a computerized SORP training tool that allows new employees, and those needing refresher training, to train at their own pace on a computer. Training is also given in a classroom setting with hands-on field training components when more appropriate. In addition, KUB relies on feedback from customers and other local organizations to help identify any instances when the quality of SSO response falters. Such feedback is directed to Engineering, who works with various departments to correct any concerns.

9.4 Gravity Line Preventative Maintenance Program (GLPMP)

The GLPMP is divided into the Comprehensive Hydraulic Cleaning Program (CHCP) and Blockage Abatement (BA). The CHCP is a systematic, planned cleaning of the system to reduce debris and grease buildup and root intrusion. The BA Program is also a preventative maintenance approach for addressing operational issues that uses event history and condition assessment information to implement activities that prevent or reduce system disruptions. Activities may include, but are not limited to, hydraulic flushing, mechanical and chemical root control, rodding, and televised inspections.

The following table documents program activities for the year.

Table 5. GLPMP Elements

Program Elements				
Comprehensive Hydraulic Cleaning Program (CHCP)	Cleaned and televised			
	660,000 ft (125 miles)			
Blockage Abatement (BA) Program	Sewer mains in BA	Sewer mains cleaned	Sewer mains televised	Sewer mains root cut
	1,494,533 ft (283 miles)	680,000 ft (129 miles)	190,000 ft (36 miles)	320,000 ft (61 miles)

Section 10 Other MOM Programs

KUB continues to implement and manage its Other MOM Programs as represented in Appendix A of the Consent Decree. There have been no substantial program changes made during this reporting period.

Section 11 Private Lateral Program (PLP)

KUB operates a Private Lateral Program (PLP), as required by the Consent Decree and KUB's Wastewater Rules and Regulations. The PLP helps protect our environment by ensuring that property owners repair their laterals and/or remove prohibited connections. Through the CSSAP, KUB has smoke tested and/or televised all laterals within the WCTS during one complete 12-year cycle period. In addition, KUB completed the Supplemental Environmental Project (SEP) and submitted the SEP Completion Report to the EPA on June 29, 2012. KUB continues to enforce on private sewer laterals through the PLP where defects are discovered in laterals when there is a problem on property (POP) reported and customers fail to correct the problem. The statistics below include enforcement actions undertaken in the program from January 1, 2021, to December 31, 2021.

Total Private Lateral Enforcements	0
Repair	0
Replace	0
Total with Tenants	0

Additionally, there were two properties that received reinstatement of water service after lateral work was completed. In these cases, the water service was terminated in previous years due to noncompliance with the PLP, but the required repairs were completed in 2021.

Total Repairs Completed	2
2021 Enforcements	0
Reinstatements	2
Terminations	0

Appendix A

Unpermitted Discharges

Appendix A
Unpermitted Discharges in 2021

12

Overflow volume of 500 gallons or less

0

1-day rainfall greater than 3"

4

Overflow volume of 501 - 1000 gallons

0

3-day rainfall greater than 4"

0

Vandalism

0

Intensity >= 0.84 in/hr

1

Electrical or mechanical failure

Reporting Period	Date	Location	Event	Unrecovered Volume (Gal.)	Receiving Stream	Cause	Rainfall Totals 1-Day*	Rainfall Totals 3-Day**	Peak Rainfall Intensity (in/hr)	Force Majeure event
1st 2021	2/11/2021	725 Sevier Ave	Unpermitted Discharge	94	Tennessee River	Blockage	0.78	0.79	0.18	No
1st 2021	2/13/2021	2350 Ellistown Rd	Unpermitted Discharge	5,000	Legg Creek	Blockage	0.61	1.66	0.08	No
1st 2021	2/17/2021	524 Avenue A	Unpermitted Discharge	45	Goose Creek	Blockage	0.00	0.17	0.19	No
1st 2021	3/1/2021	600 N Gallaher View Rd	Unpermitted Discharge	135,005	Ten Mile Creek	Pump Station Failure	0.87	1.30	0.41	No
1st 2021	3/1/2021	4301 Clinton Hwy	Unpermitted Discharge	2,470	Second Creek	Blockage	0.87	1.30	0.41	No
1st 2021	3/5/2021	1218 Glade Hill Dr	Unpermitted Discharge	870	Fourth Creek	Blockage	0.00	0.00	0.00	No
1st 2021	3/10/2021	1811 Washington Ave	Unpermitted Discharge	25	First Creek	Blockage	0.00	0.00	0.00	No
1st 2021	3/18/2021	5619 E Governor John Sevier Hwy	Unpermitted Discharge	64	Holston River	Heavy Rainfall	0.89	1.30	0.30	No
1st 2021	3/18/2021	106 Colonial Dr	Unpermitted Discharge	84,200	Pond	Heavy Rainfall	0.89	1.30	0.30	No
1st 2021	3/18/2021	1829 Wayland Rd	Unpermitted Discharge	40,000	Swanpond Creek	Heavy Rainfall	0.89	1.30	0.30	No
1st 2021	3/18/2021	1920 Ulster Rd	Unpermitted Discharge	135	Williams Creek	Blockage	0.89	1.30	0.30	No
1st 2021	3/26/2021	1408 Adair Dr	Unpermitted Discharge	85,000	Lynnhurst Creek	Heavy Rainfall	0.10	1.13	0.31	Yes
1st 2021	3/26/2021	4100 Central Ave Pike	Unpermitted Discharge	400	Second Creek	Heavy Rainfall	0.10	1.13	0.31	Yes
1st 2021	3/26/2021	600 N Gallaher View Rd	Unpermitted Discharge	8,200,000	Ten Mile Creek	Heavy Rainfall	0.10	1.13	0.31	Yes
1st 2021	3/27/2021	4100 Central Ave Pike	Unpermitted Discharge	700	Second Creek	Heavy Rainfall	1.23	2.36	0.41	Yes
1st 2021	3/28/2021	1408 Adair Dr	Unpermitted Discharge	420,000	Lynnhurst Creek	Heavy Rainfall	1.04	2.37	0.53	Yes
1st 2021	3/28/2021	4605 Webb Ln	Unpermitted Discharge	19,000	Third Creek	Heavy Rainfall	1.04	2.37	0.53	Yes
1st 2021	3/28/2021	4923 Ball Rd	Unpermitted Discharge	1,800	Grassy Creek	Heavy Rainfall	1.04	2.37	0.53	Yes
1st 2021	3/28/2021	1500 Lyons Bend Rd	Unpermitted Discharge	950,000	Fourth Creek	Heavy Rainfall	1.04	2.37	0.53	Yes
1st 2021	3/28/2021	2004 Neyland Dr	Unpermitted Discharge	150,000	Tennessee River	Heavy Rainfall	1.04	2.37	0.53	Yes
1st 2021	3/28/2021	2544 Fair Dr	Unpermitted Discharge	75,000	First Creek	Heavy Rainfall	1.04	2.37	0.53	Yes
1st 2021	3/28/2021	106 Colonial Dr	Unpermitted Discharge	12,080	Pond	Heavy Rainfall	1.04	2.37	0.53	Yes
1st 2021	3/28/2021	1221 Milam Cir	Unpermitted Discharge	1,780	Fourth Creek	Heavy Rainfall	1.04	2.37	0.53	Yes
1st 2021	3/28/2021	2004 Riverside Dr	Unpermitted Discharge	150,000	Williams Creek	Heavy Rainfall	1.04	2.37	0.53	Yes
1st 2021	3/28/2021	2723 South Haven Rd	Unpermitted Discharge	15,455	Baker Creek	Heavy Rainfall	1.04	2.37	0.53	Yes
1st 2021	3/28/2021	2700 Boright Dr	Unpermitted Discharge	2,500	First Creek	Heavy Rainfall	1.04	2.37	0.53	Yes
1st 2021	3/28/2021	1500 Hoitt Ave	Unpermitted Discharge	7,455	First Creek	Heavy Rainfall	1.04	2.37	0.53	Yes
1st 2021	3/28/2021	4200 Holston Hills Rd	Unpermitted Discharge	21,122	Holston River	Heavy Rainfall	1.04	2.37	0.53	Yes
1st 2021	3/28/2021	4420 Holston Hills Rd	Unpermitted Discharge	5,875	Holston River	Heavy Rainfall	1.04	2.37	0.53	Yes
1st 2021	3/29/2021	4719 Old Broadway	Unpermitted Discharge	4,500,000	Lynnhurst Creek	Heavy Rainfall	0.00	2.27	0.53	No
1st 2021	3/29/2021	6410 S Northshore Dr	Unpermitted Discharge	1,360,750	Fourth Creek	Heavy Rainfall	0.00	2.27	0.53	No
1st 2021	3/29/2021	1829 Wayland Rd	Unpermitted Discharge	807,000	Swanpond Creek	Heavy Rainfall	0.00	2.27	0.53	No
1st 2021	3/31/2021	1408 Adair Dr	Unpermitted Discharge	126,320	Lynnhurst Creek	Heavy Rainfall	1.04	1.04	0.48	No
1st 2021	3/31/2021	4605 Webb Ln	Unpermitted Discharge	40,000	Third Creek	Heavy Rainfall	1.04	1.04	0.48	No
1st 2021	3/31/2021	4719 Old Broadway	Unpermitted Discharge	147,000	Lynnhurst Creek	Heavy Rainfall	1.04	1.04	0.48	No
2nd 2021	4/29/2021	2000 Shoppers Ln	Unpermitted Discharge	300	Third Creek	Blockage	0.03	0.03	0.03	No
2nd 2021	5/3/2021	1218 Glade Hille Dr	Unpermitted Discharge	1,405	Fourth Creek	Blockage	0.15	0.15	0.29	No

Reporting Period	Date	Location	Event	Unrecovered Volume (Gal.)	Receiving Stream	Cause	Rainfall Totals 1-Day*	Rainfall Totals 3-Day**	Peak Rainfall Intensity (in/hr)	Force Majeure event
2nd 2021	5/4/2021	600 N Gallaher View Rd	Unpermitted Discharge	281,500	Ten Mile Creek	Heavy Rainfall	0.50	0.50	0.32	No
2nd 2021	6/2/2021	4351 Falconite Way	Unpermitted Discharge	40,305	Third Creek	Blockage	0.00	0.00	0.03	No
2nd 2021	6/14/2021	5906 Walden Dr	Unpermitted Discharge	250	Fourth Creek	Blockage	0.00	0.11	0.20	No
2nd 2021	6/28/2021	193 Kensi Dr	Unpermitted Discharge	2,100	Second Creek	Blockage	0.08	0.31	0.03	No
3rd 2021	8/25/2021	2700 Boright Dr	Unpermitted Discharge	400	First Creek	Heavy Rainfall	0.00	0.00	0.44	No
3rd 2021	9/1/2021	600 N Gallaher View Rd	Unpermitted Discharge	1,500,000	Ten Mile Creek	Heavy Rainfall	0.62	1.03	0.37	No
3rd 2021	9/5/2021	1109 Spruce Dr	Unpermitted Discharge	550	Goose Creek	Blockage	0.03	0.03	0.06	No
3rd 2021	9/17/2021	3920 Tiberius Rd	Unpermitted Discharge	750	Second Creek	Blockage	0.00	0.00	0.07	No
3rd 2021	9/23/2021	1500 Lyons Bend Rd	Unpermitted Discharge	500	Tennessee River	Constuction Failure	0.00	0.63	0.15	No
4th 2021	10/4/2021	2511 Kingston Pike	Unpermitted Discharge	8,500	Third Creek	Blockage	0.33	0.51	0.12	No
4th 2021	10/20/2021	2511 Kingston Pike	Unpermitted Discharge	150	Third Creek	Blockage	0.00	0.00	0.01	No
4th 2021	11/4/2021	3222 Kingston Pike	Unpermitted Discharge	25	Tennessee River	Broken System	0.01	0.03	0.04	No
4th 2021	11/8/2021	1723 Breda Dr	Unpermitted Discharge	1,005	First Creek	Blockage	0.00	0.00	0.00	No

*1-Day Rainfall Total is the rain that occurred on the day of the SSO

**3-Day Rainfall Total is the total amount of rain that occurred on the day of the SSO and the 2 days prior

***Evidence that these overflows occurred was found some time following the actual event. The rainfall shown for these events correlate to the amount received on the date the events were reported to KUB.

1 and 3-Day Rainfall Total comes from NOAA website, McGhee Tyson

Intensity comes from export of Flowview, average of 8 rain gauges max hour over 3 day period

Appendix B

SSOs

Date	Time	Street #	Street	Plant	Watershed	Basin	Overflow Location	Pathway	Receiving Water	Cause of SSO/KUB Response	Total Volume (Gallons)	Recovered Volume (Gallons)	Non-Recovered Volume (Gallons)	Duration (Hours)	Unpermitted Discharge	Corrective Action
1/5/2021	10:05am	4421	Sullivan Rd	KUW	Third Creek	12	Gravity Main	Wet Weather Conveyence to Soil Saturation		Construction Failure - Dig-In (Boring) Third Party. The sewer main was flushed and the main was repaired. The area was cleaned.	525	50	475	1	No	System Repair Completed
1/13/2021	3:16pm	1925	Rosewood Dr	LC	Loves Creek	105	Force Main	Soil Saturation to Catch Basin		Construction Failure - Dig-In (Boring) . The force main was repaired. The area was cleaned.	25	0	25	1	No	System Repair Completed
1/16/2021	11:43pm	800	E Inskip Dr	KUW	First Creek	7	Manhole 29-58 and Lateral Cleanout	Wet Weather Conveyence to Soil Saturation		Blockage - Grease. The sewer main was flushed to remove the blockage. The area was cleaned.	275	110	165	2	No	Routine Blockage Abatement
1/20/2021	12:18pm	5925	Bridge Garden	KUW	Third Creek	9	Manhole 17-210	Soil Saturation		Blockage - Debris. The sewer main was flushed to remove the blockage. The area was cleaned.	6,500	200	6,300	2	No	Routine Blockage Abatement
1/26/2021	10:10pm	4509	East End Rd	KUW	South Knox	39	Manhole 27-102	Soil Saturation		Blockage - Roots and Debris. The sewer main was flushed to remove the blockage. The area was cleaned.	10	0	10	2	No	Routine Blockage Abatement
2/11/2021	12:56pm	725	Sevier Ave	KUW	South Knox	40	Manhole 1-34	Catch Basin to Tennessee River	Tennessee River	Blockage - Debris. The sewer main was flushed and the area was cleaned.	94	0	94	1	Yes	Routine Blockage Abatement
2/13/2021	4:22pm	2350	Ellistown Rd	LC	Loves Creek	106	Manhole 88-50	Wet Weather Conveyance to Legg Creek	Legg Creek	Blockage - Greases and Debris. The sewer main was flushed and the area was cleaned.	13,000	8,000	5,000	2	Yes	Routine Blockage Abatement
2/16/2021	11:05am	2015	Neyland Dr	KUW	Third Creek	35b	#6 Digester	Soil Saturation		WWTP - Process Failure. The WWTP process was reinstated. And the area was cleaned.	45	0	45	1	No	System Repair Completed
2/17/2021	9:48am	524	Avenue A	KUW	South Knox	39	Manhole 38-2	Pavement to Unnamed Tributary to Goose Creek	Goose Creek	Blockage - Debris. The sewer main was flushed to remove the blockage. The area was cleaned.	45	0	45	1	Yes	Routine Blockage Abatement
2/18/2021	3:00pm	323	E Caldwell Ave	KUW	Second Creek	15	Lateral Cleanout	Soil Saturation		Blockage - Grease. The sewer main was flushed to remove the blockage. The area was cleaned.	140	0	140	1	No	Routine Blockage Abatement
2/21/2021	12:18am	1237	Virginia Ave	KUW	Third Creek	22	Lateral Cleanout	Pavement to Storm Drain to Soil Saturation		Broken System - Broken Gravity Main. The sewer main was repaired and the area was cleaned.	125	0	125	2	No	System Repair Completed
2/24/2021	7:15pm	212	Dry Gap Pike	KUW	Second Creek	5	Manholes 16-67 and 16-68	Soil Saturation		Blockage - Roots and Grease. The sewer main was flushed to remove the blockage. The area was cleaned.	1,275	0	1,275	3	No	Routine Blockage Abatement
2/25/2021	12:30pm	5311	Beverly Park Cir	KUW	First Creek	2	Manhole 79-8	Soil Saturation		Blockage - Debris. The sewer main was flushed to remove the blockage. The area was cleaned.	65	0	65	2	No	Routine Blockage Abatement
2/26/2021	1:55pm	3818	Boyd's Bridge Pike	LC	Loves Creek	26	Air Release Valve	Soil Saturation		Broken System - Air Release Valve Failure. The force main was repaired.	553,360	10,000	543,360	5	No	System Repair Completed
2/28/2021	6:54pm	1234	Park Hill Cir	FC	Fourth Creek	32a	Lateral Cleanout	Pavement to Recovery		Blockage - Debris. The sewer main was flushed to remove the blockage. The area was cleaned.	125	125	0	3	No	Routine Blockage Abatement
3/1/2021	10:05am	4301	Clinton Hwy	KUW	Second Creek	10	Manhole 14-38	Pavement to Storm Drain to Second Creek	Second Creek	Blockage - Debris. The sewer main was flushed to remove the blockage. The area was cleaned.	2,490	20	2,470	1	Yes	Routine Blockage Abatement
3/1/2021	10:40am	5100	W Martin Mill Pike	KUW	South Knox	39	Manhole 142	Soil Saturation		I/I - Rainfall in the area produced I&I and high flows in the sewer mains.. The sewer main was checked until the high flows subsided. The area was cleaned.	14,230	0	14,230	4	No	System Repair Completed
3/1/2021	5:16am	600	N Gallaher View Rd	FC	Fourth Creek	32a	Manhole 77	Ground to Ten Mile Creek	Ten Mile Creek	Pump Station Failure - Mechanical Failure. The WW Storage Facility was scheduled for repair and the area was cleaned.	135,000	5	135,005	10	Yes	System Repair Completed
3/1/2021	9:12am	3148	Wilderness Rd	KUW	First Creek	18	Manholes 51 and 52	Soil Saturation		I/I - Rainfall in the area produced I&I and high flows in the sewer mains.. The sewer main was checked until the high flows subsided. The area was cleaned.	2,840	0	2,840	8	No	Future Construction Planned
3/5/2021	8:12am	1218	Glade Hill Dr	FC	Fourth Creek	32a	Manhole 30-50	Pavement to Catch Basin to Fourth Creek	Fourth Creek	Blockage - Debris. The sewer main was flushed to remove the blockage. The area was cleaned.	870	0	870	2	Yes	Routine Blockage Abatement
3/8/2021	10:48am	6114	Creekhead Dr	FC	Fourth Creek	32a	Manhole 49-118	Wet Weather Conveyance to Soil Saturation		Blockage - Grease and Debris. The sewer main was flushed to remove the blockage. The area was cleaned.	3,120	0	3,120	2	No	Routine Blockage Abatement
3/9/2021	4:06pm	2015	Neyland Dr	KUW	Third Creek	35b	Primary Building - Scum Boxes	Ground to Pavement to Recovery		WWTP - Process Failure. The WWTP process was reinstated. And the area was cleaned.	4,500	4,000	500	1	No	System Repair Completed
3/10/2021	12:43pm	1811	Washington Ave	KUW	First Creek	24	Manhole 25-181 and BBU	Ditch to Storm Drain to First Creek	First Creek	Blockage - Grease. The sewer main was flushed to remove the blockage. The area was cleaned.	30	5	25	2	Yes	Routine Blockage Abatement
3/18/2021	10:45am	5619	E Governor John Sevier Hwy	LC	Loves Creek	61	Manhole 4	Ground to Stream to Holston River	Holston River	I/I - Rainfall in the area produced I&I and high flows in the sewer mains.. The sewer main was checked until the high flows subsided. The area was cleaned.	64	0	64	1	Yes	System Assessment Underway
3/18/2021	10:47am	106	Colonial Dr	KUW	Knob Creek	41	Manhole 66-66	Ground to Pond	Pond	I/I - Rainfall in the area produced I&I and high flows in the sewer mains.. The sewer main was checked until the high flows subsided. The area was cleaned.	84,200	0	84,200	4	Yes	System Assessment Underway
3/18/2021	11:20am	7308	Rising Rd	LC	Loves Creek	106	Wet Well	Soil Saturation		I/I - Rainfall in the area produced I&I and high flows in the sewer mains.. The sewer main was checked until the high flows subsided. The area was cleaned.	188	0	188	7	No	Construction Project Completed
3/18/2021	12:00am	4206	Chapman Hwy	KUW	South Knox	39	Manhole 72	Pavement		Blockage - Debris. The sewer main was flushed to remove the blockage. The area was cleaned.	1,635	0	1,635	2	No	Routine Blockage Abatement
3/18/2021	2:02pm	3148	Wilderness Rd	KUW	First Creek	18	Manholes 51, 52, and 55	Soil Saturation		I/I - Rainfall in the area produced I&I and high flows in the sewer mains.. The sewer main was checked until the high flows subsided. The area was cleaned.	18,000	0	18,000	18	No	Future Construction Planned
3/18/2021	3:30pm	1920	Ulster Rd	KUW	Williams Creek	25	Manhole 35	Pavement to Ground to Williams Creek	Williams Creek	Blockage - Grease. The sewer main was flushed to remove the blockage. The area was cleaned.	185	50	135	2	Yes	Routine Blockage Abatement
3/18/2021	7:08pm	1829	Wayland Rd	LC	Loves Creek	67	Manhole 40-2	Ground to Swanpond Creek	Swanpond Creek	I/I - Rainfall in the area produced I&I and high flows in the sewer mains.. The sewer main was checked until the high flows subsided. The area was cleaned.	40,000	0	40,000	7	Yes	Construction Project Underway
3/25/2021	2:02pm	3148	Wilderness Rd	KUW	First Creek	18	Manholes 51 and 52	Soil Saturation		I/I - The area received an average of 4.88 inches of rainfall in a 72 hour period, which exceeds a 5 year storm. This resulted in significant I&I and high flows in the sewer mains.. The sewer main was checked until the high flows subsided. The area was cleaned.	21,000	0	21,000	11	No	Future Construction Planned
3/25/2021	7:50pm	4105	Milton St	KUW	First Creek	16	Manhole 31-7 and BBU	Pavement to Soil Saturation		Broken System - Broken Gravity Main. The gravity sewer main will be repaired. The building was cleaned by Restoration 101.	997	962	35	3	No	System Repair Completed
3/26/2021	12:35am	4100	Central Ave Pike	KUW	Second Creek	10	Manhole 17-9	Pavement to Wet Weather Conveyance to Second Creek	Second Creek	I/I - The area received an average of 4.88 inches of rainfall in a 72 hour period, which exceeds a 5 year storm. This resulted in significant I&I and high flows in the sewer mains.. The sewer main was checked until the high flows subsided. The area was cleaned.	400	0	400	1	Yes	Future Construction Planned
3/26/2021	8:27am	1408	Adair Dr	KUW	First Creek	7	Manholes 72 and 73	Ground to Lynnhurst Creek	Lynnhurst Creek	I/I - The area received an average of 4.88 inches of rainfall in a 72 hour period, which exceeds a 5 year storm. This resulted in significant I&I and high flows in the sewer mains.. The sewer main was checked until the high flows subsided. The area was cleaned.	85,000	0	85,000	4	Yes	Construction Project Underway
3/26/2021	9:21pm	1024	Piney Grove Church Rd	FC	Fourth Creek	32	Manhole 49-114	Soil Saturation		Blockage - Debris. The sewer main was flushed to remove the blockage. The area was cleaned.	6,760	0	6,760	2	No	Routine Blockage Abatement
3/26/2021	9:30pm	600	N Gallaher View Rd	FC	Fourth Creek	32a	Manhole 77	Ground to Ten Mile Creek	Ten Mile Creek	I/I - The area received an average of 4.88 inches of rainfall in a 72 hour period, which exceeds a 5 year storm. This resulted in significant I&I and high flows in the sewer mains.. The sewer main was checked until the high flows subsided. The area was cleaned.	8,200,000	0	8,200,000	156	Yes	Future Construction Planned

Date	Time	Street #	Street	Plant	Watershed	Basin	Overflow Location	Pathway	Receiving Water	Cause of SSO/KUB Response	Total Volume (Gallons)	Recovered Volume (Gallons)	Non-Recovered Volume (Gallons)	Duration (Hours)	Unpermitted Discharge	Corrective Action
3/27/2021	11:15pm	4100	Central Ave Pike	KUW	Second Creek	10	Manhole 17-9	Pavement to Wet Weather Conveyance to Second Creek	Second Creek	I/I - The area received an average of 4.88 inches of rainfall in a 72 hour period, which exceeds a 5 year storm. This resulted in significant I&I and high flows in the sewer mains.. The sewer main was checked until the high flows subsided. The area was cleaned.	700	0	700	4	Yes	Future Construction Planned
3/27/2021	12:35pm	3148	Wilderness Rd	KUW	First Creek	18	Manholes 51, 52, and 55	Soil Saturation		I/I - The area received an average of 4.88 inches of rainfall in a 72 hour period, which exceeds a 5 year storm. This resulted in significant I&I and high flows in the sewer mains.. The sewer main was checked until the high flows subsided. The area was cleaned.	76,000	0	76,000	36	No	Future Construction Planned
3/28/2021	1:05pm	4200	Holston Hills Rd	LC	Loves Creek	26	Manhole 74-1	Ground to Beamon Branch to Holston River	Holston River	I/I - The area received an average of 4.88 inches of rainfall in a 72 hour period, which exceeds a 5 year storm. This resulted in significant I&I and high flows in the sewer mains.. The sewer main was checked until the high flows subsided. The area was cleaned.	21,122	2	21,122	8	Yes	Future Construction Planned
3/28/2021	1:28pm	2723	South Haven Rd	KUW	South Knox	40	Manhole 24-305	Ground to Unnamed Tributary to Baker Creek	Baker Creek	I/I - The area received an average of 4.88 inches of rainfall in a 72 hour period, which exceeds a 5 year storm. This resulted in significant I&I and high flows in the sewer mains.. The sewer main was checked until the high flows subsided. The area was cleaned.	15,455	0	15,455	4	Yes	Construction Project Underway
3/28/2021	1:28pm	2700	Boright Dr	KUW	First Creek	8	Manhole 26	Pavement to Storm Drain to First Creek	First Creek	I/I - The area received an average of 4.88 inches of rainfall in a 72 hour period, which exceeds a 5 year storm. This resulted in significant I&I and high flows in the sewer mains.. The sewer main was checked until the high flows subsided. The area was cleaned.	2,500	0	2,500	5	Yes	Construction Project Underway
3/28/2021	1:30pm	4420	Holston Hills Rd	LC	Loves Creek	65	Manhole 65	Ground to Holston River	Holston River	I/I - The area received an average of 4.88 inches of rainfall in a 72 hour period, which exceeds a 5 year storm. This resulted in significant I&I and high flows in the sewer mains.. The sewer main was checked until the high flows subsided. The area was cleaned.	5,875	0	5,875	8	Yes	Future Construction Planned
3/28/2021	1:46pm	5100	W Martin Mill Pike	KUW	South Knox	39	Manhole 142	Soil Saturation		I/I - The area received an average of 4.88 inches of rainfall in a 72 hour period, which exceeds a 5 year storm. This resulted in significant I&I and high flows in the sewer mains.. The sewer main was checked until the high flows subsided. The area was cleaned.	429,920	0	429,920	11	No	System Repair Completed
3/28/2021	10:40am	106	Colonial Dr	KUW	Knob Creek	41	Manhole 66-66	Ground to Pond	Pond	I/I - The area received an average of 4.88 inches of rainfall in a 72 hour period, which exceeds a 5 year storm. This resulted in significant I&I and high flows in the sewer mains.. The sewer main was checked until the high flows subsided. The area was cleaned.	12,080	0	12,080	7	Yes	System Assessment Underway
3/28/2021	11:09am	4225	Cruze Rd	KUW	South Knox	40	Manhole 71-9	Soil Saturation		I/I - The area received an average of 4.88 inches of rainfall in a 72 hour period, which exceeds a 5 year storm. This resulted in significant I&I and high flows in the sewer mains.. The sewer main was checked until the high flows subsided. The area was cleaned.	12,025	0	12,025	8	No	Construction Project Completed
3/28/2021	11:35am	4923	Ball Rd	FC	Fourth Creek	49	Manholes 1-1 and 2	Ground to Grassy Creek	Grassy Creek	I/I - The area received an average of 4.88 inches of rainfall in a 72 hour period, which exceeds a 5 year storm. This resulted in significant I&I and high flows in the sewer mains.. The sewer main was checked until the high flows subsided. The area was cleaned.	1,800	0	1,800	4	Yes	System Assessment Underway
3/28/2021	12:59pm	2004	Riverside Dr	KUW	Williams Creek	25	Manhole 1-1	Ground to Williams Creek	Williams Creek	I/I - The area received an average of 4.88 inches of rainfall in a 72 hour period, which exceeds a 5 year storm. This resulted in significant I&I and high flows in the sewer mains.. The sewer main was checked until the high flows subsided. The area was cleaned.	150,000	0	150,000	6	Yes	Future Construction Planned
3/28/2021	2:20pm	1221	Milam Cir	FC	Fourth Creek	36	Manhole 12-173	Ground to Unnamed Tributary to Fourth Creek	Fourth Creek	I/I - The area received an average of 4.88 inches of rainfall in a 72 hour period, which exceeds a 5 year storm. This resulted in significant I&I and high flows in the sewer mains.. The sewer main was checked until the high flows subsided. The area was cleaned.	1,780	0	1,780	7	Yes	Construction Project Underway
3/28/2021	2:21pm	7308	Rising Rd	LC	Loves Creek	106	Wet Well	Soil Saturation		I/I - The area received an average of 4.88 inches of rainfall in a 72 hour period, which exceeds a 5 year storm. This resulted in significant I&I and high flows in the sewer mains.. The sewer main was checked until the high flows subsided. The area was cleaned.	280,255	0	280,255	8	No	Construction Project Completed
3/28/2021	3:39pm	2544	Fair Dr	KUW	First Creek	4	Manholes 77 and 20-2	Ground to Wet Weather Conveyance to First Creek	First Creek	I/I - The area received an average of 4.88 inches of rainfall in a 72 hour period, which exceeds a 5 year storm. This resulted in significant I&I and high flows in the sewer mains.. The sewer main was checked until the high flows subsided. The area was cleaned.	75,000	0	75,000	6	Yes	Future Construction Planned
3/28/2021	3:57pm	4605	Webb Ln	KUW	Third Creek	28	Manholes 27-56 and 1	Ground to Third Creek	Third Creek	I/I - The area received an average of 4.88 inches of rainfall in a 72 hour period, which exceeds a 5 year storm. This resulted in significant I&I and high flows in the sewer mains.. The sewer main was checked until the high flows subsided. The area was cleaned.	19,000	0	19,000	5	Yes	System Assessment Underway
3/28/2021	4:38pm	1500	Hoitt Ave	KUW	First Creek	17	Manhole 38	Ground to First Creek	First Creek	I/I - The area received an average of 4.88 inches of rainfall in a 72 hour period, which exceeds a 5 year storm. This resulted in significant I&I and high flows in the sewer mains.. The sewer main was checked until the high flows subsided. The area was cleaned.	7,455	5	7,455	4	Yes	System Assessment Underway
3/28/2021	7:47am	2310	Greenfield Ln	KUW	First Creek	18	Lateral Cleanout	Soil Saturation		I/I - The area received an average of 4.88 inches of rainfall in a 72 hour period, which exceeds a 5 year storm. This resulted in significant I&I and high flows in the sewer mains.. The sewer main was checked until the high flows subsided. The area was cleaned.	735	0	735	8	No	System Assessment Underway
3/28/2021	8:13am	1408	Adair Dr	KUW	First Creek	7	Manhole 72, 73, and 31	Ground to Lynnhurst Creek	Lynnhurst Creek	I/I - The area received an average of 4.88 inches of rainfall in a 72 hour period, which exceeds a 5 year storm. This resulted in significant I&I and high flows in the sewer mains.. The sewer main was checked until the high flows subsided. The area was cleaned.	420,000	0	420,000	11	Yes	Construction Project Underway

Date	Time	Street #	Street	Plant	Watershed	Basin	Overflow Location	Pathway	Receiving Water	Cause of SSO/KUB Response	Total Volume (Gallons)	Recovered Volume (Gallons)	Non-Recovered Volume (Gallons)	Duration (Hours)	Unpermitted Discharge	Corrective Action
3/28/2021	8:26am	2004	Neyland Dr	KUW	Second Creek	35a	Manhole 1	Tennessee River	Tennessee River	I/I - The area received an average of 4.88 inches of rainfall in a 72 hour period, which exceeds a 5 year storm. This resulted in significant I&I and high flows in the sewer mains.. The sewer main was checked until the high flows subsided. The area was cleaned.	150,000	0	150,000	2	Yes	System Assessment Underway
3/28/2021	8:26am	1500	Lyons Bend Rd	FC	Fourth Creek	37	Manhole 1	Fourth Creek	Fourth Creek	I/I - The area received an average of 4.88 inches of rainfall in a 72 hour period, which exceeds a 5 year storm. This resulted in significant I&I and high flows in the sewer mains.. The sewer main was checked until the high flows subsided. The area was cleaned.	950,000	0	950,000	7	Yes	System Assessment Underway
3/29/2021	1:04pm	6410	S Northshore Dr	FC	Fourth Creek	37	Manhole 8	Ground to Fourth Creek	Fourth Creek	I/I - The area received an average of 4.88 inches of rainfall in a 72 hour period, which exceeds a 5 year storm. This resulted in significant I&I and high flows in the sewer mains.. The sewer main was checked until the high flows subsided. The area was cleaned.	1,360,750	0	1,360,750	7	Yes	System Assessment Underway
3/29/2021	5:24pm	1829	Wayland Rd	LC	Loves Creek	67	Manhole 40-2	Ground to Swanpond Creek	Swanpond Creek	I/I - The area received an average of 4.88 inches of rainfall in a 72 hour period, which exceeds a 5 year storm. This resulted in significant I&I and high flows in the sewer mains.. The sewer main was checked until the high flows subsided. The area was cleaned.	807,000	0	807,000	9	Yes	Construction Project Underway
3/29/2021	8:42am	4719	Old Broadway	KUW	First Creek	7	Manholes 2 and 63	Ground to Lynnhurst Creek	Lynnhurst Creek	I/I - The area received an average of 4.88 inches of rainfall in a 72 hour period, which exceeds a 5 year storm. This resulted in significant I&I and high flows in the sewer mains.. The sewer main was checked until the high flows subsided. The area was cleaned.	4,500,000	0	4,500,000	16	Yes	Construction Project Underway
3/29/2021	9:35am	1912	Paris Rd	KUW	Third Creek	13	Lateral Cleanout	Ground to Soil Saturation		Blockage - Debris. The sewer main was flushed to remove blockage. The area was cleaned.	65	0	65	2	No	Routine Blockage Abatement
3/30/2021	2:08pm	4605	Crosby Dr	KUW	Third Creek	28	Lateral Cleanout	Wet Weather Conveyance to Soil Saturation		Blockage - Debris. The sewer main was flushed to remove blockage. The area was cleaned.	75	0	75	2	No	Routine Blockage Abatement
3/31/2021	11:05am	4605	Webb Ln	KUW	Third Creek	28	Manhole 27-56	Ground to Third Creek	Third Creek	I/I - Rainfall in the area produced I&I and high flows in the sewer mains.. The sewer main was checked until the high flows subsided. The area was cleaned.	40,000	0	40,000	3	Yes	System Assessment Underway
3/31/2021	11:20am	7308	Rising Rd	LC	Loves Creek	106	Wet Well	Soil Saturation		I/I - Rainfall in the area produced I&I and high flows in the sewer mains.. The sewer main was checked until the high flows subsided. The area was cleaned.	127,390	0	127,390	27	No	Construction Project Completed
3/31/2021	7:42am	3148	Wilderness Rd	KUW	First Creek	18	Manholes 51, 52, and 55	Soil Saturation		I/I - Rainfall in the area produced I&I and high flows in the sewer mains.. The sewer main was checked until the high flows subsided. The area was cleaned.	14,430	0	14,430	17	No	Future Construction Planned
3/31/2021	8:35am	4719	Old Broadway	KUW	First Creek	7	Manholes 2 and 63	Ground to Lynnhurst Creek	Lynnhurst Creek	I/I - Rainfall in the area produced I&I and high flows in the sewer mains.. The sewer main was checked until the high flows subsided. The area was cleaned.	147,000	0	147,000	6	Yes	Construction Project Underway
3/31/2021	9:20am	1408	Adair Dr	KUW	First Creek	7	Manhole 72, 73, and 31	Ground to Lynnhurst Creek	Lynnhurst Creek	I/I - Rainfall in the area produced I&I and high flows in the sewer mains.. The sewer main was checked until the high flows subsided. The area was cleaned.	126,320	0	126,320	5	Yes	Construction Project Underway
4/12/2021	3:55pm	474 and 484	Cherokee Blvd	KUW	Third Creek	38	Lateral Cleanout	Grond to Soil Saturation		Blockage, Debris, The sewer main was flushed to remove blockage. The area was cleaned.	650	10	640	2	No	Routine Blockage Abatement
4/14/2021	4:25pm	3702	Decatur Dr	KUW	South Knox	40	Lateral Cleanout	Ground to Storm Drain to Soil Saturation in Ditch		Blockage, Grease, The sewer main was flushed and the area was cleaned.	125	0	125	4	No	Routine Blockage Abatement
4/29/2021	2:21pm	2000	Shoppers Ln	KUW	Third Creek	13	Manhole 5-11	Storm Drain to Third Creek	Third Creek	Blockage, Debris, The sewer main was flushed and the area was cleaned.	300	0	300	1	Yes	Routine Blockage Abatement
5/2/2021	1:33pm	203	W Jackson Ave	KUW	First Creek	30	Manhole 30-31	Pavement		Blockage, Debris, The sewer main was flushed to remove blockage. The area was cleaned.	360	0	360	2	No	Routine Blockage Abatement
5/3/2021	8:10pm	1218	Glade Hille Dr	FC	Fourth Creek	32a	Manhole 30-50	Pavement to Catch Basin to Fourth Creek	Fourth Creek	Blockage, Debris, The sewer main was flushed and the area was cleaned.	1,405	0	1,405	3	Yes	Routine Blockage Abatement
5/4/2021	11:35pm	600	N Gallaher View Rd	FC	Fourth Creek	32a	Manhole 77	Ground to Ten Mile Creek	Ten Mile Creek	I/I, Rainfall in the area produced I&I and high flows in the sewer mains., The sewer mains were checked until the high flows subsided. The area has been cleaned.	281,500	0	281,500	3	Yes	Future Construction Planned
5/11/2021	9:25pm	5800	Rockwood Ln	KUW	Third Creek	11	Lateral Cleanout	Wet Weather Conveyance to Soil Saturation		Blockage, Roots, The sewer main was flushed and the area was cleaned.	200	0	200	5	No	Routine Blockage Abatement
5/21/2021	7:56pm	556	Greystoke Ln	KUW	Second Creek	119	Manholes 1-59 and 1-60	Soil Saturation		Blockage, Debris, The sewer main was flushed and the area was cleaned.	100	0	100	2	No	Routine Blockage Abatement
6/2/2021	12:31pm	4351	Falconite Way	KUW	Third Creek	13	Manhole 8	Ground to West Fork Third Creek	Third Creek	Blockage, Debris, The sewer main was flushed to remove blockage. The area was cleaned.	40,305	0	40,305	7	Yes	Routine Blockage Abatement
6/3/2021	11:30pm	2419	Amherst Rd	FC	Fourth Creek	32a	Manhole 61-27	Pavement to Soil Saturation		Blockage, Debris, The sewer main was flushed and the area was cleaned.	550	0	550	3	No	Routine Blockage Abatement
6/14/2021	2:20pm	727	Front Ave	KUW	First Creek	30	Manhole 1-14	Pavement to Soil Saturation		Blockage, Debris, The sewer main was flushed and the area was cleaned.	300	2	298	2	No	Routine Blockage Abatement
6/14/2021	4:55pm	5906	Walden Dr	FC	Fourth Creek	37	Manhole 34-5	Tributary to Fourth Creek	Fourth Creek	Blockage, Debris, The sewer main was flushed and the area was cleaned.	250	0	250	2	Yes	Routine Blockage Abatement
6/19/2021	12:25pm	829	Tally Ho Dr	KUW	South Knox	39	Manhole 62-17	Pavement to Soil Saturation		Blockage, Grease, The sewer main was flushed and the area was cleaned.	4,700	0	4,700	2	No	Routine Blockage Abatement
6/28/2021	5:47pm	193	Kensi Dr	KUW	Second Creek	10	Manhole 16-22	Ground to Second Creek	Second Creek	Blockage, Grease, The sewer main was flushed and the area was cleaned.	2,100	0	2,100	2	Yes	Routine Blockage Abatement
7/14/2021	6:53pm	3902	Oakland Dr	KUW	Third Creek	2	Lateral Cleanout	Soil Saturation		Blockage, Debris, The sewer main was flushed to remove blockage. The area was cleaned.	50	0	50	2	No	Routine Blockage Abatement
7/24/2021	11:34am	5241	Bent River Blvd	FC	Fourth Creek	37	Grinder Pump	Soil Saturation		Grinder Pump Failure, Pump was replaced. Area was cleaned.	2	1	1	1	No	System Repair Completed
7/25/2021	12:15pm	710	Radford Pl	KUW	Second Creek	15	Lateral Cleanout	Soil Saturation		Blockage, Grease, The sewer main was flushed to remove blockage. The area was cleaned.	75	0	75	2	No	Routine Blockage Abatement
8/23/2021	6:49pm	6235	Rutledge Pike	LC	Loves Creek	105	Grinder Pump	Soil Saturation		Grinder Pump Failure, Pump Failure, The pump was replaced and the area was cleaned.	5	1	4	1	No	System Repair Completed
8/25/2021	5:51pm	3148	Wilderness Rd	KUW	First Creek	18	Manholes 51 and 52	Soil Saturation		I/I, Rainfall in the area produced I&I and high flows in the sewer mains., The sewer main was checked until the high flows subsided. The area was cleaned.	4,000	0	4,000	3	No	Future Construction Planned
8/25/2021	6:36pm	2700	Boright Dr	KUW	First Creek	8	Manhole 26	Pavement to Storm Drain to First Creek	First Creek	I/I, Rainfall in the area produced I&I and high flows in the sewer mains., The sewer main was checked until the high flows subsided. The area was cleaned.	400	0	400	1	Yes	Construction Project Underway
8/31/2021	11:35pm	3148	Wilderness Rd	KUW	First Creek	18	Manholes 51 and 52	Soil Saturation		I/I, Rainfall in the area produced I&I and high flows in the sewer mains., The sewer main was checked until the high flows subsided. The area was cleaned.	2,000	0	2,000	1	No	Future Construction Planned
9/1/2021	5:05am	600	N Gallaher View Rd	FC	Fourth Creek	32a	Manhole 77	Ground to Ten Mile Creek	Ten Mile Creek	I/I, Rainfall in the area produced I&I and high flows in the sewer mains., The sewer main was checked until the high flows subsided. The area was cleaned.	1,500,000	0	1,500,000	20	Yes	Future Construction Planned

Date	Time	Street #	Street	Plant	Watershed	Basin	Overflow Location	Pathway	Receiving Water	Cause of SSO/KUB Response	Total Volume (Gallons)	Recovered Volume (Gallons)	Non-Recovered Volume (Gallons)	Duration (Hours)	Unpermitted Discharge	Corrective Action
9/4/2021	12:15am	6212	Pleasant Ridge Rd	KUW	Third Creek	11	Manhole 12-92	Soil Saturation		Blockage, Grease, The sewer main was flushed to clear the blockage. The area was cleaned.	700	0	700	2	No	Routine Blockage Abatement
9/5/2021	12:03pm	1109	Spruce Dr	KUW	South Knox	39	Manhole 27-209	Ground to Unnamed Tributary to Goose Creek	Goose Creek	Blockage, Grease, The sewer main was flushed to clear the blockage. The area was cleaned.	550	0	550	3	Yes	Routine Blockage Abatement
9/7/2021	10:40am	5277	Bent River Blvd	FC	Fourth Creek	37	Grinder Pump	Soil Saturation		Grinder Pump Failure, Mechanical Failure and Broken Discharge Pipe, The pump was replaced and the discharge pipe was repaired. The area was cleaned.	2	0	2	1	No	System Repair Completed
9/17/2021	8:50am	3920	Tiberius Rd	KUW	Second Creek	10	Manhole 17-94	Ditch to Storm Drain to Unnamed Tributary to Second Creek	Second Creek	Blockage, Grease, The sewer main was flushed to clear the blockage. The area was cleaned.	750	0	750	1	Yes	Routine Blockage Abatement
9/23/2021	10:22am	1500	Lyons Bend Rd	FC	Fourth Creek	37	Bypass Pumping	Ground to Storm Drain to Tennessee River	Tennessee River	Constuction Failure, by Third Party, Discharge hose was damaged. The pump was shut off immediately, hose was replaced.	500	0	500	0	Yes	System Repair Completed
9/24/2021	6:42pm	7511	Granda Dr	FC	Fourth Creek	32a	Lateral Cleanout	Storm Drain to Wet Weather Conveyance to Soil Saturation		Blockage, Grease, The sewer main was flushed to clear the blockage. The area was cleaned.	75	0	75	1	No	Routine Blockage Abatement
9/28/2021	12:37pm	5241	Bent River Blvd	FC	Fourth Creek	37	Grinder Pump	Soil Saturation		Grinder Pump Failure, , The pump was replaced and the discharge pipe was repaired. The area was cleaned.	1	0	1	1	No	System Repair Completed
10/4/2021	1:38pm	1730	Transport Way	LC	Loves Creek	105	Grinder Pump	Pavement to Ground to Soil Saturation		Grinder Pump Failure, Mechanical Failure, The pump was replaced and the area was cleaned.	5	0	5	1	No	System Repair Completed
10/4/2021	12:01pm	2511	Kingston Pike	KUW	Third Creek	35b	Manhole 18-4	Pavement to Storm Drain to Third Creek	Third Creek	Blockage, Debris, The sewer main was flushed to clear the blockage. The area was cleaned.	8,500	0	8,500	2	yes	Routine Blockage Abatement
10/20/2021	1:42pm	2511	Kingston Pike	KUW	Third Creek	35b	Manhole 18-4	Pavement to Storm Drain to Third Creek	Third Creek	Blockage, Debris, The sewer main was flushed to clear the blockage. The area was cleaned.	150	0	150	2	yes	Routine Blockage Abatement
10/20/2021	5:38pm	2015	Neyland Dr	KUW	Third Creek	35b	Lateral Cleanout	Soil Saturation		Construction Failure, by Third Party - Process Failure, The issue was resolved and the area was cleaned.	7,000	5,500	1,500	1	No	System Repair Completed
11/4/2021	11:45am	3222	Kingston Pike	KUW	Third Creek	38	Gravity Main	Ground to Tennessee River	Tennessee River	Broken System, Broken Gravity Main, The sewer main was repaired. The area was cleaned.	25	0	25	2	Yes	System Repair Completed
11/8/2021	10:20am	1712	Polkwright Ln	FC	Fourth Creek	37	Grinder Pump	Soil Saturation		Grinder Pump Failure, Grease, The pump was replaced and the area was cleaned.	6	1	5	2	No	System Repair Completed
11/8/2021	5:20pm	1723	Breda Dr	KUW	First Creek	8	Manhole 7-144	Ditch to Storm Drain to First Creek	First Creek	Blockage, Grease and Roots, The sewer main was flushed to clear the blockage. The area was cleaned.	1,005	0	1,005	2	Yes	Routine Blockage Abatement
11/15/2021	4:43pm	1017	Valley Ave	KUW	South Knox	40	Manhole 3-99	Pavement to Storm Drain to Wet Weather Conveyance to Soil Saturation		Blockage, Grease and Debris, The sewer main was flushed to clear the blockage. The area was cleaned.	850	0	850	2	No	Routine Blockage Abatement
11/17/2021	11:40am	1422	Old Weisgarber Rd	FC	Fourth Creek	33	Manhole 24-50	Soil Saturation		Blockage, Roots, The sewer main was flushed to clear the blockage. The area was cleaned.	18,500	0	18,500	2	No	Routine Blockage Abatement
11/18/2021	10:20am	5243	Tillery Rd	KUW	Third Creek	9	Lateral Cleanout	Soil Saturation		Blockage, Grease and Roots, The sewer main was flushed to clear the blockage. The area was cleaned.	350	0	350	2	No	Routine Blockage Abatement
11/20/2021	10:47am	2916	Legacy Pointe Way	KUW	Third Creek	9	Manhole 12-77	Soil Saturation		Blockage, Debris, The sewer main was flushed to clear the blockage. The area was cleaned.	25	0	25	1	No	Routine Blockage Abatement
11/29/2021	12:00pm	1917	Andy Holt Ave	KUW	Third Creek	35b	Lateral Cleanout	Soil Saturation		Blockage, Debris, The sewer main was flushed to clear the blockage. The area was cleaned.	75	0	75	1	No	Routine Blockage Abatement
12/13/2021	11:15am	5241	Bent River Blvd	FC	Fourth Creek	37	Grinder Pump	Soil Saturation		Grinder Pump Failure, Pump Failure, The pump was replaced and the area was cleaned.	5	0	5	1	No	System Repair Completed

*KUB performs inspections, hydraulic cleaning, and/or root removal on a routine frequency for all locations under Blockage Abatement

Appendix C

Building Backups

Date	Time	Street #	Street	Plant	Watershed	Basin	Overflow Location	Pathway	Receiving Water	Cause of SSO/KUB Response	Total Volume (Gallons)	Recovered Volume (Gallons)	Non-Recovered Volume (Gallons)	Duration (Hours)	Unpermitted Discharge	Corrective Action
1/16/2021	1:35pm	2110	Atchley St	KUW	South Knox	40	BBU			Blockage - Debris. The sewer main was flushed to remove blockage. The building was cleaned by Restoration 101.	24	24	0	2.0	No	Routine Blockage Abatement
1/31/2021	2:35pm	1209	Tobler Rd	FC	Fourth Creek	36	BBU			Blockage - Grease. The sewer main was flushed to remove blockage. The building was cleaned by Restoration 101.	38	38	0	1.0	No	Routine Blockage Abatement
3/10/2021	12:43pm	1811	Washington Ave	KUW	First Creek	24	MH 25-181 and BBU at 1811 Washington Ave	Ditch to Storm Drain to First Creek	First Creek	Blockage - Grease. The sewer main was flushed to remove blockage. The building was cleaned by Restoration 101.	30	5	25	1.5	Yes	Routine Blockage Abatement
3/14/2021	2:08pm	5600	Montina Rd	KUW	Third Creek	9	BBU			Blockage - Grease. The sewer main was flushed to remove blockage. The building was cleaned by Restoration 101.	1	1	0	0.5	No	Routine Blockage Abatement
3/25/2021	7:50pm	4105	Milton St	KUW	First Creek	16	MH 31-7 and BBU at 4105 Milton St	Pavement to Soil Saturation		Broken System – Broken Gravity Main. The gravity sewer main was repaired. The building was cleaned by Restoration 101.	997	962	35	3.0	No	System Repair Completed
3/31/2021	8:15pm	5005	Asheville Hwy	LC	Loves Creek	20	BBU			Construction Failure – Third Party - Unconnected Lateral. The lateral was reconnected. The building was cleaned by customer.	Unknown	Unknown	Unknown	2.5	No	System Repair Completed
4/6/2021	11:51am	6305	Kingston Pike	FC	Fourth Creek	33	BBU			Construction Failure – Third Party - Unconnected Lateral. The lateral was reconnected. The building was cleaned by Restoration 101	10	10	0	1.0	No	System Repair Completed
8/25/2021	5:59pm	2818	Linden Ave	KUW	Williams Creek	19	BBU			Blockage - Debris. The sewer main was flushed to remove blockage. The building was cleaned by Restoration 101.	5,500	5,500	0	1.0	No	Routine Blockage Abatement
9/18/2021	7:48pm	15	Market Sq	KUW	First Creek	30	BBU			Blockage - Grease & Debris. The sewer main was flushed to remove blockage. The building was cleaned by Restoration 101.	850	850	0	2.0	No	Routine Blockage Abatement
12/2/2021	1:00pm	1206	Melbourne Ave	KUW	Third Creek	35a	BBU			Blockage – Grease and Roots. Action Taken – The main was flushed to remove blockage. The building was cleaned by Restoration 101.	1,600	1,600	0	2.0	No	Routine Blockage Abatement

*KUB performs inspections, hydraulic cleaning, and/or root removal on a routine frequency for all locations under Blockage Abatement

Appendix D

Water Quality Monitoring Program Sampling Results



Water Quality Monitoring
Report

Routine Water Quality Monitoring Report

1/1/2021 Through 12/31/2021

Knoxville Utilities Board

Water Quality Laboratory
Whitney Durfee, Lab Supervisor
835 East Jackson Avenue
Knoxville, Tennessee 37915
(865) 594-8296 Fax: (865) 594-8245

Creek Mile #	Sample Date	Sample Time	pH	Sample Temp (C)	Dissolved Oxygen (mg/l)	Fecal Coliform (CFU/100 ml)	<i>E. Coli</i> (MPN)	Precipitation Event	Status*
First Creek									
1.74	1/20/2021	12:08	8.1	9	12	18	13	Dry	R
2.57	1/20/2021	11:56	8.3	9	11	18	23	Dry	R
6.33	1/20/2021	10:07	7.7	11	9.6	180	140	Dry	R
1.74	2/5/2021	09:41	8.2	8	11	730	820	Wet	R
2.57	2/5/2021	09:22	8.2	8	12	1300	980	Wet	I
6.33	2/5/2021	08:53	7.8	11	9.0	640	580	Wet	R
1.74	3/19/2021	09:58	7.9	13	9.5	1900	2400	Wet	R
2.57	3/19/2021	09:39	8.0	13	9.7	2500	1700	Wet	I
6.33	3/19/2021	09:19	7.7	14	8.7	230	610	Wet	R
1.74	4/9/2021	09:54	8.0	16	9.3	400	370	Wet	R
2.57	4/9/2021	09:37	8.1	15	9.6	420	270	Wet	R
6.33	4/9/2021	09:11	7.5	16	8.3	410	310	Wet	R
1.74	5/24/2021	09:52	7.9	19	8.1	370	300	Dry	R
2.57	5/24/2021	10:12	8.1	20	8.9	240	260	Dry	R
6.33	5/24/2021	08:41	7.6	19	7.5	910	310	Dry	R
1.74	6/11/2021	09:42	8.0	20	7.7	680	730	Wet	R
2.57	6/11/2021	09:27	8.2	20	8.2	20000	460	Wet	R
6.33	6/11/2021	09:03	7.6	20	7.1	460	250	Wet	R

*Status: I = Site Under Investigation, R = Reportable for monitoring purposes

Precipitation event = "Wet" if the total amount of rainfall for four days prior to the sample was greater than 0.1 inches.



Water Quality Monitoring
Report

Routine Water Quality Monitoring Report

1/1/2021 Through 12/31/2021

Knoxville Utilities Board

Water Quality Laboratory
Whitney Durfee, Lab Supervisor
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Knoxville, Tennessee 37915
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Creek Mile #	Sample Date	Sample Time	pH	Sample Temp (C)	Dissolved Oxygen (mg/l)	Fecal Coliform (CFU/100 ml)	<i>E. Coli</i> (MPN)	Precipitation Event	Status*
First Creek									
1.74	7/23/2021	09:38	8.1	21	7.9	850	300	Dry	R
2.57	7/23/2021	09:17	8.2	21	8.4	910	190	Dry	R
6.33	7/23/2021	08:55	7.6	20	7.1	1100	330	Dry	R
1.74	8/13/2021	09:43	8.0	22	7.4	1300	290	Dry	R
2.57	8/13/2021	09:20	8.2	23	8.0	260	110	Dry	R
6.33	8/13/2021	08:58	7.6	21	6.9	550	580	Dry	R
1.74	9/24/2021	09:35	7.9	15	8.6	740	410	Wet	R
2.57	9/24/2021	09:15	8.1	15	9.2	450	410	Wet	R
6.33	9/24/2021	08:56	7.6	16	7.4	330	410	Wet	R
1.74	10/18/2021	10:58	6.9	14	9.2	460	370	Wet	R
2.57	10/18/2021	11:12	7.5	15	9.7	380	160	Wet	R
6.33	10/18/2021	09:50	6.5	16	7.6	< 9	370	Wet	R
1.74	11/19/2021	09:48	7.3	9	10	230	110	Dry	R
2.57	11/19/2021	09:35	7.3	9	11	230	110	Dry	R
6.33	11/19/2021	09:16	6.6	11	8.2	450	330	Dry	R
1.74	12/3/2021	09:14	7.3	11	9.5	41	110	Dry	R
2.57	12/3/2021	08:54	7.2	10	10	81	60	Dry	R
6.33	12/3/2021	08:33	6.3	13	7.7	370	410	Dry	R

*Status: I = Site Under Investigation, R = Reportable for monitoring purposes

Precipitation event = "Wet" if the total amount of rainfall for four days prior to the sample was greater than 0.1 inches.



Water Quality Monitoring
Report

Routine Water Quality Monitoring Report

1/1/2021 Through 12/31/2021

Knoxville Utilities Board

Water Quality Laboratory
Whitney Durfee, Lab Supervisor
835 East Jackson Avenue
Knoxville, Tennessee 37915
(865) 594-8296 Fax: (865) 594-8245

Creek Mile #	Sample Date	Sample Time	pH	Sample Temp (C)	Dissolved Oxygen (mg/l)	Fecal Coliform (CFU/100 ml)	<i>E. Coli</i> (MPN)	Precipitation Event	Status*
<u>Second Creek</u>									
0.30	1/20/2021	10:50	7.8	10	11	200	580	Dry	R
1.54	1/20/2021	10:36	8.0	10	11	2400	1700	Dry	I
5.11	1/20/2021	09:35	7.4	13	7.7	540	520	Dry	R
0.30	2/24/2021	12:35	8.2	13	10	250	650	Wet	R
1.54	2/24/2021	12:15	8.6	14	11	280	410	Wet	R
5.11	2/24/2021	12:00	7.5	16	8.0	160	180	Wet	R
0.30	3/29/2021	13:25	8.0	15	9.5	370	730	Wet	R
1.54	3/29/2021	12:59	7.7	15	9.2	1000	2400	Wet	I
5.11	3/29/2021	12:41	7.2	15	7.3	450	330	Wet	R
0.30	4/27/2021	09:15	7.9	16	9.2	420	580	Wet	R
1.54	4/27/2021	09:31	7.7	16	9.0	2700	1400	Wet	I
5.11	4/27/2021	10:55	7.1	17	6.0	120	61	Wet	R
0.30	5/24/2021	09:35	8.0	19	8.7	520	440	Dry	R
1.54	5/24/2021	09:17	7.8	18	8.3	41000	> 2400	Dry	I
5.11	5/24/2021	09:05	7.5	18	5.8	150	120	Dry	R
1.54	5/26/2021	12:12	7.9	21	8.4	440	340	Dry	R
0.30	6/29/2021	07:50	8.0	21	8.2	2100	730	Dry	R
1.54	6/29/2021	07:39	7.7	20	7.3	3900	1700	Dry	I
5.11	6/29/2021	07:12	7.1	19	5.6	270	410	Dry	R

*Status: I = Site Under Investigation, R = Reportable for monitoring purposes

Precipitation event = "Wet" if the total amount of rainfall for four days prior to the sample was greater than 0.1 inches.



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Routine Water Quality Monitoring Report

1/1/2021 Through 12/31/2021

Knoxville Utilities Board

Water Quality Laboratory
Whitney Durfee, Lab Supervisor
835 East Jackson Avenue
Knoxville, Tennessee 37915
(865) 594-8296 Fax: (865)594-8245

Creek Mile #	Sample Date	Sample Time	pH	Sample Temp (C)	Dissolved Oxygen (mg/l)	Fecal Coliform (CFU/100 ml)	<i>E. Coli</i> (MPN)	Precipitation Event	Status*
<u>Second Creek</u>									
0.30	7/29/2021	09:46	8.1	22	7.9	2600	460	Dry	R
1.54	7/29/2021	10:40	7.9	22	7.4	1000	920	Dry	R
5.11	7/29/2021	10:15	7.5	20	5.7	1200	650	Dry	R
0.30	8/27/2021	09:35	8.0	22	8.1	2800	2400	Wet	R
1.54	8/27/2021	09:10	7.8	21	7.5	2200	1400	Wet	R
5.11	8/27/2021	08:43	7.4	18	5.8	2500	1700	Wet	R
0.30	9/29/2021	12:17	8.1	20	8.9	440	390	Dry	R
1.54	9/29/2021	11:52	7.8	19	8.5	1200	580	Dry	R
5.11	9/29/2021	11:30	7.3	19	6.3	280	370	Dry	R
0.30	10/18/2021	10:47	7.4	15	9.5	1300	580	Wet	R
1.54	10/18/2021	10:23	7.1	15	8.9	1700	550	Wet	R
5.11	10/18/2021	10:02	6.9	15	6.7	820	980	Wet	R
0.30	11/29/2021	09:25	7.0	10	11	330	220	Dry	R
1.54	11/29/2021	09:05	6.8	9	9.7	290	230	Dry	R
5.11	11/29/2021	08:45	6.0	10	6.7	560	550	Dry	R
0.30	12/28/2021	09:17	6.5	16	9.2	460	260	Dry	R
1.54	12/28/2021	10:05	7.0	15	8.5	1100	920	Dry	R
5.11	12/28/2021	09:47	6.3	16	5.9	250	340	Dry	R

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Creek Mile #	Sample Date	Sample Time	pH	Sample Temp (C)	Dissolved Oxygen (mg/l)	Fecal Coliform (CFU/100 ml)	<i>E. Coli</i> (MPN)	Precipitation Event	Status*
<u>Third Creek</u>									
0.87	1/12/2021	12:10	8.1	10	11	280	390	Dry	R
2.08E	1/12/2021	11:39	7.9	9	12	63	98	Dry	R
4.80W	1/12/2021	11:12	7.7	11	10	110	67	Dry	R
0.87	2/23/2021	09:07	7.4	12	9.9	680	490	Wet	R
2.08E	2/23/2021	11:49	7.9	12	11	110	110	Wet	R
4.80W	2/23/2021	09:47	7.5	12	9.8	72	110	Wet	R
0.87	3/16/2021	10:48	7.9	13	9.3	550	650	Wet	R
2.08E	3/16/2021	10:36	7.9	13	9.2	820	980	Wet	R
4.80W	3/16/2021	10:20	7.7	14	9.0	170	130	Wet	R
0.87	4/22/2021	11:12	8.2	12	10	390	460	Dry	R
2.08E	4/22/2021	10:00	7.8	14	9.3	45	88	Dry	R
4.80W	4/22/2021	10:16	7.6	12	9.6	230	220	Dry	R
0.87	5/7/2021	09:20	8.1	15	8.8	560	610	Wet	R
2.08E	5/7/2021	09:00	7.9	15	8.7	1100	310	Wet	R
4.80W	5/7/2021	09:45	7.8	14	8.7	910	520	Wet	R
0.87	6/16/2021	10:21	8.0	19	8.2	91	630	Wet	R
2.08E	6/16/2021	10:10	7.8	19	8.1	1400	1000	Wet	R
4.80W	6/16/2021	09:21	7.6	17	8.1	280	340	Wet	R

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Creek Mile #	Sample Date	Sample Time	pH	Sample Temp (C)	Dissolved Oxygen (mg/l)	Fecal Coliform (CFU/100 ml)	<i>E. Coli</i> (MPN)	Precipitation Event	Status*
<u>Third Creek</u>									
0.87	7/13/2021	10:17	8.0	20	7.8	300	260	Wet	R
2.08E	7/13/2021	10:06	7.9	22	7.6	2000	730	Wet	R
4.80W	7/13/2021	09:37	7.8	18	7.8	310	200	Wet	R
0.87	8/23/2021	08:59	7.9	20	8.0	1100	410	Wet	R
2.08E	8/23/2021	10:29	7.4	23	7.3	3400	1700	Wet	R
4.80W	8/23/2021	09:15	7.6	19	7.9	210	96	Wet	R
0.87	9/20/2021	10:47	8.0	21	7.9	320	280	Wet	R
2.08E	9/20/2021	10:20	7.8	21	6.9	1300	240	Wet	R
4.80W	9/20/2021	09:55	7.7	18	8.1	330	170	Wet	R
0.87	10/25/2021	11:07	7.6	16	8.8	490	460	Wet	R
2.08E	10/25/2021	10:52	7.3	17	9.0	550	610	Wet	R
4.80W	10/25/2021	10:21	6.7	15	8.6	170	140	Wet	R
0.87	11/17/2021	10:26	7.7	12	9.7	190	150	Dry	R
2.08E	11/17/2021	10:12	7.8	12	9.5	360	550	Dry	R
4.80W	11/17/2021	09:59	7.7	13	9.0	120	69	Dry	R
0.87	12/7/2021	08:40	6.5	11	8.9	3900	> 2400	Wet	R
2.08E	12/7/2021	08:51	6.5	9	9.1	1200	650	Wet	R
4.80W	12/7/2021	09:25	7.3	10	8.6	2400	920	Wet	R

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Creek Mile #	Sample Date	Sample Time	pH	Sample Temp (C)	Dissolved Oxygen (mg/l)	Fecal Coliform (CFU/100 ml)	<i>E. Coli</i> (MPN)	Precipitation Event	Status*
<u>Fourth Creek</u>									
1.75	1/12/2021	09:42	7.9	13	10	90	88	Dry	R
2.79	1/12/2021	09:51	7.8	11	10	150	75	Dry	R
3.29	1/12/2021	10:06	8.0	10	11	140	62	Dry	R
1.75	2/24/2021	13:40	8.2	16	11	27	32	Wet	R
2.79	2/24/2021	13:30	8.2	16	10	45	33	Wet	R
3.29	2/24/2021	13:15	8.1	16	10	99	100	Wet	R
1.75	3/16/2021	09:39	7.6	15	8.8	520	370	Wet	R
2.79	3/16/2021	09:48	7.6	14	8.9	260	120	Wet	R
3.29	3/16/2021	10:06	7.8	14	9.6	220	55	Wet	R
1.75	4/22/2021	10:53	8.0	13	11	140	78	Dry	R
2.79	4/22/2021	10:42	7.8	13	9.7	120	40	Dry	R
3.29	4/22/2021	10:28	7.9	14	10	81	34	Dry	R
1.75	5/26/2021	11:40	8.0	20	9.9	380	410	Dry	R
2.79	5/26/2021	11:28	7.9	19	8.8	160	84	Dry	R
3.29	5/26/2021	11:16	7.9	19	9.2	280	200	Dry	R
1.75	6/25/2021	08:47	8.0	18	8.8	450	730	Wet	R
2.79	6/25/2021	08:15	8.0	17	8.0	350	300	Wet	R
3.29	6/25/2021	09:08	8.1	17	9.1	290	360	Wet	R

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<u>Fourth Creek</u>									
1.75	7/13/2021	08:55	7.8	20	8.1	1200	390	Wet	R
2.79	7/13/2021	09:06	7.8	19	7.7	1200	730	Wet	R
3.29	7/13/2021	09:21	8.0	18	8.7	310	230	Wet	R
1.75	8/23/2021	10:00	7.9	20	8.4	2200	250	Wet	R
2.79	8/23/2021	09:42	7.9	19	7.7	1500	330	Wet	R
3.29	8/23/2021	09:30	8.0	19	8.7	730	550	Wet	R
1.75	9/20/2021	09:17	7.8	19	8.4	240	170	Wet	R
2.79	9/20/2021	09:28	7.7	18	7.9	530	550	Wet	R
3.29	9/20/2021	09:37	7.9	18	9.0	370	400	Wet	R
1.75	10/21/2021	09:46	7.0	17	8.0	13000	> 2400	Wet	R
2.79	10/21/2021	09:35	6.8	17	7.9	2100	1700	Wet	R
3.29	10/21/2021	10:21	7.8	16	9.3	640	290	Wet	R
1.75	10/25/2021	10:41	7.0	16	9.5	210	150	Wet	R
1.75	11/17/2021	08:50	7.0	13	9.5	160	140	Dry	R
2.79	11/17/2021	08:35	6.7	14	8.5	150	210	Dry	R
3.29	11/17/2021	09:08	7.3	13	10	200	180	Dry	R
1.75	12/13/2021	09:25	6.6	11	10	2000	240	Wet	R
2.79	12/13/2021	09:39	7.2	10	9.6	470	130	Wet	R
3.29	12/13/2021	09:47	7.4	11	10	1300	110	Wet	R

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Creek Mile #	Sample Date	Sample Time	pH	Sample Temp (C)	Dissolved Oxygen (mg/l)	Fecal Coliform (CFU/100 ml)	<i>E. Coli</i> (MPN)	Precipitation Event	Status*
<u>Baker Creek</u>									
0.36	1/22/2021	09:53	7.5	10	9.9	5100	> 2400	Wet	R
1.45	1/22/2021	09:15	7.4	11	9.5	550	280	Wet	R
2.00	1/22/2021	09:34	7.8	11	10	1800	310	Wet	R
0.36	2/4/2021	10:52	7.9	7	12	430	550	Wet	R
1.45	2/4/2021	11:14	8.0	9	11	220	210	Wet	R
2.00	2/4/2021	11:02	8.1	9	11	280	260	Wet	R
0.36	3/22/2021	10:50	7.8	14	9.4	300	330	Dry	R
1.45	3/22/2021	11:31	7.7	14	9.5	110	86	Dry	R
2.00	3/22/2021	10:38	7.9	12	9.8	81	96	Dry	R
0.36	4/15/2021	09:41	7.6	16	8.5	520	290	Wet	R
1.45	4/15/2021	09:59	7.5	14	9.3	1000	1000	Wet	I
2.00	4/15/2021	10:14	7.9	14	8.8	210	120	Wet	R
0.36	5/17/2021	11:32	7.6	18	8.1	480	550	Dry	R
1.45	5/17/2021	12:03	7.8	17	8.8	320	200	Dry	R
2.00	5/17/2021	11:53	7.9	18	8.0	340	300	Dry	R
0.36	6/23/2021	09:03	7.6	18	7.4	2000	1600	Wet	R
1.45	6/23/2021	09:36	7.7	17	8.2	2100	1300	Wet	I
2.00	6/23/2021	09:21	7.8	17	8.5	1500	1000	Wet	R

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<u>Baker Creek</u>									
0.36	7/15/2021	08:27	7.7	20	7.4	820	410	Dry	R
1.45	7/15/2021	08:59	7.7	19	7.9	2500	870	Dry	R
2.00	7/15/2021	08:39	8.0	17	8.4	1400	1000	Dry	R
0.36	8/25/2021	09:15	7.9	20	7.3	860	440	Wet	R
1.45	8/25/2021	08:59	7.6	20	7.8	360	330	Wet	R
2.00	8/25/2021	09:30	8.0	18	8.3	730	410	Wet	R
0.36	9/28/2021	10:20	7.7	18	7.3	760	390	Dry	R
1.45	9/28/2021	11:03	7.8	17	8.2	430	520	Dry	R
2.00	9/28/2021	10:49	7.8	17	8.4	1100	260	Dry	R
0.36	10/27/2021	11:10	7.4	13	8.3	530	920	Wet	R
1.45	10/27/2021	10:47	8.0	13	9.1	1500	770	Wet	R
2.00	10/27/2021	11:19	7.4	13	9.1	2400	2400	Wet	I
0.36	11/15/2021	10:16	7.6	10	9.1	430	410	Dry	R
1.45	11/15/2021	09:58	7.4	10	9.7	730	1200	Dry	R
2.00	11/15/2021	09:42	7.3	10	9.7	1400	1600	Dry	I
0.36	12/2/2021	09:33	7.0	11	8.8	1200	730	Dry	R
1.45	12/2/2021	09:23	6.5	12	9.0	220	460	Dry	R
2.00	12/2/2021	09:10	6.7	12	8.4	580	460	Dry	R

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Creek Mile #	Sample Date	Sample Time	pH	Sample Temp (C)	Dissolved Oxygen (mg/l)	Fecal Coliform (CFU/100 ml)	<i>E. Coli</i> (MPN)	Precipitation Event	Status*
<u>Goose Creek</u>									
0.40	1/26/2021	11:42	8.0	12	10	2800	2400	Wet	I
1.19E	1/26/2021	11:25	9.1	13	9.7	3500	2400	Wet	I
1.80E	1/26/2021	11:13	8.0	13	9.3	1200	1300	Wet	I
0.40	2/12/2021	09:02	7.8	10	9.6	1800	1200	Wet	I
1.19E	2/12/2021	09:21	7.9	10	9.1	1200	1600	Wet	I
1.80E	2/12/2021	09:38	8.0	11	9.8	550	870	Wet	R
0.40	3/29/2021	11:40	7.3	13	9.2	3600	> 2400	Wet	I
1.19E	3/29/2021	11:27	7.0	14	9.0	3900	> 2400	Wet	I
1.80E	3/29/2021	11:50	7.5	14	9.3	3000	> 2400	Wet	I
0.40	4/15/2021	11:30	7.9	15	10	270	390	Wet	R
1.19E	4/15/2021	11:10	7.9	15	9.5	500	490	Wet	R
1.80E	4/15/2021	11:21	7.9	14	9.4	190	250	Wet	R
0.40	5/17/2021	13:02	7.6	18	8.9	820	390	Dry	R
1.19E	5/17/2021	12:29	7.9	18	8.5	600	460	Dry	R
1.80E	5/17/2021	12:49	7.9	16	8.6	390	550	Dry	R
0.40	6/18/2021	08:50	7.7	18	7.5	2100	1200	Dry	R
1.19E	6/18/2021	09:03	8.0	18	8.3	1200	770	Dry	R
1.80E	6/18/2021	09:18	8.0	17	8.4	3900	> 2400	Dry	R

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<u>Goose Creek</u>									
0.40	7/15/2021	09:46	7.7	20	7.0	2200	870	Dry	R
1.19E	7/15/2021	09:23	8.0	20	8.0	2100	1300	Dry	I
1.80E	7/15/2021	09:13	7.4	18	8.1	1200	980	Dry	I
0.40	8/20/2021	08:51	7.7	20	7.2	950	390	Wet	R
1.19E	8/20/2021	09:15	7.8	20	7.7	2500	550	Wet	R
1.80E	8/20/2021	09:32	7.9	18	8.1	1500	980	Wet	I
0.40	9/16/2021	07:50	7.6	20	6.5	1200	1000	Dry	R
1.19E	9/16/2021	08:02	6.7	20	8.6	3100	2400	Dry	I
1.80E	9/16/2021	08:15	8.0	18	8.1	2100	1000	Dry	I
0.40	10/27/2021	10:10	6.5	14	7.8	730	370	Wet	R
1.19E	10/27/2021	10:41	7.1	12	9.1	820	980	Wet	R
1.80E	10/27/2021	10:32	7.1	12	9.2	390	340	Wet	R
0.40	11/15/2021	09:30	7.0	10	8.2	460	650	Dry	R
1.19E	11/15/2021	08:50	6.7	11	8.8	820	770	Dry	R
1.80E	11/15/2021	09:03	6.9	10	9.7	520	650	Dry	R
0.40	12/2/2021	10:41	7.0	11	8.0	150	150	Dry	R
1.19E	12/2/2021	10:32	7.0	11	9.0	140	230	Dry	R
1.80E	12/2/2021	10:20	6.9	12	8.8	170	440	Dry	R

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Creek Mile #	Sample Date	Sample Time	pH	Sample Temp (C)	Dissolved Oxygen (mg/l)	Fecal Coliform (CFU/100 ml)	<i>E. Coli</i> (MPN)	Precipitation Event	Status*
<u>Loves Creek</u>									
0.85	1/11/2021	11:00	7.8	9	11	150	140	Wet	R
1.89	1/11/2021	10:51	7.4	11	9.0	81	79	Wet	R
3.45	1/11/2021	10:39	7.7	9	10	27	28	Wet	R
0.85	2/10/2021	09:36	7.7	11	10	45	81	Wet	R
1.89	2/10/2021	09:24	7.4	11	10	63	53	Wet	R
3.45	2/10/2021	09:10	7.5	11	10	110	150	Wet	R
0.85	3/5/2021	09:16	7.1	12	9.0	50	34	Dry	R
1.89	3/5/2021	09:32	7.8	11	10	160	84	Dry	R
3.45	3/5/2021	09:03	7.7	11	9.3	220	83	Dry	R
0.85	4/2/2021	09:45	7.7	11	10	240	140	Wet	R
1.89	4/2/2021	09:30	7.5	10	9.6	130	120	Wet	R
3.45	4/2/2021	09:15	7.3	10	10	140	110	Wet	R
0.85	5/19/2021	12:07	7.8	18	9.2	330	330	Dry	R
1.89	5/19/2021	11:55	7.4	18	8.2	130	100	Dry	R
3.45	5/19/2021	11:44	7.5	20	7.6	45	50	Dry	R
0.85	6/9/2021	09:47	7.7	20	7.5	1700	1600	Wet	R
1.89	6/9/2021	09:32	7.5	20	6.9	3100	2400	Wet	R
3.45	6/9/2021	09:16	7.6	22	6.3	1700	1100	Wet	R

*Status: I = Site Under Investigation, R = Reportable for monitoring purposes

Precipitation event = "Wet" if the total amount of rainfall for four days prior to the sample was greater than 0.1 inches.



Water Quality Monitoring
Report

Routine Water Quality Monitoring Report

1/1/2021 Through 12/31/2021

Knoxville Utilities Board

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Creek Mile #	Sample Date	Sample Time	pH	Sample Temp (C)	Dissolved Oxygen (mg/l)	Fecal Coliform (CFU/100 ml)	<i>E. Coli</i> (MPN)	Precipitation Event	Status*
<u>Loves Creek</u>									
0.85	7/8/2021	08:56	7.7	20	7.6	490	230	Dry	R
1.89	7/8/2021	09:10	7.3	20	6.5	820	370	Dry	R
3.45	7/8/2021	09:21	7.5	20	7.1	300	120	Dry	R
0.85	8/10/2021	08:56	7.7	21	7.3	1600	460	Dry	R
1.89	8/10/2021	09:06	7.4	20	7.2	490	190	Dry	R
3.45	8/10/2021	09:27	7.6	21	7.3	1600	170	Dry	R
0.85	9/10/2021	09:43	8.1	17	8.2	590	460	Dry	R
1.89	9/10/2021	09:22	7.6	17	7.5	250	120	Dry	R
3.45	9/10/2021	09:08	7.7	18	7.4	330	100	Dry	R
0.85	10/22/2021	09:32	7.7	16	8.2	560	820	Wet	R
1.89	10/22/2021	09:12	7.0	16	7.7	420	170	Wet	R
3.45	10/22/2021	08:53	7.1	16	8.0	2600	490	Wet	R
0.85	11/5/2021	09:36	6.7	11	10	280	550	Dry	R
1.89	11/5/2021	09:13	6.4	12	9.4	210	200	Dry	R
3.45	11/5/2021	08:56	6.3	12	9.3	1100	1300	Dry	R
0.85	12/1/2021	10:42	6.8	10	11	180	460	Dry	R
1.89	12/1/2021	09:47	7.1	10	10	110	93	Dry	R
3.45	12/1/2021	09:35	6.9	9	11	72	34	Dry	R

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Creek Mile #	Sample Date	Sample Time	pH	Sample Temp (C)	Dissolved Oxygen (mg/l)	Fecal Coliform (CFU/100 ml)	<i>E. Coli</i> (MPN)	Precipitation Event	Status*
<u>Williams Creek</u>									
0.89	1/11/2021	12:01	8.0	9	11	54	18	Wet	R
1.70	1/11/2021	11:17	7.6	11	9.0	54	79	Wet	R
2.02	1/11/2021	11:30	7.9	11	10	81	84	Wet	R
0.89	2/25/2021	12:35	8.0	15	10	14	19	Wet	R
1.70	2/25/2021	12:05	7.4	16	9.4	54	110	Wet	R
2.02	2/25/2021	12:19	7.9	14	10	110	100	Wet	R
0.89	3/22/2021	09:58	7.6	15	9.5	230	170	Dry	R
1.70	3/22/2021	10:12	7.4	14	9.4	210	200	Dry	R
2.02	3/22/2021	10:20	7.7	14	9.5	170	110	Dry	R
0.89	4/16/2021	09:47	8.0	13	9.9	120	84	Wet	R
1.70	4/16/2021	09:32	7.8	14	8.3	350	200	Wet	R
2.02	4/16/2021	09:13	7.7	15	8.4	290	390	Wet	R
0.89	5/19/2021	12:49	8.0	20	9.1	140	54	Dry	R
1.70	5/19/2021	12:23	7.5	21	9.0	300	290	Dry	R
2.02	5/19/2021	12:32	7.8	19	8.0	730	870	Dry	R
0.89	6/28/2021	11:35	8.0	23	7.4	300	98	Dry	R
1.70	6/28/2021	11:05	7.3	20	6.4	1000	220	Dry	R
2.02	6/28/2021	11:45	7.8	22	7.2	2400	820	Dry	R

*Status: I = Site Under Investigation, R = Reportable for monitoring purposes

Precipitation event = "Wet" if the total amount of rainfall for four days prior to the sample was greater than 0.1 inches.



Water Quality Monitoring
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Routine Water Quality Monitoring Report

1/1/2021 Through 12/31/2021

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Creek Mile #	Sample Date	Sample Time	pH	Sample Temp (C)	Dissolved Oxygen (mg/l)	Fecal Coliform (CFU/100 ml)	<i>E. Coli</i> (MPN)	Precipitation Event	Status*
<u>Williams Creek</u>									
0.89	7/8/2021	09:57	8.0	20	8.3	520	260	Dry	R
1.70	7/8/2021	09:42	7.7	22	6.9	540	340	Dry	R
2.02	7/8/2021	10:23	7.6	21	7.4	1100	820	Dry	R
0.89	8/25/2021	11:10	7.9	24	7.5	1400	240	Wet	R
1.70	8/25/2021	10:25	7.5	21	6.4	1200	370	Wet	R
2.02	8/25/2021	10:47	7.9	22	7.2	640	870	Wet	R
0.89	9/23/2021	11:10	7.7	18	8.3	2600	520	Wet	R
1.70	9/23/2021	09:36	7.4	17	7.0	2900	370	Wet	R
2.02	9/23/2021	11:24	7.6	19	7.5	2500	390	Wet	R
0.89	10/27/2021	12:18	7.8	13	9.3	270	190	Wet	R
1.70	10/27/2021	11:42	7.3	14	7.9	430	98	Wet	R
2.02	10/27/2021	11:50	7.6	16	8.4	260	44	Wet	R
0.89	11/29/2021	10:07	7.4	8	10	120	170	Dry	R
1.70	11/29/2021	09:39	7.0	10	8.2	220	190	Dry	R
2.02	11/29/2021	09:50	7.0	9	8.0	< 9	5	Dry	R
0.89	12/1/2021	11:20	7.4	9	11	820	520	Dry	R
1.70	12/1/2021	11:00	6.7	12	8.3	3600	2000	Dry	R
2.02	12/1/2021	11:14	7.3	9	12	< 9	2	Dry	R

*Status: I = Site Under Investigation, R = Reportable for monitoring purposes

Precipitation event = "Wet" if the total amount of rainfall for four days prior to the sample was greater than 0.1 inches.



Water Quality Monitoring
Report

Spill Impact Sampling Results Water Quality Monitoring Program

Knoxville Utilities Board
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Event Date 2/17/2021
Street Address 524 Avenue A
Description Blockage - Debris

Pavement to Unnamed Tributary to Goose Creek

Estimated unrecovered volume 45 gallons

Sampling Notes: No Priority Pollutants were known to be present in any SIU discharge upstream of this SSO.

Precipitation (McGhee-Tyson Airport)	Date	Total - Day of Event	Total - Prior 4 Days
	2/17/2021	0.01	0.45

Sample Location	Sample Date	Sample Time	Dissolved Oxygen	Temperature (Celsius)	pH	Fecal Coliform	<i>E-Coli</i> (MPN)
Upstream of SSO Discharge	2/17/2021	14:15	9.6	12	7.7	2000	> 2400
Downstream of SSO Discharge	2/17/2021	14:30	10	11	7.9	1800	2000



Water Quality Monitoring
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Event Date 3/5/2021
Street Address 1218 Glade Hill Drive
Description Blockage - Debris

Pavement to Catch Basin to Fourth Creek

Estimated unrecovered volume 870 gallons

Sampling Notes: No Priority Pollutants were known to be present in any SIU discharge upstream of this SSO.

Precipitation (McGhee-Tyson Airport)	Date	Total - Day of Event	Total - Prior 4 Days
	3/5/2021	0	0

Sample Location	Sample Date	Sample Time	Dissolved Oxygen	Temperature (Celsius)	pH	Fecal Coliform	<i>E-Coli</i> (MPN)
Upstream of SSO Discharge	3/5/2021	10:40	10	9	8.0	190	290
Downstream of SSO Discharge	3/5/2021	10:52	11	11	8.2	72	110



Water Quality Monitoring
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Event Date 3/10/2021
Street Address 1811 Washington Ave
Description Blockage - Grease

Ditch to Storm Drain to First Creek

Estimated unrecovered volume 25 gallons

Sampling Notes: No Priority Pollutants were known to be present in any SIU discharge upstream of this SSO.

Precipitation (McGhee-Tyson Airport)	Date	Total - Day of Event	Total - Prior 4 Days
	3/10/2021	0	0

Sample Location	Sample Date	Sample Time	Dissolved Oxygen	Temperature (Celsius)	pH	Fecal Coliform	<i>E-Coli</i> (MPN)
Upstream of SSO Discharge	3/10/2021	14:37	12	14	8.1	1500	340
Downstream of SSO Discharge	3/10/2021	14:28	12	14	8.2	1000	180



Water Quality Monitoring
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Event Date 4/29/2021
Street Address 2000 Shoppers Lane
Description Blockage - Debris

Storm Drain to Third Creek

Estimated unrecovered volume 300 gallons

Sampling Notes: No Priority Pollutants were known to be present in any SIU discharge upstream of this SSO.

Precipitation (McGhee-Tyson Airport)	Date	Total - Day of Event	Total - Prior 4 Days
	4/29/2021	0.19	0.19

Sample Location	Sample Date	Sample Time	Dissolved Oxygen	Temperature (Celsius)	pH	Fecal Coliform	E-Coli (MPN)
Upstream of SSO Discharge	4/30/2021	08:15	8.5	15	7.5	160	250
Downstream of SSO Discharge	4/30/2021	08:00	6.5	16	7.4	6800	> 2400
Upstream of SSO Discharge	5/7/2021	09:45	8.7	14	7.8	910	520
Downstream of SSO Discharge	5/7/2021	08:30	7.5	15	7.8	12000	> 2400
Upstream of SSO Discharge	5/20/2021	09:15	8.3	17	7.5	290	140
Downstream of SSO Discharge	5/20/2021	09:35	8.4	16	7.6	4000	> 2400
Upstream of SSO Discharge	5/26/2021	10:39	8.2	18	7.5	160	130
Downstream of SSO Discharge	5/26/2021	11:10	7.6	19	7.7	11000	> 2400
Upstream of SSO Discharge*	6/16/2021	09:56	7.7	18	7.3	200	190
Downstream of SSO Discharge*	6/16/2021	09:10	8.0	18	7.6	400	440

* Further investigation of West Fork Third Creek resulted in discovery of SSO at 4351 Falconite Way on 6/2/21. Sampled same upstream and downstream sites for both Shopper Ln and Falconite.

006887



Water Quality Monitoring
Report

Spill Impact Sampling Results
Water Quality Monitoring Program

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Event Date 6/2/2021
Street Address 4351 Falconite Way
Description Blockage - Debris

Ground to West Fork Third Creek

Estimated unrecovered volume 40300 gallons

Sampling Notes: No Priority Pollutants were known to be present in any SIU discharge upstream of this SSO.

Precipitation (McGhee-Tyson Airport)	Date	Total - Day of Event	Total - Prior 4 Days
	6/2/2021	0.01	0.01

Sample Location	Sample Date	Sample Time	Dissolved Oxygen	Temperature (Celsius)	pH	Fecal Coliform	E-Coli (MPN)
Upstream of SSO Discharge	6/2/2021	09:35	5.5	17	7.6	220	140
Downstream of SSO Discharge	6/2/2021	11:45	6.9	19	7.2	> 60000	> 2400
Upstream of SSO Discharge	6/14/2021	09:23	6.3	20	7.2	2300	820
Downstream of SSO Discharge	6/14/2021	09:00	7.0	20	7.5	13000	> 2400
Upstream of SSO Discharge	6/16/2021	09:56	7.7	18	7.3	200	190
Downstream of SSO Discharge	6/16/2021	09:10	8.0	18	7.6	400	440



Water Quality Monitoring
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Spill Impact Sampling Results
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Event Date 6/14/2021
Street Address 5906 Walden Drive
Description Blockage - Debris

Tributary to Fourth Creek

Estimated unrecovered volume 250 gallons

Sampling Notes: No Priority Pollutants were known to be present in any SIU discharge upstream of this SSO.

Precipitation (McGhee-Tyson Airport)	Date	Total - Day of Event	Total - Prior 4 Days
	6/14/2021	0.15	0.73

Sample Location	Sample Date	Sample Time	Dissolved Oxygen	Temperature (Celsius)	pH	Fecal Coliform	E-Coli (MPN)
Upstream of SSO Discharge	6/15/2021	09:00	8.0	18	7.7	1600	460
Downstream of SSO Discharge	6/15/2021	08:35	8.2	20	7.7	2100	1600
Upstream of SSO Discharge	6/25/2021	08:15	8.0	17	8.0	350	300
Downstream of SSO Discharge	6/25/2021	08:47	8.8	18	8.0	450	730



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Event Date 6/28/2021
Street Address 193 Kensi Drive
Description Blockage - Grease

Ground to Second Creek

Estimated unrecovered volume 2100 gallons

Sampling Notes: No Priority Pollutants were known to be present in any SIU discharge upstream of this SSO.

Precipitation (McGhee-Tyson Airport)	Date	Total - Day of Event	Total - Prior 4 Days
	6/28/2021	0	0

Sample Location	Sample Date	Sample Time	Dissolved Oxygen	Temperature (Celsius)	pH	Fecal Coliform	<i>E-Coli</i> (MPN)
Upstream of SSO Discharge	6/29/2021	07:12	5.6	19	7.1	270	410
Downstream of SSO Discharge	6/29/2021	06:57	8.0	20	7.9	350	280



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Event Date 9/5/2021
Street Address 1109 Spruce Drive
Description Blockage - Grease

Ground to Unnamed Tributary to Goose Creek

Estimated unrecovered volume 550 gallons

Sampling Notes: No Priority Pollutants were known to be present in any SIU discharge upstream of this SSO.

Precipitation (McGhee-Tyson Airport)	Date	Total - Day of Event	Total - Prior 4 Days
	9/5/2021	0.05	0.05

Sample Location	Sample Date	Sample Time	Dissolved Oxygen	Temperature (Celsius)	pH	Fecal Coliform	E-Coli (MPN)
Upstream of SSO Discharge	9/6/2021	08:34	8.1	17	7.7	350	88
Downstream of SSO Discharge	9/6/2021	08:51	7.9	19	7.7	2100	1000
Upstream of SSO Discharge	9/16/2021	08:45	8.2	17	8.0	440	78
Downstream of SSO Discharge	9/16/2021	09:09	7.7	19	8.0	1400	1000



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Event Date 10/4/2021
Street Address 2511 Kingston Pike
Description Blockage - Debris

Pavement to Storm Drain to Third Creek to Tennessee River

Estimated unrecovered volume 8500 gallons

Sampling Notes: No Priority Pollutants were known to be present in any SIU discharge upstream of this SSO.

Precipitation (McGhee-Tyson Airport)	Date	Total - Day of Event	Total - Prior 4 Days
	10/4/2021	0.06	0.83

Sample Location	Sample Date	Sample Time	Dissolved Oxygen	Temperature (Celsius)	pH	Fecal Coliform	E-Coli (MPN)
Upstream of SSO Discharge	10/4/2021	12:45	8.3	20	7.9	820	1000
Downstream of SSO Discharge	10/4/2021	12:55	8.2	20	8.4	3700	> 2400
Upstream of SSO Discharge	10/6/2021	12:35	8.8	20	7.0	820	230
Downstream of SSO Discharge	10/6/2021	12:45	8.6	20	7.5	1100	260



Water Quality Monitoring
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Event Date 11/8/2021
Street Address 1723 Breda Drive
Description Blockage - Grease and Roots

Ditch to Storm Drain to First Creek

Estimated unrecovered volume 1005 gallons

Sampling Notes: No Priority Pollutants were known to be present in any SIU discharge upstream of this SSO.

Precipitation (McGhee-Tyson Airport)	Date	Total - Day of Event	Total - Prior 4 Days
	11/8/2021	0	0

Sample Location	Sample Date	Sample Time	Dissolved Oxygen	Temperature (Celsius)	pH	Fecal Coliform	E-Coli (MPN)
Upstream of SSO Discharge	11/9/2021	09:21	8.7	12	7.0	290	200
Downstream of SSO Discharge	11/9/2021	09:00	9.8	11	7.1	190	210

Knoxville Utilities Board
Water Quality Monitoring Program

Investigative Water Quality Monitoring Report
1/1/21 - 12/31/21

Table 1: Investigative Sampling - City of Knoxville Concern

Location	Collection Date	Weather	Dissolved Oxygen	Water Temp	pH	Fecal Coliform	<i>E. coli</i>
			(mg/L)	(°C)	s.u.	(CFU/ 100mL)	(MPN)
Spring Box at Davis St - Baker Creek	2/4/2021	Wet (0.11 in)				28000	> 2400

KUB and City of Knoxville investigated for several months some suspected infiltrated septage/sewage bubbling up in a spring box located on Davis St. Dye testing was unsuccessful at identifying the source. On 3/1/21, UGC completed a temporary sanitary sewer lateral connection at the spring box; the connection will be reevaluated after KUB completes the planned short line sewer project on Beech Street. COK planned to continue to investigate potential private sources that could be causing the contamination.

Table 2: Investigative Sampling - First Creek

Location	Collection Date	Weather	Dissolved Oxygen	Water Temp	pH	Fecal Coliform	<i>E. coli</i>
			(mg/L)	(°C)	s.u.	(CFU/ 100mL)	(MPN)
5055 N Broadway - Trib to First Creek	8/13/2021	Dry				200	110
5055 N Broadway - Trib to First Creek	8/26/2021	Wet (0.21 in)				2600	120

Table 3: Investigative Sampling - Third Creek

Location	Collection Date	Weather	Dissolved Oxygen	Water Temp	pH	Fecal Coliform	<i>E. coli</i>
			(mg/L)	(°C)	s.u.	(CFU/ 100mL)	(MPN)
Upstream of Wet Weather SSO 2511 Kingston Pk	10/21/2021	Wet (0.23 in)	17	9.0	7.3	350	190
Downstream of Wet Weather SSO 2511 Kingston Pk	10/21/2021	Wet (0.23 in)	17	9.2	7.8	2700	1700
Third Creek near Tyson park	12/7/2021	Wet (0.75 in)	10	10	7.4	1900	2000

Appendix E

Grease-Related SSO Summary Table

Grease-Related SSOs

	Date			Building	Grease	Grease	Grease	Grease, Roots	Grease &	Customers	Residential Letters	Cans, Bags, or	Commercial	# of Feet	Blockage Abatement*
	of SSO or BBU	Address	SSO	Backup	Only	& Roots	& Debris	& Debris	I & I	Contributing to SSO	Mailed	Spatulas Mailed	Inspections	Cleaned	Frequency
1	1/16/21	800 E. Inskip Rd. - MH 29-58 & Cleanout	Yes	-	Yes	-	-	-	-	498	498	498	1	262	12
2	1/31/21	1209 Tobler Rd - BBU	-	Yes	Yes	-	-	-	-	4	4	4	0	220	24
3	2/16/21	2350 Ellistown Rd - SSO MH 88-50	Yes	-	-	-	Yes	-	-	207	207	207	0	281	24
4	2/18/21	323 Caldwell Ave - Cleanout	Yes	-	Yes	-	-	-	-	19	19	19	0	458	48
5	2/24/21	212 Dry Gap Pike - MH 16-67 & 16-68	Yes	-	-	Yes	-	-	-	455	455	455	0	376	12
6	3/8/21	6114 Creekhead Dr - MH 49-118 SSO	Yes	-	-	-	Yes	-	-	148	148	148	0	269	48
7	3/11/21	1811 Washinton Ave - MH 25-181 Res & Com SSO/ BBU	Yes	Yes	Yes	-	-	-	-	152	151	151	1	121	24
8	3/14/21	5600 Montina Rd BBU	-	Yes	Yes	-	-	-	-	20	20	20	0	155	48
9	3/18/21	1920 Ulster Rd	Yes	-	Yes	-	-	-	-	95	87	87	8	358	3
10	4/14/21	3702 Decatur Dr	Yes	-	Yes	-	-	-	-	139	137	137	2	419	48
11	6/19/21	829 Tally Ho Dr - MH 62-17	Yes	-	Yes	-	-	-	-	202	202	202	0	142	48
12	6/28/21	193 Kensi Dr	Yes	-	Yes	-	-	-	-	64	62	62	2	137	6
13	7/25/21	710 Radford Place (MH 46-1)	Yes	-	Yes	-	-	-	-	43	43	43	0	367	6
14	9/4/21	6212 Pleasant Ridge Rd (MH 12-92)	Yes	-	Yes	-	-	-	-	106	106	106	0	431	48
15	9/5/21	1109 Spruce Dr (MH 27-209)	Yes	-	Yes	-	-	-	-	53	53	53	0	370	6
16	9/17/21	1008 Breda Dr / 3920 Tiberius Rd	Yes	-	Yes	-	-	-	-	172	153	153	19	1090	24
17	9/21/21	15 Market Square	-	Yes	-	-	Yes	-	-	6	0	0	6	300	24
18	9/24/21	7511 Granda Dr	Yes	-	Yes	-	-	-	-	267	267	267	0	538	48
19	10/21/21	2511 Kingston Pike (MH 18-4)	Yes	-	Yes	-	-	-	-	8	0	8	8	338	12
20	11/8/21	1723 Breda Drive (MH 7-144)	Yes	-	-	Yes	-	-	-	113	111	111	2	777	3
21	11/18/21	1017 Valley Ave (MH 3-98)	Yes	-	Yes	-	Yes	-	-	188	188	188	0	320	3
22	11/23/21	5243 Tillery Rd (MH 24-45)	Yes	-	-	Yes	-	-	-	66	66	66	0	337	24
23	12/2/21	1206 Melbourne Ave (MH 8-1) BBU	Yes	Yes	-	Yes	-	-	-	132	125	125	7	249	48
										3157	3102	3110	56		

*KUB performs inspections, hydraulic cleaning, and/or root removal on a routine frequency for all locations under Blockage Abatement

Appendix F

Infrastructure Rehabilitation Projects

IRP Projects

Project	Plant	Watershed	Basin	Description	Status
8355 Kingston Pike Shortline	Fourth Creek	Fourth Creek	32b	Shortline Sewer Replacement Project consists of localized sewer replacement of higher priority sewer mains.	Construction Project Completed 09/02/2021
Adair Trunk	Kuwahee	First Creek	7	Trunkline Rehabilitation/Replacement.	Construction Project Underway - Estimated Completion 04/26/2022
Baker Ave Shortline	Kuwahee	South Knox	40	Shortline Sewer Replacement Project consists of localized sewer replacement of higher priority sewer mains.	Construction Project Underway - Estimated Completion 01/18/2022
Bearden Hill Shortline	Fourth Creek	Fourth Creek	33	Shortline Sewer Replacement Project consists of localized sewer replacement of higher priority sewer mains.	Construction Project Completed 05/05/2021
First Creek -Fifth Ave/Gill Ave CIPP Project (W/B done 6/30)	Kuwahee	First Creek	24	Shortline Sewer Replacement Project consists of localized sewer replacement of higher priority sewer mains.	Construction Project Completed 05/06/2021
Forks PS	Kuwahee	Williams Creek	60	Pump station and appropriate force main upgrade.	Construction Project Underway - Estimated Completion 02/08/2022
Fremont Shortline	Kuwahee	First Creek	17	Shortline Sewer Replacement Project consists of localized sewer replacement of higher priority sewer mains.	Construction Project Completed 10/06/2021
Jones St PS	Kuwahee	South Knox	40	Pump station and appropriate force main upgrade.	Construction Project Underway - Estimated Completion 06/12/2022
Loves Creek MB 20A3 Sewer Rehab CN 1829	Loves Creek	Loves Creek	20	Mini-Basin Sewer Replacement Project consists of comprehensive analysis of inspection data from the area to determine appropriate upgrades.	Construction Project Completed 05/10/2021
Parkview Shortline	Kuwahee	Williams Creek	19	Shortline Sewer Replacement Project consists of localized sewer replacement of higher priority sewer mains.	Construction Project Underway - Estimated Completion 05/28/2022
Prosser Rd Shortline CN 2478	Loves Creek	Loves Creek	6	Shortline Sewer Replacement Project consists of localized sewer replacement of higher priority sewer mains.	Construction Project Completed 11/24/2021
Rutledge Pike Force Main CN 1634	Loves Creek	Loves Creek	6, 105, 106, 107	Force main extension project.	Construction Project Completed 08/28/2021
Second Creek James Agee St and Clinch Ave Sewer Rehab CN 2434	Kuwahee	Second Creek	35a	Shortline Sewer Replacement Project consists of localized sewer replacement of higher priority sewer mains.	Construction Project Completed 01/12/2021
Sequoiah Hills Phase 3 CN 2039a	Kuwahee	Third Creek	38	Mini-Basin Sewer Replacement Project consists of comprehensive analysis of inspection data from the area to determine appropriate upgrades.	Construction Project Underway - Estimated Completion 02/06/2022
Sevier Avenue Streetscapes Sewer Replacement CN 2247	Kuwahee	South Knox	40	Shortline Sewer Replacement Project consists of localized sewer replacement of higher priority sewer mains.	Construction Project Completed 01/26/2021
South Knoxville MB 40C1 Sanitary Sewer Abatement Project	Kuwahee	South Knox	40	Mini-Basin Sewer Replacement Project consists of comprehensive analysis of inspection data from the area to determine appropriate upgrades.	Construction Project Completed 05/28/2021
UGC - Milton Street Shortline	Kuwahee	First Creek	16	Shortline Sewer Replacement Project consists of localized sewer replacement of higher priority sewer mains.	Construction Project Completed 04/07/2021
Wayland Rd PS	Loves Creek	Loves Creek	67	Pump station and appropriate force main upgrade.	Construction Project Underway - Estimated Completion 03/15/2022