

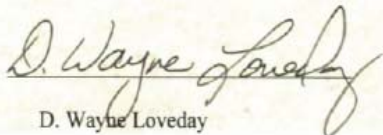
Quarterly Progress Report

Volume 18

Third Quarter Report
July 1 through September 30, 2009

Submitted to EPA on October 28, 2009

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.


D. Wayne Loveday

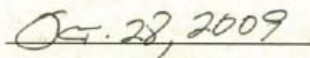

Date



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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 following Quarterly Progress Report is submitted to fulfill the reporting requirements described in Section XIX of the Consent Decree.

Consent Decree language, pages 82-83: *“Beginning thirty (30) Days after the first Calendar Quarter following the Date of Entry, and thirty (30) Days after each Calendar Quarter thereafter until termination of the Consent Decree, KUB shall submit to the Parties, and simultaneously place in the PDR, a Quarterly Progress Report. Quarterly Progress Reports shall not be subject to the Public Review Requirement of Section VI.A.2. However, KUB shall receive questions and comments from the public for KUB’s review for a period of twenty (20) Days following placement in the PDR. Each Quarterly Progress Report shall contain:*

1. *A summary of compliance with and activities related to implementation of the Phase 1 CAP/ER and Phase 2 CAP/ER, including: the status of construction projects in comparison to the schedules that have been established pursuant to the Consent Decree for those projects; and schedule deadlines and milestones achieved during Calendar Quarter and expected during the next Calendar Quarter;*
2. *A summary of compliance with and activities related to implementation of the CPE and CCP;*
3. *A summary of implementation of and compliance with the Process Controls Program;*
4. *A summary of the implementation of the Capacity Assurance Program for the Calendar Quarter, including the number of, and anticipated flow from, sewer connections that have been authorized, by Sewerbasin, a description of the projects that have been authorized and the number of credits earned and banked by KUB that will be expended for those projects, by Sewerbasin, and any exceptions granted for connections for essential services;*
5. *Identification of any transfer of an ownership interest, operation, management, or other control of the Treatment Works, or any portion thereof.*
6. *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.*
7. *A spreadsheet and summary of all SSOs, Bypasses, Diversions and effluent limit violations that occurred during the previous Calendar Quarter. 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 reason for each SSO, the total SSO volume, the volume returned to the WCTS, and the volume not captured;*
 - 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.*
8. *The water quality monitoring data and other information required pursuant to Section VII.D.1.(e).(v).”*

KUB compiled this Quarterly Progress Report to detail the events that occurred during the third quarter of 2009 from July 1 through September 30. This is the eighteenth quarterly report required of KUB under this Consent Decree.

Report Organization

Section 1: Phase 1 CAP/ER and Phase 2 CAP/ER – Summarizes the compliance with and activities related to implementation of the Phase 1 CAP/ER and Phase 2 CAP/ER, including the status of construction projects in comparison to the schedules that have been established pursuant to the Consent Decree for those projects; and schedule deadlines and milestones achieved during the Calendar Quarter and expected during the next Calendar Quarter.

Section 2: Comprehensive Performance Evaluation and Composite Correction Plan – Summarizes the compliance with and activities related to the implementation of those deliverables.

Section 3: Process Controls Program – Summarizes the implementation of and compliance with the deliverable.

Section 4: Capacity Assurance Program – Summarizes the implementation of the Capacity Assurance Program for the Calendar Quarter, including the number of, and anticipated flow from, sewer connections that have been authorized, by sewerbasin, a description of the projects that have been authorized and the number of credits earned and banked by KUB that will be expended for those projects, by sewerbasin, and any exceptions granted for connections for essential services.

Section 5: Transfers of Ownership – Identifies any transfers of ownership interest, operation, management, or other control of the treatment works, or any portion thereof.

Section 6: Compliance and Non-Compliance with the Consent Decree – Describes the status of compliance or non-compliance with requirements of the Consent Decree.

Section 7: SSOs, Bypasses, Diversions, and Effluent Limit Violations – Provides a spreadsheet and summary of all SSOs, Bypasses, Diversions, and effluent limit violations.

Section 8: Water Quality Monitoring Data – Summarizes all sampling that was conducted, the results of the sampling, and the projected data collection for the reporting period.

Status of Deliverables

Below is a list of significant dates on which KUB submitted deliverables to EPA or received approval for deliverables. To date, KUB has submitted all deliverables in accordance with the schedule set forth in the Consent Decree.

July 27, 2009

- Posted in the PDR – Phase II CAP/ER

July 28, 2009

- Submitted to EPA – Quarterly Progress Report 2nd quarter 2009
- Submitted to EPA – SEP Periodic Report 1st period 2009
- Submitted to EPA – Annual CAP/ER Report 2009

September 9, 2009

- Submitted to EPA – Phase II CAP/ER

September 30, 2009

- Posted in PDR – 2nd Revised Water Quality Monitoring Program

Section 1 Phase 1 CAP/ER and Phase 2 CAP/ER

Consent Decree language, pages 82-83: *“Each Quarterly Progress Report shall contain... A summary of compliance with and activities related to implementation of the Phase 1 CAP/ER and Phase 2 CAP/ER, including the status of construction projects in comparison to the schedules that have been established pursuant to the Consent Decree for those projects; and schedule deadlines and milestones achieved during Calendar Quarter and expected during next Calendar Quarter.”*

KUB began developing a Corrective Action Plan/Engineering Report (CAP/ER) in January 2004, following the completion of the Phase I Sanitary Sewer Overflow Evaluation Report (SSOER) required by the Agreed Order with the Tennessee Department of Environment and Conservation (TDEC) and, subsequently, the Consent Decree. The objective of the Phase I CAP/ER is to identify facility improvements needed to address the conditions causing SSOs occurring in the collection system during the period of 2001-2004 with the goal of eliminating the SSO locations on the Long-Term List and to support future growth needs. KUB submitted the Phase 1 CAP/ER to EPA on October 28, 2005. Comments were received from EPA on February 23, 2006. Per EPA's letter, KUB submitted a 30-day response to EPA's comments on March 27, 2006. The Revised Phase 1 CAP/ER was submitted to EPA on May 22, 2006, and subsequently approved by EPA on June 30, 2006. All work necessary to meet the objectives of the Phase 1 CAP/ER will be completed by June 30, 2013. The Phase 2 CAP/ER was submitted to EPA on September 9, 2009.

Requested Project Extensions and Changes Requested in Phase ICAP/ER Annual Report 2009

| Project and Reason | Original Completion Date | Revised Completion Date |
|---|---------------------------------|--------------------------------|
| 2-2 Lower Second Creek Replacement/Rehabilitation at Woodland – Construction has been completed of the lower trunkline work. Upper portion is currently in design and will require permitting from two different railroad owners. End date was initially extended to FY 08/09. New alignment for trunk sewer construction required easement acquisition and railroad permitting and requires an additional extension. | FY 08/09 | FY 10/11 |
| 3-6 Interstate 40 and Middlebrook Pike Trunk Replacement Project – Constructability issues and permitting require that the project completion date be extended until FY 11/12. Project will require coordination with future TDOT road improvement project and extensive railroad permitting, environmental permitting, and property acquisition. | FY 09/10 | FY 11/12 |
| 4-2 Gleason Drive Collector Rehabilitation Project – See justification below | FY 08/09 | FY 09/10 |
| 4-3 Middlebrook Pike Rehabilitation (Sub-basin 27C3) Project – See justification below | FY 08/09 | FY 09/10 |
| 4-4 Northshore Drive Trunk Replacement Project – See justification below | FY 08/09 | FY 10/11 |
| 4-6 Shadyland Drive Rehabilitation (Sub-basin 36A2) Project – See justification below | FY 08/09 | FY 09/10 |

Preliminary design of these projects were shifted from FY 07/08 to FY 08/09 to allow resources to focus on other projects in First Creek, Second Creek, Loves Creek, and Williams Creek that were determined to be higher risk areas for overflows. The shift in starts has led to a need for

extension in completion of one year. In the case of the Northshore trunk, a two-year extension is requested due to difficult construction on a major street. All projects are well underway and should complete in the requested time frame.

EPA Approved Project Extensions and Changes

All previously approved project extensions and changes are listed below.

- **1-1 Upper First Creek Collector Project (Mini-basin 1A1, 2A2, and 3D1)** – End date extended from FY 06/07 to FY 07/08. Due to the expanded scope, an additional extension was requested in the Phase I CAP/ER Annual Report 2008. End date was extended from FY 07/08 to FY 08/09 and was completed on schedule.
- **1-20 Vine Middle School Rehabilitation Project** – End date extended from FY 06/07 to FY 07/08 and was completed as scheduled.
- **2-4 Dutch Valley Collector Rehabilitation (Sewershed 10B1)** – End date was extended to September 2007 and was completed as scheduled.
- **2-5 Rickard and Wilson Collector Rehabilitation (Sewershed 10C1)** – End date was extended to September 2007 and was completed as scheduled.
- **S-1 Ginnbrook Pump Station Rehabilitation** – End date was extended from FY 06/07 to FY 08/09 and was completed as scheduled.
- **S-5 South Knoxville/Knob Creek Storage Facility** – Project was removed from CAP/ER and replaced with the project below.
- **Revised S-5 Neubert Springs Collector and West Ford Valley Trunk Rehabilitation** – End date scheduled as FY 08/09 and was completed as scheduled.
- **2-1 Lower Second Creek Replacement/Rehabilitation at I40/I275 Junction** – End date was extended from FY 08/09 to FY 09/10 and is on schedule.
- **2-2 Lower Second Creek Replacement/Rehabilitation at Woodland** – End date was extended from FY 07/08 to FY 08/09. Approximately half of the project is complete. Delays due to railroad permitting on the remaining half. Requesting additional extension to FY 09/10.

Current Capital Improvement Plan for FY 04/05 - FY 09/10

The following is a list of facility improvement projects included in the Capital Improvement Plan for fiscal years 04/05 to 09/10. These projects were in various stages during the reporting period, including preliminary engineering, design, construction, and completion. Many of these projects are “find and fix” rehabilitation projects. Find work is defined as the inspection (i.e. flow monitoring, CCTV, manhole inspections, smoke testing, etc.) and design phase of the project. Fix is defined as the construction phase that may include manhole rehabilitation/replacement, main line rehabilitation/replacement, and lower lateral rehabilitation/replacement. Other projects are trunkline capacity improvements or wet-weather storage. Each of these projects is considered part of the overall Phase 1 CAP/ER.

Ongoing Projects

First Creek

1. **1-19 Edgewood Drive Rehabilitation Project** – Find and fix work to identify and address cause of overflow in the vicinity of 1620 Edgewood Drive. Project is in preliminary engineering. The expected completion date for construction is June 2010.
2. **1-23 Oglewood Avenue Rehabilitation Project** – Find and fix work to identify and address cause of overflow in the vicinity of 1307 Oglewood Avenue. Project is in preliminary engineering. The expected completion date for construction is June 2013.

Second Creek

1. **2-1 Lower Second Creek Replacement/Rehabilitation at I40/I275 Junction** –Project scope has been redefined in lieu of storage placement upstream of the Second Creek trunk sewer running from Dameron south to Interstate 40. Revised project scope will only include line work beginning at MH 19-133 and continuing to MH 19-107. Design of revised trunk project is underway. Construction of CCP storage at Bernard Avenue is underway.
2. **2-2 Lower Second Creek Replacement/Rehabilitation at Woodland** – Perform sewer system assessment and design rehabilitation and replacement of various trunk and collector lines located in sub-basin 23 near Woodland Avenue. Sewer assessment is underway. Design is complete for the northern section, and railroad permits are being acquired. Construction has been completed for the southern portion of this project.
3. **2-11 Burnside Rehabilitation Project** – Find and fix work to identify and address cause of overflow in the vicinity of 2523 Burnside Street. Design underway.
4. **2-12 Camelia Road Rehabilitation Project** - Find and fix work to identify and address cause of overflow in the vicinity of Camelia Road and Merchant Drive and 412 Merchant Drive. Construction underway.
5. **2-13 Cedar Heights Road Rehabilitation Project** - Find and fix work to identify and address cause of overflow in the vicinity of 5511 Cedar Heights Road and 5605 Pinecrest Road. Design underway.
6. **2-14 Central Avenue Pike Rehabilitation Project** - Find and fix work to identify and address cause of overflow in the vicinity of 5500 Central Avenue Pike. Construction underway.
7. **2-15 1000 Block Elm Street Rehabilitation Project** - Find and fix work to identify and address cause of overflow in the vicinity of 1025 Elm Street. This project is currently in the design phase.
8. **2-16 1600 Block Elm Street Rehabilitation Project** - Find and fix work to identify and address cause of overflow in the vicinity of 1611 Elm Street and 801 West Oldham Avenue. This project is currently in the design phase.
9. **2-17 Shasta Drive Rehabilitation Project** - Find and fix work to identify and address cause of overflow in the vicinity of 5108 Fennel Road and 805 Shasta Drive. Construction underway.
10. **2-18 Nicholas Road - Clinton Highway Rehabilitation Project** - Find and fix work to identify and address cause of overflow in the vicinity of 4500 Nicholas Road and 4200 Clinton Highway. Construction underway
11. **2-19 Cumberland Avenue Rehabilitation Project** - Find and fix work to identify and address cause of overflow in the vicinity of 1000 Phillip Fulmer Way, 1509 Cumberland Avenue, and Seventeenth Street and White Avenue. This project is currently in the design phase.
12. **2-20 Sierra Road Rehabilitation Project** - Find and fix work to identify and address cause of overflow in the vicinity of 5609 Sierra Road. Construction underway.
13. **2-21 Morelia Avenue Rehabilitation Project** - Find and fix work to identify and address cause of overflow in the vicinity of 120 E. Morelia Avenue. This project is currently in the design phase.
14. **2-22 Dale Avenue Rehabilitation Project** - Find and fix work to identify and address cause of overflow in the vicinity of 345 Dale Avenue. This project is currently in the design phase.

Third Creek

1. **3-6 Interstate 40 and Middlebrook Pike Trunk Sewer Replacement** – Design is underway.

2. **3-7 Neyland Drive Trunk Replacement** – Project is at 90% engineering design as part of the CCP storage being evaluated at the Kuwahee WWTP. Original scope has changed from replacement work along Neyland Drive to work on the existing trunk south of Tyson Park.
3. **3-8 Third Creek Bike Trail Trunk Replacement** – Phase 1 project is at 90% engineering design.

Fourth Creek

1. **4-2 Gleason Road Rehabilitation** – The Notice to Proceed was issued on May 14, 2009. This project is included in the Fourth Creek SSO project. Substantial completion date will be in October 2009. Requesting extension to FY 09/10.
2. **4-3 Middlebrook Pike Rehabilitation** – The Notice to Proceed was issued on May 14, 2009. This project is included in the Fourth Creek SSO project. Substantial completion date will be in October 2009. Requesting extension to FY 09/10.
3. **4-4 Northshore Drive Trunk Sewer Replacement** – Replace approximately 3600 ft of existing 24-inch trunk sewer with 36 inch. Construction should commence in the 4th quarter 2009. Design is underway with anticipated construction start in first quarter of 2010. Requesting extension to 10/11.
4. **4-6 Shadyland Drive Rehabilitation** – The Notice to Proceed was issued on May 14, 2009. This project is included in the Fourth Creek SSO project. Substantial completion date will be in October 2009. Requesting extension to 09/10.

South Knox

1. **S-11 Ford Valley Pump Station Upgrade Project** – Design is complete. Construction is expected in November 09.
2. **S-15 Trunk Replacement in Sub-basin 40A2 Project** – Design is underway and is projected to be completed in 1st quarter 2010.
3. **S-9 Ellis Road Rehabilitation Project** – Rehabilitate approximately 3,940 ft of sewer in the vicinity of 6555 Chapman Highway, 6516 Jackie Lane, 212 Ellis Road, and 6528 Jackie Lane. Project is currently in design.

Loves Creek and Eastbridge

1. **L-1 Asheville Highway west of I-40 Trunk Replacement** – Upgrade 4,786 LF of existing 18-inch pipe into 24-inch and 30-inch pipe. Project is under construction. The expected completion date is June 2010, two years ahead of schedule.
2. **L-2 Boyds Bridge Pike and Holston Hills Trunk Replacement** – Replace approximately 4,190 LF of existing 10-inch, 500 LF of 12-inch, and 330 LF of 15-inch pipe. Project is under design. The expected completion date for construction is June 2011, one year ahead of schedule.
3. **L-3 River View Rehabilitation** – Find and fix work to identify and address cause of overflow in the vicinity of 4102, 4200, 3722, 3716, and 4014 Holston Hills Road. Project is in preliminary engineering.
4. **L-4 Asheville Highway Rehabilitation** – Find and fix work to identify and address cause of overflow in the vicinity of 5411 Asheville Highway. Project is in preliminary engineering.
5. **L-5 Brentwood Shortline Repair** – Find and fix work to identify and address cause of overflow in the vicinity of Brentwood Road. Project is in preliminary engineering.
6. **L-6 Holston Hills Road Rehabilitation** – Find and fix work to identify and address cause of overflow in the vicinity of 4716 Holston Hills Road. Project is in preliminary engineering.
7. **L-7 Magnolia Avenue Rehabilitation** – Find and fix work to identify and address cause of overflow in the vicinity of 3301 Magnolia Avenue. Project is in preliminary engineering.

8. **L-8 McDonald Drive Rehabilitation** – Find and fix work to identify and address cause of overflow in the vicinity of 3415 McDonald Drive. Project is in preliminary engineering.
9. **L-10 Washington Court Rehabilitation** – Find and fix work to identify and address cause of overflow in the vicinity of 4436 Washington Court. Project is in preliminary engineering.

Completed Projects

First Creek

1. **Fountain Road** - Upsized 3700 ft of gravity sewer using open cut and pipe bursting methods. Replaced manholes and services.
2. **Fair Drive Phase II** - Rehabilitated 3691 ft and replaced 2458 ft of existing 8-12 inch gravity sewer along Fair Drive.
3. **Greenfield Lane** - Replaced approximately 3300 ft of existing sewer with 8-inch and 12-inch PVC and ductile iron pipe.
4. **Whites Creek Phase III** - Replaced 300 ft of 12-inch, 300 ft of 16-inch, 2700 ft of 24-inch, and 5000 ft of 36-inch sewer.
5. **First Creek Sub-basins 3 and 4 Rehabilitation** – Rehabilitated 26,500 ft of line and replaced 10,500 ft. Project included CCTV, smoke testing, and manhole inspections.
6. **Lower First Creek Storage** - Designed and built 5 million gallon (MG) wet-weather storage tank to control sewer overflows near North Hoitt Avenue during rain events.
7. **Upper First Creek Storage** - Designed and built 9 MG wet-weather storage tank to control sewer overflows near Old Broadway during rain events.
8. **Fountain City Trunkline Replacement** - Replaced and upgraded approximately 6000 ft of trunk sewer connecting lines in upper Fountain City to Upper First Creek storage tank. The project addressed SSOs along Broadway, Cedar Lane, and Fountain Road.
9. **Sub-Basin 8B2** – Characterized the condition of 24,900 ft of pipe to determine rehabilitation needs.
10. **1-20 Vine Middle School Rehabilitation Project** – Completed find and fix work to identify cause of overflow in the vicinity of 214 Bertrand Street.
11. **First Creek 8A1** - Rehabilitated approximately 21,067 ft, and replaced approximately 10,273 ft of sewer.
12. **1-1 Upper First Creek Collector Project (Mini-basin 1A1, 2A2, and 3D1)** – Estimated total quantities: 10,235 ft gravity sewer replaced/rehabbed; 32 new MHs installed; 175 ft MH rehab; 69 private laterals reinstated.

Second Creek

1. **Second Creek Pilleaux PS Collector** - Rehabilitated 19,600 ft of collection system piping in mini-basin 05A4. Project included inspection (CCTV, smoke test, manhole inspections), design, and rehabilitation of lines requiring repair.
2. **Second Creek Sub-basin 15 Rehabilitation** - Rehabilitated approximately 23,500 ft of pipe in mini-basin 15D2. Project included inspection (CCTV, smoke test, manhole inspections), design, and rehabilitation of lines requiring repair.
3. **Second Creek 23E1** - Inspected a total of 28,067 ft of pipe for find and design rehabilitation needs for Mini-basin 23E1. Project included inspection (CCTV, smoke test, manhole inspections), design, and rehabilitation of lines requiring repair.
4. **Dutch Valley Collector Rehab (Mini-basin 10B1)** - Assessed and rehabilitated, where needed, approximately 16,400 ft of collector pipe. This project was combined with the Rickard and Wilson Collector Rehab project below.

5. **Rickard and Wilson Collector Rehab (Mini-basin 10C1)** - Assessed and rehabilitated, where needed, approximately 19,000 ft of collector pipe. Project was combined with Mini-basin 10B1.
6. **Second Creek Trunk Sewer Improvements Phase I** - Replaced approximately 4,100 feet of existing trunkline with 30-inch sewer.
7. **Second Creek Trunk Sewer Improvements Phase II** - Replaced approximately 3,700 feet of existing trunkline with 30-inch sewer and replaced approximately 1,400 feet of existing trunkline with 36-inch sewer.

Third Creek

1. **Mynderse, Western, and Canna** - Replaced approximately 1700 ft of 8-inch sewer and pipe-burst approximately 3400 ft of 8-inch up to 10-inch and 12-inch pipe to address wet-weather capacity restrictions resulting in overflows near Pleasant Ridge Road.
2. **Third Creek 28B1*** - Investigated rehabilitation needs for collectors in mini-basin 28B1 (approximately 7900 ft of pipe). Project included inspection (CCTV, smoke test, manhole inspections), design, and rehabilitation of lines requiring repair. Plans are being developed for a future rehabilitation project. No construction is planned in the short-term.
*The project named Third Creek 28B1 replaces Third Creek 28C1 that appeared in the Quarterly Progress Report for the Second Quarter 2005. After additional studies, it was determined that flows from 28B1 more likely contributed to overflows along Sutherland Avenue and North Bellemeade, as listed in the SSOER.
3. **Third Creek Storage** - Designed and constructed 4.5 MG wet-weather storage tank to control sewer overflows near Western Avenue and Third Creek Road during rain events.
4. **Upper McKamey Trunk Sewer Replacement** – Project replaced approximately 1600 ft of 12-inch and 15-inch trunk sewer. This project further enhanced improvements already made in Third Creek to address overflows along McKamey Road.
5. **Third Creek Basin 11** – Assessed and rehabilitated approximately 129,657 ft in sub-basin 11. Project included inspection (CCTV, smoke test, manhole inspections), design, and rehabilitation of lines requiring repair.
6. **Third Creek Road Trunk Sewer Replacement** – Project included approximately 3100 ft of 24-inch and 30-inch trunkline. The project replaced and upgraded the trunkline from Western Avenue along Third Creek to the Third Creek storage facility. It addressed overflows occurring at 5600 Western Avenue. Project was extended approximately 2000 ft to reach the new location of the Third Creek Storage Facility at the KUB Hoskins Center.
7. **Third Creek Basin 9 Phase I** – Assessed and rehabilitated collector sewer in 9A1, 9A2, 9A4, and 9D1 (CAP/ER Scope).
8. **Third Creek Basin 9 Phase II** - Designed rehabilitation methods for collectors in Sub-basin 9 (approximately 177,900 ft). Project included inspection (CCTV, smoke test, manhole inspections), design, and rehabilitation of lines requiring repair.
9. **3-11 Sutherland Avenue Collector Rehabilitation Project (Sub-basin 28B1)** – Replaced 303 ft of existing sewer and rehabilitated 3,332 ft of existing sewer collectors in mini-basin 28B1. Project included inspection (CCTV, smoke test, manhole inspections), design, and rehabilitation of lines requiring repair.
10. **3-12 Clinch and 21st Street Collector Rehabilitation Project (Sub-basin 35B3)** – Replaced approximately 3,400 lf of existing sewer, rehabilitated 1,900 lf and replaced/rehabbed 25 manholes.

Fourth Creek

1. **Pinebrook Drive Sewer Replacement** – Replaced 330 ft of 8-inch gravity sewer partially exposed by erosion of the bank of the adjacent drainage channel.
2. **Walker Springs Rehabilitation (Mini-Basin 32A4)** – Performed find, and design work in Mini-basin 32A4 in the Walker Springs area. Inspection included 43,000 ft of smoke

testing, 43,000 ft of CCTV, and 228 manhole inspections. Plans will be developed for future rehabilitation work.

3. **Walker Springs Storage** – Designed and constructed 3.25 MG wet-weather storage tank to control sewer overflows near Walker Springs Pump Station during rain events.
4. **Papermill Drive Phases I, II, and III** – Designed and constructed replacement of approximately 4000 ft of 15-inch, 18-inch, and 2100 ft of 36-inch sewer in the Papermill Drive area to increase conveyance capacity and reduce sewer overflows.
5. **4-1 Chukar Road Rehabilitation** – Replaced 1,600 ft of pipe and nine manholes; rehabbed 900 ft of pipe and nine manholes.

South Knox

1. **Maryville Pike** – Designed and replaced 800–1,200 ft of 24-inch sewer located in Witherspoon Superfund site. Design rerouted sewer around site.
2. **South Haven Phase I and Phase II** – Relocated, rehabilitated, and upsized approximately 4700 ft of existing collector sewers to increase conveyance capacity and reduce inflow and infiltration (I/I).
3. **Island Home Rehabilitation** – Rehabilitated 9400 ft and replaced 1200 ft of collector sewers to reduce I/I.
4. **East Ford Valley Rehabilitation** – Rehabilitated approximately 16,000 ft of sewers in Mini-basin 41A4. Project included inspection (CCTV, smoke test, manhole inspections), design, and rehabilitation of lines requiring repair.
5. **Stone Road Rehabilitation** – Rehabilitated approximately 13,500 ft of sewers in Mini-basin 41B1. Project included inspection (CCTV, smoke test, manhole inspections), design, and rehabilitation of lines requiring repair.
6. **South Haven Rehabilitation Phase III** – Rehabilitated approximately 21,700 ft of sewers in Mini-basin 40F1. Project included inspection (CCTV, smoke test, manhole inspections), design, and rehabilitation of lines requiring repair.
7. **Ginnbrook Pump Station** – Evaluated pump station and force main to ensure adequate capacity. Also included improvements to wet-well, pump system, and valve vault. The force main was re-routed.
8. **Neubert Springs Collector and West Ford Valley Trunk Rehabilitation** – Rehabilitated 10,000 ft of 15- to 18-inch trunk sewer along West Ford Valley Road. Completed find work in sub-basins 41C1, 41C2, and 41A2. Completed trunkline rehabilitation on West Ford Valley. Rehabilitated collector line in sub-basin 41C1, C2, and A2.
9. **Mini-basin 41A6 Rehabilitation Project** – Rehabilitated approximately 21,000 ft of sewer in sub-basin 41A6.
10. **Blount Avenue Trunkline and Goose Creek Siphon Upgrade** – The trunkline upgrades between the siphon inlet structure and manhole 63-2 are complete. This work was included in phases I and II of the Blount Avenue Trunkline Replacement/Rehabilitation Project. This construction successfully addressed historical overflows.
11. **S-6 Sevier Avenue and Jones Street Collector Project** – Rehabilitated approximately 3,100 ft of existing sewer and rerouted approximately 352 ft of 8-inch sewer.

Williams Creek

1. **Delrose Force Main Replacement** – Designed and replaced approximately 5,000 ft of 16-inch ductile iron pipe force main that had severe structural problems.
2. **Williams Creek Trunk Line Replacement** – Designed and replaced approximately 3,700 ft of 24-inch sewer to correct structural problems.
3. **Williams Creek Sub-basin 19 Rehabilitation** – Performed rehabilitation in sub-basin 19A1, 19B1, and 19A2/A3 to reduce R-value to 2%. Investigative work was performed on

the approximately 105,000 ft in the entire sub-basin 19 area. Completed rehabilitation projects in 19A1, 19B1, and 19A2/A3. The original CAP/ER completion date for the 19A2 project was in FY 10/11. This project was shifted to higher priority due to the large number of private lateral problems and CSSAP rating. Project coincided with water quality monitoring program work in Williams Creek.

4. **W-4 E. Fifth Avenue Sewer Replacement Project** – Replaced 956 ft with 8” PVC and four manholes.
5. **W-6 Selma Avenue – Harrison Street Rehabilitation Project** – Replaced 650 ft with 8” PVC and four manholes, and rehabbed 600 ft of 8” concrete.
6. **W-8 South Elmwood Street Rehabilitation Project** – Replaced 200 ft with 8” PVC and three manholes, and rehabbed 400 ft of 8” concrete.
7. **W-9 Williams Creek Trunk Line Replacement (Sub-basin 19A1)** – In lieu of replacement of 360 ft of 12” concrete with 15” sewer, problem was addressed by comprehensive rehab of mini-basin 19A1. Project included replacement with 8,900 ft of 8” PVC, 97 ft with 10” PVC, 179 ft with 12” PVC, and 76 manholes. Also rehabbed 21,200 ft of 8” concrete and 180 ft of 12” concrete.

Loves Creek and Eastbridge

1. **L-9 Shelbourne Road Rehabilitation** – 26,900 ft of gravity sewer was rehabilitated along with 30 manholes in sub-basins 6A4 and 6A5. This work addressed the SSO located on Shelbourne Road.
2. **EB-1 Maloneyville Road Rehabilitation** – Mechanical grinder was installed at Knox County Detention Facility to remove paper debris prior to discharge. Paper debris clogging the pumps was the cause of previous SSOs at Maloney Road pump station.

Phase II CAP/ER

The Phase II CAP/ER was submitted to EPA on September 9, 2009.

Section 2 Comprehensive Performance Evaluation Program (CPE) and Composite Correction Plan (CCP)

Consent Decree language, pages 82-83: *"Each Quarterly Progress Report shall contain... A summary of compliance with and activities related to implementation of the CPE and CCP."*

The CPE was submitted to EPA on February 24, 2006, and was approved on July 24, 2006.

The CCP was posted in the public document repository on June 19, 2007, and comments were accepted until July 18, 2007. The CCP was submitted to the EPA on July 23, 2007.

On November 19, 2007, KUB received notice from EPA extending their review period of the CCP until December 22, 2007. On January 4, 2008, KUB received a letter from EPA disapproving the CCP. In a letter dated February 20, 2008, KUB requested to extend the deadline for responding to EPA's comments until March 25, 2008, which was approved by EPA.

KUB submitted the Revised CCP to EPA on March 21, 2008.

Following the submittal of the Revised CCP in March 2008, KUB, EPA, TDEC, and DOJ participated in several discussions to address both technical issues related to the work outlined in the CCP and legal issues pertaining to the relationship between the CCP, Consent Decree, and outstanding appeals of KUB's NPDES Permits. These discussions culminated in all parties agreeing to a revised schedule for the CCP plant upgrades. Among the changes agreed upon by all parties was to issue an amendment to the Consent Decree, which specifically addresses extending the compliance schedule for completing the work outlined in the Revised CCP.

The Revised CCP was submitted to EPA on January 5, 2009 and subsequently approved on January 20, 2009.

Chemically Enhanced Primary Treatment (CEPT) continues to be studied. Benchtop testing of various polymers as well as iron salts has been completed. Recommendation is to remain with a single-source polymer with no iron salts needed. Full-scale trials continue to reflect the results of the benchtop testing.

Section 3 Process Controls Program

Consent Decree language, pages 82-83: *“Each Quarterly Progress Report shall contain... A summary of implementation of and compliance with the Process Controls Program.”*

The Process Controls Program (PCP) was initiated 26 times during this reporting period, resulting in 2 Diversion events (one at Kuwahee and one at Fourth Creek).

In a letter to EPA dated August 28, 2008, KUB concluded that the PCP needed no modifications or revisions and proposed continuing to use the PCP as previously approved. KUB committed to make revisions to the PCP as upgrades required by the CCP are made to Kuwahee and Fourth Creek WWTPs in the future. Until then, KUB agreed to provide updates regarding the number of initiations and any resulting Diversions in the Quarterly Progress Report.

Section 4 Capacity Assurance Program

Consent Decree language, pages 82-83: *“Each Quarterly Progress Report shall contain... A summary of the implementation of the Capacity Assurance Program for that Calendar Quarter, including the number of, and anticipated flow from, sewer connections that have been authorized, by Sewerbasin, a description of the projects that have been authorized and the number of credits earned and banked by KUB that will be expended for those projects, by Sewerbasin, and any exceptions granted for connections for essential services.”*

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 started reviewing building permits based on the approved CAP on June 6, 2006, which was within the 60-day timeframe for implementing the program after receiving EPA approval.

To review building permits more efficiently using the CAP criteria agreed on with the EPA, KUB worked with a consultant, Camp, Dresser, & McKee, to develop an Information Management System (IMS). The IMS assists KUB in managing the CAP program by determining the amount of wastewater each proposed building would add to KUB's wastewater system based on its location. The IMS also helps track rehabilitation credits that KUB earns through its CAP/ER and MOM programs.

Appendix A includes a list of capital projects that KUB performed to gain rehabilitation credit in its sewer system. As stated in the Consent Decree, the list of authorized sewer connections was maintained and updated as necessary until full implementation of the CAP as approved by EPA. Therefore, the list will no longer be included as part of this quarterly report.

There were no exceptions granted for connections for essential services during this reporting period.

Section 5 Transfers of Ownership

Consent Decree language, pages 82-83: *“Each Quarterly Progress Report shall contain... Identification of any transfer of an ownership interest, operation, management, or other control of the Treatment Works, or any portion thereof.”*

There has been no transfer of an ownership interest, operation, management, or other control of the Treatment Works, or any portion thereof, during this reporting period.

Section 6 Compliance and Non-Compliance With the Consent Decree

Consent Decree language, pages 82-83: *“Each Quarterly Progress Report shall contain...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 Consent Decree.”*

6.1 Submission of Deliverables

To date, KUB has submitted all deliverables in accordance with the schedule set forth in the Consent Decree. The following sections detail all activity related to deliverables that occurred during the past quarter. Also noted are the dates each submittal was available for public comment in the Public Document Repository (PDR), when the deliverable was submitted to EPA, when EPA responded with comments, when KUB responded to those comments, and when EPA approval was received.

6.1.1 Phase II Corrective Action Plan/Engineering Report

Consent Decree language, page 24. *“Within twelve (12) Months of EPA’s approval of the Annual SSOER Update to be submitted by KUB on April 30, 2008, KUB shall submit a Phase 2 CAP/ER to address the conditions causing SSOs with the goal of eliminating the SSO locations on the Long-Term List.”*

On July 27, 2009, KUB posted in the PDR the Phase II CAP/ER. This deliverable was subject to the Public Review Requirement of Section VI.A.2, and was available for public comment from July 27, 2009, until August 26, 2009. No comments were received during that period. The Phase 2 CAP/ER was submitted to EPA on September 9, 2009.

6.1.2 Quarterly Progress Report Second Quarter 2009

Consent Decree language, pages 82-83: *“Beginning thirty (30) Days after the first Calendar Quarter following the Date of Entry, and thirty (30) Days after each Calendar Quarter thereafter until termination of the Consent Decree, KUB shall submit to the Parties, and simultaneously place in the PDR, a Quarterly Progress Report.”*

On July 28, 2009, KUB submitted to EPA and placed in the PDR the Quarterly Progress Report for the second quarter 2009. This deliverable was not subject to the Public Review Requirement of Section VI.A.2, but was available for public comment from July 28, 2009, until August 17, 2009. No comments were received during that period.

6.1.3 SEP Periodic Report First Period 2009

Consent Decree language, page 61: *“While the SEP is being planned and implemented, KUB shall submit semiannual reports to the Parties describing the progress of the SEP up to and during the most recent Calendar Quarter within one (1) Month after the end of the second and fourth Calendar Quarters following the Date of Entry.”*

On July 28, 2009, KUB submitted the SEP Periodic Report for the first period 2009 to EPA. This deliverable was not subject to public review but was posted in the PDR at the time of submission.

6.1.4 Phase 1 CAP/ER Annual Report 2009

Consent Decree language, page 24: *"On an annual basis, beginning on July 30, 2006, KUB shall submit a report which shall include specific dates for beginning and completing all work identified in both the Phase 1 CAP/ER and Phase 2 CAP/ER for the upcoming twelve (12)-month period."*

On July 28, 2009, KUB submitted the Phase 1 CAP/ER Annual Report 2009 to EPA. This deliverable was not subject to the Public Review Requirement of Section VI.A.2, but was available for public comment from July 28, 2009, until August 17, 2009. No comments were received during that period. Accompanying the submission was the request to extend the schedules for the following projects; 2-2 Lower Second Creel Replacement/Rehabilitation at Woodland, 3-6 Interstate 40 and Middlebrook Pike Trunk Replacement Project, 4-2 Gleason Drive Collector Rehabilitation Project, 4-3 Middlebrook Pike Rehabilitation (Sub-basin 27C3), 4-4 Northshore Drive Trunk Replacement Project, and 4-6 Shadyland Drive Rehabilitation (Sub-basin 36A2).

6.2 Violations Subject to Stipulated Penalties

During this reporting period, KUB incurred 10 Unpermitted Discharges. Table 1 below lists all violations subject to stipulated penalties as outlined in the Consent Decree.

Table 1. Violations Subject to Stipulated Penalties

| Violation | Date | Address | Cause |
|-----------------------|-------------|----------------------|--------------------|
| Unpermitted Discharge | 7/13/09 | 1210 E Moody Ave | Heavy Rainfall |
| Unpermitted Discharge | 7/28/09 | 1210 E Moody Ave | Heavy Rainfall |
| Unpermitted Discharge | 7/31/09 | 1210 E Moody Ave | Heavy Rainfall |
| Unpermitted Discharge | 8/6/09 | 3741 Eakers Street | Heavy Rainfall |
| Unpermitted Discharge | 8/12/09 | 608 Van Street | Blockage |
| Unpermitted Discharge | 9/26/09 | 1500 Lyons Bend Road | Electrical Failure |
| Unpermitted Discharge | 9/26/09 | 1411 Davanna Street | Heavy Rainfall |
| Unpermitted Discharge | 9/26/09 | 1210 E Moody Ave | Heavy Rainfall |
| Unpermitted Discharge | 9/26/09 | 3741 Eakers Street | Heavy Rainfall |
| Unpermitted Discharge | 9/26/09 | 2004 Neyland Drive | Heavy Rainfall |

Section 7 SSOs, Bypasses, Diversions, and Effluent Limit Violations

Consent Decree language, pages 82-83: *“Each Quarterly Progress Report shall contain... A spreadsheet and summary of all SSOs, Bypasses, Diversions, and effluent limit violations that occurred during the previous Calendar Quarter. 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 reason for each SSO, the total SSO volume, the volume returned to the WCTS, and the volume not captured;*
- b. For all Bypasses and Diversions, the location, date, time, duration, volume and reason for each Bypass and Diversion; and the total Bypass or Diversion volumes;*
- c. For all effluent limit violations, all information required to be reported on KUB’s Discharge Monitoring Reports.”*

7.1 SSOs

Appendix B lists all SSOs that occurred during this reporting period. During this period, there were 25 SSO events. Of that number, nine were due to heavy rainfall; seven were due to blockages by either grease, debris, roots, or a combination thereof; three were due to construction failure; three were due to electrical failure; two were due to mechanical failure; and one was due to grinder pump failure. Of the 25 SSO events, 15 were in the 0 – 1000 gallons volume range, six were in the 1001 – 10,000 range, three events totaled greater than 10,000 gallons, and the volume was unknown for one event. Durations for events during this period are as follows: 18 ranged from 0 – 2 hours, two ranged from 2.1 - 5 hours, four were greater than 5 hours, and the duration was unknown for one event.

7.2 Building Backups

Appendix C lists all Building Backups that occurred during this reporting period. During this period, there were six Building Backups. Two were due to construction failure, two were due to blockage, and two were due to heavy rainfall.

7.3 Bypasses

No Bypasses occurred during this reporting period.

7.4 Diversions

Table 2 contains all Diversion event information that occurred during this reporting period. During this reporting period, there were two Diversion events. One occurred at Kuwahee and one occurred at Fourth Creek.

7.5 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 two Effluent Limit Violations that occurred at Loves Creek.

Table 2: Bypasses and Diversions

| WWTP | Did an event occur? | Type of Event | 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 | Diversion | 9/26/2009 | 17:00 | | | 9/26/2009 | 7 | 13.87 | 9 | 14.86 | High flow event due to excess rainfall |
| | | | | | 9/27/2009 | 02:00 | 9/27/2009 | 2 | 0.99 | | | |
| Fourth Creek | Yes | Diversion | 9/26/2009 | 16:00 | | | 9/26/2009 | 8 | 3.72 | 9.75 | 4.03 | High flow event due to excess rainfall |
| | | | | | 9/27/2009 | 01:45 | 9/27/2009 | 1.75 | 0.31 | | | |
| Loves Creek | No | | | | | | | | | | | |
| Eastbridge | No | | | | | | | | | | | |
| | | | | | | | | | | | | |

Table 3: Effluent Limit Violations

| WWTP | Did an event occur? | Date | Parameter | Type | Limit | Value |
|------------------------------|-----------------------------|-----------|----------------|-----------|-----------------|-----------------|
| Kuwahee | No | - | - | - | - | - |
| Fourth Creek | No | - | - | - | - | - |
| Loves Creek | Yes | 8/8/2009 | Fecal Coliform | Daily Max | 1,000 cfu/100ml | 1,400 cfu/100ml |
| | Yes | 8/10/2009 | Fecal Coliform | Daily Max | 1,000 cfu/100ml | 1,100 cfu/100ml |
| Eastbridge | No | - | - | - | - | - |
| SS - Settleable Solids | mg/l - milligrams per liter | | | | | |
| TSS - Total Suspended Solids | cfu – Colony Forming Unit | | | | | |
| ml/l – milliliters per liter | lbs - Pounds | | | | | |

Section 8 Water Quality Monitoring Data

Consent Decree language, pages 82-83: “Each Quarterly Progress Report shall contain... The water quality monitoring data and other information required pursuant to Section VII.D.1.(e).(v).”

8.1 Sampling Conducted and Results

Appendix D lists all sampling that was conducted during the reporting period and the results thereof. In addition to routine monitoring in all creeks, and responding to Sanitary Sewer Overflows (SSO), KUB Water Quality Personnel conducted dry and/or wet weather investigative sampling on Williams Creek, Goose Creek, Baker Creek, Fourth Creek, Second Creek, Loves Creek and First Creek. Also, KUB continued to utilize RT-PCR *Bacteroides* analysis on selected routine samples to investigate high *E. coli* counts when necessary. The Routine Water Quality Monitoring Report has been revised to include some of this investigative PCR data for ease of review.

The Water Quality Monitoring Program has also been revised to include updated creek mile identifiers and safety related guidance for reference. The updated version was posted in the KUB Consent Decree Public Document Repository on 9/30/09.

Fourth Creek

During the previous quarter, KUB Water Quality Personnel conducted a Dry Weather Walking Survey of the entire length of Fourth Creek. This monitoring data was reported in last quarterly report and revealed one area, just above routine site 1.74, with elevated fecal coliform counts (> 1000CFU/100mL). KUB Water Quality Personnel resampled the area of concern on August 26th, after the first available four days of dry weather. (Table 1). The resulting bacteria counts did not indicate significant elevations, which warrant further investigation.

KUB also submitted three routine samples from Fourth Creek for further investigation and *Bacteroides* analysis due to elevations in *E. coli* counts. The samples did not exhibit the presence of human *Bacteroides*. (Table 1).

Williams Creek

During this quarter, Water Quality Personnel conducted additional dry and wet weather investigations on the upper most region of Williams Creek, (upstream from routine site 2.02, where there is a fork in the main stream). Samples at the fork in the upper region of the creek were collected during wet weather, as well as during routine monitoring for this quarter. Although there were elevations in fecal coliform, *E.coli* and Total *Bacteroides* concentrations, there was no evidence of human content in the elevated samples as illustrated in Table 2.

KUB will continue to monitor this creek on a monthly basis and investigate the possibility of human content in areas of count elevation along the upper portion of the creek.

Goose Creek

KUB submitted five samples from routine monitoring for *Bacteroides* RT-PCR analysis that had elevations in fecal coliform and *E. coli* counts (Table 3). The samples submitted from July and August did not reveal evidence of human contribution, but KUB conducted dye testing around routine site 1.19 to determine if laterals from a community center or

apartment complex could be contributing to continued elevation of fecal coliform and *E. coli*, as well as occasional evidence of Human *Bacteroides*. The low and inconsistent evidence of human source in this area during wet weather conditions could be the result of a nearby leaking lateral. There was no indication of dye in the stream during testing, but some investigation will be continued above routine site 1.19E.

Second Creek

KUB continued to investigate the area around routine site 5.76 on Second Creek. In previous quarters, KUB had seen high elevations of fecal coliform, *E. coli* and some evidence of human contribution via the *Bacteroides* analysis. Field personnel have observed stagnant water in the area of routine site 5.76 and have investigated a second pipe that also drains to site 5.76. KUB submitted five samples for *Bacteroides* analysis from Second Creek during July due to elevations in fecal coliform and *E. coli* counts (Table 4). One sample located at routine site 5.76 exhibited a slight elevation in Human *Bacteroides* content during wet weather in July. August and September monitoring did not illustrate similar elevations in bacteria counts. The elevations in fecal coliform and *E. coli* during July routine monitoring are most likely due to wet weather conditions. On September 29th, samples were again collected from routine site 5.76. This monitoring also included samples taken after the creek flows from under the interstate to possibly pinpoint the source of fecal contamination, but the samples did not have elevated bacteria counts. Water Quality personnel have conducted dye testing of several restaurant laterals in the area of routine site 5.76 without evidence of dye in the stream. KUB will continue to investigate the area around the routine site 5.76.

Water Quality Personnel also investigated two concerns communicated by customers in areas of Second Creek near Charlene Lane and Bernard Street, further downstream from site 5.76. Samples taken show no significant elevation of fecal coliform or *E. coli* counts in these areas of Second Creek. (Table 4). These results were also consistent with routine monitoring results for August and September. No further investigation was necessary.

Baker Creek

Due to a significant increase in fecal coliform and *E. coli* counts during routine monitoring in August, KUB submitted three samples from Baker Creek for *Bacteroides* analysis as illustrated in Table 5. Routine site 0.36 exhibited human *Bacteroides* content; where as the other two routine sites did not. In previous quarters, we have seen some indication of human source at routine site 0.36 especially during wet weather. The elevated counts in August prompted Water Quality personnel to sample a left bank tributary, located upstream from routine site 0.36, during routine monitoring in September. All counts were much lower, but investigation of this tributary with PCR testing will continue in the coming quarter.

KUB also responded to a sanitary sewer overflow that may have entered Baker Creek on August 6th. Evidence was found in the area of 3741 Eakers St. that an SSO had occurred in the area in the recent past during heavy rainfall, and it was reported as an unpermitted discharge. Water Quality Personnel sampled above and below where the overflow may have entered Baker Creek despite the late discovery. Since the counts were not elevated above the typical bacteria level seen in Baker Creek during wet weather, KUB decided further sampling of the area was unnecessary under Spill Impact Monitoring. This event does not appear to be related to routine monitoring results obtained later on 8/20/09 that were much higher, warranting the investigation described above.

Loves Creek

On August 12th, KUB responded to a sanitary sewer overflow (SSO) on Sandis Lane, near the Loves Creek Wastewater Treatment Plant. The overflow was not an unpermitted discharge, but KUB Water Quality Personnel proactively sampled the creek, since this stream has not ever required investigation or shown potential impacts from the sewer. Fecal coliform and *E. coli* counts of that area corroborated that this SSO had not impacted the creek (Table 6).

First Creek

On August 17th, Water Quality personnel responded to a sanitary sewer overflow on First Creek at W. Glenwood Avenue. Although the SSO was not an unpermitted discharge, samples were collected above and below from where the discharge may have entered the creek as a precautionary measure. Fecal coliform and *E. coli* counts illustrated that the discharge did not reach First Creek (Table 7).

8.2 Projected Data Collection

During the fourth quarter of 2009, KUB will continue to monitor the 24 routine sampling locations in the sewer basins of eight area creeks. KUB will collect samples from the following locations during the third quarter of 2009:

Sample Locations by Creek Mile or Site Number

| <i>Creek Name</i> | <i>Creek Mile #</i> | <i>Creek Mile #</i> | <i>Creek Mile #</i> |
|--------------------------|----------------------------|----------------------------|----------------------------|
| First Creek | 1.74 | 2.57 | 6.33 |
| Second Creek | 0.30 | 1.54 | 5.76 |
| Third Creek | 0.87 | 2.08E | 4.80W |
| Fourth Creek | 1.75 | 2.79 | 3.29 |
| Baker Creek | 0.36 | 0.53 | 1.45 |
| Goose Creek | 0.40 | 1.19E | 1.80E |
| Loves Creek | 0.85 | 1.89 | 3.45 |
| Williams Creek | 0.89 | 1.70 | 2.02 |

In the fourth Quarter of 2009, KUB will conduct Wet Weather investigations on Goose Creek and Fourth Creek as weather permits. KUB will also continue to investigate regions of Williams Creek and the upper regions of Second Creek.

Appendix A

Capital Projects and Rehabilitation Credits

| Project Name | Credit Type | Basin | WWTP | Credits Banked (gpd) | Status |
|---|------------------------------|-------------------------|--------------|----------------------|------------------|
| 1 Comprehensive Rehab 03B1a | Comprehensive Rehabilitation | 1st Creek | Kuwahee | 321,030 | Project Complete |
| 2 Comprehensive Rehab 03B2a | Comprehensive Rehabilitation | 1st Creek | Kuwahee | 302,366 | Project Complete |
| 3 Comprehensive Rehab 04B1a | Comprehensive Rehabilitation | 1st Creek | Kuwahee | 334,626 | Project Complete |
| 4 Comprehensive Rehab 08A1 | Comprehensive Rehabilitation | 1st Creek | Kuwahee | 1,589,952 | Project Complete |
| 5 McCampbell Lane Sewer Replacement | Find & Fix Gravity Main | 1st Creek | Kuwahee | 25,543 | Project Complete |
| 6 Knox Road Trunkline Replacement | Find & Fix Gravity Main | 1st Creek | Kuwahee | 36,728 | Project Complete |
| 7 vented manhole cover replacement (7A1) | Manhole Cover | 1st Creek | Kuwahee | 13,333 | Project Complete |
| 8 vented manhole cover replacement (7A1) | Manhole Cover | 1st Creek | Kuwahee | 13,333 | Project Complete |
| 9 vented manhole cover replacement (7A1) | Manhole Cover | 1st Creek | Kuwahee | 13,333 | Project Complete |
| 10 Comprehensive Rehab 15D2 | Comprehensive Rehabilitation | 2nd Creek | Kuwahee | 1,450,008 | Project Complete |
| 11 Comprehensive Rehab 05A4 & 05A3 | Comprehensive Rehabilitation | 2nd Creek | Kuwahee | 43,904 | Project Complete |
| 12 Comprehensive Rehab 09A2 | Comprehensive Rehabilitation | 3rd Creek | Kuwahee | 296,664 | Project Complete |
| 13 Comprehensive Rehab 09A1 | Comprehensive Rehabilitation | 3rd Creek | Kuwahee | 219,345 | Project Complete |
| 14 Walker Springs Storage Tank | Storage Tank | 4th Creek | Fourth Creek | 3,250,000 | Project Complete |
| 15 Comprehensive Rehab 40F1 | Comprehensive Rehabilitation | South Knox / Knob Creek | Kuwahee | 83,600 | Project Complete |
| 16 Comprehensive Rehab 41A4 | Comprehensive Rehabilitation | South Knox / Knob Creek | Kuwahee | 371,994 | Project Complete |
| 17 Comprehensive Rehab 41B1 | Comprehensive Rehabilitation | South Knox / Knob Creek | Kuwahee | 152,958 | Project Complete |
| 18 Wilson Ave, Chesnut St., Donnell St. (Asset Replacement) | Find & Fix Gravity Main | Williams Creek | Kuwahee | 28 | Project Complete |
| 19 Williams Creek Trunkline Replacement | Find & Fix Gravity Main | Williams Creek | Kuwahee | 168,667 | Project Complete |
| 20 Rushland Park Off Site Sewer Rehabilitation | Find & Fix Gravity Main | Loves Creek | Loves Creek | 3,803 | Project Complete |
| 21 Emily Avenue Pump Station Abandonment | Find & Fix Gravity Main | Loves Creek | Loves Creek | 141,600 | Project Complete |
| 22 Fair Drive - Phase I | Find & Fix Gravity Main | 1st Creek | Kuwahee | 130,928 | Project Complete |
| 23 Comprehensive Rehab 23E1 | Comprehensive Rehabilitation | 2nd Creek | Kuwahee | 4,215,003 | Project Complete |
| 24 vented manhole cover replacements (08B2) | Manhole Cover | 1st Creek | Kuwahee | 4,669 | Project Complete |
| 25 vented manhole cover replacement (16B1) | Manhole Cover | 1st Creek | Kuwahee | 667 | Project Complete |
| 26 vented manhole cover replacements (28C1) | Manhole Cover | 3rd Creek | Kuwahee | 1,334 | Project Complete |
| 27 10" mainline replacement (33A2) | Find & Fix Gravity Main | 4th Creek | Fourth Creek | 5,409 | Project Complete |
| 28 vented manhole cover replacements (22C2) | Manhole Cover | 3rd Creek | Kuwahee | 16,002 | Project Complete |
| 29 vented manhole cover replacements (63) | Manhole Cover | Sinking Creek | Loves Creek | 66,665 | Project Complete |
| 30 10" mainline replacement (6C1) | Find & Fix Gravity Main | Loves Creek | Loves Creek | 24,620 | Project Complete |
| 31 Comprehensive Rehab 06A5 | Comprehensive Rehabilitation | Loves Creek | Loves Creek | 263,358 | Project Complete |
| 32 Comprehensive Rehab 06A4 | Comprehensive Rehabilitation | Loves Creek | Loves Creek | 386,304 | Project Complete |
| 33 vented manhole cover replacement (39D2) | Manhole Cover | South Knox/Knob Creek | Kuwahee | 667 | Project Complete |
| 34 vented manhole cover replacement (39D4) | Manhole Cover | South Knox/Knob Creek | Kuwahee | 667 | Project Complete |
| 35 vented manhole cover replacement (39D3) | Manhole Cover | South Knox/Knob Creek | Kuwahee | 2,668 | Project Complete |
| 36 vented manhole cover replacement (20A6) | Manhole Cover | Loves Creek | Loves Creek | 1,334 | Project Complete |
| 37 vented manhole cover replacement (20A7) | Manhole Cover | Loves Creek | Loves Creek | 667 | Project Complete |
| 38 vented manhole cover replacement (13A2) | Manhole Cover | 3rd Creek | Kuwahee | 667 | Project Complete |
| 39 vented manhole cover replacement (13B1) | Manhole Cover | 3rd Creek | Kuwahee | 13,335 | Project Complete |
| 40 vented manhole cover replacement (28B1) | Manhole Cover | 3rd Creek | Kuwahee | 1,334 | Project Complete |
| 41 12" mainline replacement (44) | Find & Fix Gravity Main | South Knox/Knob Creek | Kuwahee | 4,278 | Project Complete |
| 42 manhole frame seal repair (67) | Manhole Repair | Loves Creek | Loves Creek | 2,304 | Project Complete |
| 43 Whites Creek Trunk Line Replacement (02) | Find & Fix Gravity Main | 1st Creek | Kuwahee | 50,106 | Project Complete |
| 44 Comprehensive Rehab 09D1 | Comprehensive Rehabilitation | 3rd Creek | Kuwahee | 381,376 | Project Complete |
| 45 Comprehensive Rehab 09A4 | Comprehensive Rehabilitation | 3rd Creek | Kuwahee | 408,317 | Project Complete |
| 46 Lower First Creek Storage Tank | Storage Tank | 1st Creek | Kuwahee | 5,000,000 | Project Complete |
| 47 vented manhole cover replacement (11B2) | Manhole Cover | 3rd Creek | Kuwahee | 13,333 | Project Complete |
| 48 vented manhole cover replacement (13C1) | Manhole Cover | 3rd Creek | Kuwahee | 2,667 | Project Complete |
| 49 vented manhole cover replacement (22A2) | Manhole Cover | 3rd Creek | Kuwahee | 667 | Project Complete |
| 50 vented manhole cover replacement (22B1) | Manhole Cover | 3rd Creek | Kuwahee | 667 | Project Complete |
| 51 Creek Head Drive sewer line replacement (32A4) | Find & Fix Gravity Main | 4th Creek | Fourth Creek | 11,132 | Project Complete |
| 52 Manhole replacement (19A3) | Find & Fix Gravity Main | Williams Creek | Kuwahee | 207 | Project Complete |
| 53 Papermill drive sewer line replacement (33A2) | Find & Fix Gravity Main | 4th Creek | Fourth Creek | 103,769 | Project Complete |
| 54 Wells Rd sewer line replacement (39C2) | Find & Fix Gravity Main | South Knox/Knob Creek | Kuwahee | 1,728 | Project Complete |
| 55 Power Park Manhole Rehab (45) | Find & Fix Gravity Main | Knob Creek | Kuwahee | 3,596 | Project Complete |
| 56 Blount Ave abandoned lateral (39A1) | Disconnect abandoned lateral | South Knox/Knob Creek | Kuwahee | 2,000 | Project Complete |
| 57 Woodbine Ave sewerline Rehab (19A2) | Find & Fix Gravity Main | Williams Creek | Kuwahee | 2,683 | Project Complete |

| Project Name | Credit Type | Basin | WWTP | Credits Banked (gpd) | Status |
|--|------------------------------|-----------------------|--------------|----------------------|------------------|
| 58 Pleasant Ridge Rd Sewer line improvements (09A1) | Find & Fix Gravity Main | 3rd Creek | Kuwahee | 207 | Project Complete |
| 59 Papermill drive sewer line replacement (27A1) | Find & Fix Gravity Main | Fourth Creek | Fourth Creek | 18,211 | Project Complete |
| 60 Wilson Rd Manhole Rehab (10C1) | Find & Fix Gravity Main | 2nd Creek | Kuwahee | 831 | Project Complete |
| 61 Maryville Pike Trunk Replacement (39C1) | Find & Fix Gravity Main | South Knox/Knob Creek | Kuwahee | 72,880 | Project Complete |
| 62 Upper McKamey Trunk Replacement (11B1 11B2) | Find & Fix Gravity Main | 3rd Creek | Kuwahee | 64,324 | Project Complete |
| 63 Fox Manor Blvd sewer line replacement (32A4) | Find & Fix Gravity Main | 4th Creek | Fourth Creek | 31,510 | Project Complete |
| 64 Power Park Manhole Rehab (47) | Manhole Repair | South Knox/Knob Creek | Kuwahee | 7,700 | Project Complete |
| 65 Sutherland Ave Sewer Line Replacement (28B1) | Find & Fix Gravity Main | 3rd Creek | Kuwahee | 20,383 | Project Complete |
| 66 Fountain City Trunkline Replacement (03B1 03B2) | Find & Fix Gravity Main | 1st Creek | Kuwahee | 72,512 | Project Complete |
| 67 vented manhole cover replacement (11B2) | Manhole Cover | 4th Creek | Fourth Creek | 13,333 | Project Complete |
| 68 vented manhole cover replacement (39D2) | Manhole Cover | South Knox/Knob Creek | Kuwahee | 13,333 | Project Complete |
| 69 Comprehensive Rehabilitation 19A2 | Comprehensive Rehabilitation | Williams Creek | Kuwahee | 521,631 | Project Complete |
| 70 17B1 Manhole Replacement | Find & Fix Gravity Main | 1st Creek | Kuwahee | 1,803 | Project Complete |
| 71 Vine Middle School sewerline Rehab (24D1) | Find & Fix Gravity Main | 1st Creek | Kuwahee | 23,491 | Project Complete |
| 72 Comprehensive Rehabilitation (08B2) | Comprehensive Rehabilitation | 1st Creek | Kuwahee | 841,370 | Project Complete |
| 73 Third Creek Storage Tank (21A1) | Storage Tank | 3rd Creek | Kuwahee | 4,000,000 | Project Complete |
| 74 Comprehensive Rehabilitation (19A1) | Comprehensive Rehabilitation | Williams Creek | Kuwahee | 313,938 | Project Complete |
| 75 Comprehensive Rehabilitation (19B1) | Comprehensive Rehabilitation | Williams Creek | Kuwahee | 328,300 | Project Complete |
| 76 Comprehensive Rehabilitation (10B1) | Comprehensive Rehabilitation | 2nd Creek | Kuwahee | 191,698 | Project Complete |
| 77 Comprehensive Rehabilitation (10C1) | Comprehensive Rehabilitation | 2nd Creek | Kuwahee | 67,840 | Project Complete |
| 78 Disconnected Stormwater Detention Pond Sevier Ave (40C1) | Disconnect Storm Sewer | South Knox/Knob Creek | Kuwahee | 97,333 | Project Complete |
| 79 Sub Basin 63 Sinking Creek Drainage rehabilitation (63) | Comprehensive Rehabilitation | South Knox/Knob Creek | Loves Creek | 72,110 | Project Complete |
| 80 West Ford Valley Trunkline replacement (41A1) | Find & Fix Gravity Main | South Knox/Knob Creek | Kuwahee | 236,704 | Project Complete |
| 81 Blount Avenue Trunkline Replacement (39A1) | Find & Fix Gravity Main | South Knox/Knob Creek | Kuwahee | 225,376 | Project Complete |
| 82 Brookvale Point Repairs (02A3) | Find & Fix Gravity Main | 1st Creek | Kuwahee | 52,079 | Project Complete |
| 83 Park Pump Point Repairs (45) | Find & Fix Gravity Main | South Knox/Knob Creek | Kuwahee | 11,522 | Project Complete |
| 84 Wayland Road Storage Tank (67) | Storage Tank | Loves Creek | Loves Creek | 20,000 | Project Complete |
| 85 Comprehensive Rehab (19A3) | Comprehensive Rehabilitation | Williams Creek | Kuwahee | 325,090 | Project Complete |
| 86 Comprehensive Rehab (41A2) | Comprehensive Rehabilitation | South Knox/Knob Creek | Kuwahee | 39,330 | Project Complete |
| 87 Comprehensive Rehab (41A5) | Comprehensive Rehabilitation | South Knox/Knob Creek | Kuwahee | 119,327 | Project Complete |
| 88 Jersey Ave sewer rehabilitation (SubBasin 23) | Find & Fix Gravity Main | 1st Creek | Kuwahee | 419 | Project Complete |
| 89 East Magnolia sewer rehabilitation (SubBasin 24) | Find & Fix Gravity Main | 1st Creek | Kuwahee | 846 | Project Complete |
| 90 Walker Blvd Sewer Rehabilitation (SubBasin 16) | Find & Fix Gravity Main | 1st Creek | Kuwahee | 1086 | Project Complete |
| 91 Kingston Court Sewer Rehabilitation (SubBasin 29) | Find & Fix Gravity Main | 3rd Creek | Kuwahee | 3727 | Project Complete |
| 92 Clinch Ave Sewer Rehabilitation (SubBasin 30) | Find & Fix Gravity Main | 1st Creek | Kuwahee | 442 | Project Complete |
| 93 Badgett Drive Sewer Rehabilitation (SubBasin 22) | Find & Fix Gravity Main | 3rd Creek | Kuwahee | 214 | Project Complete |
| 94 Dickson Street Sewer Rehabilitation (SubBasin 20) | Find & Fix Gravity Main | Loves Creek | Loves Creek | 417 | Project Complete |
| 95 W New Street Sewer Rehabilitation (SubBasin 24) | Find & Fix Gravity Main | 1st Creek | Kuwahee | 2844 | Project Complete |
| 96 Rennoc Rd Sewer Rehabilitation (SubBasin 4) | Find & Fix Gravity Main | 1st Creek | Kuwahee | 2853 | Project Complete |
| 97 Spicewood Lane Sewer Rehabilitation (SubBasin 13) | Find & Fix Gravity Main | 3rd Creek | Kuwahee | 216 | Project Complete |
| 98 Chapman Highway Sewer Rehabilitation (SubBasin 39) | Find & Fix Gravity Main | South Knox/Knob Creek | Kuwahee | 212 | Project Complete |
| 99 McCroskey Ave Sewer Rehabilitation (SubBasin 17) | Find & Fix Gravity Main | 1st Creek | Kuwahee | 1,076 | Project Complete |
| 100 East 5th Ave Sewer Rehabilitation (SubBasin 24) | Find & Fix Gravity Main | 1st Creek | Kuwahee | 447 | Project Complete |
| 101 Simms Rd Sewer Rehabilitation (SubBasin 39) | Find & Fix Gravity Main | South Knox/Knob Creek | Kuwahee | 2,955 | Project Complete |
| 102 Maynard Ave Sewer Rehabilitation (SubBasin 16) | Find & Fix Gravity Main | 1st Creek | Kuwahee | 423 | Project Complete |
| 103 Minibasin 10B1 & 10C1 find & fix | Find & Fix Gravity Main | 2nd Creek | Kuwahee | 15,689 | Project Complete |
| 104 Third Creek Trunkline Replacement | Find & Fix Gravity Main | 3rd Creek | Kuwahee | 483,793 | Project Complete |
| 105 Disconnected Stormwater 15" discharge pipe Island Home Bblvd | Disconnect Storm Sewer | South Knox/Knob Creek | Kuwahee | 1,720,000 | Project Complete |
| 106 Paved Manhole Rehabilitation 40A2 | Find & Fix Gravity Main | South Knox/Knob Creek | Kuwahee | 20,140 | Project Complete |
| 107 Paved Manhole Rehabilitation 40F2 | Find & Fix Gravity Main | South Knox/Knob Creek | Kuwahee | 6,515 | Project Complete |
| 108 Paved Manhole Rehabilitation 40G1 | Find & Fix Gravity Main | South Knox/Knob Creek | Kuwahee | 13,571 | Project Complete |
| 109 Paved Manhole Rehabilitation 39E1 | Find & Fix Gravity Main | South Knox/Knob Creek | Kuwahee | 2,576 | Project Complete |
| 110 Paved Manhole Rehabilitation 03C1 | Find & Fix Gravity Main | 1st Creek | Kuwahee | 3,615 | Project Complete |
| 111 Paved Manhole Rehabilitation 02A1 | Find & Fix Gravity Main | 1st Creek | Kuwahee | 6,491 | Project Complete |
| 112 Paved Manhole Rehabilitation SB 38 | Find & Fix Gravity Main | 3rd Creek | Kuwahee | 5,797 | Project Complete |
| 113 Paved Manhole Rehabilitation 18A1 | Find & Fix Gravity Main | 1st Creek | Kuwahee | 4,540 | Project Complete |
| 114 Paved Manhole Rehabilitation 39E1 | Find & Fix Gravity Main | South Knox/Knob Creek | Kuwahee | 34,671 | Project Complete |

| Project Name | Credit Type | Basin | WWTP | Credits Banked (gpd) | Status |
|---|------------------------------|-----------------------|--------------|----------------------|------------------|
| 115 Paved Manhole Rehabilitation 39D1 | Find & Fix Gravity Main | South Knox/Knob Creek | Kuwahee | 8,000 | Project Complete |
| 116 Paved Manhole Rehabilitation 39A2 | Find & Fix Gravity Main | South Knox/Knob Creek | Kuwahee | 13,335 | Project Complete |
| 117 Paved Manhole Rehabilitation 39C3 | Find & Fix Gravity Main | South Knox/Knob Creek | Kuwahee | 26,670 | Project Complete |
| 118 Broken Manhole Lid Replacement (67) | Find & Fix Gravity Main | Loves Creek | Loves Creek | 26,666 | Project Complete |
| 119 Manhole Replacement (61) | Find & Fix Gravity Main | Loves Creek | Loves Creek | 2,304 | Project Complete |
| 120 Woodbine Aver Sewer Rehab Phase II (19A2) | Find & Fix Gravity Main | Williams Creek | Kuwahee | 855 | Project Complete |
| 121 Comprehensive Sewer Rehab (41A6) | Comprehensive Rehabilitation | South Knox/Knob Creek | Kuwahee | 951,328 | Project Complete |
| 122 Comprehensive Sewer Rehab (41C1) | Comprehensive Rehabilitation | South Knox/Knob Creek | Kuwahee | 161,680 | Project Complete |
| 123 Comprehensive Sewer Rehab (41C2) | Comprehensive Rehabilitation | South Knox/Knob Creek | Kuwahee | 94,332 | Project Complete |
| 124 Davenport Trunkline Replacement (15A1) | Find & Fix Gravity Main | 2nd Creek | Kuwahee | 86,423 | Project Complete |
| 125 Forks of the River Trunkline Replacement (60) | Find & Fix Gravity Main | Riverdale | Kuwahee | 62,037 | Project Complete |
| 126 Brooks & Ester Sewer Rehabilitation (25A2) | Find & Fix Gravity Main | Williams Creek | Kuwahee | 14,186 | Project Complete |
| 127 Grand Ave Sewer Rehabilitation (23B1) | Find & Fix Gravity Main | 2nd Creek | Kuwahee | 885 | Project Complete |
| 128 Clinch Ave & 21st Rehabilitation (35B3) | Find & Fix Gravity Main | 3rd Creek | Kuwahee | 15,453 | Project Complete |
| 129 Blount Ave Trunkline phase II (39A2) | Find & Fix Gravity Main | South Knox/Knob Creek | Kuwahee | 124,150 | Project Complete |
| 130 Trunkline at Woodland Ave | Trunkline Replacement | 2nd Creek | Kuwahee | 106,558 | Project Complete |
| 131 Keowee Ave, Sandusky Rd, and Sutherland Ave | Find & Fix Gravity Main | 3rd Creek | Kuwahee | 6,367 | Project Complete |
| 132 Antietam Rd | Find & Fix Gravity Main | 1st Creek | Kuwahee | 1,760 | Project Complete |
| 133 Cheyanne Dr | Find & Fix Gravity Main | South Knox/Knob Creek | Kuwahee | 1,760 | Project Complete |
| 134 Chambliss Ave | Find & Fix Gravity Main | 3rd Creek | Kuwahee | 2,642 | Project Complete |
| 135 Godfrey St | Find & Fix Gravity Main | 1st Creek | Kuwahee | 218 | Project Complete |
| 136 Shortline-Ave B | Find & Fix Gravity Main | South Knox/Knob Creek | Kuwahee | 7,332 | Project Complete |
| 137 Second Creek SSO Abatement | Find & Fix Gravity Main | 2nd Creek | Kuwahee | 163,471 | Project Complete |
| 138 Shortline- Maplehurst | Find & Fix Gravity Main | 1st Creek | Kuwahee | 6,062 | Project Complete |
| 139 Shortline- Parkhill | Find & Fix Gravity Main | 4th Creek | Fourth Creek | 1,755 | Project Complete |
| 140 Shortline- Essary | Find & Fix Gravity Main | 1st Creek | Kuwahee | 215 | Project Complete |
| 141 Shortline- Ridgecrest | Find & Fix Gravity Main | 1st Creek | Kuwahee | 3,058 | Project Complete |

Appendix B

SSOs

[illegible]

Appendix C

Building Backups

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|-----------|----------|----------|----------------------------|-------|-----------------|-------|-------------------|--|------------------------|----------------------------|--------------------------------|--------------------|
| Date | Time | Street # | Street | Plant | Watershed | Basin | Overflow Location | Cause of BBU/KUB Response | Total Volume (Gallons) | Recovered Volume (Gallons) | Non-Recovered Volume (Gallons) | Duration (Hours) |
| 7/13/2009 | 3:00 PM | 4900 | ADA LANE | KUW | First Creek | 2 | BBU | Building backup due to sewer main flushing. | 98 | 98 | 0 | 0.5 |
| 7/15/2009 | 10:33 PM | 2709 | SPRING HILL ROAD | LC | Loves Creek | 6 | BBU | Building backup due to a damaged lateral during gas main installation. | 20 | 20 | 0 | 6 |
| 9/1/2009 | 6:42 PM | 2716 | SUTHERLAND AVENUE | KUW | Third Creek | 29 | BBU | The sewer main was flushed to remove the blockage caused by debris. | 200 | 200 | 0 | 9.5 |
| 9/25/2009 | 5:41 PM | 3001 | GINNBROOKE LANE | KUW | South Knoxville | 47 | BBU | The sewer main was flushed to remove the blockage caused by debris. | 100 | 100 | 0 | 120 Intermittently |
| 9/26/2009 | 6:46 PM | 2637 | W. BLOUNT AVENUE | KUW | South Knoxville | 39 | BBU | Rainfall in the area produced I & I and high flows in sewer mains. | 1000 | 1000 | 0 | 2 |
| 9/26/2009 | 7:18 PM | 2725 | E. GOVERNOR JOHN SEVIER HW | KUW | Riverdale | 60 | BBU | Rainfall in the area produced I & I and high flows in sewer mains. | 50 | 50 | 0 | 1 |
| | | | | | | | | | | | | |

Appendix D

Water Quality Monitoring Program Sampling Results



Routine Water Quality Monitoring Report

7/1/2009 Through 9/30/2009

Knoxville Utilities Board
Water Quality Laboratory
Debbie Alley, Lab Supervisor
835 East Jackson Avenue
Knoxville, Tennessee 37915
(865) 594-8286 Fax: (865) 594-8245

| Creek Mile # | Sample Date | Sample Time | pH | Sample Temp (C) | Dissolved Oxygen (mg/l) | Fecal Coliform (CFU/100 ml) | E. Coli (MPN) | Total Bacteroides | Human Bacteroides | Precipitation Event | Status |
|---------------------|-------------|-------------|-----|-----------------|-------------------------|-----------------------------|---------------|-------------------|-------------------|---------------------|--------|
| First Creek | | | | | | | | | | | |
| 1.74 | 7/21/2009 | 12:03 | 8.0 | 20 | 8.1 | 540 | 210 | N/A | N/A | Dry | R |
| 2.57 | 7/21/2009 | 09:45 | 8.1 | 19 | 7.8 | 580 | 310 | N/A | N/A | Dry | R |
| 6.33 | 7/21/2009 | 09:26 | 7.8 | 18 | 7.3 | 420 | 260 | N/A | N/A | Dry | R |
| 1.74 | 8/11/2009 | 09:31 | 8.0 | 22 | 7.6 | 360 | 260 | N/A | N/A | Dry | R |
| 2.57 | 8/11/2009 | 09:18 | 8.0 | 21 | 7.6 | 480 | 390 | N/A | N/A | Dry | R |
| 6.33 | 8/11/2009 | 09:02 | 7.8 | 20 | 7.2 | 350 | 210 | N/A | N/A | Dry | R |
| 1.74 | 9/9/2009 | 10:23 | 8.4 | 20 | 8.2 | 4900 | 980 | N/A | N/A | Dry | R |
| 2.57 | 9/9/2009 | 10:05 | 8.4 | 19 | 8.2 | 400 | 240 | N/A | N/A | Dry | R |
| 6.33 | 9/9/2009 | 09:49 | 8.1 | 19 | 7.3 | 360 | 460 | N/A | N/A | Dry | R |
| Second Creek | | | | | | | | | | | |
| 0.30 | 7/30/2009 | 09:22 | 7.8 | 22 | 7.1 | 58000 | > 2400 | 372.2 | < 5 | Wet | R |
| 1.54 | 7/30/2009 | 09:05 | 7.7 | 21 | 7.0 | 39000 | 2400 | 342.2 | < 5 | Wet | R |
| 5.76 | 7/30/2009 | 08:30 | 7.2 | 19 | 5.2 | 4700 | 2400 | 33.5 | < 5 | Wet | R |
| 0.30 | 8/25/2009 | 11:17 | 8.4 | 21 | 8.5 | 420 | 120 | N/A | N/A | Dry | R |
| 1.54 | 8/25/2009 | 11:00 | 8.3 | 20 | 8.7 | 540 | 390 | N/A | N/A | Dry | R |
| 5.76 | 8/25/2009 | 10:36 | 7.4 | 16 | 5.8 | 210 | 88 | N/A | N/A | Dry | R |
| 0.30 | 9/22/2009 | 09:37 | 8.3 | 20 | 8.1 | 390 | 340 | N/A | N/A | Wet | R |
| 1.54 | 9/22/2009 | 09:47 | 8.4 | 20 | 7.7 | 910 | 610 | N/A | N/A | Wet | R |
| 5.76 | 9/22/2009 | 10:26 | 7.5 | 17 | 5.7 | 360 | 200 | N/A | N/A | 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.



Routine Water Quality Monitoring Report

7/1/2009 Through 9/30/2009

Knoxville Utilities Board
Water Quality Laboratory
Debbie Alley, Lab Supervisor
835 East Jackson Avenue
Knoxville, Tennessee 37915
(865) 594-8286 Fax: (865) 594-8245

| Creek Mile # | Sample Date | Sample Time | pH | Sample Temp (C) | Dissolved Oxygen (mg/l) | Fecal Coliform (CFU/100 ml) | E. Coli (MPN) | Total Bacterioides | Human Bacterioides | Precipitation Event | Status |
|---------------------|-------------|-------------|-----|-----------------|-------------------------|-----------------------------|---------------|--------------------|--------------------|---------------------|--------|
| Third Creek | | | | | | | | | | | |
| 0.87 | 7/23/2009 | 10:04 | 8.0 | 19 | 8.1 | 420 | 460 | N/A | N/A | Dry | R |
| 2.08E | 7/23/2009 | 09:50 | 8.2 | 19 | 7.3 | 1600 | 870 | N/A | N/A | Dry | R |
| 4.80W | 7/23/2009 | 09:37 | 7.7 | 17 | 8.0 | 360 | 360 | N/A | N/A | Dry | R |
| 0.87 | 8/19/2009 | 10:35 | 8.2 | 21 | 7.9 | 1900 | 280 | N/A | N/A | Dry | R |
| 2.08E | 8/19/2009 | 10:16 | 8.2 | 22 | 7.0 | 910 | 340 | N/A | N/A | Dry | R |
| 4.80W | 8/19/2009 | 08:32 | 7.9 | 17 | 8.2 | 420 | 180 | N/A | N/A | Dry | R |
| 0.87 | 9/10/2009 | 09:53 | 8.4 | 19 | 8.2 | 2500 | 1700 | N/A | N/A | Dry | R |
| 2.08E | 9/10/2009 | 09:36 | 8.1 | 19 | 5.8 | 4000 | 610 | N/A | N/A | Dry | R |
| 4.80W | 9/10/2009 | 09:16 | 8.2 | 17 | 8.3 | 310 | 250 | N/A | N/A | Dry | R |
| Fourth Creek | | | | | | | | | | | |
| 1.75 | 7/15/2009 | 09:15 | 7.9 | 18 | 7.9 | 1400 | 1000 | 6.3 | < 5 | Wet | I |
| 2.79 | 7/15/2009 | 08:55 | 7.8 | 17 | 8.3 | 520 | 360 | N/A | N/A | Wet | R |
| 3.29 | 7/15/2009 | 08:45 | 7.9 | 17 | 8.5 | 290 | 240 | N/A | N/A | Wet | R |
| 1.75 | 8/18/2009 | 09:17 | 7.9 | 19 | 7.4 | 23000 | > 2400 | 35.4 | < 5 | Dry | I |
| 2.79 | 8/18/2009 | 09:39 | 8.0 | 18 | 8.0 | 3200 | 1400 | 15.8 | < 5 | Dry | R |
| 3.29 | 8/18/2009 | 09:30 | 8.1 | 17 | 8.9 | 360 | 520 | N/A | N/A | Dry | R |
| 1.75 | 9/21/2009 | 12:31 | 8.0 | 20 | 8.0 | 1800 | 1000 | N/A | N/A | Wet | I |
| 2.79 | 9/21/2009 | 12:55 | 8.1 | 19 | 8.2 | 1000 | 920 | N/A | N/A | Wet | R |
| 3.29 | 9/21/2009 | 12:46 | 8.2 | 18 | 8.7 | 350 | 390 | N/A | N/A | 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.



Routine Water Quality Monitoring Report

7/1/2009 Through 9/30/2009

Knoxville Utilities Board
Water Quality Laboratory
Debbie Alley, Lab Supervisor
835 East Jackson Avenue
Knoxville, Tennessee 37915
(865) 594-8286 Fax: (865) 594-8245

| Creek Mile # | Sample Date | Sample Time | pH | Sample Temp (C) | Dissolved Oxygen (mg/l) | Fecal Coliform (CFU/100 ml) | E. Coli (MPN) | Total Bacterioides | Human Bacterioides | Precipitation Event | Status |
|-----------------------|-------------|-------------|-----|-----------------|-------------------------|-----------------------------|---------------|--------------------|--------------------|---------------------|--------|
| Loves Creek | | | | | | | | | | | |
| 0.85 | 7/14/2009 | 10:05 | 7.8 | 19 | 7.4 | 730 | 280 | N/A | N/A | Wet | R |
| 1.89 | 7/14/2009 | 09:45 | 7.4 | 19 | 6.6 | 540 | 410 | N/A | N/A | Wet | R |
| 3.45 | 7/14/2009 | 09:35 | 7.5 | 21 | 6.5 | 480 | 410 | N/A | N/A | Wet | R |
| 0.85 | 8/3/2009 | 09:39 | 7.6 | 18 | 7.9 | 450 | 460 | N/A | N/A | Wet | R |
| 1.89 | 8/3/2009 | 09:26 | 6.7 | 18 | 7.4 | 340 | 130 | N/A | N/A | Wet | R |
| 3.45 | 8/3/2009 | 09:15 | 7.6 | 20 | 6.5 | 360 | 100 | N/A | N/A | Wet | R |
| 0.85 | 9/1/2009 | 10:23 | 8.1 | 19 | 8.1 | 480 | 520 | N/A | N/A | Wet | R |
| 1.89 | 9/1/2009 | 10:04 | 7.4 | 18 | 7.6 | 240 | 88 | N/A | N/A | Wet | R |
| 3.45 | 9/1/2009 | 09:55 | 7.1 | 20 | 7.6 | 530 | 140 | N/A | N/A | Wet | R |
| Williams Creek | | | | | | | | | | | |
| 0.89 | 7/28/2009 | 09:37 | 7.9 | 20 | 7.7 | 1000 | 360 | N/A | N/A | Dry | R |
| 1.70 | 7/28/2009 | 10:00 | 7.4 | 19 | 6.9 | 640 | 180 | N/A | N/A | Dry | R |
| 2.02 | 7/28/2009 | 10:12 | 7.7 | 21 | 7.1 | 1100 | 610 | N/A | N/A | Dry | R |
| 0.89 | 8/27/2009 | 09:19 | 8.0 | 18 | 8.7 | 1800 | 1700 | 20.5 | < 5 | Dry | R |
| 1.70 | 8/27/2009 | 09:07 | 7.7 | 18 | 7.3 | 4100 | > 2400 | 12.0 | < 5 | Dry | I |
| 2.02 | 8/27/2009 | 09:29 | 8.0 | 20 | 7.6 | 7000 | > 2400 | 22.1 | < 5 | Dry | I |
| 0.89 | 9/24/2009 | 13:37 | 8.6 | 21 | 8.2 | 780 | 340 | N/A | N/A | Wet | R |
| 1.70 | 9/24/2009 | 13:26 | 7.7 | 21 | 7.1 | 3200 | > 2400 | N/A | N/A | Wet | I |
| 2.02 | 9/24/2009 | 13:10 | 8.0 | 22 | 6.6 | 4600 | 1400 | N/A | N/A | Wet | I |

*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
Water Quality Laboratory
Debbie Alley, Lab Supervisor
835 East Jackson Avenue
Knoxville, Tennessee 37915
(865) 594-8286 Fax: (865) 594-8245

Event Date 8/6/2009

Street Address: 3741 Eakers St.

Description: The SSO was caused by heavy rainfall in the area which produced I and I and high flows in the sewer mains. The SSO traveled from soil saturation and swale to Baker Creek.

Estimated unrecovered volume 224 gallons

Sampling Notes: There was no industry upstream of the SSO, therefore no Priority Pollutant samples were collected.

| Precipitation (McGhee-Tyson Airport) | Date | Total - Day of Event | Total - Prior 4 Days |
|---|----------|----------------------|----------------------|
| | 8/6/2009 | 0 | 0.75 |

| Sample Location | Sample Date | Sample Time | Dissolved Oxygen | Temperature (Celsius) | pH | Fecal Coliform | E-Coli (MPN) |
|-----------------------------|-------------|-------------|------------------|-----------------------|-----|----------------|--------------|
| Upstream of SSO Discharge | 8/7/2009 | 12:29 | 7.5 | 18 | 7.8 | 1400 | 1300 |
| Downstream of SSO Discharge | 8/7/2009 | 12:39 | 7.7 | 18 | 7.9 | 2000 | 1600 |



Water Quality Monitoring
Report

Spill Impact Sampling Results
Water Quality Monitoring Program

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835 East Jackson Avenue
Knoxville, Tennessee 37915
(865) 594-8286 Fax: (865) 594-8245

Event Date 8/12/2009

Street Address: 608 Van St.

Description: The SSO was caused by a partial grease blockage in the sewer main. The SSO flowed from the pavement to a swale to soil saturation, recovery and Second Creek.

Estimated unrecovered volume 20 gallons

Sampling Notes: There was no industry upstream of the SSO, therefore no Priority Pollutant samples were collected.

Precipitation (McGhee-Tyson Airport) Date 8/12/2009 Total - Day of Event 0.01 Total - Prior 4 Days 0.74

| Sample Location | Sample Date | Sample Time | Dissolved Oxygen | Temperature (Celsius) | pH | Fecal Coliform | E-Coli (MPN) |
|-----------------------------|-------------|-------------|------------------|-----------------------|-----|----------------|--------------|
| Upstream of SSO Discharge | 8/12/2009 | 16:13 | 7.9 | 21 | 8.1 | 640 | 610 |
| Downstream of SSO Discharge | 8/12/2009 | 16:04 | 7.5 | 22 | 8.1 | 14000 | > 2400 |
| Upstream of SSO Discharge | 8/24/2009 | 09:47 | 8.6 | 19 | 8.3 | 1100 | 280 |
| Downstream of SSO Discharge | 8/24/2009 | 10:06 | 7.9 | 18 | 8.2 | 820 | 460 |

Knoxville Utilities Board

Water Quality Monitoring Program

Investigative Water Quality Monitoring Report

07/01/2009 Through 9/30/2009

Table 1: Fourth Creek Routine and Dry Weather Investigation

| Sample Location | Collection Date | Collection Time | Dissolved Oxygen | Water Temp | Water pH | Fecal Coliform | E. coli | Total Fecal | Human Fecal |
|--------------------------------|-----------------|-----------------|------------------|------------|----------|----------------|---------|-------------|-------------|
| | | | (mg/L) | (°C) | | (CFU/100mL) | (MPN) | (mg/L) | (mg/L) |
| Routine Site 1.75 | 7/15/2009 | 9:15 | 7.9 | 18 | 7.9 | 1400 | 1000 | 6.3 | < 5 |
| | 8/18/2009 | 9:17 | 7.4 | 19 | 7.9 | 23000 | > 2400 | 35.4 | < 5 |
| Routine Site 2.79 | 8/18/2009 | 9:39 | 8.0 | 18 | 8.0 | 3200 | 1400 | 15.8 | < 5 |
| 6000 Walden Dr. | 8/26/2009 | 12:36 | 10 | 25 | 8.1 | 540 | 620 | N/A | N/A |
| Gore St. at Walden (Tributary) | 8/26/2009 | 12:10 | 7.5 | 23 | 7.7 | 570 | 250 | N/A | N/A |
| Downstream of Tributary | 8/26/2009 | 12:50 | 8.8 | 21 | 8.1 | 1400 | 330 | N/A | N/A |
| Routine Site 1.75 | 8/26/2009 | 12:22 | 9.0 | 20 | 8.2 | 640 | 440 | N/A | N/A |

Knoxville Utilities Board
Water Quality Monitoring Program

Investigative Water Quality Monitoring Report
07/01/2009 Through 09/30/2009

Table 2: Williams Creek Routine and Investigative Sampling

| | Collection Date | Collection Time | Dissolved Oxygen (mg/L) | Water Temp (°C) | Water pH | Fecal Coliform (CFU/100mL) | E. coli (MPN) | Total Fecal (mg/L) | Human Fecal (mg/L) |
|--|-----------------|-----------------|----------------------------|--------------------|----------|-------------------------------|------------------|-----------------------|-----------------------|
| Routine Site 0.89 | 8/27/2009 | 9:19 | 8.7 | 18 | 9.0 | 1800 | 1700 | 20.5 | < 5 |
| Routine Site 1.70 | 8/27/2009 | 9:07 | 7.3 | 18 | 7.7 | 4100 | > 2400 | 12.0 | < 5 |
| Routine Site 2.02 | 7/13/2009 | 9:02 | 8.7 | 22 | 7.5 | 4700 | > 2400 | 26.4 | < 5 |
| | 8/27/2009 | 9:29 | 7.8 | 20 | 8.0 | 7000 | > 2400 | 22.1 | < 5 |
| Left Fork, Upstream from Routine Site 2.02 | 7/13/2009 | 9:10 | 7.1 | 22 | 7.5 | 2200 | >2400 | 23.3 | < 5 |
| | 7/28/2009 | 10:20 | 7.0 | 21 | 7.0 | < 10 | 6 | | |
| | 8/27/2009 | 9:37 | 7.9 | 20 | 7.7 | 14000 | > 2400 | 89.9 | < 5 |
| Right Fork, Upstream from Routine Site 2.02 | 7/13/2009 | 8:50 | 7.2 | 22 | 7.7 | 5100 | > 2400 | 70.8 | < 5 |
| | 7/28/2009 | 10:28 | 9.3 | 22 | 7.8 | 420 | 330 | | |
| | 8/27/2009 | 9:47 | 8.4 | 21 | 8.0 | 1000 | 460 | 9.9 | < 5 |

Knoxville Utilities Board
Water Quality Monitoring Program

Investigative Water Quality Monitoring Report
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Table 3: Goose Creek Routine Sampling

| | Collection Date | Collection Time | Dissolved Oxygen (mg/L) | Water Temp (°C) | Water pH | Fecal Coliform (CFU/100mL) | E. coli (MPN) | Total Fecal (mg/L) | Human Fecal (mg/L) |
|--------------------|-----------------|-----------------|----------------------------|--------------------|----------|-------------------------------|------------------|-----------------------|-----------------------|
| Routine Site 0.40 | 7/1/2009 | 10:50 | 8.0 | 19 | 7.5 | 4800 | 2000 | 27.3 | < 5 |
| | 8/5/2009 | 9:11 | 7.3 | 19 | 7.8 | 18000 | > 2400 | 28.0 | < 5 |
| Routine Site 1.19E | 7/1/2009 | 10:42 | 7.1 | 18 | 7.7 | 1200 | 1300 | 13.9 | < 5 |
| | 8/5/2009 | 9:02 | 7.3 | 18 | 7.8 | 3500 | 1700 | 22.1 | < 5 |
| Routine Site 1.80E | 8/5/2009 | 8:49 | 8.0 | 17 | 7.8 | 5100 | 1300 | 18.9 | < 5 |

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Table 4: Second Creek Routine and Investigative Sampling

| | Collection Date | Collection Time | Dissolved Oxygen (mg/L) | Water Temp (°C) | Water pH | Fecal Coliform (CFU/100mL) | E. coli (MPN) | Total Fecal (mg/L) | Human Fecal (mg/L) |
|--|-----------------|-----------------|-------------------------|-----------------|----------|----------------------------|---------------|--------------------|--------------------|
| Routine Site 0.30 | 7/30/2009 | 9:22 | 7.1 | 22 | 7.8 | 58000 | > 2400 | 372.2 | < 5 |
| Routine Site 1.54 | 7/30/2009 | 9:05 | 7.0 | 21 | 7.7 | 39000 | 2400 | 342.2 | < 5 |
| Routine Site 5.76 | 7/30/2009 | 8:30 | 5.2 | 19 | 7.2 | 4700 | 2400 | 33.5 | < 5 |
| | 9/29/2009 | 9:41 | 6.1 | 16 | 7.5 | 260 | 360 | N/A | N/A |
| Left Pipe next to Routine Site 5.76 | 7/30/2009 | 8:42 | 6.2 | 20 | 7.4 | 13000 | > 2400 | 14.9 | 6.5 |
| | 8/25/2009 | 10:42 | 7.7 | 17 | 7.3 | 260 | 200 | | |
| ~300 yards Upstream from Routine Site 5.76 (behind IHOP) | 7/30/2009 | 8:20 | 5.4 | 20 | 7.2 | 31000 | > 2400 | 19.3 | < 5 |
| | 8/25/2009 | 10:20 | 4.0 | 17 | 7.3 | 120 | 75 | N/A | N/A |
| | 9/22/2009 | 10:52 | 4.2 | 17 | 7.5 | 230 | 250 | N/A | N/A |
| | 9/29/2009 | 9:51 | 5.6 | 16 | 7.4 | 390 | 520 | N/A | N/A |
| Right branch, looking downstream | 7/30/2009 | 8:50 | 4.8 | 21 | 7.2 | 3900 | 730 | N/A | N/A |
| Right Fork at Charlene Ln. | 9/29/2009 | 10:07 | 6.6 | 17 | 7.5 | 250 | 290 | N/A | N/A |
| Left Fork at Charlene Ln. | 9/29/2009 | 10:13 | 7.3 | 16 | 7.6 | 140 | 280 | N/A | N/A |
| 514 Bernard St. | 9/29/2009 | 12:39 | 3.4 | 21 | 7.8 | 3100 | 870 | N/A | N/A |
| Second Creek at Bernard St. | 9/29/2009 | 12:48 | 7.5 | 19 | 8.1 | 730 | 610 | N/A | N/A |

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Table 5: Baker Creek Routine and Investigative Sampling

| | Collection Date | Collection Time | Dissolved Oxygen (mg/L) | Water Temp (°C) | Water pH | Fecal Coliform (CFU/100mL) | E. coli (MPN) | Total Fecal (mg/L) | Human Fecal (mg/L) |
|---|-----------------|-----------------|-------------------------|-----------------|----------|----------------------------|---------------|--------------------|--------------------|
| Routine Site 0.36 | 8/20/2009 | 8:13 | 7.7 | 20 | 7.2 | 49000 | > 2400 | 56.5 | 33 |
| Routine Site 0.53 | 8/20/2009 | 8:24 | 7.9 | 20 | 7.6 | 31000 | > 2400 | 29.6 | < 5 |
| Routine Site 1.46 | 8/20/2009 | 8:06 | 7.7 | 19 | 7.2 | 27000 | > 2400 | 26.6 | < 5 |
| Left Bank Tributary, upstream from 0.36 | 9/15/2009 | 9:56 | 7.6 | 20 | 8.1 | 3400 | > 2400 | N/A | N/A |

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Table 6: Loves Creek Investigative Sampling

| | Collection Date | Collection Time | Dissolved Oxygen | Water Temp | Water pH | Fecal Coliform | E. coli |
|------------------------------|--------------------|--------------------|---------------------|---------------|----------|-------------------|---------|
| | | | (mg/L) | (°C) | | (CFU/ 100mL) | (MPN) |
| Upstream of 812 Sandis Ln. | 8/12/2009 | 14:17 | 7.8 | 21 | 8.0 | 1400 | 690 |
| Downstream of 812 Sandis Ln. | 8/12/2009 | 14:02 | 7.7 | 21 | 8.0 | 1100 | 870 |

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Table 7: First Creek Investigative Sampling

| | Collection Date | Collection Time | Dissolved Oxygen (mg/L) | Water Temp (°C) | Water pH | Fecal Coliform (CFU/100mL) | E. coli (MPN) |
|------------------------------------|--------------------|--------------------|-------------------------------|-----------------------|----------|----------------------------------|------------------|
| Upstream of 119 W. Glenwood Ave. | 8/17/2009 | 18:00 | 8.2 | 23 | 8.3 | 230 | 240 |
| Downstream of 119 W. Glenwood Ave. | 8/17/2009 | 17:45 | 8.1 | 23 | 8.3 | 180 | 190 |