StormWater Management Program Annual Report

"Protecting, preserving, and restoring our local water resources."

Permit Year

April 2019 – March 2020

Submitted in Accordance with the Requirements of
National Pollutant Discharge Elimination System (NPDES)

PERMIT NUMBER ALR040003

CITY OF AUBURN

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEMS (NPDES)
PERMIT NUMBER ALR040003
MUNICIPAL STORMWATER PROGRAM ANNUAL REPORT

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 fathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for fathering 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.

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5-4-2020

Date

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FOREWORD:

The mission of the Watershed Division of the Water Resource Management Department of the City of Auburn is, first and foremost, to *protect, preserve, and restore the chemical, biological, and physical integrity of our local water resources*. And, although the City's comprehensive Stormwater Management Program is managed by the Watershed Division, the long-term success of the program will ultimately be determined by its ability to strengthen the resolve and desire of the entire community toward this same objective. This report is drafted with this understanding and therefore reflects the summary of the efforts of the community of Auburn as much as it does those of the staff of the City of Auburn. Although there are many success stories and much progress made in 2019, many challenges and concerns remain, not the least of which is the continued status of impairment of three of the City's principal water resources; Saugahatchee Creek (Nutrients and Pathogens), Parkerson Mill Creek (Pathogens), and Moore's Mill Creek (Siltation). We will continue to improve upon and develop our Stormwater Management Plan in the coming years, focusing on building and expanding upon the program's strengths and identifying and implementing strategies for addressing threats to our local water resources.

STORMWATER MANAGEMENT PROGRAM
ANNUAL REPORT

City of Auburn

PERMIT YEAR
April 2019 - March 2020

PROGRAM EVALUATION & EXECUTIVE SUMMARY

The City of Auburn is now entering its seventeenth year as a regulated owner/operator of a small municipal separate storm sewer system, with the current reporting year representing the fourth under the current Statewide General Permit ALR040003. Over these past seventeen years, the City's Stormwater Management Program (SWMP) has generally been managed and operated with the same number of staff and with the same operational budget. However, during this reporting period, the City did hire an additional Stormwater Coordinator within the Watershed Division. The City's physical infrastructure and population has continued to experience rapid growth during this same time period, with the population increasing by approximately 25% every ten years. This rapid urbanization, which began many years before the promulgation of Phase II of the NPDES program, has presented challenges to the City's SWMP, both in the form of legacy impacts to our water resources and in the form of the ever-evolving dynamics of the impacts of urban and suburban growth on local hydrologic conditions. The most outward physical evidence of these challenges is the continued status of impairment of three of the City's principal water resources; Saugahatchee Creek, Moore's Mill Creek, and Parkerson Mill Creek. Furthermore, the diversity of impairment (nutrients and pathogens, siltation, & pathogens respectively) between these waters highlights the complexity and uniqueness of the impacts of urbanization on our watersheds and underscores the need for prescriptive and strategic plans for protection, preservation, and restoration. The City's SWMP provides the framework for accomplishing this through both targeted regulations and policies (e.g. requirement of Water Quality Plans for developments discharging to impaired waters) and through the implementation of other targeted structural and non-structural control measures as required by the City's MS4 Permit and/or as outlined in the City's Stormwater Management Plan or any of the three approved Watershed Management Plans.

This report outlines, in detail, how the City is operating its SWMP and how it records and documents measurable success. Additionally, this report demonstrates how innovation, partnerships, collaboration, and dedication to a common mission have permitted the City to expand the capacity of its SWMP services to a growing population at little to no increased costs for over a decade. These partnerships, many of which started in the formative years of the program, are the foundation of the City's SWMP and have grown to include Auburn University, Save our

Saugahatchee (SOS), Alabama Water Watch (AWW), the City of Opelika, the City of Smiths Station, Lee County Highway Department, Auburn City Schools, and the Alabama Water Environment Association. Some of the successes and accomplishments of the program in 2019-2020, many of which would not be possible without these partners, include:

- Green Infrastructure Master Plan—In 2017, the City entered into an agreement with AMEC Foster Wheeler (now Wood Group), Volkert, and MacKnally Ross Land Design to develop the City's Green Infrastructure Master Plan (first of such plans in the State). During this reporting period, the Green Infrastructure Master Plan transitioned to the City's Integration of Green Infrastructure Guidance Document and was accepted by the City during the summer of 2019.

- Entered into an agreement with the Green Infrastructure Center, Inc. to perform an assessment of the City's Urban Tree Canopy and to make recommendations for how to better manage and expand urban forest to minimize stormwater impacts.

- Integrated multiple Green Infrastructure practices into the design of the City's new Public Safety Building and began construction of those practices. The Public Safety Building is scheduled to be completed in the 2020 calendar year.

- Gave 7 public presentations on stormwater and watershed management related topics to a variety of different groups and organizations.

- Visually screened 212 storm sewer outfalls within the City's MS4, just above the mandated 15% identified in the City's MS4 Permit.

- Responded, investigated and resolved 38 water resource concerns received by citizens.

- Published 13 articles directly or indirectly related to stormwater and watershed management in the City's OpenLine Newsletter, which is distributed monthly to over 21,125 customers.

- Continued to meet with Auburn University's Comprehensive Stormwater Management Policy Initiative to discuss opportunities for developing programmatic and regulatory consistency between the two programs.

- Continued to make improvements to the Watershed Division webpage, including providing information about how citizens can get involved with various stormwater programs (ex. Water Festival, Storm Drain Marking, Stream Clean-ups, etc.).

- Continued discussions with Alabama Water Watch to explore a partnership to sponsor the training of citizens interested in performing water quality monitoring in the City of Auburn.

- Continued regular meetings of the ALOAS organization. *Meetings were substituted with meetings of the broader Alabama Stormwater Association.
- Picked up 12,610 bags of litter from 4,943 miles of right of way through the hours of community service/inmates.
- Recycled over 3,600 pounds of household hazardous waste, over 937,360 pounds of newspaper, cardboard, glass and over 1,618 gallons of used cooking oil/grease.
- Performed ~1,148 Erosion and Sediment Control inspections on developments >1 acre, resulting in 574 inspection reports and sixty-three (63) 72-Hour Notices of Violation (NOV's) and seven (7) cease and desist orders.
- Maintained, implemented and enforced lot-level erosion and sediment control standards for single-family residential lots less <1 acre.
- Performed ~1,077 Initial Erosion and Sediment Control inspections on construction sites <1 acre. Of these inspections, 311 resulted in required corrective action prior to issuance of a building permit.
- Supported and participated in numerous community education and outreach opportunities, including Earth Day, the Lee County Water Festival, and clean-up events, etc.
- Performed Stream Cleanups that resulted in the removal of 26 garbage bags full of trash/debris from Parkerson Mill Creek.
- Performed 414 detention pond inspections.
- Performed approximately 63 stormwater inspections of City-owned facilities.
- Continued to implement the illicit discharge detection and elimination training module for City staff during this reporting period.
- Continued to implement numerous recommendations outlined in the Natural Systems section of the City's Comp Plan 2030.
- Continued routine monitoring of 52 stations throughout the City for turbidity, dissolved oxygen, temperature, pH, and specific conductance.
- Continued the City's in-sourcing Source Water Monitoring Plan.
- Continued to jointly fund and operate two USGS stream gaging operations on Saugahatchee and Chewacla Creeks.

- Completed the sixteenth year of conservation measures outlined in the Chewacla Creek Safe Harbor Agreement.
- Sustained a substantial reduction in sanitary sewer overflows since implementing a strategic maintenance and prevention program.
- Purchased an IDEXX system for E. coli enumeration to replace the Coliscan Easygel method currently utilized by the City. The Coliscan Easygel method may be subjective in determining the colony color, and the IDEXX system should remove this subjectivity.
- The City hired an additional Stormwater Coordinator within the Watershed Division. This position was fulfilled in February 2020.
- Purchased an Enviroscape Model to be used for Public Education and Outreach activities.

Progress Update of Specific Goals Established for 2019-2020 and New Goals for 2020-2021

The Watershed Division regularly evaluates the effectiveness and efficiency of its operations, both from a permit compliance perspective as well as a mission/objectives and budgetary perspective. This allows staff to identify elements of the SWMP that are working, those that are not, and those that need or warrant modification. Staff work to continue those services that they determine effective, eliminate those that are not, and establish goals for improving those that could be. Below is an update of progress made toward goals established for 2019-2020 and a list of new goals established for 2020-2021.

<u>2019-2020 Goals - Progress Updates</u>

- Goal - Continue to increase public education and awareness through storm water activities, involvement with our local schools and other education and outreach initiatives.
  - Staff completed stream cleanup activities, Auburn City Schools Earth Day Activities and Lee County Water Festival in this reporting year of 2019-2020.
- Continue the City's new Stream Gaging Program through the installation of one (1) real-time stream gage per year until all major waterways are gaged.
  - City staff were not able to install a new real-time gage on a new waterway this reporting period; however, City personnel continued updating and maintaining the current instruments and refining their measurements.
- Review the City's Illicit Discharge Ordinance, and make any changes that may be deemed necessary for compliance with the City's MS4 permit.

  - Staff reviewed the Illicit Discharge Ordinance and no changes were deemed necessary during this reporting period.

- Continue to improve and promote the City's Water Quality Monitoring Public Viewer Application.

  - Staff have made numerous presentations highlighting the City's Water Quality Public Viewer Application and made improvements to its website for ease of access.

- Continue to assess City properties and facilities and perform annual inspections and improvements for stormwater management.

  - Staff successfully completed an assessment of City owned properties and facilities and no changes were made to the City's property inventory list. In addition, the staff inspected all City owned properties and facilities during this reporting period.

- Continue the implementation and enhancement of the City's comprehensive water quality monitoring database that houses data from the City's various water quality monitoring programs.

  - Staff have made many improvements in its data collection, data management, and data integration, supporting data-driven decisions for activities ranging from illicit discharge investigations to water treatment processes. Toward the end of this reporting period, Staff have been transitioning from Storm Central to a new database called Hydrosphere.

- Complete the development, and begin implementation, of the City's Green Infrastructure Master Plan.

  - During this reporting period, the City's Green Infrastructure Master Plan was transitioned to the City's Integration of Green Infrastructure Guidance Document and was accepted in the late summer of 2019.

- Update the City's Site Development Review Tool, which is used for evaluating a proposed development's pollutant removal performance for compliance with applicable TMDL's.

  - Staff were awaiting the completion of the City's Integration of Green Infrastructure Guidance Document prior to completing this task. The Site Development Review Tool is currently under evaluation and revisions are anticipated during this reporting period.

- Install at least one Green Infrastructure practice within the City.

   - The City installed an outdoor classroom at the City of Auburn Public Library. Water Resource Management committed $30K toward the use of Green Infrastructure in this project. The grand opening of the outdoor classroom took place in December 2019. The City is also incorporating various green infrastructure practices into the City's new Public Safety Building that is currently being constructed and should open in the fall of 2020.

- Complete the design and implementation of the H.C Morgan Stream Restoration Project.

   - Veolia, Inc. contracted with Normandeau and Associates to perform a biodiversity study within the H.C. Morgan Water Pollution Control Facility property. Due to the ongoing construction activity at the H.C. Morgan Wastewater treatment plant this past year, the staff have postponed the recommended improvements from the biodiversity study, along with continued exploration of alternatives for the restoration of two small tributaries located onsite until FY20-FY21. Staff are currently collaborating on a project with Auburn University to install several grassland plots at the H.C. Morgan facility. The plots have been installed, seed has been planted and Auburn University is now monitoring and researching effectiveness of various types of soil conditioners, grasses, wildflowers, etc.

- Complete Phase IA of the Saugahatchee Greenway + Blueway Project, which includes the first 1.5 miles of greenway trail, two kayak put-in/take-out facilities, a small pocket park, and associated parking facilities.

   - Staff have reviewed CBMP plans for this project during this reporting period and anticipate commencement of this project during the 2020-2021 reporting period.

- Plan and host an erosion and sediment control workshop to help educate local engineers and contractors on proper methods for the implementation of stormwater best management practices.

   - Staff coordinated with the City of Opelika and Silt Saver, Inc., in August 2019, to host a lunch and learn to help enhance the knowledge of the latest performance based sediment control products. The lunch and learn was open to local engineers and contractors and the event hosted approximately seventy-five attendees.

New Goals for 2021

- Begin implementation of the recommended policy and ordinance changes identified in the City's Integration of Green Infrastructure Guidance Document and begin scheduling demonstration projects as strategic capital improvements.
- Install an additional stream gaging station on either Town Creek or Moore's Mill Creek.
- Complete the design and construction of various green infrastructure practices as opportunities arise.
- Continue to promote the city-wide online education program for Illicit Discharge Detection and Elimination.
- Continue to investigate methods to improve communication with developers and improve response to erosion and sediment control enforcement issues.
- Evaluate options to improve tracking and reporting features of stormwater program components in CityWorks.
- Seek additional public education and outreach opportunities such as pet waste stations, CityFest, activities with Auburn City Schools, etc.
- Plan and host an erosion and sediment control workshop to help educate local engineers and contractors on proper methods for the implementation of stormwater best management practices.
- Make improvements to the Watershed Division website.
- Make any necessary revisions to the Site Development Review Tool.
- Continue to inventory existing Green Infrastructure practices in the City of Auburn.
- Complete the transition from Storm Central software to the new water quality monitoring software, Hydrosphere.

I. INTRODUCTION

In response to the National Pollutant Discharge Elimination System (NPDES) Phase II Stormwater Regulations, the City of Auburn (City) applied for and received an NPDES permit for stormwater discharges from the Alabama Department of Environmental Management (ADEM) on May 14, 2003. The current permit was issued September 6, 2016 and became effective October 1, 2016. A copy of this permit (ALR040003) is included in this report.

This report is being submitted to the ADEM pursuant to Part VI; paragraph 1 of NPDES Permit ALR040003. This annual report is the City's seventeenth report, and fourth under the reissued permit, and covers the reporting period from April 2019 through March 2020. The stormwater program outlined in this report is patterned after the program submitted ADEM in October 2015 in the City of Auburn's Notice of Intent (NOI) and in accordance with the City's revised Stormwater Management Plan submitted to the Department in December 2019.

II. Site Description

The City of Auburn is located in East Central Alabama. A map of the City is provided in Appendix B. The Auburn, Alabama land area encompasses 49.9 square miles per the 2018 U.S. Census. Approximately 26.80 square miles of the Auburn City Limits are located within this urbanized area. The current population of Auburn is approximately 65,738 per the 2018 U.S. Census estimate. There are approximately 466.3 miles of rivers and streams flowing through Auburn, and approximately 679 lakes and ponds. From the most recent City storm drainage system inventory, the storm drainage system contains approximately 148 linear miles of storm pipe (132 miles of which are owned by the City). The City is updating its stormwater infrastructure inventory on a routine basis using the City's survey crew, as well as private surveyors.

Geographic Context

The City of Auburn is situated within a unique transitional zone between the Piedmont and Coastal Plain physiographic regions of the Southeastern United States (see link below). More specifically, the City is located within the Level IV sub-ecoregion known as the Southern Outer Piedmont. This ecoregion is generally characterized as having lower elevations, less relief, and less precipitation than that exhibited in other regions of the Piedmont. Overstory cover type within this region consists mostly of mixed deciduous (oak, gum, hickory) and mixed coniferous (pines, firs, spruces, etc.) with the presence of numerous monotypic pine plantations scattered throughout. Specific to these transitional areas in the southeast is the presence of the "fall line", the geographic divide between the Piedmont and Coastal Plain. More information can be found at the link provided below. The City's presence within this transitional area between the piedmont and coastal plain regions provides for a unique hydrogeomorphic diversity of water features within a relatively small geographic area. This diversity is exemplified in the abundance and variety of stream channel features, varying substrate composition, and variety of aquatic habitats. For example, streams in central Auburn generally exhibit piedmont characteristics, such as strong riffle/pool complex formation and cobble/gravel substrate composition, yet they cascade to a coastal plain dynamic of long runs and sandy substrates as they flow to the western and southern extents of the City. Similarly, the topography of each of the contributing watersheds follows the same pattern of increasing coastal plain-like features to the west and south of the City.

Link to a map of Alabama's physiographic regions:

http://alabamamaps.ua.edu/contemporarymaps/alabama/physical/al_physio.pdf

III. KNOWN OR SUSPECTED WATER QUALITY PROBLEMS

The City's MS4 discharges into streams located in three primary (10-digit HUC) watersheds; Saugahatchee Creek Watershed, Uphapee Creek Watershed, and Chewacla Creek Watershed. Smaller watersheds of the Saugahatchee Creek Watershed to which portions of the City's MS4 discharge include the Loblockee Creek Watershed and the Little Loblockee Creek Watershed. Smaller watersheds of the Chewacla Creek Watershed to which portions of the City's MS4 discharge include Parkerson Mill Creek, Moore's Mill Creek, and Town Creek. The only sub-watershed of the Uphapee Creek Watershed to which portions of the City's MS4 discharge is the Choctafaula Creek Watershed.

Moore's Mill Creek was placed on the draft 303(d) list in 1998 and has been listed on the final 303(d) lists from 2002 to present. Known water quality concerns within the jurisdictional area were identified as stream siltation resulting from sedimentation deriving from local development within the Moore's Mill Creek watershed and in-stream erosion. The ADEM final 2018 303(d) list identifies Moore's Mill Creek as a Low Priority for TMDL development. The Moore's Mill Creek Watershed Management Plan was drafted and finalized in May of 2008.

The Saugahatchee Embayment, where Saugahatchee Creek flows into Yates Lake, was placed on the final 303(d) lists from 1996 to 2008. The Embayment was listed on the 303(d) list primarily for nutrient enrichment (Organic Enrichment/Dissolved Oxygen). ADEM and the USEPA issued the final Total Maximum Daily Load (TMDL) for nutrients and organic enrichment/dissolved oxygen for Pepperell Branch and the Saugahatchee Embayment in April 2008. Implementation of the stormwater TMDL is addressed in the City's Phase II Permit that was issued on September 6, 2016 (effective on October 1, 2016) and the City's updated Stormwater Management Plan that was submitted to ADEM in December 2019. Saugahatchee was again listed on the final 2018 303(d) list for pathogens (E. Coli). The City included pathogen monitoring of the Saugahatchee Watershed in the summer of 2019 as detailed in the Water Quality Monitoring Report found in Appendix D.

Parkerson Mill Creek, from its source to Chewacla Creek, was placed on the final 303(d) list in 2008 and 2010. Known water quality concerns within the jurisdictional area were identified as pathogens resulting from urban runoff, storm sewers, and illicit discharges. A TMDL for Parkerson Mill Creek was issued by ADEM in September 2011. Implementation of this stormwater TMDL is addressed in the City's Phase II Permit issued on September 6, 2016 (effective on October 1, 2016) and the City's updated Stormwater Management Plan that was submitted to ADEM in December 2019. The Parkerson Mill Creek Watershed Management Plan was drafted and finalized in December of 2011.

A detailed map of the hydrology and watersheds with approved TMDLs is found in Appendix E of this report.

IV. RESPONSIBLE PARTY

The City's Stormwater Management Program (SWMP) is implemented through a diversity of programs operating under various departments within the City's organization. The City, in 2018, experienced a re-organization. As a result, components of the SWMP and each department's respective responsibilities may have changed from previous years, but are currently as follows:

- Environmental Services Department – Operates the collection of garbage, bulky waste (trash) and recycling, along with animal control services and the maintenance of the City's vehicles and equipment fleet; Hosts the household hazardous waste event, shredding event, and the Amnesty Trash Month;

- Parks and Recreation Department – Hosts annual Earth Day activities along with several other community events; Manages the City's Greenway/Greenspace Program and the Pet Waste Stations;

- Planning Services Department – Assists with reviewing and approving low impact development projects; Manages CompPlan 2030 and future land use planning efforts;

- Inspection Services Department – Monitors residential and commercial construction, including construction stormwater inspection and enforcement for those entities;

- Public Works Department – Provides construction and maintenance services of the City's streets, sidewalks, storm drains, right-of-ways and public facilities. Within Public Works, several divisions play a role implementing the SWMP:

    - Landscape and Sustainability – Incorporates green infrastructure concepts and water quality management into the design and renovations of City facilities. The City's urban forestry program is managed through this division, thus supporting the Integration of Green Infrastructure Guidance Document, Urban Forestry Master Plan, and Tree Giveaway Program (Arbor Day and Christmas Parade);

    - Maintenance – Maintains the street network and storm drainage system by repairing streets that have been damaged by construction and assessing existing streets, curb and gutter, drain inlets and stormwater conveyance systems to identify defects and develop maintenance recommendations for the renewal and replacement of assets;

    - Right of Way Maintenance – Provides maintenance of public right of way to include streets and sidewalks to keep grass mowed, weeds maintained, trees cut back and sidewalks and curbs edged. Also, provides litter control within the right of way and street sweeping.

- Engineering Services Department – provides engineering and project management services for construction and improvements to roads, sidewalks, drainage structures and bridges within the City and coordinates the plan review process for engineering and utility construction proposed by the local development community. Performs detention pond inspections;

- Water Resource Management Department – Monitors residential and commercial construction and conducts erosion and sediment control inspections; Manages water quality sampling program; Manages public education and outreach program; Assists Engineering Services with annual detention pond inspections; Manages the overall SWMP and compliance with the MS4 Phase II Stormwater Permit.

When the City began its Phase II program, coordination and implementation of the individual SWMP was the responsibility of the Public Works Department. In October 2005, management of the stormwater program was transferred from the Public Works Department to the Water Resource Management Department, under a newly created Watershed Division. The intent of the move was to manage water supply operations, wastewater operations, and stormwater operations from a watershed perspective for all components that impact water quality within the City.

The following group is responsible for the coordination and implementation of the individual SWMP:

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V. STORMWATER MANAGEMENT PROGRAM COMPONENTS

The Phase II stormwater regulations require operators of small Municipal Separate Storm Sewer Systems (MS4s) in urbanized areas to develop and implement stormwater management programs employing best management practices (BMPs) to adequately address five minimum control measures. The control measures include:

- Public Education and Public Involvement on Stormwater Impacts
- Illicit Discharge Detection and Elimination;
- Construction Site Stormwater Runoff Control;
- Post-Construction Stormwater Management; and
- Pollution Prevention/Good Housekeeping for Municipal Operations.

In March 2003, the City submitted to ADEM a Notice of Intent (NOI) to implement a SWMP under the Phase II stormwater regulations. The City's most recent update to its SWMP was in December 2019 to comply with the current Phase II regulations. The goals and details of the City's program are outlined in the revised SWMP. At the end of permit year seventeen (fourth year under the reissued permit) all program components outlined in the SWMP have been implemented. The City is currently re-evaluating and proposing additional revisions to its SWMP Plan, which will be submitted to ADEM no later than end of the year 2020.

VI. PUBLIC EDUCATION AND PUBLIC INVOLVEMENT ON STORMWATER IMPACTS

A. Articles in the City Newsletter "Open Line"

Open Line is a monthly newsletter mailed to Auburn citizens through their utility bill. Articles and messages contained in the newsletter reach a large and diverse group of citizens. The goal for articles in Open Line is to produce five (5) articles per year. During the current reporting year, a total of thirteen (13) articles were published in which stormwater related issues were highlighted or affected:

- *City of Auburn on Nextdoor App – June 2019*
- *2018 Consumer Confidence Report – July 2019*
- *Recycling Oils, Grease in Auburn – August 2019*
- *Irrigation, Water Conservation Tips – August 2019*
- *Who Should I Call? – August 2019*
- *Construction Zone: What's Going on Around Town?—September 2019*
- *Household Hazardous Waste Collection Day – October 2019*
- *City of Auburn Flood Protection & Preparation Information – October 2019*
- *Auburn FixIt: An Easier Way to Reach Your Local Government – November 2019*
- *Holiday Recycling Tips – December 2019*
- *You Could Be Recycling! – January 2020*
- *Big Event – February 2020*
- *Trash Amnesty 2020 – March 2020*

Copies of these articles can be downloaded from the City's website at:

http://www.auburnalabama.org/openline/.

B. Brochure Publications

Pamphlets and brochures can be an effective way to present and explain stormwater issues. Unlike other communication methods, pamphlets and brochures can be distributed in many locations without requiring staffing and the location of distribution can specifically target the audience of interest. The City has produced various brochures over the past decade and the City's goal is to continue to promote these previously developed brochures to the public by distributing at least two (2) different stormwater brochures per year, at a minimum. The City will use these brochures to target a specific educational component (i.e. grass clippings) and make the brochures available to the public by distributing the brochures at City facilities, City functions and the City's Phase II stormwater website. In November 2019, following a complaint regarding grease traps, the City distributed the "Stormwater Pollution Prevention for Restaurants" to several of the restaurants within the downtown area to help educate on grease management. The City also made "Recycle, Auburn, What are you wasting for?" brochures available in different municipal facilities such as the Bailey-Alexander Water and Sewer Complex. In addition, brochures provided by the City over the past several years can be downloaded from the City's website at:

https://www.auburnalabama.org/water-resource-management/watershed/aloas/

Additional Brochures Made Available:

- Washing Cars (Alabama Clean Water Partnership (ALCWP))
- Changing Oil (ALCWP)
- Pets (ALCWP)
- Fertilizing (ALCWP)
- Saugahatchee Creek Watershed: Past, Present and Future (Saugahatchee Watershed Management Plan Group (SWaMP))
- Fats, Oils and Grease Recycling Program (City of Auburn)
- ALOAS brochures from previous years
- Alabama Scenic River Trail maps and information

C. Social Media

The City of Auburn takes advantage of social media as a communication tool with the citizens to let them know about upcoming stormwater events and festivals in the community, news articles involving stormwater issues, as well as updates to the City's MS4 stormwater program. The following networks are currently utilized by the City of Auburn:

- Facebook – The City currently has 16,223 followers and 14,959 likes. That is an increase of approximately 3,164 followers and 2,731 likes from last year. On average, there are 750 posts per year by the City.

- Twitter – The City currently has 8,163 followers which is an increase of 1,050 followers from last year. Also, the City has 3,923 Tweets with an average of 370 Tweets per year.

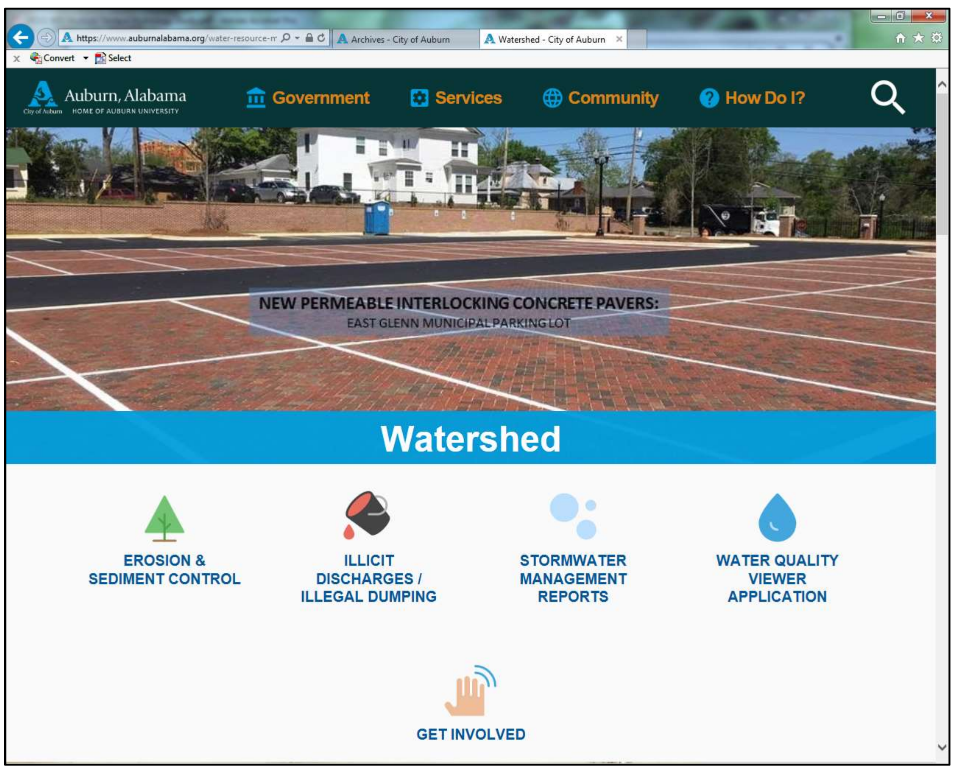
- Instagram – The City currently has 2,265 posts and averages approximately 550 posts per year. There are currently 6,159 followers which increased approximately 3,300 followers from the previous year.

- Youtube – Currently, the City has 5,270 subscribers which is a significant increase of subscribers from last year.

- Next Door Neighbor – The City is new to this network within the last year (March 2019). Currently, the City has reached 9,014 members with its posts. That is an increase of 3,170 members from the previous year.

D. Website

The City of Auburn launched a newly designed website during 2017, improving access and functionality for a more user-friendly experience. Citizens can go to the City's website to obtain information on items of local interests. The web page is accessible 24 hours per day and can serve citizens that do not have the time or the ability to physically meet with staff during normal working hours.



The City's Stormwater website was moved from the Public Works Department home page to the Water Resource Management Department home page in 2005. The Stormwater website received a major overhaul in 2017, including additional updates to the public water quality viewer application for the City's various Water Quality Monitoring programs and a new "Get Involved" site to inform citizens about various ways they can become involved in stormwater management activities. **During this reporting period, the Stormwater website was visited 1,139 times.**

For more information on the website please visit:

https://www.auburnalabama.org/water-resource-management/watershed/

E. Public Water Quality Viewer Application

This application, developed and launched in 2015 (updated in 2018), allows the public to view water quality data from forty (40) monitoring locations on streams throughout the City. These stations are monitored routinely by Watershed Division staff using modern water quality monitoring equipment, with the viewer application updated monthly to reflect current data. Water quality parameters analyzed and presented include Turbidity, Dissolved Oxygen, Temperature, Specific Conductance, and pH. More information about these parameters can be found through various webpage links provided in the application. This application helps to provide transparency in our monitoring operations, facilitate educational and research opportunities for students and teachers, and provide an additional tool for citizens to become aware and involved in helping to preserve and protect our local water resources. This application can be found at:

http://webgis.auburnalabama.org/waterqualitypublic/#openModal#openModal#openModal

F. Public Presentations

The City provides staff and/or resources to perform presentations for various groups and public meetings. Typically presentations are offered in PowerPoint format and the topics are chosen by the organization requesting the information.

Seven (7) public presentations were made during the current reporting year. Presentations were given to various groups, including Auburn University students from various departments, City officials, and public service organizations.

- Urban Hydraulics System Design Class – Auburn University – April 2019

  A. Topic – Our Local Water Resources

     1. Presenters – Marla Smith and Dan Ballard

- Auburn City Academy

  A. Topic – WRM Watershed—What happens here?

1. Presenters – Marla Smith, Dusty Kimbrow and Ron McCurry

- Auburn United Methodist Church - Harvesters– June 2019

  A. Topic – City of Auburn Watershed Division – Protecting, Preserving, and Restoring Our Local Water Resources: A Brief Overview of Our Erosion and Sediment Control Program

     1. Presenter – Ron McCurry

- Auburn University Soil and Water Conservation Class/Toomers Corner Tour – October 2019

  A. Topic – City of Auburn LID/Green Infrastructure projects

     1. Presenters – Marla Smith and Dan Ballard

- Auburn University American Society of Agricultural and Biological Engineers Student Chapter Meeting – January 2020

  A. Topic – Water Resource Management Overview

     1. Presenter – Matt Dunn

- Auburn High School Class Tours of Estes WTP and Morgan WPCF – October 2019

  A. Topic – Fundamentals of a Water Treatment Plant and Water Pollution Control Facility

     1. Presenter – Tim Johnson

- Auburn University Landscape Architecture Watershed Hydrology Class Tours of Lake Ogletree Raw Water Pump Station and Spillway – November 2019

  A. Topic – Monitoring Water Quality and Streamflow in Auburn's Drinking Water Reservoir

     1. Presenters – Tim Johnson and Dusty Kimbrow

G. Workshops/Training Hosted

In an effort to educate contractors, developers, engineers, and staff, the City has initiated a series of workshops. The content of the workshops focuses on local stormwater issues of concern. Workshops/training hosted by the City over the past year include:

- **Erosion and Sediment Control Workshop (August 2019)** – The City of Auburn partnered with the City of Opelika and Silt Saver Inc. to host a lunch and learn to help educate and interact with local engineers, developers and contractors who are governed by the City's Erosion and Sediment Control Ordinance, the ADEM stormwater regulations, and the United States Environmental Protection Agency (EPA) regulations. The event hosted approximately seventy-five attendees.

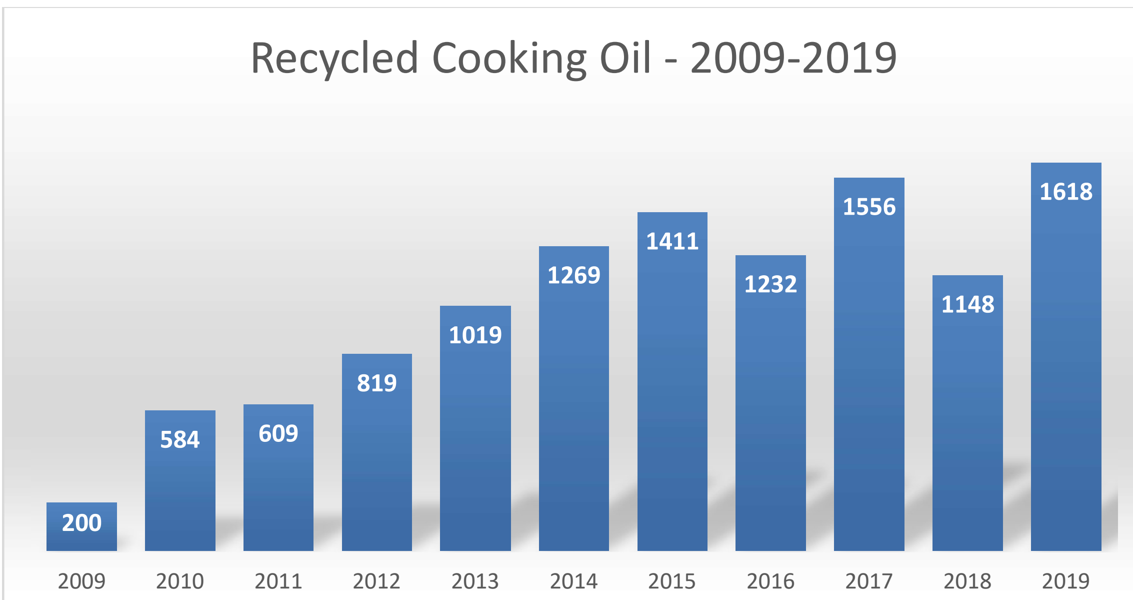
- **Webcasts & Webinars –** The Water Resource Management Department regularly schedules and participates in online webinars and webcasts training opportunities. During this reporting year, stormwater and watershed-related webinars/webcasts attended by City staff included topics such as MS4 BMPs, monitoring software, and source water protection and are listed below:

  - Biosolids Today: Understanding & Communicating - The State of Science (April 2019)
  - Stage Two Disinfection By Products Rule and Simultaneous Compliance (April 2019)
  - Predictive Analytics of Harmful Algae Blooms (July 2019)
  - CyAn App: Cyanobacteria Assessment Network Mobile Application (July 2019)
  - Clean H2O Enforcement: Is the U.S. Water Market Truly Regulated (August 2019)
  - Litter Quitter MS4 Campaign: SESWA (January 2020)
  - Failure Prevention Through Force Main Risk Management Confirmation (January 2020)
  - LCR Overview and Corrosion Control Basics (February 2020)
  - Partnering For Security and Resilience (February 2020)
  - Storm Central Migration to Hydrosphere (March 2020)

H. Household Grease Recycling Program and Composting

The Water Resource Management Department initiated a Household Grease Recycling Program in 2009 with containers and bins located at the recycling center. This program provides citizens with a mechanism to properly dispose of household grease and is targeted at reducing potential sanitary sewer overflows. In 2011, the Water Resource Management Department launched a curbside household grease recycling program that provides residents with an opportunity to collect their household grease and have it picked up by City personnel at their residence. **Approximately 11,456 gallons of used cooking oil/grease have been collected since implementation of the program began in March 2009, with 1,618 of those gallons collected in 2019.** For more information on our household grease recycling program, please visit:

https://www.auburnalabama.org/water-resource-management/fog-recycling/.



I. Educational Field Activities

Earth Day Activities

On April 4^{th} and 5^{th}, 2019, 2^{nd} graders had the opportunity to experience hands-on Earth Day activities such as working with a water Enviroscape. An Enviroscape is a molded plastic model of a watershed complete with various types of landuse including residential, transportation, agricultural, construction, recreation and forestry areas. The interaction with the Enviroscape allowed the children to visually see how soil erosion, pesticides, and storm water runoff impact a watershed and helped them learn ways to protect the environment. **In 2019, four Water Resource Management (WRM) City personnel volunteered to help with the Earth Day activity and helped educate approximately 200 students from four Auburn City elementary schools.**

Lee County Water Festival

On May 1^{st} and 2^{nd}, 2019 the annual Lee County Water Festival was held at the Opelika SportsPlex. **Over 1,200 fourth graders from schools in the Lee County area attended the two-day event along with 50+ volunteers**. The primary purpose of the event is to educate young people on the importance of our water resources and the role each of us plays in conserving our water. During the event, students learned about water filtration, aquifers, and the water cycle through hands-on activities such as building an edible aquifer, making a water cycle bracelet, and building a mini-filtration unit. Volunteers from the City of Auburn, the Auburn Water Works Board, the City of Opelika, and other local groups helped make this past year's event a huge success. **The Auburn Water Works Board also helps to sponsor the annual Lee County Water Festival by providing a monetary donation in the amount of $3,000/year**. **The Water Resource Department had four employees volunteer to assist during the 2019 Lee County Water Festival.**

Public Clean-Ups

Parkerson Mill Creek Clean Up (February 2020)

In a collaborative effort, the City of Auburn's Water Resource Management Department and Auburn University's Risk Management and Safety Department recruited Omega Phi Alpha volunteers to clean up Parkerson Mill Creek. A total of 12 volunteers collected 11 bags of trash and other debris (i.e. pvc pipe). The City of Auburn provided waters, gloves, trash bags, and safety vests.

Parkerson Mill Creek Clean Up (March 2020)

The City of Auburn's Water Resource Management Department, along with Auburn University's Risk Management and Safety Department partnered with Alternative Student Breaks (ASB) to recruit approximately 40 volunteers to clean up Parkerson Mill Creek. Volunteers were furnished maps, gloves, trash-tongs, safety vests, waters and plastic garbage bags. An estimated amount of 15 bags of trash were collected along with larger debris (i.e. wood and iron posts).

J. Integration of Green Infrastructure Guidance Document

In 2016 the City began the process of planning for the future incorporation of Green Infrastructure as a "standard operating procedure". The first step in this process is to develop a strategic plan that identifies impediments to the use of Green Infrastructure and specific opportunities for the incorporation of Green Infrastructure. The City selected a team of consultants in 2017, led by the Wood Group, Inc., to develop this guidance document. The Integration of Green Infrastructure Guidance Document was completed during this reporting period and the City is in the process of incorporating some of these practices within City projects. For more information regarding this guidance document, please visit:

https://www.auburnalabama.org/water-resource-management/watershed/green-infrastructure-master-plan

K. Comprehensive Stormwater Management Committee

In 2016 Auburn University formed an internal team to begin discussions about ways to modernize its stormwater management policy and programs and to identify areas for the development of consistency between its MS4 program and the City's. City staff have participated in these discussions since May of 2016, with meetings occurring quarterly to semi-annually. To date, this group has identified several ways in which each program can more effectively, and consistently, approach stormwater management within and between our respective jurisdictional areas. One such example includes joint annual review of our respective SWMP's, thus identifying opportunities for developing program consistency and collaboration. This group continued to meet through the current reporting year.

L. Citizens Advisory Committee

Both the EPA and ADEM recommend that the public be included in developing, implementing, and reviewing stormwater management programs through the establishment of a citizen's advisory committee. Communities that encourage citizens representing diverse backgrounds and interests to participate in the development of stormwater management programs are far more likely to gain community support during the implementation process.

ALOAS CITIZENS STORMWATER ADVISORY COMMITTEE (2001-present) **- ALOAS** is a Citizens' Advisory Committee that serves **A**uburn, **L**ee County, **O**pelika, **A**uburn University and **S**miths Station. It meets on a quarterly basis to review and provide public input on current policies, brochure content, educational material, and proposed ordinances. Prior to 2012, the Citizens Advisory Group was known as ALOA. In 2012, the City of Smiths Station joined the group and the group renamed itself ALOAS to include the addition of Smiths Station. ALOAS meets twice, at a minimum, throughout the year; however, during this reporting period, several of the meetings were substituted with the Alabama Stormwater Association meetings and/or public events (i.e. clean-ups, Lee County Water Festival, etc). Meetings that were attended for Alabama Stormwater Association occurred August 15, 2019 and April 29, 2020. Also, ALOAS had discussions via email during the month of March 2020, due to coronavirus, and a zoom meeting on April 6, 2020.

ALOAS members utilized educational materials that were either created by MS4 entities or obtained from other sources. These brochures and other materials are available to the citizens of Auburn and can be obtained at City Hall, the Bailey-Alexander Water and Sewer Complex or by contacting the Water Resource Management Department at (334) 501-3060. The brochures can also be downloaded from the City's website at https://www.auburnalabama.org/water-resource-management/watershed/aloas/.

M. Watershed Organizations

Regional watershed organizations bring together representatives from utilities, private industry, environmental awareness groups, farmers and branches of government to coordinate individual efforts, share information and plan for water resource and aquatic life protection. The regional approach allows participating entities to expand upon individual efforts in order to maximize limited resources. These organizations also allow for the sharing of ideas, lessons-learned, and development of professional networks.

Lower Tallapoosa River Basin/Clean Water Partnership (2001-2017) – While the City was an active participant in the Lower Tallapoosa River Basin/Clean Water Partnership, this Partnership was disbanded in 2017.

Save our Saugahatchee and Alabama Water Watch Citizen Water Quality Monitoring Program (2014 - Present) – Beginning in 2014, the City of Auburn, the City of Opelika, and the Lee County Highway Department have contributed $350 each to pay for material aid to the volunteer water quality monitoring programs operated by Save our Saugahatchee and the Alabama Water Watch organization. **In 2019, the City's contribution was $400.** These funds are used for both physical-chemical monitoring of local waters as well as bacteriological monitoring used to guide illicit discharge detection and elimination efforts. **In 2019 the City's contribution to these organizations financed routine monitoring of ~30 sites in the Saugahatchee Watershed, resulting in water chemistry and bacteriological monitoring.** All data collected is made available to the public via the Alabama Water Watch Data Portal at:

www.alabamawaterwatch.org/water-data

Parkerson Mill Creek (PMC) Watershed Management Plan Group (March 2010 – present) - Parkerson Mill Creek was placed on Alabama's 303(d) List of Impaired Waters for pathogens in 2007 and a pathogen TMDL for the Parkerson Mill Creek Watershed was subsequently approved by ADEM in July 2011. The PMC Group continues to assist by supporting the bacteriological monitoring in Parkerson Mill Creek by Auburn University undergraduates students (ex. Sydney Smith), which in turn supports investigative illicit discharge detection and elimination activities for the City of Auburn and Auburn University. For more information on the Parkerson Mill Creek Watershed Management Plan, please visit http://www.aces.edu/waterquality/pmc.htm.

N. Household Hazardous Waste Collection Day/Document Shredding Event

The City hosted the Household Hazardous Waste Collection Day twice during 2019. This event is a favorite among Auburn residents and was held one day during the months of April and October of 2019. The City allowed its customers to drop off hazardous household chemicals at a collection site free of charge. The items are then disposed of in a safe manner, eliminating the possibility of these items being improperly dumped in local creeks and streams. **The 2019 Household Hazardous Waste Collection Days yielded approximately 1.8 tons.** In addition to the collection of household hazardous waste, the City also provided document shredding events during these two days. **The 2019 Document Shredding Event yielded over 2.15 tons.**

O. Website Hotline

In an effort to provide the general public with an additional means of reporting potential erosion control violations, the City launched the "On-Line Hotline" in March 2003. Citizens have the ability to log on to the website 24 hours a day and provide information on suspected violations. The information is forwarded to the Water Resource Management Department and an investigation is initiated. The website hotline has proven to be a valuable tool over the course of the past seventeen years by assisting City personnel in responding to citizen concerns. For more information concerning the hotline, please visit:

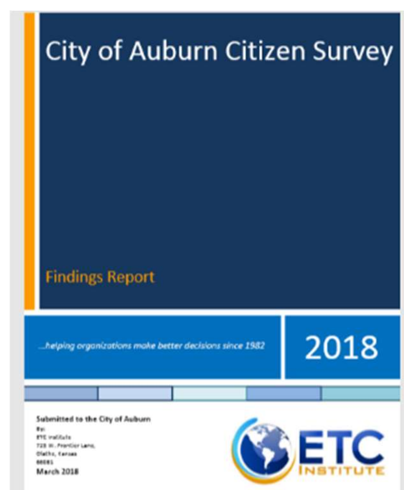
https://www.auburnalabama.org/water-resource-management/watershed/illicit-discharges/.

In addition to the website hotline, the City launched the free Auburn FixIt app during this reporting period. This online/mobile app allows citizens to request City services and report non-emergency concerns directly to City staff. Citizens can even track the progress of their concerns from the moment it is reported to resolution. In addition, the app includes useful resources such as links to pay your utility bill, FAQs, and quick access to the City's downtown parking app.

P. Tree Give Away

The planting of trees improves water quality by reducing stormwater runoff and erosion while facilitating nutrient removal. During the City's 2019 Cityfest, held in April, the City distributed 50 potted Northern Red Oaks to area citizens. Also, during the City's 2019 December Christmas parade, the City distributed 500 Dogwoods and 500 Sourwoods (Bare Root). In addition, to celebrate Alabama's Arbor Day and to continue to encourage the reforestation of the City's urban landscape, the City's Tree Commission gave away 400 Blackgums, 500 Dogwoods and 500 Sourwoods (Bare Root) at the annual February 2020 Arbor Day Tree Giveaway.

Q. City of Auburn Citizen Survey



In years past, the Citizen Survey was facilitated on an annual basis; however, starting in 2018, the survey will be conducted every other year. The last survey, sent in 2018, contained several questions that were directly or indirectly related to stormwater issues. The questions covered issues such as infrastructure maintenance, trash collection, yard waste disposal, recycling, natural resource protection, greenspace initiatives and future growth planning. In 2018, the City received very high satisfaction levels in most areas. **The 2020 Citizen Survey was scheduled to hit citizen mailboxes beginning in January 2020 and the results will be included in the 2020-2021 reporting period.**

To view the Citizen survey, please visit: http://www.auburnalabama.org/survey.

R. Newspaper Articles

Newspaper articles covering local stormwater/environmental issues are a means for disseminating information to a large and diverse group of residents most directly impacted by these issues. Informative articles provide the reader with an independent point of view. The reader is not forced to rely on information generated by a single source (i.e. City through the newsletter Open Line or brochures).

The City is fortunate to have a local daily publication. The Opelika-Auburn News is a regional daily newspaper that covers local events and is widely read by residents of Lee County. A weekly newspaper publication, the Auburn Villager, began circulation in 2007. In addition, the Auburn Plainsman, is a student-run newspaper for Auburn University that is published weekly throughout each academic term and distributed throughout campus and surrounding cities, such as Auburn. **A total of 43 stormwater related articles were published during the reporting year.** A listing of articles and publication dates is included in Appendix C of this report.

S. Greenspace Advisory Board/Greenspace Master Plan

The Auburn Greenspace Advisory Board (GAB) was created by a City Council resolution in 2002. Its objective was to identify potential areas for future property acquisitions for parks, recreation facility projects, and greenways. Once identified, these properties could be purchased and/or protected from development.

In 2003, the GAB recommended a Greenspace/Greenway Master Plan for the City. It was adopted in December 2003 by the City Council and has been utilized by the Planning Commission in connection with approval of projects. The GAB revised the initial Plan to include a vast expansion of the proposed greenspace/greenway areas. This first amendment to the Greenspace/Greenway Master Plan was adopted by the City Council in October 2004.

This plan has resulted in the acquisition of several hundred acres of property located in environmentally sensitive areas. The greenspace/greenway areas include proposed bikeways and trails along existing and new roads and along waterways located within the City's growth boundary. Areas along waterways may be improved with natural trails and will be preserved by the dedication of conservation easements in developments or the acquisition of property by the City. **Additionally, the City continued its feasibility analysis, planning, and design work associated with a combined Blueway/Greenway along Saugahatchee Creek (general alignment as identified in Greenway Master Plan) during the 2019-2020 reporting period.**

T. Auburn Interactive Growth Model

In 2007 – 2008, the City, through its Planning Department, contracted with a firm to develop the Auburn Interactive Growth Model (AIGM), a tool the City utilizes annually to make informed planning decisions. Detailed inventories were conducted for current development such as housing unit by type, population by age groups and retail space by gross area. A demographic forecasting model was developed as well as models for other uses that will provide guidance for future land use allocations. The AIGM also forecasts the spatial distribution of the population over time and the apportionment of land uses necessary to meet the needs of the population. The Planning Department updates the AIGM annually. Since its initial completion, the AIGM's population projections have been used in projecting water and sewer demand, future traffic, regional growth, school growth and as the foundation of the Future Land Use Plan component of CompPlan 2030.

U. CompPlan 2030

In 2009, the City's Planning Department began development of CompPlan 2030, a comprehensive plan to guide future development in Auburn. CompPlan 2030 focuses on the following key areas: current and future land use, and how land use and the built environment affects our natural resources, schools, parks, utilities, civic facilities and transportation. The Plan provides guidance for future planning based on public input, analysis of current and future conditions, and best practices. A series of public meetings was held in 2009 and 2010 to allow citizens to share their ideas for Auburn's future, giving citizens a voice in the development of the plan. The Future Land Use Plan provides parcel-level recommendations for the type and scale of new development for the next twenty years, and is the product of a strategy to promote infill development and growth in downtown Auburn. The Future Land Use Plan element of CompPlan 2030 replaces the 2004 Future Land Use Plan. The Natural Systems and Utility sections of CompPlan 2030 provide recommendations for water conservation and stormwater management. The plan was adopted by the Auburn City Council on October 4, 2011 and City Departments are now working to integrate components of the Plan into their operations. Revisions to the CompPlan 2030 were completed and adopted by the City in February of 2018. **For this reporting period, the Watershed Division is continuing to integrate components of the revised CompPlan into its operations.** For more information on CompPlan 2030, please visit:

https://www.auburnalabama.org/CompPlan2030/

V. CompPlan 2040

During this reporting period, the City of Auburn is putting together eight community teams to discuss the future of Auburn known as Auburn 2040, Creating Community Together. These eight teams consists of Education; Public Safety, Transportation; Intergovernmental, Growth and Development; Utilities, Environment and Technology; Citizen Engagement; and Family and Community. The teams will meet two to three times a month, beginning in April 2020 and will recommend goals to the Auburn City Council in September 2020. The finalized Auburn 2040 plan will go before the City Council for adoption in December 2020.

W. Pet Waste Stations

Pet Waste Stations have been installed within the City of Auburn, especially within the City Parks such as Town Creek Park and Kiesel Park that are frequented by residents and visitors with their furry companions. The pet waste stations are emptied and bags replenished twice a week except those stations placed at Town Creek Park and Kiesel Park which are maintained daily. If pet waste is not removed from the ground, there is the potential for the waste to be carried in stormwater runoff to nearby waterbodies causing possible pathogen impairments. The installation, maintenance and promoting the use of these stations, will help to reduce the potential presence of harmful bacteria due to pet waste from entering our waterbodies.

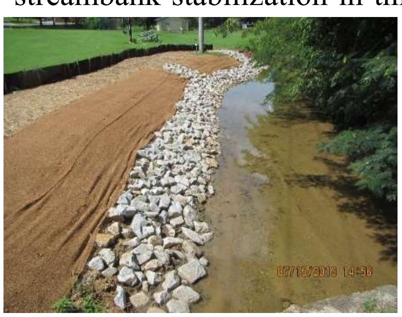
X. Streambank Stabilization Projects

Town Creek Park

Town Creek flows through Town Creek Park, one of the City's more popular parks. Years ago, this area of Auburn was primarily crop and pastureland. Historic aerial photographs of Town Creek show a small but straight channel f lowing through the middle of a large field. Years of urban development have led to both deepening and widening of the stream in this area. Today, a pond sits adjacent to the stream channel in the southern end of the park. Over the past few years, the pond dam has been severely eroded after large rain events. To prevent further erosion to the pond dam, the stream side of the dam (which is also the streambank) was stabilized using large stones.

Margie Piper Bailey Park

Town Creek at Margie Piper Bailey Park had a severely eroded streambank which was both steep and highly unstable. Not only was the eroded bank adding excess sediment to the stream, the steep banks of the stream posed a danger to park patrons. The City's Watershed Division and Collections System Division worked together to create a plan and conduct the streambank stabilization in this area. The streambank was re-graded to a gentler slope, and large stones were placed at the toe of the slope. Coconut fiber matting was placed on the upper part of the bank to both inhibit erosion and promote seed germination. Since the implementation of this project, it has withstood several large flood events, and continues to perform as designed.

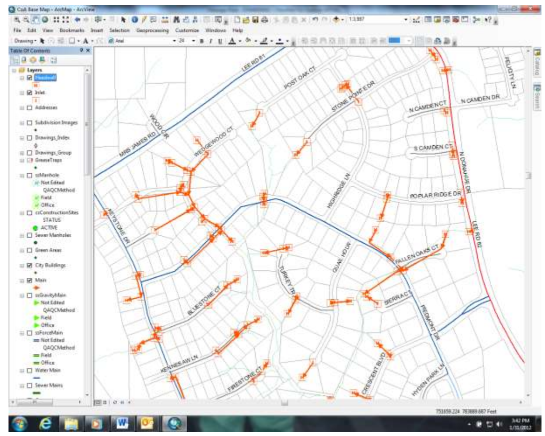


Parkerson Mill Creek Sewer and Stream Stabilization Project

The WRM Department, in coordination with Auburn University and the Alabama Cooperative Extension Service, completed construction of the Parkerson Mill Creek Sewer and Stream Stabilization Project in December of 2015. This project is now in a maintenance phase and will be inspected annually for maintenance requirements. **During the 2019-2020 reporting period, maintenance was not required on this project.**

VII. <u>ILLICIT DISCHARGE DETECTION AND ELIMINATION</u>

A. Storm Sewer Mapping



The City of Auburn completed the initial mapping of its storm sewer system in 2003. The mapping is maintained in a Geographical Information Systems Database (GIS). Detailed information on pipe size, pipe material, direction of flow, inlets, manholes, bridges, box culverts, detention ponds, and headwalls are maintained in the City's GIS database. The City is currently working to collect stormwater infrastructure data throughout the entire City Limits. In 2013, the City began a Utility Mapping Project utilizing City survey crews and several outside surveying firms. This project, the initial inventorying phase, was completed in 2017, which included the surveying of over 41,875 linear feet (7.93 Miles) of storm sewer main. **The GIS files are updated during the 2019-2020 reporting period as new work is added or as old work is modified to current standards.** The latest revisions of the maps can be obtained through the Engineering Services Department located at 171 North Ross Street.

B. Illicit Discharge Ordinance

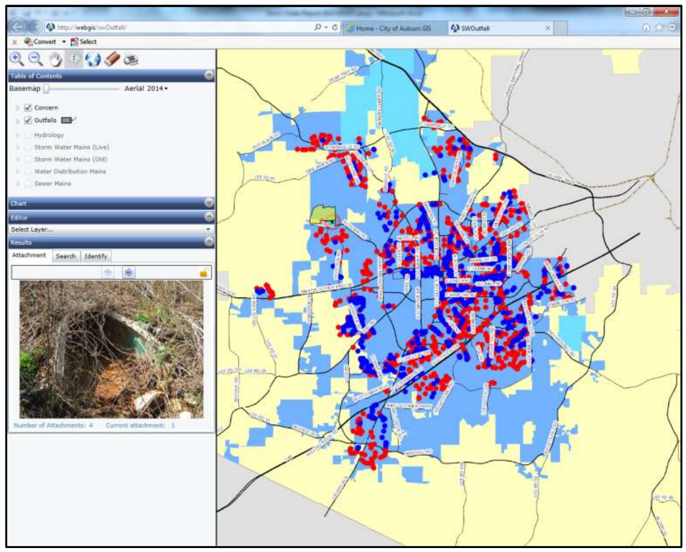
The Environmental Protection Agency (EPA) recommends municipalities implement an ordinance that provides the means to identify and enforce correction of illicit discharges. In the City's NOI, submitted to ADEM in March 2003, the stated goal was to develop and implement an Illicit Discharge Ordinance by December 2005. This goal was met two years ahead of schedule.

A draft copy of the Illicit Discharge Ordinance was reviewed by the **ALOA** (now ALOAS) Citizens Advisory Committee in November of 2003. A revised draft was forwarded to the City Attorney and Municipal Judge for review in December 2003. The Auburn City Council adopted the Illicit Discharge Ordinance on January 20, 2004. **Revisions were made in 2017 and City Council adopted these revisions in May of 2018. No changes were made to the IDDE ordinance during this reporting period.**

The City's IDDE Ordinance may be found at the following link:

https://library.municode.com/al/auburn/codes/code_of_ordinances?nodeId=CO_CH7DRFLCO

C. Stormwater Outfall Reconnaissance Inventory

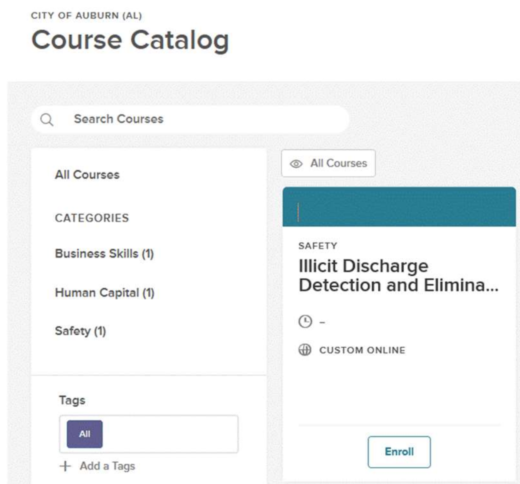


In 2009, the Water Resource Management Department began a stormwater outfall reconnaissance inventory (ORI) program. The purpose of this ORI program is to familiarize staff with all receiving waters within the City limits, conduct an inspection of each stormwater outfall and prepare detailed documentation of each stormwater outfall in that basin so that water quality concerns are documented and corrective actions planned. City staff are able to document any current illicit discharges and provide more detailed location information concerning existing outfalls. The City's ORI program is patterned on recommendations outlined in the *Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments* (Center for Watershed Protection and Dr. Robert Pitt, October 2004). The City's goal is to inspect (or screen) all of its outfalls every five years (and/or 15% per year). In calendar year 2015 Watershed Division staff began planning for the second phase of its ORI Program. This included purchasing of a LaMotte Smart 3 Colorimeter for enhanced source identification and tracking, development of plans for a small laboratory at the WRM offices, and updates to the ORI tracking application. Upon the initial completion of its inventory, the WRM Department documented and inspected approximately two hundred forty (240) miles of stream and documented approximately one thousand two hundred twenty-eight (1,228) stormwater outfalls in the Saugahatchee, Parkerson Mill, Moore's Mill and Town Creek Watersheds. Staff also inspected approximately one hundred fifty (150) sanitary sewer aerial creek crossings and identified approximately eight hundred fifty eight (858) concerns or potential concerns during the ORI program. **During the current reporting year, staff re-screened and/or performed water quality analyses at 218 of the City's one thousand three hundred ninety-nine (1,399) outfalls representing 15% of all outfalls in the City.** This list is included in Appendix H.

The Water Resource Management Department collaborated with the City's Information Technology (IT) Department GIS Division in 2010 to develop a stormwater outfall tracking tool that allows for easy management, access and viewing of data collected during the ORI program. Staff from multiple departments can view the data assimilated by this application and can utilize that information to monitor progress at addressing concerns identified by field survey. This tool/application was updated in 2015 to include attribute fields for water quality data. A screenshot of this tool can be seen above.

The ORI program is just one example of the measures the City has taken in creating and sustaining an efficient, effective and innovative stormwater management program, with the ultimate goal of protecting our local water resources. **Staff will continue both visual screening and water quality screening of select outfalls in 2020-2021.**

D. Public Education on Illicit Discharges and Improper Disposal



The City of Auburn created an illicit discharge brochure and has made it available to the public for review and/or download via the City's website (www.auburnalabama.org/water-resource-managment/watershed/aloas). In addition, the City routinely places articles in the City newsletter, Open Line and social media to educate citizens on illicit discharges. In 2018, the City also began working with its IT Department to develop an employee and citizen online training program for recognizing and responding to illicit discharges. This online training program was made available to all City employees in March 2019. **During this reporting period, the Landscape and Sustainability Division within the City's Public Works Department was trained on IDDE, along with the recently hired WRM Stormwater Coordinator. The City is continuing to develop and implement an online training program for citizens.**

E. Hazardous Waste Emergency Response Team

The City maintains a mutual aid agreement with the City of Opelika to share some of the cost of operating an emergency response vehicle equipped to handle hazardous waste spills. The agreement provides the City with the ability to properly identify and address hazardous or potentially hazardous spills. **The mutual aid agreement is still in effect and no revisions were made to the mutual aid agreement during this reporting period.**

F. Illicit Discharge Hotline and Reporting Form

In 2008, the Water Resource Management Department developed an illicit discharge reporting form that residents can download, complete and e-mail back to the Department upon discovering a potential illicit discharge. This document is located on the Illicit Discharge Website, giving residents instant and 24-hour access to the form. This form assists the Department in tracking and responding to illicit discharges. This form can be downloaded from the City's website at https://www.auburnalabama.org/water-resource-management/watershed/illicit-discharges/.

City of Auburn
Illicit Discharge Notification Form

First Name: ____ Last Name: ____
Address: ____
City: ____ State: ____ Zip Code: ____
Phone No.: ____ Email: ____

Incident/Discharge Information

Date Discharge Discovered: ____ Time Discharge Discovered: ____
Street Location: ____
Nearest Major Intersection: ____
Nearest Waterbody (if known): ____
Nature of Discharge: ___ Spill ___ Intermediate ___ Continuous ___ Pulsing

Description of Discharge

Odor: ___ None ___ Sewage ___ Rancid/Sour ___ Sulphur/Rotten Egg ___ Gas/Petroleum ___ Cooking Oil
Appearance: ___ Clear ___ Sheen ___ Cloudy ___ Gray ___ Other
Solids/Floatables: ___ None ___ Fish Kill ___ Sewage ___ Tissue ___ Unknown
Other Notes/Comments:

No forms were submitted in 2019. The City hopes that the Auburn FixIt app will phase out the reporting illicit discharge hotline and reporting form in the future.

The City of Auburn responded to several cases of reported illicit discharges during the current reporting year that were reported by phone. In each instance, the potential illicit discharge was investigated and if necessary, was traced back to its source and the violator was given a notice of violation and informed of the penalties for violating the City's Illicit Discharge Ordinance. In each incident, the City was able to ensure proper cleanup and corrective actions taken. **During this reporting period, the City received a total of 38 potential illicit discharge complaints.** Below is a summary table of the complaints received:

Type of Complaint	# of Complaints	Corrective Action	Resolved
Illicit Discharge	16	16 investigations resulting in 5 NOVs	Yes
Erosion and Sediment Control (Construction Site Runoff)	11	11 investigations with correction of deficiencies performed on site	Yes
Stream Erosion/Other Watershed Concern	11	11 investigations performed; 7 forwarded to different City Departments	Yes

G. Water Quality Monitoring Programs

In 2004, the City of Auburn began a water quality monitoring program in an effort to analyze the effectiveness of stormwater best management practices (BMPs) on active construction sites within the City. This program has been significantly expanded over the past 16 years to include a diverse range of monitoring programs and more in-depth water quality monitoring.

In 2019, the City of Auburn continued its water quality monitoring programs in accordance with its mission and Stormwater Quality Monitoring Plan. Altogether, thousands of data points are collected by City staff and are used to make data-driven decisions for the protection, preservation, and restoration of our local water resources. **For additional information concerning the City's Water Quality Monitoring Program, please see the 2019 Annual Water Quality Monitoring Report included in Appendix D. This Water Quality Monitoring Report is being submitted in accordance with Part V of NPDES General Permit ALR040003.**

VIII. CONSTRUCTION SITE STORMWATER RUNOFF CONTROL

A. Erosion and Sediment Control Ordinance

The City, in conjunction with the City of Opelika and Auburn University, adopted the Erosion and Sediment Control Policy drafted by the ALOA (now ALOAS) Citizens Advisory Committee in 2003. The policy provides for a regional set of rules that can be applied to contractors, developers and engineers in the area.

The Auburn City Council approved additions to the City's Erosion and Sediment Control Ordinance in 2005 to establish protocol for enforcement of the Ordinance and to enable City personnel to issue citations to developers/contractors in violation of the Ordinance. The enforcement mechanisms have proven to be a valuable tool in ensuring compliance with the Ordinance.

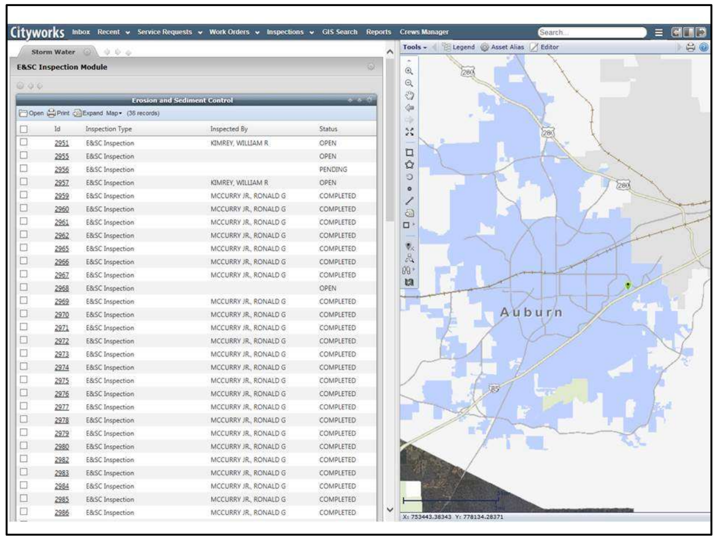
For more information on the City of Auburn's Erosion and Sediment Control Ordinance, please visit the following:

https://library.municode.com/al/auburn/codes/code_of_ordinances?nodeId=CO_CH7DRFLCO_ARTIIIERSECO

B. Erosion Control Inspections

The City, in an effort to patrol the management of erosion and sediment control measures on active construction sites, initiated a construction site inspection program in 2003. The inspection program is designed to identify deficiencies in erosion control and initiate corrective action. **Approximately 1,148 site erosion and sediment control inspections were performed during the current reporting year (includes follow-up inspections), resulting in 574 inspection reports, 63 72-Hour Notices of Violation and 7 Cease and Desist Orders**. The number of inspections performed is relative to development activity and annual rainfall intensity and accumulation patterns. The City's Water Resource Management Department maintains copies of the inspection reports in an electronic format and are available upon request.

C. Erosion Control Inspection Software



In 2011, staff from the City's Water Resource Management Department and Information Technology Department created an electronic erosion and sediment control inspection software program. This software gave staff the ability to fill out electronic copies of the erosion control inspection checklist using handheld units while in the field performing inspections. In 2015 Watershed Division staff began working with the City's IT staff to migrate the erosion and sediment control inspection and enforcement tracking into CityWorks, a GIS-centric asset management software. **Watershed Division staff began using this software exclusively in 2016 and continued to use this software during the 2019-2020 reporting year.**

D. Residential Erosion Control

The City now issues an Erosion and Sediment Control Permit that allows for minimal clearing to install the approved BMPs onsite. This minimizes the clearing and grading work that sometimes occurred in the past prior to getting the site BMPs installed. The City's Inspection Services Department conducts an initial site inspection for all building construction in Auburn. Lots requesting the initial inspection must have a construction entrance and other necessary best management practices (BMPs) in place prior to authorizing foundation construction. Deficiencies noted during the initial inspection are relayed to the building permit applicant for correction. **During the current reporting year, 1,077 initial lot level inspections were performed and of those inspections, 311 failed the pre-permitting inspection which in turn held the permit issuance until the BMPs were properly implemented.**

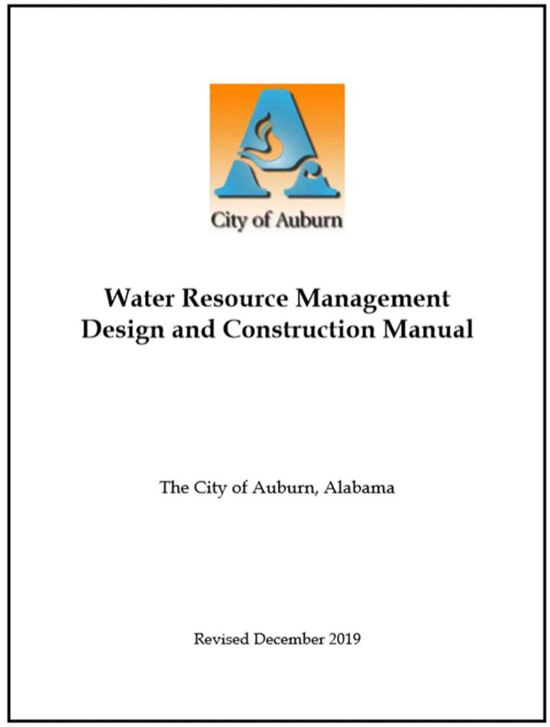
The City's Inspection Services Department also inspects stormwater BMPs during the building phase inspections. If there is a minor deficiency with the stormwater BMPs, then the inspector will require the contractor to correct the issue prior to the next inspection. If the issue has not been corrected by the next inspection, the subsequent inspection will not be performed. If there is a major deficiency with the stormwater BMPs, then the inspector will not perform the requested inspection and have the contractor correct the deficiency immediately.

E. Rainfall Data Collection

In 2005, the City began maintaining historical rainfall data records. The data is obtained through a subscription to the Agricultural Weather Information System (AWIS) website. AWIS records daily weather data from the NOAA weather station at the Auburn University Regional Airport. Daily rainfall data is also collected at the City's two water pollution control facilities, as well as at Lake Ogletree and the James Estes Water Treatment Plant. Details regarding rainfall during this reporting period can be found in the Water Quality Monitoring Report included in Appendix D of this report.

IX. POST-CONSTRUCTION STORMWATER MANAGEMENT IN NEW DEVELOPMENT AND REDEVELOPMENT

A. Engineering Design and Construction Manuals


City of Auburn

Water Resource Management
Design and Construction Manual

The City of Auburn, Alabama

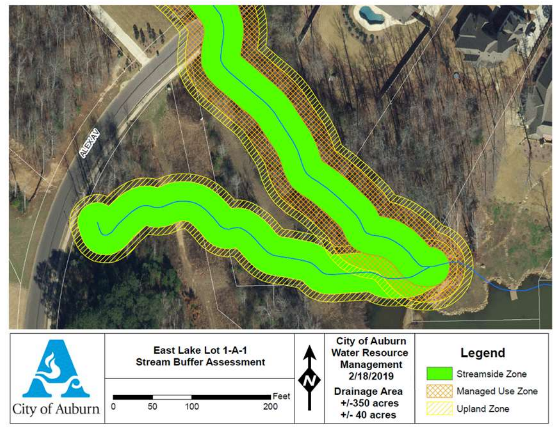
Revised December 2019

In April 2003, the City of Auburn published a Stormwater Design Manual that effectively addressed stormwater runoff controls required for sites greater than one acre. The manual identified project requirements and specifications for new infrastructure and also addressed the requirements for stormwater system sizing and stormwater runoff control/detention. During its implementation, the manual proved to be a very successful tool for the City and developers. The Water Resource Management Department contracted with CH2M Hill to develop an Engineering Design Manual in 2008 that includes engineering design criteria for sewer and water infrastructure, as well as stormwater BMPs for water quality protection such as rain gardens and stormwater wetlands. The Water Resource Management Design Manual also simplifies the City's regulations regarding restrictions on development in steep slope areas. The Public Works Department also developed a comprehensive Engineering Design Manual. The Stormwater Design Manual has been updated and included as an appendix in the Public Works Manual. Both the Public Works and Water Resource Management Design and Construction Manuals were adopted by the City Council in November 2010 and became effective on January 1, 2011. Reviews of these manuals are performed annually during the first fiscal quarter (October-December). **Revisions were made and were adopted by City Council in December of 2019.**

For more information on the City of Auburn's Water Resource Management Design and Construction Manual, please visit the following:

https://www.auburnalabama.org/water-resource-management/design-and-construction-manual/

B. Stream Buffer Regulations



As part of the Erosion and Sediment Control Ordinance adopted by the City Council in July 2002, a minimum 25-foot non-disturbed vegetative buffer zone was required for new developments on "blue line" streams and creeks identified on USGS 7.5 minute topographic maps. In May 2006, the City Council adopted new Stream Buffer regulations. The 2006 buffer regulations were based on a managed-use type buffer rather than a strict non-disturbed buffer approach. The 2006 regulations implement a 3-zoned buffer (streamside zone, managed use zone and upland zone) with the width of the buffer being based on the drainage area of the stream. A copy of the 2006 regulations can be found under Article IV in the City's Zoning Ordinance on the City's website. Greater than 656 acres of riparian corridors have been set aside since the adoption of the new regulations. **During this reporting period, the City reviewed 59 development plans for compliance with the stream buffer ordinance.** The table below provides the City's current stream buffer requirements.

Stream Buffer Requirements				
Drainage Area (Watershed) Designation	**Streamside Zone**	**Managed Use Zone**	**Upland Zone**	**Total Buffer Width on each side of Stream**
< 100 acres	25 feet	None	10 feet	35 feet
≥ 100 acres and ≤ 300 acres	25 feet	None	20 feet	45 feet
≥ 300 acres and ≤ 640 acres	25 feet	20 feet	10 feet	55 feet
≥ 640 acres	25 feet	50 feet	25 feet	100 feet

C. Post-Construction BMP Inspections

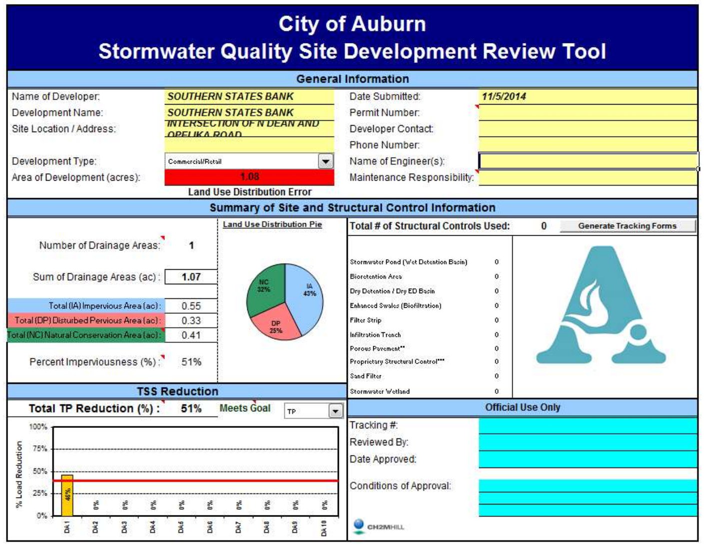
Existing post-construction BMPs need periodic inspections to evaluate the maintenance and operation of these vital components of the City's drainage system. Because vast quantities of stormwater are collected and passed through detention ponds every year, inspections of these facilities can identify potential problems and illicit discharges.

The Engineering Services Department and the Water Resource Management Department conduct annual inspections of all detention ponds (public and private) listed in the stormwater database. Upon inspection, the owner of the pond is notified of any corrective action needed. Enforcement measures are taken if the owner does not address the items listed in the report. **Approximately four hundred fourteen (414) detention ponds were inspected by the City within the 2019-2020 reporting period. There was an increase of approximately 75 post-construction BMPs since last year. A list of the detention ponds is available upon request.**

D. Conservation Subdivision Regulations

In 2006, staff members from the Planning Department, Water Resource Management Department, Public Works Department and Parks and Recreation Department began developing conservation subdivision regulations to aid in the protection of local water resources. These regulations were approved by the Auburn City Council in 2007. The regulations promote water resource protection through the setting aside of open space and concentrating development away from water resources. The ordinance and subdivision regulations promote the use of low impact design concepts to protect natural resources in the Auburn area. While developer interest for conservation subdivisions has not been strong to this point, the City continues to promote conservation subdivisions and low impact development principles for developments within the City of Auburn. These regulations can be downloaded from the City's website at https://www.auburnalabama.org/planning/development-services/subdivision-regulations/.

E. Site Development Review Tool



In 2006, the Water Resource Management Department contracted with CH2M Hill to develop a Site Development Review Tool (Tool) that could be utilized by local engineers when designing stormwater BMPs on developments within the City. This Tool was modeled on a similar tool created by CH2M Hill for Gwinnett County, Georgia.

The Tool was developed using a Microsoft Excel platform and can be used by engineers and developers to design and incorporate structural stormwater BMPs for developments within Auburn's planning jurisdiction boundaries and to maximize the efficiency of runoff pollutant management following construction of developments. This Tool can also be used to meet the target pollutant removal efficiencies outlined in the City's Conservation Subdivision Regulations.

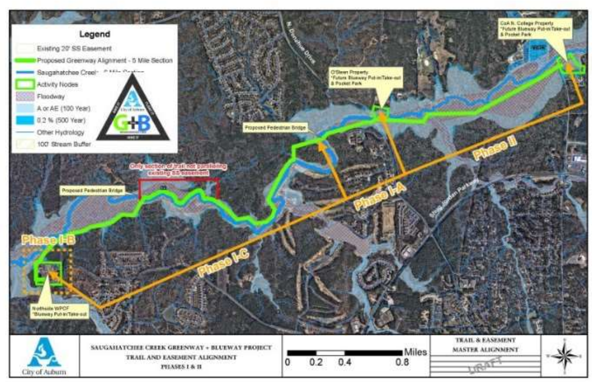
The Tool provides pollutant removal estimates for site specific conditions based on removal efficiencies for a variety of stormwater BMPs including detention ponds, bioretention areas (i.e. rain gardens) and stormwater wetlands. This Tool analyzes a variety of stormwater pollutants including nutrients (phosphorus and nitrogen) and total suspended solids. City staff utilize the Tool during the plan review process to analyze development impacts on water quality within its water supply protection area (Lake Ogletree watershed). This Tool is also used by engineers when submitting water quality plans for developments located in the Saugahatchee Creek Watershed, the Parkerson Mill Creek Watershed, or the Lake Ogletree Watershed to assist them in determining if their post-development stormwater controls meet the City's applicable pollutant removal criteria. A copy of the Tool can be downloaded at https://www.auburnalabama.org/water-resource-management/standard-development-forms/. **During the 2019-2020 reporting year, the City reviewed thirty-two (32) stormwater quality site development review tools.**

F. Student Chapter of American Society of Civil Engineers Constructed Wetland

In 2015, the student chapter of the American Society of Civil Engineers (ASCE) of Auburn University worked to design and construct an Outdoor Civil Engineering Learning Lab (Auburn OutCELL) featuring educational displays and interactive exhibits meant to appeal to students of all ages. This project involved a collaborative effort with the City, which provided access to a city-owned site for developing the proposed learning center and design and construction feedback to the student-led team. The Auburn OutCELL will serve as a center where local K-12 students can come (free of charge) with family or school groups to interactively engage and learn about the various disciplines of civil engineering, specifically highlighting elements of environmental, geotechnical, hydraulics, hydrology, materials, structural, and transportation engineering.

The main feature of Auburn OutCELL is a constructed stormwater wetland, which includes an improved sediment basin and constructed treatment wetland system. Not only does this stormwater treatment system provide an ideal setup for lessons on erosion control, water quality, watershed hydrology and native Alabama vegetation, but it also serves to actively improve the quality of stormwater flowing into the Saugahatchee Creek. The site's location just off the unpaved Miracle Road leads to extremely turbid stormwater flowing through the site, which formerly deposited large amounts of sediment into the Saugahatchee Creek. **Due to other developments in the area, the OutCELL project will be re-instated during the construction of the Saugahatchee Greenway + Blueway project anticipated to begin in late 2020.**

G. Saugahatchee Greenway + Blueway Project



Saugahatchee Creek is identified as a Primary Greenway Corridor in the City's Greenway and Greenspace Master Plan. In 2015 the City began performing the necessary feasibility assessments for the development of both a greenway and blueway component of this corridor. Staff have evaluated approximately six (6) miles of Saugahatchee for floatability and over six (6) miles of existing sanitary sewer easement for trail alignment. Between 2015 and 2018, the City has obtained more than 97 acres of land and/or public access easements thereto to convey +/-1.5 miles of Greenway and install two put-in/take-out locations. Additionally, in March of 2017 the City installed one realtime stream gage on Saugahatchee Creek, which will be used to develop a floatability index for kayaking. **During this reporting period, staff reviewed and commented on CBMP plans for this project and commencement is anticipated during 2020-2021.**

X. POLLUTION PREVENTION/GOOD HOUSEKEEPING FOR MUNICIPAL OPERATIONS

A. Stormwater Management Training

The City of Auburn continues to develop a training program that provides the Water Resource Management Department and other City departments with information on the proper methods for implementing site control measures on all municipal projects. City personnel also attend a variety of stormwater/water quality related conferences, workshops and seminars annually.

Training opportunities during this reporting year included:

- **Alabama Water Resources Association (AWRA)**—In September 2019, one City Staff member (Ron McCurry) attended this conference in Orange Beach, Alabama

- **Certified Professional in Erosion and Sediment Control (CPESC)** – In February 2020, two City staff personnel (Ron McCurry and Marla Smith) attended this course in Raleigh, North Carolina.

- **International Erosion Control Association (IECA) Conference** – In February 2020, two City staff personnel (Ron McCurry and Marla Smith) attended this conference in Raleigh, North Carolina.

- **American Water Works Association (AWWA) Customer Service Seminar** – In April 2019, two City staff (Tim Johnson and Kyle Hildreth) attended this conference in Indianapolis, Indiana.

- **Alabama Rural Water Association (ARWA) Source Water Protection Workshop** – In December 2019, two City staff (Dusty Kimbrow and Tim Johnson) personnel attended this workshop in Union Springs, Alabama.

- **American Water Works Association (AWWA) and AL/MS Alabama Water Environmental Association (AWWA) Section Water JAM Conference** – In July 2019, four City Staff (Matt Dunn, Tim Johnson, Mikel Thompson and Eric Carson) attended this event in Mobile, Alabama.

- **Silt Saver, Inc. Workshop—In** August 2019, several City staff attended this event co-hosted by the City of Auburn in Opelika, Alabama

- **WEFTEC 2019 (September 2019)** – This 4-day conference, sponsored by the Water Environment Federation, is one of the premier water quality conferences in the world. WEFTEC 2019 was held in Chicago, Illinois. Two (2) City employees (Matt Dunn and Jimmy Segrest) attended this conference and attended technical sessions related to watershed protection, water quality, stormwater BMPs and wastewater treatment.

- **Alabama Department of Environmental Management (ADEM) Annual Groundwater Conference** – In June 2019, one City staff (Timothy Johnson) attended this conference Montgomery, Alabama.

- **Alabama Rivers Educator Workshop** – In July 2019, two City staff (Marla Smith and Dusty Kimbrow) attended this workshop in Loachapoka, Alabama and are certified educators of Alabama Rivers.

- **Qualified Credentialed Inspector Training** – On average, 10 to 20 WRM employees maintain Qualified Credentialed Inspector (QCI) certification. This certification requires annual refresher training, for which all QCI certified personnel must perform in order to retain certification. In addition to QCI certified staff, the City has numerous professionals who qualify as Qualified Credentialed Professionals (QCP) through existing certifications. **In 2019, approximately fifteen (15) WRM staff received their QCI certifications.**

- **Alabama Department of Environmental Management (ADEM) Annual Surface Water Meeting** – In October 2019, one City staff (Timothy Johnson) attended this conference in Montgomery, Alabama.

- **Alabama Rural Water Association (ARWA) Current Technologies for Water and Wastewater Operators**– In October 2019, one City staff (Timothy Johnson) attended this event in Auburn, Alabama.

- **ADEM/ARWA Understanding and Complying with Sanitary Sewer Overflow Permit Requirements (Multiple)** – Two City employees (Mikel Thompson and Jimmy Segrest) attended these sessions that were held statewide during various times of the reporting year (April 2018 – March 2019).

- **American Water Works Association and Alabama Water Environment Association Utility Management Workshop** – In January 2020, four City staff (Eric Carson, Matt Dunn, Mikel Thompson, and Tim Johnson) attended this workshop in Montgomery, AL.

- **Alabama Department of Environmental Management Non-point Source Conference**—In January 2020, two City staff personnel (Ron McCurry and Dusty Kimbrow) attended this conference in Montgomery, Alabama.

- **Alliance for PE Pipe Roadshow** – In March 2020, several City staff (Matt Dunn, Tim Johnson) attended the Roadshow held in Auburn, Alabama.

B. Spill Response and Prevention Training

The City of Auburn has developed an in-house spill response training program. Staff from Water Resource Management and Public Works' Construction Management and Fleet Services Divisions routinely inspect their respective facilities for proper containment and signage associated with storage of petroleum products. Additionally, staff attend annual training on Spill Prevention, Control, and Countermeasure (SPCC) to ensure that they are prepared to respond to discharges in an appropriate manner.

C. Risk Management Manual

The City's Human Resources Department has developed a manual outlining specific requirements/policies for dealing with hazardous chemicals. Topic 12 (titled Hazard Communication Program) of the City's Risk Management Manual specifically requires City personnel to receive training on hazardous chemicals used. Safety Data Sheets (SDS) identifying personal protective equipment, permissible exposure limits (PEL) and Threshold Limit Values (TLV) are required for all hazardous chemicals used. The Hazard Communication Program was adopted as part of the Risk Management Manual.

D. Municipal Operations Recycling

RecycleAuburn Tonnage Report	
Item	**Total Tons**
Newspaper	47.79
Green Glass	127.61
Clear Glass	63.66
Brown Glass	55.17
Aluminum Cans	2.02
Cardboard	174.45
Steel	5.16
Magazines	38.29
Mixed Paper	40.12
Plastics	0.00
Computers/Electronics	3.38
Batteries Transistors	0.29
Batteries Automotive	0.20
Used Motor Oil	1.31
Scrap Metal	49.30
Downtown Grease	39.35
Single Stream	1719.88
Total	**2367.99**
Monthly Average	**197.33**

It has been standard policy to encourage individual Departments to participate in the City's recycling program. Recyclable waste generated through City activities is collected and processed through the City's recycling center located on Donahue Drive. This recycling center accepts the following recyclables 24 hours a day, 365 days a year: aluminum cans; flattened cardboard; paper (all types); steel/tin cans; batteries (transistor only up to size D); cellular phones; cooking grease/oil; green glass; magazines/telephone books; mixed office paper; and plastics #1-#7. Computer equipment and other electronics (not TVs) may also be recycled, but an appointment must be made as these items require special handling.

In 2017, the City transitioned to single-stream recycling with 5,600 containers. Using 95-gallon containers/carts, citizens are able to place all recyclables into one container and place them at the curbside on their scheduled garbage collection day. Acceptable single-stream materials include: aluminum cans; flattened cardboard; paper (all types); plastic #1 through #7 and steel/tin cans. **As of March 2020, the City services a total of 13,596 curbside recycling households. During this reporting period, the City recycled approximately 1,720 tons of single-stream recyclables.**

E. Street Sweeping & Litter Control

Regular street sweeping has been proven as an effective means to reduce overall pollutant loading from roads and storm sewer systems. The Right of Way Maintenance Division of the City's Public Works Department currently performs street sweeping measures on a 4-week rotating basis, barring uncontrollable circumstances. **During this reporting period, the City swept streets and parking lots within the City, thereby removing approximately 8,384 tons of debris from the road. Additionally, the City removed 12,610 bags of litter from 4,943 miles of right-of-way through community service/inmates.**

F. Alabama Certified Pesticides Applicator

The Parks and Recreation Department of the City maintains trained and certified personnel in the application of pesticides, including restricted-use pesticides. Although qualified to do so, the Parks and Recreation Department has not used any restricted-use pesticides in the previous decade. In order to maintain certification with the State of Alabama, the staff must document and complete 30 continuing education units (CEUs) over a three-year period. CEUs are earned at various conferences and workshops such as the Alabama Turfgrass Conference, Alabama Department of Transportation workshops, the Sports Turf Short Course and the Alabama Urban Forestry Association's Annual Conference. The CEUs cover the application of pesticides, information on the proper use of fertilizers and other chemicals typically used to maintain athletic fields, and best management practices for trees/shrubs/turf that are intended to reduce the need for pesticides, fertilizers and irrigation.

G. Municipal Facilities Inventory and Good Housekeeping Inspections

In 2017 the City completed an initial inventory and desktop assessment of all its properties and physical facilities, including an assessment of stormwater knowledge of the persons responsible for management and upkeep. The purpose of this inventory and assessment is to evaluate each property's respective potential to contribute to stormwater pollution, and to identify site-specific best management practices to improve maintenance and operation of these properties and facilities to reduce that potential. A total of 128 properties are currently owned and managed by the City. Of these 128 properties, 76 are developed (varying intensity) and 52 are in an undeveloped/natural condition. In 2018, the City re-evaluated the 128 properties, and determined that of the 128 properties, a total of 63 City properties have the potential to discharge pollutants via stormwater runoff. An updated table of City facilities and/or properties may be found in Appendix F. **During this reporting period, all 63 City properties were inspected with minimal deficiencies which have since been addressed.**

XII. STORMWATER INFRASTRUCTURE IMPROVEMENTS

In 2019-2020 report year, the Engineering Services Department continued to make considerable progress toward installing, rehabilitating and upgrading stormwater infrastructure within the City of Auburn. A listing of projects completed is included below, along with projects under construction, projects under design and/or consideration and a list of stormwater maintenance activities.

A. Stormwater Infrastructure Projects Completed

- Moores Mill Road Sidewalk - This project will involve the installation of sidewalk along the south side of Moores Mill Road from East University Drive and Samford Avenue. As part of the project, curb and gutter will be added to portions of the roadway which will trigger the need for inlets and pipe. The project also include removal of any old-style inlets.

- Annalue Drive Sidewalk - This project will involve the installation of 40 LF of 15-inch Pipe, 1264 LF of 18-inch pipe, 667 LF of 24-inch Pipe, 4 LF of 48-inch Pipe, 8 LF of 54-inch Pipe, 4 LF of 72-inch Pipe, 1 single wing inlet, 2 grate inlets, 15 area inlet, and 3 junction boxes and 13 headwalls. The project also included the removal of 362 LF of pipe.

B. Stormwater Infrastructure Projects Currently Under Construction

- New Public Safety Facility- This project will involve the installation of 132 LF of 12-inch Pipe, 91 LF of 15-inch Pipe, 1016 LF of 18-inch pipe, 18 LF of 24-inch Pipe, 681 LF of 48-inch Pipe, 188 LF of 6'x5' box culvert, 6 single wing inlets, 9 wing inlets, 9 grate inlets, and one headwall.

C. Stormwater Infrastructure Projects Under Design and/or Consideration

- Martin Luther King Drive Streetscape - This project will involve the installation of sidewalk along the north side of Martin Luther King Drive from North Donahue Drive to Richland Road. As part of the project, curb and gutter will be added which will trigger the need for inlets and pipe. The project also include removal of any old-style inlets and the extension of an existing culvert near Jones Street.

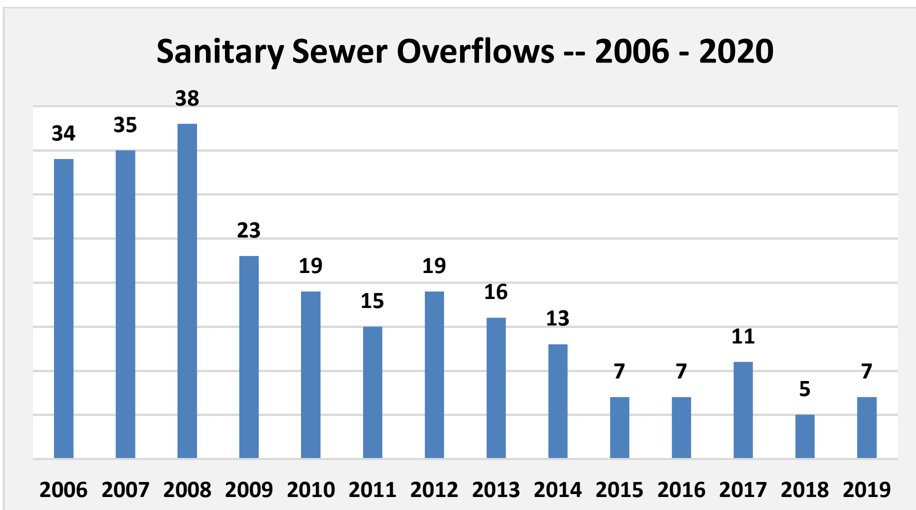
- Renew Opelika Road Phase 4 - This project will involve the installation of sidewalk along Opelika Road from Gentry Drive and Saugahatchee Drive. As part of the project, curb and gutter will be added to portions of the roadway which will trigger the need for inlets and pipe. The project also include removal of any old-style inlets. This project will involve the installation of 1107 LF of 15-inch Pipe, 314 LF of 18-inch pipe, 379 LF of

24-inch Pipe, 15 single wing inlets, 3 double wing inlets, 2 grate inlets, 1 area inlet, and 3 junction boxes and one headwall.

- Ogletree Road Culver Replacement - This project will involve the removal of the existing culvert and replacement with a 22’x12.5’ double barrel culvert just west of Oak Knoll Circle, installation of 151 LF of 24-inch pipe, 1 area inlet.

D. Sanitary Sewer Rehabilitation Projects

Several years ago, the City began implementation of a program to identify and rehabilitate aging sanitary sewer infrastructure in the City of Auburn. The primary purpose of this program is to rehabilitate aging infrastructure, prevent sanitary sewer overflows (SSOs) and reduce inflow and infiltration (I/I). The City actively addresses these issues through various sanitary sewer evaluation surveys and rehabilitation projects. **Efforts to rehabilitate gaining infrastructure have reduced SSOs substantially since 2006. During this reporting period, the City had seven (7) reportable SSOs.**



APPENDIX A

2016 PHASE II STORMWATER PERMIT

Lance R. LeFleur
Director

Robert J. Bentley
Governor

Alabama Department of Environmental Management
adem.alabama.gov
1400 Coliseum Blvd. 36110-2400 ■ Post Office Box 301463
Montgomery, Alabama 36130-1463
(334) 271-7700 ■ FAX (334) 271-7950

September 12, 2016

Honorable Bill Ham, Jr.
Mayor, City of Auburn
144 Tichenor Ave., Suite 1
Auburn, Alabama 36830

Re: Municipal Separate Storm Sewer System (MS4) Phase II General Permit
NPDES Permit No. ALR040003
Lee County (081)

Dear Mayor Ham:

The Department has made a final determination to reissue General NPDES Permit No. ALR040000 for discharges from regulated small municipal separate storm sewer systems. The reissued permit will become effective on October 1, 2016 and will expire on September 30, 2021.

The Department notified the public of its tentative determination to reissue General NPDES Permit No. ALR040000 on November 18, 2015. Interested persons were provided the opportunity to submit comments on the Department's tentative decision through December 18, 2015. In accordance with ADEM Admin Code r. 335-6-6-.21(7), a response to all comments received during the public comment period will be available on the Department's efile system.

Based on your request, as evidenced by the submittal of a Notice of Intent, coverage under the General NPDES Permit No. ALR040003 is granted. The effective date of issuance coverage is October 1, 2016.

Coverage under this permit does not authorize the discharge of pollutant or non-stormwater that is not specifically identified in the permit and by the Notice of Intent which resulted in granting this coverage.

You are responsible for compliance with all provisions of the permit, including, but not limited to, the performance of any monitoring (if applicable), the submittal of any reports, and the preparation and implementation of any plans required by the permit. Part II.A.4. of the re-issued permit requires the submittal of an updated Stormwater Management Program Plan (SWMPP) within three months of the issuance date of this permit (January 1, 2017).

If you have any additional questions or concerns, please contact Marla Smith by email at mssmith@adem.state.al.us or by phone at 334-270-5616.

Sincerely,

Jeffery W. Kitchens, Chief
Stormwater Management Branch
Water Division

JWK/mss

File: FPER/1207

Enclosure: Final Permit ALR040003

Cc: Ms. Kacy Sable, EPA (via email)
Mr. Dan Ballard, City of Auburn (via email)

Alabama Department of Environmental Management

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT

DISCHARGE AUTHORIZED:	STORMWATER DISCHARGES FROM REGULATED SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEMS
AREA OF COVERAGE:	THE STATE OF ALABAMA
PERMIT NUMBER:	ALR040003
RECEIVING WATERS:	ALL WATERS OF THE STATE OF ALABAMA

In accordance with and subject to the provisions of the Federal Water Pollution Control Act, as amended, 33 U.S.C.§§1251-1378 (the "FWPCA"), the Alabama Water Pollution Control Act, as amended, Code of Alabama 1975, §§ 22-22-1 to 22-22-14 (the "AWPCA"), the Alabama Environmental Management Act, as amended, Code of Alabama 1975, §§22-22A-1 to 22-22A-15, and rules and regulations adopted thereunder, and subject further to the terms and conditions set forth in this permit, the Permittee is hereby authorized to discharge into the above-named receiving waters.

ISSUANCE DATE:	SEPTEMBER 6, 2016
EFFECTIVE DATE:	OCTOBER 1, 2016
EXPIRATION DATE:	SEPTEMBER 30, 2021

GLENDA L. DEAN

Alabama Department of Environmental Management

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PART I Coverage Under This General Permit

A. Permit Coverage

This permit covers the urbanized areas designated as a Phase II Municipal Separate Storm Sewer System (MS4) within the State of Alabama.

B. Authorized Discharges

1. This permit authorizes discharges of storm water from small MS4s, as defined in 40 CFR Part 122.26(b)(16). An entity may discharge under the terms and conditions of this general permit if the entity:
   a. Owns or operates a small MS4 within the permit area described in Section A;
   b. Is not a "large" or "medium" MS4 as described in 40 CFR Part 122.26(b)(4) or (7);
   c. Submits a Notice of Intent (NOI) in accordance with Part II of this general permit; and
   d. Either:
      i. Is located fully or partially within an urbanized area as determined by the latest Decennial Census by the Bureau of Census, or
      ii. Is designated for permit authorization by the Department pursuant to 40 CFR Part 122.32(a)(2).
2. This permit authorizes the following non-storm water discharges provided that they do not cause or contribute to a violation of water quality standards and that they have been determined not to be substantial contributors of pollutants to a particular small MS4 applying for coverage under this permit and that is implementing the storm water management program (SWMP) set forth in this permit:

   a. Water line flushing
   b. Landscape irrigation
   c. Diverted stream flows
   d. Uncontaminated ground water infiltration
   e. Uncontaminated pumped groundwater
   f. Discharges from potable water sources
   g. Foundation drains
   h. Air conditioning condensate
   i. Irrigation water (not consisting of treated, or untreated, wastewater)
   j. Rising ground water
   k. Springs
   l. Water from crawl space pumps
   m. Footing drains
   n. Lawn watering runoff
   o. Individual residential car washing, to include charitable carwashes

p. Residual street wash water
q. Discharge or flows from firefighting activities (including fire hydrant flushing)
r. Flows from riparian habitats and wetlands
s. Dechlorinated swimming pool discharges, and
t. Discharges authorized and in compliance with a separate NPDES permit.

C. Prohibited Discharges

The following discharges are not authorized by this permit:

1. Discharges that are mixed with sources of non-storm water unless such non-storm water discharges are:
   a. In compliance with a separate NPDES permit; or
   b. Determined by the Department not to be a significant contributor of pollutants to waters of the State;
2. Storm water discharges associated with industrial activity as defined in 40 CFR Part 122.26(b)(14)(i)-(ix) and (xi);
3. Storm water discharges associated with construction activity as defined in 40 CFR Part 122.26(b)(14)(x) or 40 CFR 122.26(b)(15) and subject to Alabama Department of Environmental Management (ADEM) Code r. 335-6-12;
4. Storm water discharges currently covered under another NPDES permit;
5. Discharges to territorial seas, contiguous zone, and the oceans unless such discharges are in compliance with the ocean discharge criteria of 40 CFR Part 125, Subpart M;
6. Discharges that would cause or contribute to instream exceedances of water quality standards; Your storm water management program plan (SWMPP) must include a description of the Best Management Practices (BMPs) that you will be using to ensure that this will not occur. The Department may require corrective action or an application for an individual permit if an MS4 is determined to cause an instream exceedance of water quality standards;
7. Discharges of any pollutant into any water for which a total maximum daily load (TMDL) has been approved or developed by EPA unless your discharge is consistent with the TMDL; This eligibility condition applies at the time you submit a NOI for coverage. If conditions change after you have permit coverage, you may remain covered by the permit provided you comply with the applicable requirements of Part V. You must incorporate any limitations, conditions and requirements applicable to your discharges, including monitoring frequency and reporting required, into your SWMPP in order to be eligible for permit coverage. For discharges not eligible for coverage under this permit, you must apply for and receive an individual or other applicable general NPDES permit prior to discharging;
8. This permit does not relieve entities that cause illicit discharges, including spills, of oils or hazardous substances, from responsibilities and liabilities under State and Federal law and regulations pertaining to those discharges.

D. Obtaining Authorization

1. To be authorized to discharge storm water from small MS4s, you must submit a Notice of Intent (NOI) and a description of your storm water management program (SWMP) in accordance with the deadlines presented in Part II of this permit.
2. You must submit the information required in Part II on the latest version of the NOI form (or photocopy thereof). Your NOI must be signed and dated in accordance with Part VII of this permit.
3. No discharge under the general permit may commence until the discharger receives the Department's acknowledgement of the NOI and approval of the coverage of the discharge by the general permit. The Department may deny coverage under this permit and require submittal of an application for an individual NPDES permit based on a review of the NOI.
4. Where the operator changes, or where a new operator is added after submittal of an NOI under Part II, a new NOI must be submitted in accordance with Part II within thirty (30) days of the change or addition.
5. For areas extended within your MS4 by the latest census or annexed into your MS4 area after you received coverage under this general permit, the first annual report submitted after the annexation must include the updates to your SWMP, as appropriate.

Note: If the Department notifies the dischargers (directly, by the public notice, or by making information available on the Internet) of other NOI form options that become available at a later date (e.g., electronic submission of forms), you may take advantage of those options to satisfy the NOI use and submittal requirements in Part II.

E. Implementation

1. This permit requires implementation of the MS4 Program under the State and Federal NPDES Regulations. MS4s shall modify their programs if and when water quality considerations warrant greater attention or prescriptiveness in specific components of the municipal program.
2. If a small MS4 operator implements the minimum control measures in 40 CFR 122.34(b) and the discharges are determined to cause or contribute to non-attainment of an applicable water quality standard as evidenced by the State of Alabama's 303(d) list or an EPA-approved or developed Total Maximum Daily Load (TMDL), the operator must tailor its BMPs within the scope of the six minimum control measures to address the pollutants of concern and implement permit requirements outlined in Part IV.D. and Part V of this permit.
3. Existing MS4s, unless otherwise stated within this permit, shall implement each of the minimum control measures outlined in Part III.B. of this permit immediately upon the effective date of coverage. Newly designated MS4s, unless otherwise stated in this permit, shall implement the minimum control measures outlined in Part III.B. of this permit within

365 days of the effective date of coverage. However, for newly designated MS4s, where new or revised ordinances are required to implement any of the minimum control measures, such ordinances shall be enacted within 730 days from the effective date of coverage.

PART II Notice of Intent (NOI) Requirements

A. Deadlines of Applications

1. If you are automatically designated under 40 CFR Part 122.32(a)(1) or designated by the Department, then to request recoverage, you are required to submit an NOI or an application for an individual permit and a description of your SWMP at least 90 days before the expiration of this permit.
2. If you are designated by the Department after the date of permit issuance, then you are required to submit an NOI or an application for an individual permit and a description of your SWMP within 180 days upon notification. Within six months of initial issuance, the operator of the regulated small MS4 shall submit a storm water management program plan (SWMPP) to the Department for review. A SWMPP can be submitted electronically in a .PDF format, or in another prescribed manner acceptable to the Department that contains all necessary components
3. You are not prohibited from submitting an NOI after the dates provided in Part II.A.1-2. If a NOI is submitted after the dates provided in Part II.A.1-2., your authorization is only for discharges that occur after permit coverage is granted. The Department reserves the right to take appropriate enforcement actions for any unpermitted discharges.
4. Within three months of the date of re-issuance of coverage under this permit, all operators of regulated small MS4s shall submit a revised storm water management program plan (SWMPP) to the Department for review.
5. **On or after December 21, 2020, all NOIs shall be made electronically in a prescribed manner acceptable to the Department.**

B. Continuation of the Expired General Permit

If this permit is not reissued or replaced prior to the expiration date, it will be administratively continued in accordance with the ADEM Code r. 335-6-6 and remain in force and effect if the Permittee re-applies for coverage as required under Part II of this Permit. Any Permittee who was granted permit coverage prior to the expiration date will automatically remain covered by the continued permit until the earlier of:

1. Reissuance or replacement of this permit, at which time you must comply with the Notice of Intent conditions of the new permit to maintain authorization to discharge; or
2. Issuance of an individual permit for your discharges; or
3. A formal permit decision by the Department not to reissue this general permit, at which time you must seek coverage under an alternative general permit or an individual permit.

C. Contents of the Notice of Intent (NOI)

The Notice of Intent must be signed in accordance with Part VII.G of this permit and must include the following information:

1. Information on the Permittee:
   a. The name of the regulated entity, specifying the contact person and responsible official, mailing address, telephone number and email address; and
   b. An indication of whether you are a Federal, State, County, Municipal or other public entity.

2. Information on the MS4:
   a. the name of your organization, county, city, or town and the latitude/longitude of the center or the MS4 location;
   b. The name of the major receiving water(s) and an indication of whether any of your receiving waters are included on the latest 303(d) list, included in an EPA-approved and/or EPA developed total maximum daily load (TMDL) or otherwise designated by the Department as being impaired. If you have discharges to 303(d) or TMDL waters, a certification that your SWMPP complies with the requirements of Part V;
   c. If you are relying on another governmental entity, regulated under the storm water regulations (40 CFR Part 122.26 & 122.32) to satisfy one or more of your permit obligations (see Part III), the identity of that entity(ies) and the elements(s) they will be implementing. The Permittee remains responsible for compliance if the other entity fails to fully perform the permit obligation, and may be subject to enforcement action if neither the Permittee nor the other entity fully performs the permit obligation; and
   d. Must include if you are relying on the Department for enforcement of erosion and sediment controls on qualifying construction sites in accordance with Part III.B.3.b.

3. Include a brief summary of the best management practices (BMPs) for the minimum control measures in Part III of this permit (i.e. a brief summary of the MS4's SWMPP), your timeframe for implementing each of the BMPs, and the person or persons responsible for implementing or coordinating your SWMPP.

D. Where to Submit MS4 Documents

You are to submit your NOI or individual application, and a description of your SWMP as allowed under Part II.A., signed in accordance with the signatory requirements of Section VII of this permit, to the Department at the following address:

Alabama Department of Environmental Management
Water Division
Storm Water Management Branch
Post Office Box 301463
Montgomery, Alabama 36130-1463

Certified and Registered Mail shall be addressed to:

Alabama Department of Environmental Management
Water Division
Storm Water Management Branch
1400 Coliseum Boulevard
Montgomery, Alabama 36110-2059

On or after December 21, 2020, all NOIs shall be made electronically in a prescribed manner acceptable to the Department.

PART III Storm Water Pollution Prevention and Management Program for Small MS4s

A. Storm Water Management Program (SWMP)

1. The Permittee is required to develop, revise, implement, maintain and enforce a storm water management program (SWMP) which shall include controls necessary to reduce the discharge of pollutants from its MS4 consistent with Section 402(p)(3)(B) of the Clean Water Act and 40 CFR Parts 122.30-122.37. These requirements shall be met by the development and implementation of a storm water management program plan (SWMPP) which addresses the best management practices (BMPs), control techniques and systems, design and engineering methods, public participation and education, monitoring, and other appropriate provisions designed to reduce the discharge of pollutants from the MS4 to the maximum extent practicable (MEP).
2. The Permittee shall provide and maintain adequate finance, staff, equipment, and support capabilities necessary to implement the SWMPP and comply with the requirements of this permit.
3. The SWMPP must address the minimum storm water control measures referenced in Part III.B. to include the following:
   a. A map of the Permittee's MS4 urbanized areas;
   b. The BMPs that will be implemented for each control measure. Low impact development/green infrastructure shall be considered where feasible. Information on LID/Green Infrastructure is available on the following websites: http://www.adem.alabama.gov/programs/water/waterforms/LIDHandbook.pdf and http://epa.gov/polwaste/green/index.cfm.
   c. The measureable goals for each of the minimum controls outlined in Part III.B.;
   d. The proposed schedule—including interim milestones, as appropriate, inspections, and the frequency of actions needed to fully implement each minimum control; and
   e. The person and/or persons responsible for implementing or coordination the BMPs for each separate minimum control measure.

4. Once the initial SWMPP is acknowledged by ADEM, activities and associated schedules outlined by the SWMPP or updates to the SWMPP are conditions of the permit.
5. Unless otherwise specified in this permit, the Permittee shall be in compliance with the conditions of this permit by the effective date of coverage.

B. Minimum Storm Water Control Measures

1. Public Education and Public Involvement on Storm Water Impacts

a. The Permittee must develop and implement a public education and outreach program to inform the community about the impacts of storm water discharges on water bodies and the steps that the public can take to reduce pollutants in storm water runoff to the MEP. The Permittee shall continuously implement this program in the areas served by the MS4. The Permittee shall also comply, at a minimum, with applicable State and local public notice requirements when implementing a public involvement/participation program.

b. The Permittee shall include within the SWMPP the methods for how it will:
   i. Seek and consider public input in the development, revision, and implementation of the SWMPP;
   ii. Identify targeted pollutant sources the Permittee's public education program is intended to address;
   iii. Specifically address the reduction of litter, floatables and debris from entering the MS4, that may include, but is not limited to:
      1. Establishing a program to support volunteer groups for labeling storm drain inlets and catch basins with "no dumping" message; and
      2. Posting signs referencing local codes that prohibit littering and illegal dumping at selected designated public access points to open channels, creeks, and other relevant waterbodies;
   iv. Inform and involve individuals and households about the steps they can take to reduce storm water pollution; and
   v. Inform and involve individuals and groups on how to participate in the storm water program (with activities that may include, but not limited to, local stream and lake restoration activities, storm water stenciling, advisory councils, watershed associations, committees, participation on rate structures, stewardship programs and environmental related activities). The target audiences and subject areas for the education program that are likely to have significant storm water impacts should include, but is not limited to, the following:
      1. General Public
         a. General impacts litter has on water bodies, how trash is delivered to streams via the MS4 and ways to reduce the litter;

b. General impacts of storm water flows into surface water from impervious surface; and
c. Source control BMPs in areas of pet waste, vehicle maintenance, landscaping and rain water reuse.

2. General Public, Businesses, Including Home-Based and Mobile Businesses
   a. BMPs for use and storage of automotive chemicals, hazardous cleaning supplies, carwash soaps and other hazardous materials; and
   b. Impacts of illicit discharges and how to report them.

3. Homeowners, Landscapers, and Property Managers
   a. Yard care techniques that protect water quality;
   b. BMPs for use and storage of pesticides and fertilizers;
   c. BMPs for carpet cleaning and auto repair and maintenance;
   d. Runoff reduction techniques, which may include but not limited to site design, pervious paving, retention of forests, and mature trees; and
   e. Storm water pond maintenance.
4. Engineers, Contractors, Developers, Review Staff and Land Use Planners
   a. Technical standards for construction site sediment and erosion control;
   b. Storm water treatment and flow control BMPs;
   c. Impacts of increased storm water flows into receiving water bodies; and
   d. Run-off reduction techniques and low impact development (LID)/green infrastructure (GI) practices that may include, but not limited to, site design, pervious pavement, alternative parking lot design, retention of forests and mature trees to assist in storm water treatment and flow control BMPS.

vi. Evaluation of the effectiveness of the public education and public involvement program.

c. The Permittee shall report each year in the annual report the following information:
   i. A description of the activities used to involve groups and/or individuals in the development and implementation of the SWMPP;
   ii. A description of the individuals and groups targeted and how many groups and/or individuals participated in the programs;
   iii. A description of the activities used to address the reduction of litter, floatables and debris from entering the MS4 as required in Part III.B.1.b.iii.;

iv. A description of the communication mechanisms or advertisements used to inform the public and the quantity that were distributed (i.e. number of printed brochures, copies of newspapers, workshops, public service announcements, etc); and
v. Results of the evaluation of the public education and public involvement program as required in Part III.B.1.b.vi.

d. The Permittee shall make their SWMPP and their annual reports required under this permit available to the public when requested. The current SWMPP and the latest annual report should be posted on the Permittee's website, if available.

2. Illicit Discharge Detection and Elimination (IDDE) Program

a. The Permittee shall implement an ongoing program to detect and eliminate illicit discharges into the MS4, to the maximum extent practicable. The program shall include, at a minimum, the following:
i. An initial map shall be provided in the SWMPP with updates, if any, provided each year in the annual report. The map shall include, at a minimum:
1. The latitude/longitude of all known outfalls;
2. The names of all waters of the State that receive discharges from these outfalls; and,
3. Structural BMPs owned, operated, or maintained by the Permittee.
ii. To the extent allowable under State law, an ordinance or other regulatory mechanism that effectively prohibits non-storm water discharges to the MS4. The ordinance or other regulatory mechanism shall be reviewed annually and updated as necessary and shall:
1. Include escalating enforcement procedures and actions; and
2. Require the removal of illicit discharges and the immediate cessation of improper disposal practices upon identification of responsible parties. Where the removal of illicit discharge within ten (10) working days is not possible, the ordinance shall require an expeditious schedule for removal of the discharge. In the interim, the ordinance shall require the operator of the illicit discharge to take all reasonable and prudent measures to minimize the discharge of pollutants to the MS4.
iii. A dry weather screening program designed to detect and address non-storm water discharges to the MS4. This program must address, at a minimum, dry weather screening of fifteen percent (15%) of the outfalls once per year with all (100 percent) screened at least once per five years. Priority areas, as described by the Permittee in the SWMPP, will be dry weather screened on a more frequent schedule as outlined in the SWMPP. If any indication of a suspected illicit discharge, from an unidentified

source, is observed during the dry weather screening, then the Permittee shall follow the screening protocol as outlined in the SWMPP.

iv. Procedures for tracing the source of a suspect illicit discharge as outlined in the SWMPP. At a minimum, these procedures will be followed to investigate portions of the MS4 that, based on the results of the field screening or other appropriate information, indicate a reasonable potential of containing illicit discharges or other sources of non-storm water.

v. Procedures for eliminating an illicit discharge as outlined in the SWMPP;

vi. Procedures to notify ADEM of a suspect illicit discharge entering the Permittee's MS4 from an adjacent MS4 as outlined in the SWMPP;

vii. A mechanism for the public to report illicit discharges discovered within the Permittee's MS4 and procedures for appropriate investigation of such reports;

viii. A training program for appropriate personnel on identification, reporting, and corrective action of illicit discharges;

ix. Address the following categories of non-storm discharges or flows (i.e., illicit discharges) only if the Permittee or the Department identifies them as significant contributors of pollutants to your small MS4: water line flushing, landscape irrigation, diverted stream flows, rising ground waters, uncontaminated ground water infiltration (infiltration is defined as water other than wastewater that enters a sewer system, including foundation drains, from the ground through such means as defective pipes, pipe joints, connections, or manholes. Infiltration does not include, and is distinguished from, inflow), uncontaminated pumped ground water, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation water, springs, water from crawl space pumps, footing drains, lawn watering run-off, individual residential car washing, flows from riparian habitats and wetlands, discharge or flows from firefighting activities (to include fire hydrant flushing); dechlorinated swimming pool discharges, and residual street wash water, discharge authorized by and in compliance with a separate NPDES permit; and

x. The Permittee may also develop a list of other similar occasional incidental non- storm water discharges (e.g. non-commercial or charity car washes, etc.) that will not be addressed as illicit discharges. These non- storm water discharges must not be reasonably expected (based on information available to the Permittees) to be significant sources of pollutants to the municipal separate storm sewer system, because of either the nature of the discharges or conditions you have established for allowing these discharges to your MS4 (e.g., a charity car wash with appropriate controls on frequency, proximity to impaired waterbodies, BMPs on the wash water, etc.). You must document in your SWMPP any local controls or conditions placed on the discharges. The Permittee must include a provision prohibiting any individual non- storm water discharge that is determined to be contributing significant amounts of pollutants to your MS4.

b. The Permittee shall report each year in the annual report the following information:
    i. List of outfalls observed during the dry weather screening;
    ii. Updated MS4 map(s) unless there are no changes to the map that was previously submitted. When there are no changes to the map, the annual report must state this;
    iii. Copies of, or a link to, the IDDE ordinance or other regulatory mechanism; and
    iv. The number of illicit discharges investigated, the screening results, and the summary of corrective actions taken to include dates and timeframe of response.

3. Construction Site Storm Water Runoff Control

a. The Permittee must develop/revise, implement and enforce an ongoing program to reduce, to the maximum extent practicable, the pollutants in any storm water runoff to the MS4 from qualifying construction sites. The program shall include the following at a minimum:
    i. Specific procedures for construction site plan (including erosion prevention and sediment controls) review and approval: The MS4 procedures must include an evaluation of plan completeness and overall BMP effectiveness;
    ii. To the extent allowable under State law, an ordinance or other regulatory mechanism to require erosion and sediment controls, sanctions to ensure compliance, and to provide all other authorities needed to implement the requirements of Part III.B.3 of this permit;
    iii. A training program for MS4 site inspection staff in the identification of appropriate construction best management practices (example: QCI training in accordance with ADEM Admin Code. R. 335-6-12 or the Alabama Construction Site General Permit);
    iv. Procedures for the periodic inspection of qualifying construction sites to verify the use of appropriate erosion and sediment control practices that are consistent with the <u>Alabama Handbook for Erosion Control, Sediment Control, And Stormwater Management on Construction Sites and Urban Areas</u> published by the Alabama Soil and Water Conservation Committee (hereinafter the "Alabama Handbook"). The frequency and prioritization of inspection activities shall be documented in the SWMPP and must include a minimum inspection frequency of once each month for priority construction sites;
    v. Procedures, as outlined in the SWMPP, to notify ADEM of construction sites that do not have a NPDES permit or ineffective BMPs that are discovered during the periodic inspections. The notification must provide,

at a minimum, the specific location of the construction project, the name and contact information from the owner or operator, and a summary of the site deficiencies; and

vi. A mechanism for the public to report complaints regarding discharges from qualifying construction sites.

b. ADEM implements a State-wide NPDES construction storm water regulatory program. As provided by 40 CFR Part 122.35(b), the Permittee may rely on ADEM for the setting of standards for appropriate erosion controls and sediment controls for qualifying construction sites and for enforcement of such controls, and must document this in its SWMPP. If the Permittee elects not to rely on ADEM's program, then the Permittee must include the following, at a minimum, in its SWMPP:

   i. Requirements for construction site operators to implement appropriate erosion and sediment control BMPs consistent with the Alabama Handbook for Erosion Control, Sediment Control, And Stormwater Management on Construction Sites and Urban Areas published by the Alabama Soil and Water Conservation Committee (hereinafter the "Alabama Handbook");

   ii. Requirements for construction site operators to control waste such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at the construction site that may cause adverse impacts to water quality;

   iii. Development and implementation of an enforcement strategy that includes escalating enforcement remedies to respond to issues of non-compliance;

   iv. An enforcement tracking system designed to record instances of non-compliance and the MS4's responding actions. The enforcement case documentation should include:

      1. Name of owner/operator
      2. Location of construction project or industrial facility
      3. Description of violations
      4. Required schedule for returning to compliance
      5. Description of enforcement response used, including escalated responses if repeat violation occur or violations are not resolved in a timely manner;
      6. Accompanying documentation of enforcement response (e.g., notices of noncompliance, notices of violation, etc);
      7. Any referrals to different departments or agencies; and
      8. Date violation was resolved

   v. The Permittee must keep records of all inspections (i.e. inspection reports) and employee training required by Part III.3.a.

c. The Permittee shall include within the SWMPP the following information:

   i. Procedures for site plan reviews as required by Part III.B.3.a.i;

   ii. A copy or link of the ordinance or other regulatory mechanism required by Part III.B.3.a.ii.;

iii. Plans for the training of MS4 site inspection staff as required by Part III.B.3.a.iii; and

iv. A site inspection plan meeting the requirements of Part III.B.3.a.iv; and

d. The Permittee shall maintain the following information and make it available upon request:

i. Documentation of all inspections conducted of qualifying construction sites as required by Part III.B.3.a.iv. The inspection documentation shall include, at a minimum, the following:

1. Facility type;
2. Inspection date;
3. Name and signature of inspector;
4. Location of construction project;
5. Owner/operator information (name, address, phone number, email);
6. Description of the storm water BMP condition that may include, but not limited to, the quality of vegetation and soils, inlet and outlet channels and structures, embankments, slopes and safety benches, spillways, weirs, and other control structures; and sediment and debris accumulation in storage and forebay areas as well as in and around inlet and outlet structures; and
7. Photographic documentation of any issues and/or concerns.

ii. Documentation of referrals of noncompliant construction sites and/or enforcement actions taken at construction sites to include, at a minimum, the following:

1. Name of owner/operator
2. Location of construction project;
3. Description of violation;
4. Required schedule for returning to compliance;
5. Description of enforcement response used, including escalated responses if repeat violations occur; and
6. Accompanying documentation of enforcement responses (e.g. notices of non-compliance, notices of violations, etc).

iii. Records of public complaints including:

1. Date, time and description of the complaint;
2. Location of subject construction sites; and
3. Identification of any actions taken (e.g. inspections, enforcement, corrections). Identifying information must be sufficient to cross-reference inspection and enforcement records.

e. The Permittee shall report each year in the annual report the following information:

i. A description of any completed or planned revisions to the ordinance or regulatory mechanism required by Part III.B.3.a.i and the most recent copy, or a link to the ordinance; and

ii. List of all active construction sites within the MS4 to include the following summary:

1. Number of construction site inspections;
2. Number of non-compliant construction site referrals and/or enforcement actions and description of violations;
3. Number of construction site runoff complaints received; and
4. Number of MS4 staff/inspectors trained.

4. Post-Construction Storm Water Management in New Development and Redevelopment

a. Post-construction storm water management refers to the activities that take place after construction occurs, and includes structural and non-structural controls including low-impact development and green infrastructure practices to obtain permanent storm water management over the life of the property's use. These post construction controls should be considered during the initial site development planning phase.

i. The Permittee must develop/revise, implement, and enforce a program to address storm water runoff from qualifying new development and redevelopment projects, to the maximum extent practicable. This program shall ensure that controls are in place to prevent or minimize water quality impacts. Specifically, the Permittee shall:

1. Develop/revise and outline in the SWMPP procedures for the site-plan review and approval process and a required re-approval process when changes to post-construction controls are required; and
2. Develop/revise and outline in the SWMPP procedures for a post-construction process to demonstrate and document that post-construction storm water measures have been installed per design specifications, which includes enforceable procedures for bringing noncompliant projects into compliance.

ii. The Permittee must develop and implement strategies which may include a combination of structural and/or non-structural BMPs designed to ensure, to the maximum extent practicable, that the volume and velocity of pre-construction stormwater runoff is not significantly exceeded. A design rainfall event with an intensity up to that of a 2yr-24hr storm event shall be the basis for the design and implementation of post- construction BMPs.

iii. To the extent allowable under State law, the Permittee must develop and institute the use of an ordinance or other regulatory mechanism to address post-construction runoff from qualifying new development and redevelopment projects.

iv. The Permittee must require adequate long-term operation and maintenance of BMPs. One or more of the following as applicable:

1. The developer's signed statement accepting responsibility for maintenance until the maintenance responsibility is legally transferred to another party; and/or
2. Written conditions in the sales or lease agreement that require the recipient to assume responsibility for maintenance; and/or
3. Written conditions in project conditions, covenants and restrictions for residential properties assigning maintenance responsibilities to a home owner's association, or other appropriate group, for maintenance of structural and treatment control management practices; and/or
4. Any other legally enforceable agreement that assigns permanent responsibility for maintenance of structural or treatment control management practices.

v. The Permittee shall perform or require the performance of post-construction inspections, at a minimum of once per year, to confirm that post-construction BMP's are functioning as designed. The Permittee shall include an inspection schedule, to include inspection frequency, within the SWMPP.

vi. The Permittee shall maintain or require the developer/owner/operator to keep records of post-construction inspections, maintenance activities and make them available to the Department upon request and require corrective actions to poorly functioning or inadequately maintained post-construction BMP's.

vii. The Permittee shall review and evaluate policies and ordinances related to building codes, or other local regulations, with a goal of identifying regulatory and policy impediments to the installation of green infrastructure and low-impact development techniques.

b. The Permittee shall report each year in the annual report the following information:

i. Copies of, or link to, the ordinance or other regulatory mechanism required by Part III.B.4.a.iii;

ii. A list of the post-construction structural controls installed and inspected during the permit year;

iii. Updated inventory of post-construction structural controls including those owned by the Permittee;

iv. Number of inspections performed on post-construction structural controls; and,

v. Summary of enforcement actions.

5. Pollution Prevention/Good Housekeeping for Municipal Operations

a. The Permittee shall develop, implement, and maintain a program that will prevent or reduce the discharge of pollutants in storm water run-off from municipal operations to the maximum extent practicable. The program elements shall include, at a minimum, the following:

i. An inventory of all municipal facilities, including municipal facilities that have the potential to discharge pollutants via storm water runoff;
ii. Strategies for the implementation of BMPs to reduce litter, floatables and debris from entering the MS4 and evaluate those BMPs annually to determine their effectiveness. If a BMP is determined to be ineffective or infeasible, then the BMP must be modified. The Permittee shall also develop a plan to remove litter, floatable and debris material from the MS4, including proper disposal of waste removed from the system;
iii. A Standard Operating Procedures (SOP) detailing good housekeeping practices to be employed at appropriate municipal facilities and during municipal operations that may include, but not limited to, the following:
    1. Equipment washing;
    2. Street sweeping;
    3. Maintenance of municipal roads including public streets, roads, and highways, including but not limited to unpaved roads, owned, operated, or under the responsibility of the Permittee;
    4. Storage and disposal of chemicals, Pesticide, Herbicide and Fertilizers (PHFs) and waste materials;
    5. Vegetation control, cutting, removal, and disposal of the cuttings;
    6. Vehicle fleets/equipment maintenance and repair;
    7. External Building maintenance; and
    8. Materials storage facilities and storage yards.
iv. A program for inspecting municipal facilities for good housekeeping practices, including BMPs. The program shall include checklists and procedures for correcting noted deficiencies;
v. A training program for municipal facility staff in good housekeeping practices as outlined in the SOP developed pursuant to Part III.B.5.a.iii; and

b. The Permittee shall include within the SWMPP the following information:
    i. The inventory of municipal facilities required by Part III.B.5.a.i;
    ii. Schedule for developing the SOP of good housekeeping practices required by Part III.B.5.a.iii;
    iii. An inspection plan and schedule, including checklists and any other materials needed to comply with Part III.B.5.a.iv; and
    iv. A description of the training program and training schedule required by Part III.B.5.a.v.

c. The Permittee shall report each year in the annual report the following information:
    i. Any updates to the municipal facility inventory;
    ii. An estimated amount of floatable material collected from the MS4 as required by Part III.B.5.a.ii;
    iii. Any updates to the inspection plan
    iv. The number of inspections conducted; and
    v. Any updates to the SOP of good housekeeping practices.

d. The Permittee shall maintain the following information and make it available upon request:

i. Records of inspections and corrective actions, if any; and
ii. Training records including the dates of each training activities and names of personnel in attendance.

PART IV Special Conditions

A. Responsibilities of the Permittee

1. If the Permittee is relying on another entity to satisfy one or more requirements of this permit, then the Permittee must note that fact in the SWMPP. The Permittee remains responsible for compliance with all requirements of this permit, except as provided by Part III.B.3.b and reliance on another entity will not be a defense or justification for non-compliance if the entity fails to implement the permit requirements.
2. If the Permittee is relying on the Department for the enforcement of erosion and sediment controls on qualifying construction sites and has included that information in the SWMPP as required by Part III.A.3.e., the Permittee is not responsible for implementing the requirements of Part III.B.3.b of this permit as long as the Department receives notification of non-compliant qualifying constructions sites from the Permittee as required by Part III.B.3.a.v.

B. SWMPP Plan Review and Modification

1. The Permittee shall submit a SWMPP and/or revised SWMPP to the Department as required by Part II.A of the permit. The Permittee shall implement plans to seek and consider public input in the development, revision and implementation of this SWMPP, as required by Part III.B.1.b.i. Thereafter, the Permittee shall perform an annual review of the current SWMPP and must revise the SWMPP, as necessary, to maintain compliance with the permit. Any revisions to the SWMPP shall be submitted to the Department at the time a revision is made for the Department review. Revisions made to the SWMPP may include, but are not limited to, the replacement of ineffective or infeasible BMPs or the addition of components, controls and requirements; and
2. The Permittee shall implement the SWMPP on all new areas added to their municipal separate storm sewer system (or for which they become responsible for implementation of storm water quality controls) as soon as practicable, but not later than one (1) year from addition of the new areas. Implementation of the program in any new area shall consider the plans of the SWMPP of the previous MS4 ownership, if any.

C. Discharge Compliance with Water Quality Standards

This general permit requires, at a minimum, that the Permittee develop, implement and enforce a storm water management program designed to reduce the discharge of pollutants to the maximum extent practicable. Full implementation of BMPs, using all known, available, and reasonable methods of prevention, control and treatment to prevent and control storm water pollution from entering waters of the State of Alabama is considered an acceptable effort to reduce pollutants from the municipal storm drain system to be the maximum extent practicable.

D. Impaired Waters and Total Maximum Daily Loads (TMDLs)

1. The Permittee must determine whether the discharge from any part of the MS4 contributes directly or indirectly to a waterbody that is included on the latest §303(d) list or designated by the Department as impaired;

2. If the Permittee's MS4 discharges to a waterbody included on the latest §303(d) or designated by the Department as impaired, it must demonstrate the discharges, as controlled by the Permittee, do not cause or contribute to the impairment. The SWMPP must detail the BMPs that are being utilized to control discharges of pollutants associated with the impairment. If existing BMPs are not sufficient to achieve this demonstration, the Permittee must, within six (6) months following the publication of the latest final §303(d) list, Department designation, or the effective date of this permit, submit a revised SWMPP detailing new or modified BMPs. The SWMPP must be revised as directed by the Department and the new or modified BMPs must be implemented within one year from the publication of the latest final §303(d) list or Department designation.

3. Permittees discharging from MS4s into waters with EPA-Approved TMDLs and/or EPA-Established TMDLs

   a. The Permittee must determine whether its MS4 discharges to a waterbody for which a total maximum daily load (TMDL) has been established or approved by EPA. If an MS4 discharges into a water body with an EPA approved or established TMDL, then the SWMPP must include BMPs targeted to meet the assumptions and requirements of the TMDL. If additional BMPs will be necessary to meet the requirements of the TMDL, the SWMPP must include a schedule for installation and/or implementation of such BMPs. A monitoring component to assess the effectiveness of the BMPs in achieving the TMDL requirements must also be included in the SWMPP. Monitoring can entail a number of activities including, but not limited to: outfall monitoring, in-stream monitoring, and/or modeling. Monitoring data, along with an analysis of this data, shall be included in the Annual Report.

   b. If, during this permit cycle, a TMDL is approved by EPA or a TMDL is established by EPA for any waterbody into which an MS4 discharges, the Permittee must review the applicable TMDL to see if it includes requirements for control of storm water discharges from the MS4.

      1. If it is found that the Permittee must implement specific allocations of the TMDL, it must assess whether the assumptions and requirements of the TMDL are being met through implementation of existing BMPs or if additional BMPs are necessary. The SWMPP must include BMPs targeted to meet the assumptions and requirements of the TMDL. If existing BMPs are not sufficient, the Permittee must, within six (6)

months following the approval or establishment of the TMDL by EPA, submit a revised SWMPP detailing new or modified BMPs to be utilized along with a schedule of installation and/or implementation of such BMPs. Any new or modified BMPs must be implemented within one year, unless an alternate date is approved by the Department, from the establishment or approval of the TMDL by EPA. A monitoring component to assess the effectiveness of the BMPs in achieving the TMDL requirements must also be included in the SWMPP. Monitoring can entail a number of activities including, but not limited to: outfall monitoring, in-stream monitoring, and/or modeling. Monitoring data, along with an analysis of this data, shall be included in the Annual Report.

E. Requiring an Individual Permit

The Department may require any person authorized by this permit to apply for and/or obtain an individual NPDES permit. When the Department requires application for an individual NPDES permit, the Department will notify the Permittee in writing that a permit application is required. This notification shall include a brief statement of the reasons for this decision, an application from and a statement setting a deadline for the Permittee to file the application.

PART V Monitoring and Reporting

1. If there are no 303(d) listed or TMDL waters located within the Permittee's MS4 area, no monitoring shall be required. The SWMPP shall include a determination stating if monitoring is required.
2. If a waterbody within the MS4 jurisdiction is listed on the latest final §303(d) list, or otherwise designated impaired by the Department, or for which a TMDL is approved or established by EPA, during this permit cycle, then the Permittee must implement a monitoring program, within 6 months, to include monitoring that addresses the impairment or TMDL. A monitoring plan shall be included in the SWMPP and any revisions to the monitoring program shall be documented in the SWMPP and Annual Report.
3. Proposed monitoring locations, and monitoring frequency shall be described in the monitoring plan with actual locations described in the annual report;
4. The Permittee must include in the monitoring program any parameters attributed with the latest final §303(d) list or otherwise designated by the Department as impaired or are included in an EPA-approved or EPA-established TMDL;
5. Analysis and collection of samples shall be done in accordance with the methods specified at 40 CFR Part 136. Where an approved 40 CFR Part 136 does not exist, then a Department approved alternative method may be used;
6. If the Permittee is unable to collect samples due to adverse conditions, the Permittee must submit a description of why samples could not be collected, including available documentation of the event. An adverse climatic condition which may prohibit the collection of samples includes weather conditions that create dangerous conditions for personnel (such as local flooding, high winds, hurricane, tornadoes, electrical storms, etc.)

or otherwise make the collection of a sample impracticable (drought, extended frozen conditions, etc.);

7. Monitoring results must be reported with the subsequent Annual Report and shall include the following monitoring information:

   a. The date, latitude/longitude of location, and time of sampling;
   b. The name(s) of the individual(s) who performed the sampling;
   c. The date(s) analysis were performed;
   d. The name(s) of individuals who performed the analysis;
   e. The analytical techniques or methods used; and
   f. The results of such analysis.

PART VI Annual Reporting Requirements

1. The Permittee shall submit to the Department an annual report (1 hardcopy and 1 electronic copy) no later than May 31st of each year. The annual report shall cover the previous April 1 to March 31. If an entity comes under coverage for the first time after the issuance of this permit, then the first annual report should cover the time coverage begins until March 31st of subsequent year.
2. **On or after December 21, 2020, all annual reports shall be submitted to the Department electronically in a prescribed manner acceptable to the Department.**
3. The Permittee shall sign and certify the annual report in accordance with Part VII.G.
4. The annual report shall include the following information, at a minimum, and in addition to those requirements referenced in Part III-V:

   a. A list of contacts and responsible parties (e.g.: agency, name, phone number, address, & email address) who had input to and are responsible for the preparation of the annual report;
   b. Overall evaluation of the storm water management program developments and progress for the following:
      i. Major accomplishments;
      ii. Overall program strengths/weaknesses;
      iii. Future direction of the program;
      iv. Overall determination of the effectiveness of the SWMPP taking into account water quality/watershed improvements;
      v. Measureable goals that were not performed and reasons why the goals were not accomplished; and
      vi. If monitoring is required, evaluation of the monitoring data.
   c. Narrative report of all minimum storm water control measures referenced in Part III.B of this permit. The activities shall be discussed as follows:
      i. Minimum control measures completed and in progress;
      ii. Assessment of the controls; and
      iii. Discussion of proposed BMP revisions or any identified measureable goals that apply to the minimum storm water control measures.

d. Summary table of the storm water controls that are planned/scheduled for the next reporting cycle;
e. Results of information collected and analyzed, if any, during the reporting period, including any monitoring data used to assess the success of the program at reducing the discharge of pollutants to the MEP.
f. Notice of reliance on another entity to satisfy some of your permit obligations; and
g. If monitoring is required, all monitoring results collected during the previous year in accordance with Part V, if applicable. The monitoring results shall be submitted in a format acceptable to the Department.

PART VII Standard and General Permit Conditions

A. Duty to Comply

You must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of CWA and is ground for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.

B. Continuation of the Expired General Permit

If this permit is not reissued or replaced prior to the expiration date, it will be administratively continued in accordance with the ADEM Code r. 335-6-6 and remain in force and effect if the Permittee re-applies for coverage as required under Part II of this Permit. Any Permittee who was granted permit coverage prior to the expiration date will automatically remain covered by the continued permit until the earlier of:

1. Reissuance or replacement of this permit, at which time you must comply with the Notice of Intent conditions of the new permit to maintain authorization to discharge; or
2. Issuance of an individual permit for your discharges; or
3. A formal permit decision by the Department not to reissue this general permit, at which time you must seek coverage under an alternative general permit or an individual permit.

C. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for you in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

D. Duty to Mitigate

You must take all reasonable steps to minimize or prevent any discharge in violation of this permit that has a reasonable likelihood of adversely affecting human health or the environment.

E. Duty to Provide Information

The Permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, suspending, or terminating the permit or to determine compliance with the permit. The Permittee shall also furnish to the Director upon request, copies of records required to be kept by the permit.

F. Other Information

If you become aware that you have failed to submit any relevant facts in your Notice of Intent or submitted incorrect information in the Notice of Intent or in any other report to the Department, you must promptly submit such facts or information.

G. Signatory Requirements

All Notices of Intent, reports, certifications, or information submitted to the Department, or that this permit requires be maintained by you shall be signed and certified as follows:

1. Notice of Intent. All Notices of Intent shall be signed by a responsible official as set forth in ADEM Admin. Code r. 335-6-6-.09.
2. Reports and other information. All reports required by the permit and other information requested by the Department or authorized representative of the Department shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:
    a. Signed authorization. The authorization is made in writing by a person described above and submitted to the Department.
    b. Authorization with specified responsibility. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of manager, operator, superintendent, or position of equivalent responsibility for environmental matters for the regulated entity.
3. Changes to authorization. If an authorization is no longer accurate because a different operator has the responsibility for the overall operation of the MS4, a new authorization satisfying the requirement of Part VII.G.2.b. above must be submitted to the Department prior to or together with any reports or information, and to be signed by an authorized representative.
4. Certification. Any person signing documents under Part VII.G.1-2. above shall make the following certification:

    "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 gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering 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."

H. Property Rights

The issuance of this permit does not convey any property rights of any sort, or any exclusive privilege, nor it does it authorize any injury to private property nor any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations.

I. Proper Operation and Maintenance

You must at all time properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by you to achieve compliance with the conditions of this permit and with the conditions of your SWMPP. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. Proper operation and maintenance requires the operation of backup or auxiliary facilities or similar systems, installed by you only when the operation is necessary to achieve compliance with the conditions of the permit.

J. Inspection and Entry

1. You must allow the Department or an authorized representative upon the presentation of credentials and other documents as may be required by law, to do any of the following:
   a. Enter your premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of this permit;
   b. Have access to and copy at reasonable times, any records that must be kept under the conditions of this permit;
   c. Inspect at reasonable times any facilities or equipment (including monitoring and control equipment) practices, or operations regulated or required under this permit; and
   d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the CWA, any substances or parameters at any location.

K. Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause. Your filing of a request for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

L. Permit Transfers

This permit is not transferable to any person except after notice to the Department. The Department may require modification or revocation and reissuance of the permit to change the name of the Permittee and incorporate such other requirements as may be necessary under the Act.

M. Anticipated Noncompliance

You must give advance notice to the Department of any planned changes in the permitted small MS4 or activity which may result in noncompliance with this permit.

N. Compliance with Statutes and Rules

1. The permit is issued under ADEM Admin. Code r. 335-6-6. All provisions of this chapter that are applicable to this permit are hereby made a part of this permit.
2. This permit does not authorize the noncompliance with or violation of any laws of the State of Alabama or the United States of America or any regulations or rules implementing such laws.

O. Severability

The provisions of this permit are severable, and if any provision of this permit or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall be affected thereby.

P. Bypass Prohibition

Bypass (see 40 CFR 122.41(m)) is prohibited and enforcement action may be taken against a regulated entity for a bypass; unless:

1. The bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;

2. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during the normal periods of equipment downtime. This condition is not satisfied if the regulated entity should, in the exercise of reasonable engineering judgment, have installed adequate backup equipment to prevent a bypass which occurred during normal periods of equipment downtime or preventative maintenance.
3. The Permittee submits a written request for authorization to bypass to the Director at least ten (10) days prior to the anticipated bypass (if possible), the Permittee is granted such authorization, and the Permittee complies with any conditions imposed by the Director to minimize any adverse impact on human health or the environment resulting from the bypass.

The Permittee has the burden of establishing that each of the conditions of Part VII.P. have been met to qualify for an exception to the general prohibition against bypassing and an exemption, where applicable, from the discharge specified in this permit.

Q. Upset Conditions

An upset (see 40 CFR 122.41(n)) constitutes an affirmative defense to an action brought for noncompliance with technology-based permit limitations if a regulated entity shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence, that:

1. An upset occurred and the Permittee can identify the specific cause(s) of the upset;
2. The Permittee's facility was being properly operated at the time of the upset; and
3. The Permittee promptly took all reasonable steps to minimize any adverse impact on human health or the environment resulting from the upset.

The Permittee has the burden of establishing that each of the conditions of Part VII.Q. of this permit have been met to qualify for an exemption from the discharge specified in this permit.

R. Procedures for Modification or Revocation

Permit modification or revocation will be conducted according to ADEM Admin. Code r. 335-6-6-.17.

S. Re-opener Clause

If there is evidence indicating potential or realized impacts on water quality due to storm water discharge covered by this permit, the regulated entity may be required to obtain an individual permit or an alternative general permit or the permit may be modified to include different limitations and/or requirements.

T. Retention of Records

1. The Permittee shall retain the storm water quality management program developed in accordance with Part III-V of this permit until at least five years after coverage under this permit terminates.
2. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
3. The Permittee shall retain records of all monitoring information including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of reports required by this permit, and records of all data used to

complete the application of this permit, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended at the request of the Director at any time.

U. Monitoring Methods

Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in this permit.

V. Additional Monitoring by the Permittee

If the Permittee monitors more frequently than required by this permit, using test procedures approved under 40 CFR Part 136 or as specified in this permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the monitoring report. Such increased monitoring frequency shall also be indicated on the monitoring report.

W. Definitions

1. Best Management Practices (BMPs) means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the State. BMPs also include treatment requirements, operating procedures, and practices to control runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.
2. Control Measure as used in this permit, refers to any Best Management Practice or other method used to prevent or reduce the discharge of pollutants to waters of the State.
3. CWA or The Act means the Clean Water Act (formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972) Pub.L. 92-500, as amended Pub. L. 95-217, Pub. L. 95-576, Pub. L. 96-483 and Pub. L. 97-117, 33 U.S.C. 1251 et.seq.
4. Department means the Alabama Department of Environmental Management or an authorized representative.
5. Discharge, when used without a qualifier, refers to "discharge of a pollutant" as defined as ADEM Admin. Code r. 335-6-6-.02(m).
6. Green Infrastructure refers to systems and practices that use or mimic natural processes to infiltrate, evapotranspirate (the return of water to the atmosphere either through evaporation or by plants), or reuse storm water or runoff on the site where it is generated.
7. Illicit Connection means any man-made conveyance connecting an illicit discharge directly to municipal separate storm sewer.
8. Illicit Discharge is defined at 40 CFR Part 122.26(b)(2) and refers to any discharge to a municipal separate storm sewer that is not entirely composed of storm water, except discharges authorized under an NPDES permit (other than the NPDES permit for discharges from the MS4) and discharges resulting from fire fighting activities.
9. Indian Country, as defined in 18 USC 1151, means (a) all land within the limits of any Indian reservation under the jurisdiction of the United States Government, notwithstanding the issuance of any patent, and including rights-of-way running through the reservation; (b) all dependent Indian communities within the borders of the United States whether within the original or subsequently acquired territory thereof, and whether within or without the limits of a State, and (c) all Indian allotments, the Indian titles to which have

not been extinguished, including rights-of-way running through the same. This definition includes all land held in trust for an Indian tribe.

10. Infiltration means water other than wastewater that enters a sewer system, including foundation drains, from the ground through such means as defective pipes, pipe joints, connections, or manholes. Infiltration does not include, and is distinguished from, inflow.
11. Landfill means an area of land or an excavation in which wastes are placed for permanent disposal, and which is not a land application unit, surface impoundment, injection well, or waste pile.
12. Large municipal separate storm sewer system means all municipal separate storm sewers that are either: (i) located in an incorporated place (city) with a population of 250,000 or more as determined by the latest decennial census.
13. Low Impact Development (LID) is an approach to land development (or re-development) that works with nature to manage storm water as close to its source as possible. LID employs principles such as preserving and recreating natural landscape features, minimizing effective imperviousness to create functional and appealing site drainage that treat storm water as a resource rather than a waste product.
14. Medium municipal separate storm sewer system means all municipal separate storm sewers that are either: (i) located in an incorporated place (city) with a population of 100,000 or more but less than 250,000 as determined by the latest decennial census.
15. MEP is an acronym for "Maximum Extent Practicable," the technology-based discharge standard for municipal separate storm sewer systems to reduce pollutants in storm water discharges that was established by CWA Section 402(p). A discussion of MEP as it applies to small MS4s is found at 40 CFR Part 122.34.
16. MS4 is an acronym for "Municipal Separate Storm Sewer System" and is used to refer to either a large, medium, or small municipal separate storm sewer system. The term is used to refer to either the system operated by a single entity or a group of systems within an area that are operated by multiple entities.
17. Municipal Separate Storm System is defined at 40 CFR Part 122.26(b)(8) and means a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains): (i) Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or a designated and approved management agency under section 208 of the CWA that discharges to waters of the United States; (ii) Designed or used for collecting or conveying storm water; (iii) Which is not a combined sewer; and (iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined in ADEM Admin. Code r. 335-6-6-.02(nn).
18. NOI is an acronym for "Notice of Intent" to be covered by this permit and is the mechanism used to "register" for coverage under a general permit.
19. Permittee means each individual co-applicant for an NPDES permit who is only responsible for permit conditions relating to the discharge that they own or operate.
20. Point Source means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling

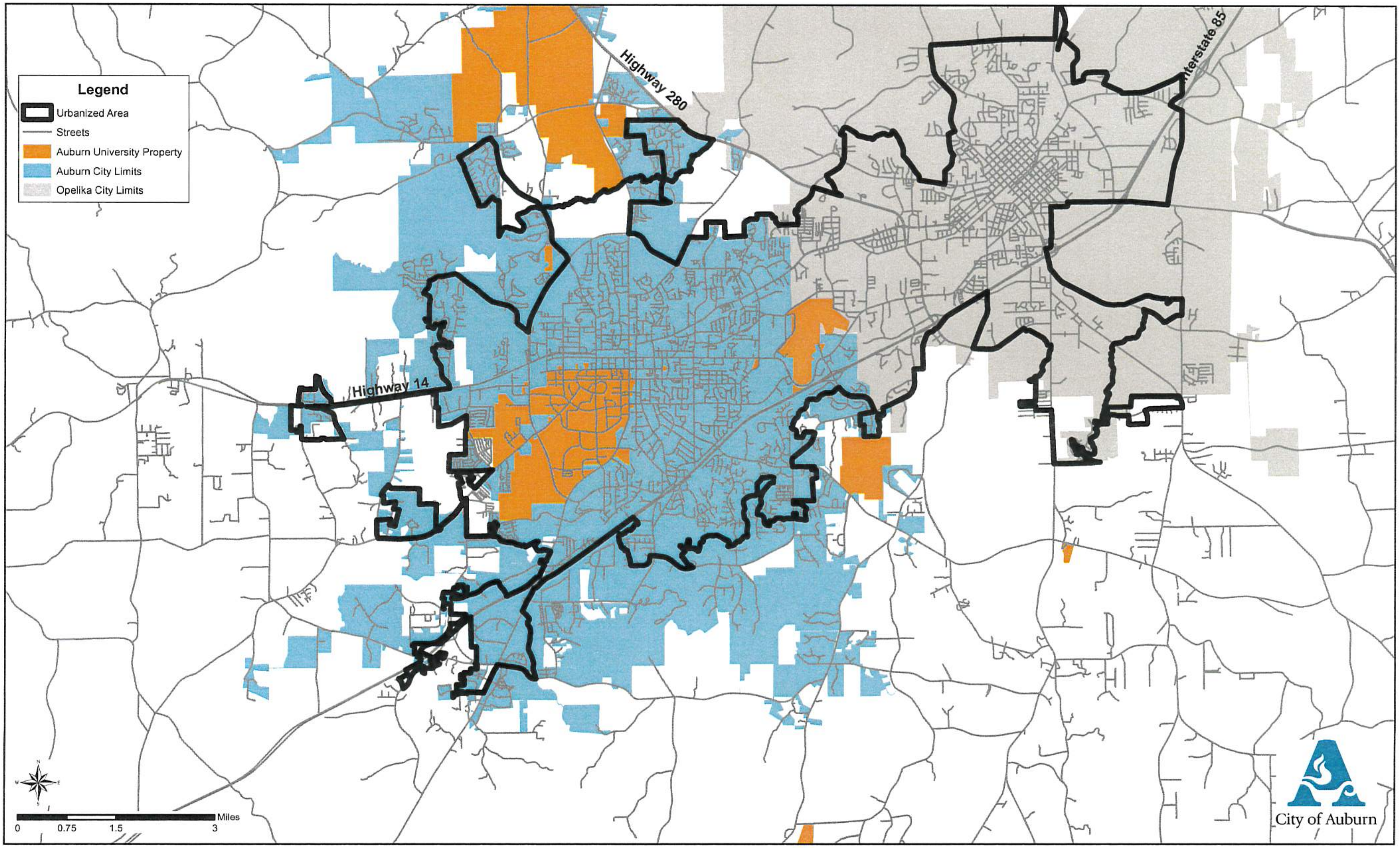
stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural storm water runoff.

21. Priority construction site means any qualifying construction site in an area where the MS4 discharges to a waterbody which is listed on the most recently approved 303(d) list of impaired waters for turbidity, siltation, or sedimentation, any waterbody for which a TMDL has been finalized or approved by EPA for turbidity, siltation, or sedimentation, and any waterbody assigned specific water quality criteria, such as Outstanding Alabama Water use classification, in accordance with ADEM Admin. Code r. 335-6-10-.09 and any waterbody assigned a special designation in accordance with ADEM Admin. Code r. 335-6-10-.10.
22. Qualifying Construction Site means any construction activity that results in a total land disturbance of one or more acres and activities that disturb less than one acre but are part of a larger common plan of development or sale that would disturb one or more acres. Qualifying construction sites do not include land disturbance conducted by entities under the jurisdiction and supervision of the Alabama Public Service Commission.
23. Qualifying New Development and Redevelopment means any site that results from the disturbance of one acre or more of land or the disturbance of less than one acre of land if part of a larger common plan of development or sale that is greater than one acre. Qualifying new development and redevelopment does not include land disturbances conducted by entities under the jurisdiction and supervision of the Alabama Public Service Commission.
24. Small municipal separate storm sewer system is defined at 40 CFR Part 122.26(b)(16) and refers to all separate storm sewers that are owned or operated by the United States, a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, storm water or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to water of the United States, but is not defined as "large" or "medium" municipal separate storm sewer system. This term includes systems similar to separate storm sewer systems in municipalities, such as systems at military bases, large hospital or prison complexes, and highways and other thoroughfares. The term does not include separate storm sewers in very discrete areas, such as individual buildings.
25. Storm water is defined at 40 CFR Part 122.26(b) (13) and means storm water runoff, snow melt runoff, and surface runoff and drainage.
26. Storm Water Management Program (SWMP) refers to a comprehensive program to manage the quality of storm water discharged from the municipal separate storm sewer system.
27. SWMP is an acronym for "Storm Water Management Program."
28. Total Maximum Daily Load (TMDL) means the calculated maximum permissible pollutant loading to a waterbody at which water quality standards can be maintained. The sum of wasteload allocations (WLAs) and load allocations (LAs) for any given pollutant.

29. You and Your as used in this permit is intended to refer to the Permittee, the operator, or the discharger as the context indicates and that party's responsibilities (e.g., the city, the country, the flood control district, the U.S. Air Force, etc.).

APPENDIX B

URBANIZED AREA MAP


Legend
Urbanized Area
Streets
Auburn University Property
Auburn City Limits
Opelika City Limits
Highway 280
Interstate 85
Highway 14
0
0.75
1.5
3
Miles
City of Auburn

APPENDIX C

NEWSPAPER PUBLICATIONS – 2019-2020

Opelika-Auburn Newspaper (OANOW)		
Title	**Publication Date**	**Hyperlink**
Auburn City Council approves Seohan expansion, tables radio equipment purchase	April 3, 2019	https://www.oanow.com/news/local/auburn-city-council-approves-seohan-expansion-tables-radio-equipment-purchase/article_1399e1b8-55b9-11e9-ad80-53017d80eeb5.html
Annalue Drive sidewalk construction starting on Wednesday, continuing into September	May 7, 2019	https://www.oanow.com/news/annalue-drive-sidewalk-construction-starting-wednesday-continuing-into-september/article_55e79a3e-70f7-11e9-b274-dbbc993ced86.html
Auburn City Council: Special meeting will decide election date for school projects	May 8, 2019	https://www.oanow.com/news/local/auburn-city-council-special-meeting-will-decide-election-date-for-schools-project/article_f0795d4e-7133-11e9-8df7-e3cefe7d2138.html
Auburn City Council honors fallen officer, approves grant funding	May 22, 2019	https://www.oanow.com/news/local/auburn-city-council-honors-fallen-officer-approves-grant-funding/article_513e6766-7c36-11e9-a8a3-1f5e51ce1a10.html
Sidewalk construction on Gay Street, Moores Mill Road starts this week	May 29, 2019	https://www.oanow.com/news/sidewalk-construction-on-gay-street-moores-mill-road-starts-this-week/article_92f308e0-81a1-11e9-8cb8-33aeb83cc9de.html
Auburn University, City collaborate on Boykin clinic project	June 4, 2019	https://www.oanow.com/news/local/auburn-university-city-collaborate-on-boykin-clinic-project/article_a55b3394-8968-11e9-9000-c31ac6584513.html
Auburn City Council approves Wright Street project	June 4, 2019	https://www.oanow.com/news/local/auburn-city-council-approves-wright-street-project/article_12f0e514-8731-11e9-9108-1bb88eacd3ee.html
Construction continues on police, public safety buildings	June 9, 2019	https://www.oanow.com/news/local/construction-continues-on-police-public-safety-buildings/article_86f695c4-8a35-11e9-86e1-d74766c22cb8.html

Opelika-Auburn Newspaper (OANOW)		
Title	**Publication Date**	**Hyperlink**
Council considers construction of new Chick-fil-A drive thru	June 28, 2019	https://www.oanow.com/news/local/council-considers-construction-of-new-chick-fil-a-drive-thru/article_3c432c60-91d1-11e9-a218-839668b701b1.html
Section of Glenn Avenue closed for curb and gutter work	July 1, 2019	https://www.oanow.com/news/section-of-glenn-avenue-closed-for-curb-and-gutter-work/article_de6e240a-9c43-11e9-b28c-6f065378f803.html
Downtown Auburn: Auburn Bank announces remodel plans, potential hotel project	July 12, 2019	https://www.oanow.com/news/local/downtown-auburn-auburnbank-announces-remodel-plans-potential-hotel-project/article_9eb0a64e-a4e0-11e9-909f-5b5fb8aec24e.html
Crews work to fill sinkhole on Glenn Ave.	July 12, 2019	https://www.oanow.com/news/local/crews-work-to-fill-sinkhole-on-glenn-ave/article_a4a77b3c-a4ad-11e9-91b9-23d229e48aa2.html
Underneath downtown: Auburn works to replace century-old sewer system, avoid sinkholes	July 15, 2019	https://www.oanow.com/news/local/underneath-downtown-auburn-works-to-replace-century-old-sewer-system-avoid-sinkholes/article_f7f7adf2-a70a-11e9-92a4-0fb72a98f5f7.html
Parking deck, alcohol licenses top Auburn Council's meeting agenda	August 6, 2019	https://www.oanow.com/news/local/parking-deck-alcohol-licenses-top-auburn-councils-meeting-agenda/article_240cbf62-b855-11e9-9f42-7fa62619c80e.html
Auburn City Council approves intersection improvements	October 2, 2019	https://www.oanow.com/news/local/auburn-city-council-approves-intersection-improvements/article_a47043ea-e51e-11e9-8e71-23e9b0a989c9.html

Opelika-Auburn Newspaper (OANOW)		
Title	**Publication Date**	**Hyperlink**
Work begins for new skate park for Auburn and Opelika	October 9, 2019	https://www.oanow.com/news/local/work-begins-on-new-skate-park-for-auburn-and-opelika/article_c3aca060-ea9f-11e9-9c4c-6f3d6f44191d.html
Auburn Council to vote on purple heart city	October 15, 2019	https://www.oanow.com/news/local/auburn-council-to-vote-on-purple-heart-city/article_db6b3144-ca71-5da3-8e79-fab411db46d2.html
Auburn plans new nature park	October 21, 2019	https://www.oanow.com/news/local/auburn-plans-new-nature-park/article_fc5a02c7-c395-55ea-a4f0-9607cb181088.html
Christmas trees still useful after holidays	December 26, 2019	https://www.oanow.com/news/local/christmas-trees-still-useful-after-holidays/article_666b22bf-ef83-5ae1-b3f9-22439bd2a649.html
Auburn Council Oks new park; I-85 improvements	January 21, 2020	https://www.oanow.com/news/local/auburn-council-oks-new-park-i-85-exit-improvements/article_3599f775-6259-5eed-bc18-934be362e7b3.html
Auburn City Officials to step up recycling awareness	February 1, 2020	https://www.oanow.com/news/local/auburn-city-officials-to-step-up-recycling-awareness/article_26e2dc07-f00d-56f6-bf0d-849447824fec3.html
Auburn Council Oks new student housing and moratorium	February 19, 2020	https://www.oanow.com/news/local/auburn-council-oks-new-student-housing-and-moratorium/article_eacef925-5e9b-50b9-a99c-ecf04a320aa0.html
Auburn City unveils new public services app	February 25, 2020	https://www.oanow.com/news/local/auburn-city-unveils-new-public-services-app/article_f9542571-420d-5998-9c8c-e579445a16ab.html

Opelika-Auburn Newspaper (OANOW)		
Title	**Publication Date**	**Hyperlink**
Auburn Bank to renovate, build parking deck	February 27, 2020	https://www.oanow.com/news/local/auburn-bank-to-renovate-build-parking-deck/article_b09ad502-3bd6-5a89-a496-8468b046f65f.html
Construction updates for Cary Woods and Drake Middle	March 5, 2020	https://www.oanow.com/news/local/construction-updates-for-cary-woods-and-drake-middle/article_0354e9cc-a455-555f-8cf9-fb1746080a12.html
Auburn changing city trash, recycling routes	March 11, 2020	https://www.oanow.com/news/local/auburn-changing-city-trash-recycling-routes/article_aad8bf70-51fc-5154-bc98-907802a0b0f2.html

The Auburn Villager		
Title	**Publication Date**	**Hyperlink**
Amphitheater, outdoor classroom coming to Auburn Public Library	April 25, 2019	https://www.auburnvillager.com/news/amphitheater-outdoor-classroom-coming-to-auburn-public-library/article_9f53a9b0-676a-11e9-8dd6-d3f90872c477.html
Plans for Parks, Recreation projects move forward	June 20, 2019	https://www.auburnvillager.com/news/plans-for-parks-recreation-projects-move-forward/article_76c9391a-9361-11e9-ac9b-97478f460760.html
Public meeting to review plans for Dinius Park set for Wednesday	July 25, 2019	https://www.auburnvillager.com/news/public-meeting-to-review-plans-for-new-dinius-park-set-for-wednesday/article_d1ea1fe2-aee8-11e9-8453-a3e9ea54b538.html
Nature star of new passive park	August 8, 2019	https://www.auburnvillager.com/news/nature-star-of-new-passive-park/article_f2e6532e-b9e6-11e9-b348-672b85afd4ff.html
Concerns raised about Chewacla Park pipeline	August 8, 2019	https://www.auburnvillager.com/news/concerns-raised-about-chewacla-park-pipeline/article_f6941034-b9e5-11e9-a313-c70e67db44e7.html
Drought watch enacted in Auburn	September 26, 2019	https://www.auburnvillager.com/news/drought-watch-enacted-in-auburn/article_159a25c6-e066-11e9-8dad-b3ec2ce6ff0b.html
Public invited to review plans for new community center	October 24, 2019	https://www.auburnvillager.com/news/public-invited-to-review-plans-for-new-community-center/article_3cd12346-f665-11e9-8549-ef1778781ae9.html
Auburn FixIt app to help residents report issues	October 30, 2019	https://www.auburnvillager.com/news/auburn-fixit-app-to-help-residents-report-issues/article_4f0c4b5e-fb46-11e9-8773-9f17c6af11aa.html

The Auburn Villager		
Title	**Publication Date**	**Hyperlink**
Auburn Parks and Rec celebrates 50 years.	January 2, 2020	https://www.auburnvillager.com/news/auburn-parks-and-rec-celebrates-50-years/article_927a92fc-2d77-11ea-9f6e-b387bb192a3d.html
Water main public meeting set for Feb. 20	February 13, 2020	https://www.auburnvillager.com/news/water-main-public-meeting-set-for-feb-20/article_1c688274-4e7c-11ea-9d74-eb75c06fb0b3.html

The Plainsman		
Title	**Publication Date**	**Hyperlink**
Public library to build outdoor classroom	April 21, 2019	https://www.theplainsman.com/article/2019/04/public-library-to-build-outdoor-classroom-in-fall
Smart home unlocks its doors for its owners	September 20, 2019	https://www.theplainsman.com/article/2019/09/smart-home-unlocks-its-doors-for-its-owner
Single-stream recycling plan grows again	October 7, 2019	https://www.theplainsman.com/article/2019/10/single-stream-recycling-plan-grows-again
City opening new park in fall 2021	October 9, 2019	https://www.theplainsman.com/article/2019/10/city-opening-new-park-in-fall-2021
Council gives approval to renovations, expansions	November 25, 2019	https://www.theplainsman.com/article/2019/11/council-gives-approval-to-renovations-expansions
City examines residents' recycling bins	February 18, 2020	https://www.theplainsman.com/article/2020/02/city-examines-residents-recycling-bins
Recycling app helps residents cut down on contamination	March 9, 2020	https://www.theplainsman.com/article/2020/03/recycling-app-helps-residents-cut-down-on-contamination

APPENDIX D

2019 STORMWATER QUALITY MONITORING REPORT

City of Auburn

City of Auburn, Alabama
Phase II MS4

Annual Surface Water Quality Monitoring Report
Monitoring Period: April 1, 2019 – March 31, 2020

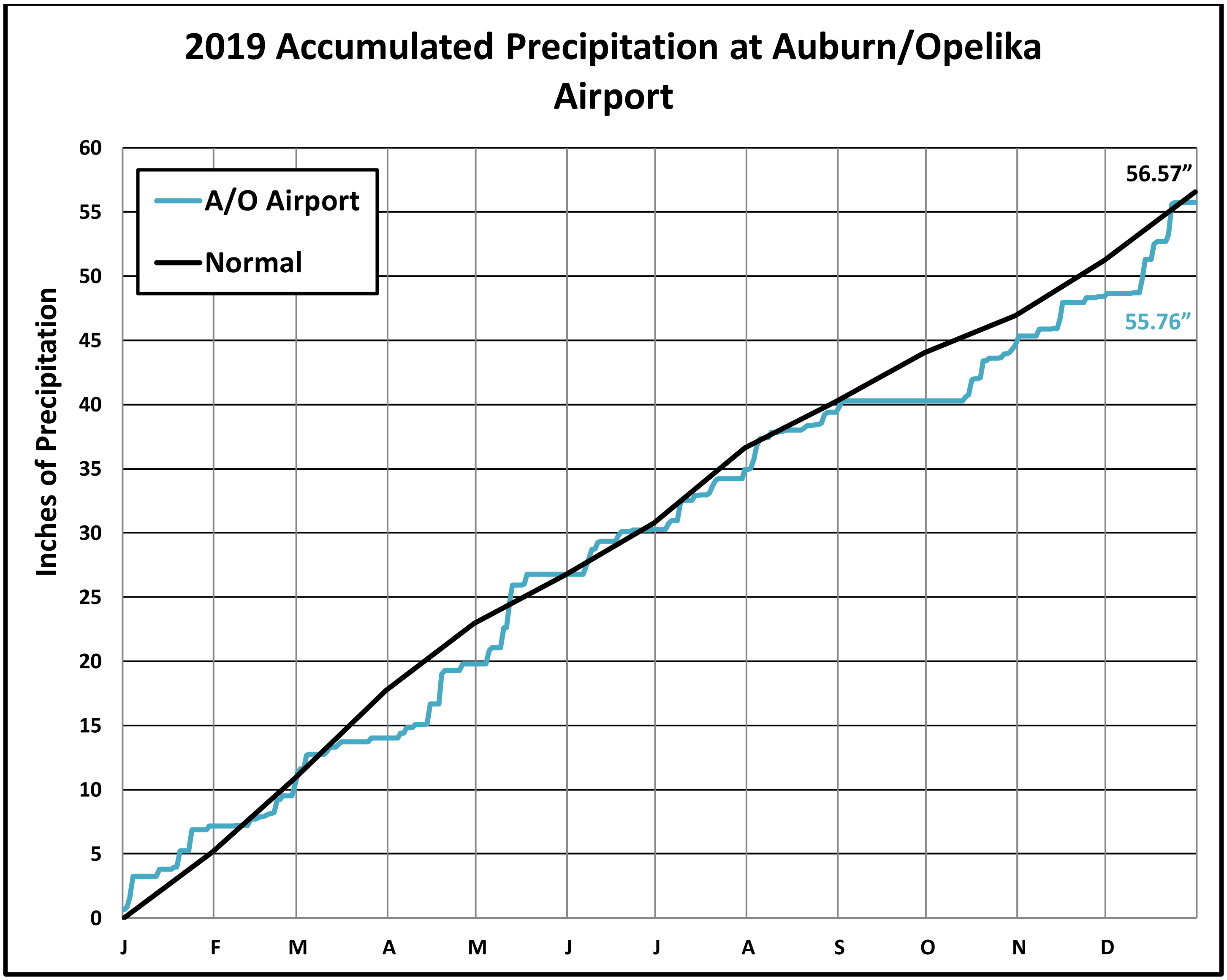
Permit # ALR040003
Effective: October 1, 2016
Expiration: September 30, 2021

Table of Contents

1.0 Introduction

The City of Auburn has been voluntarily collecting water quality data on its various surrounding water resources since the 1970's. Although initial efforts were primarily concentrated on source water quality monitoring in the Lake Ogletree reservoir watershed of Chewacla Creek, the City's water quality monitoring has expanded to include a wide variety of monitoring programs that are used to guide efforts of assessment, protection, and restoration of water quality. These programs include monitoring for physical, chemical, mineral, and biological indicators of water quality, with many monitoring efforts managed and operated in-house. This report presents the results of the water quality monitoring and analyses for the period of April 1, 2019 to March 31, 2020, and also includes notes and comments by staff in the City's Water Resource Management Department.

1.1 Precipitation Data 2019



Monthly Accumulated Precipitation at Auburn/Opelika Airport

2.0 Monitoring Required Under ADEM Phase II NPDES General Permit ALR040003

2.1 Background

The City of Auburn has three (3) streams within its jurisdiction that fail to meet the state's minimum water quality standards for their designated uses. Two streams have a finalized Total Maximum Daily Load (TMDL), and two streams are included on the 2020 final 303(d) list. A TMDL was approved for the Saugahatchee Creek watershed in 2008, with the pollutants of concern being total phosphorus (TP) and organic enrichment/dissolved oxygen (OE/DO). Saugahatchee Creek was listed on the 2020 303(d) list for pathogens, and E. coli monitoring for this impairment began during this reporting period (4/1/2019 – 3/31/2020). A TMDL was finalized for Parkerson's Mill Creek in 2011 for pathogens, with E. coli as the indicator bacteria. Moore's Mill Creek was included on the 303(d) list of impaired streams in 2000 for siltation, and there is currently no TMDL for Moore's Mill Creek. The monitoring results included in this report were collected from April 1, 2019 to March 31, 2020 in compliance with the Phase II NPDES General Permit ALR040003 as outlined in the City of Auburn's Stormwater Quality Monitoring Plan.

2.2 Compliance Requirements

According to ADEM Phase II NPDES General Permit ALR040003, if a waterbody within the MS4 jurisdiction is listed on the latest final 303(d) list, or otherwise designated impaired by ADEM, or for which a TMDL is approved or established by EPA, the MS4 permittee shall comply with the following:

1. Include a statement in the SWMPP stating if monitoring is required.
2. Implement a monitoring program within 6 months of permit coverage that addresses the impairment or TMDL. Include the monitoring plan in the SWMPP, and document the revisions to the monitoring plan in the SWMPP and SWMPP Annual Report.
3. Describe proposed monitoring locations and proposed monitoring frequency in the monitoring plan, with actual locations described in the SWMPP Annual Report.
4. Include in the monitoring program any parameters attributed with the latest final 303(d) list, or otherwise designated by ADEM as impaired, or are included in an EPA-approved or EPA-established TMDL.
5. Perform analysis and collection of samples in accordance with the methods specified at 40 CFR Part 136. If an approved 40 CFR Part 136 method does not exist, then an ADEM approved method may be used.
6. If samples cannot be collected due to adverse conditions, permittee must submit a description of why samples could not be collected, including available documentation of the event (e.g. weather conditions that create dangerous conditions for personnel, or impracticable conditions such as drought or ice).
7. Monitoring results must be reported with the subsequent SWMPP Annual Report and shall include the following:
    a. The date, latitude/longitude of location, and time of sampling
    b. The name(s) of the individual(s) who performed the sampling
    c. The date(s) analysis was performed

d. The name(s) of the individual(s) who performed the analysis

e. The analytical techniques or methods used

f. The results of such analysis

The pages that follow include the sampling and reporting requirements outlined above for Saugahatchee Creek, Parkerson's Mill Creek, and Moore's Mill Creek (watersheds that fail to meet the state's minimum water quality standards for their designated uses).

2.3 Water Sampling Methods

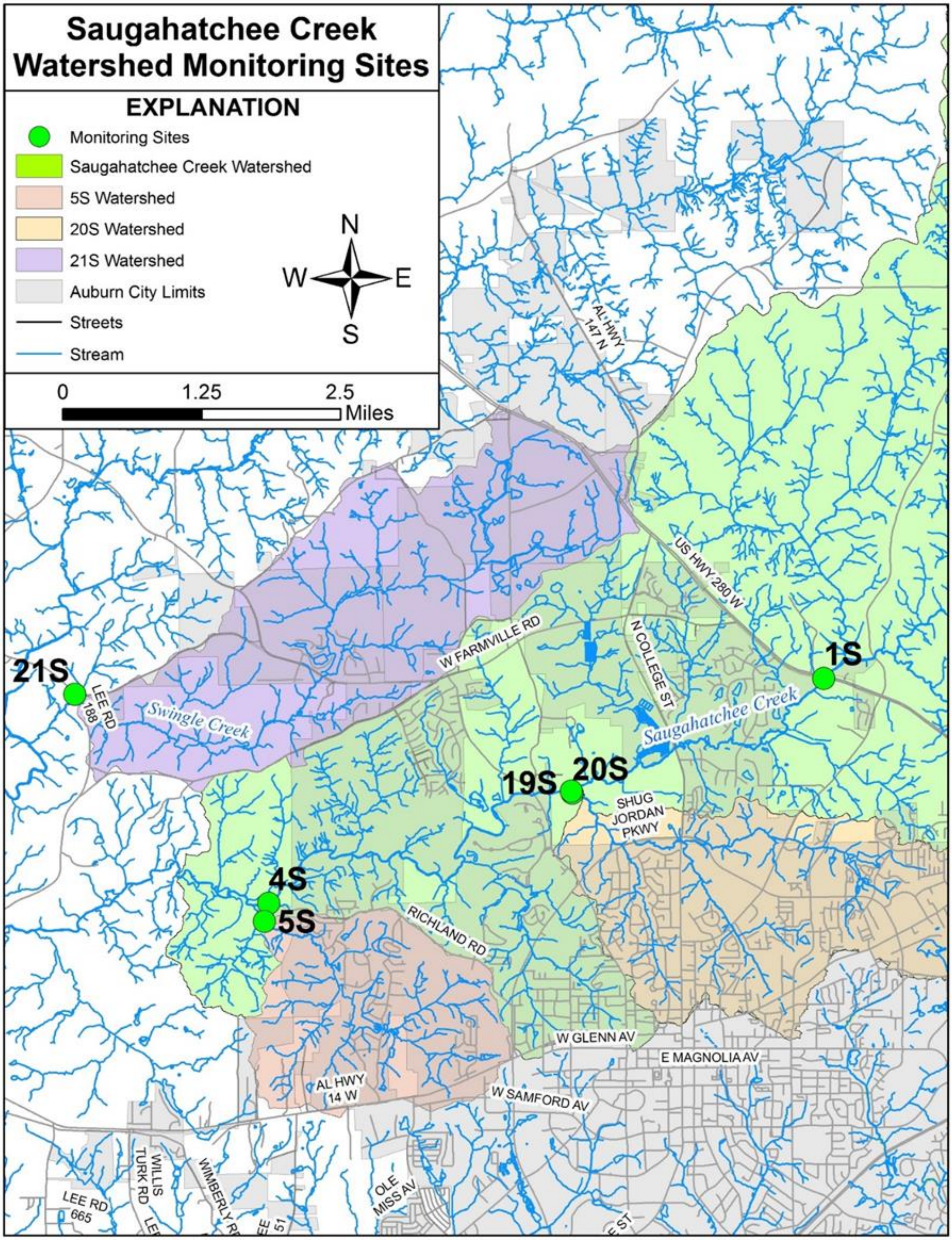
The City of Auburn understands that quality control and quality assurance are critical to a successful environmental monitoring program. In order to develop a dependable and credible database of water quality measurements, the Water Resource Management (WRM) staff employ a stringent field and laboratory protocol. WRM staff are required to wear nitrile gloves when handling sample bottles, cleaning sample bottles, plating bacterial samples, handling bacterial plates and growth media, calibrating instruments, and collecting water samples. Before going to a sample site, water sample collection bottles are placed in clean, sealable plastic bags. They are carried to the sample site in a cooler, and after the water samples are collected the bottles are immediately placed back into the bag and into the cooler to be chilled at 4 degrees Celsius. WRM staff calibrate all water quality instruments prior to field use. Calibration standards are never used outside the expiration date. A detailed calibration log is filled out each time an instrument is calibrated. Sampling devices are cleaned using Liquinox™ phosphate-free detergent, followed by a tap water rinse, and then a final rinse with deionized water. At all sample sites, WRM staff utilize field sheets to document site characteristics and observations such as stream color, geomorphic setting (riffle, pool, etc.), and weather conditions. The field sheets are also used to document water quality data measured in-situ at each site. These in-situ data are collected using a YSI ProPlus instrument and include temperature (F), pH, specific conductance (µS/cm), and dissolved oxygen (mg/L). Water samples are analyzed for turbidity in the field using a LaMotte 2020we portable turbidimeter. Streamflow is determined using the mid-section method, where the channel is divided into segments along a cross-section and width, depth, and velocity are recorded at each segment. Velocity is measured at the center of each segment using either a Sontek Flowtracker 2 acoustic doppler velocimeter or a Price Pygmy Meter. The sum of flows of all the segments along a cross-section equals the total streamflow.

2.4 Saugahatchee Creek Total Phosphorus and E. coli Compliance Monitoring Data

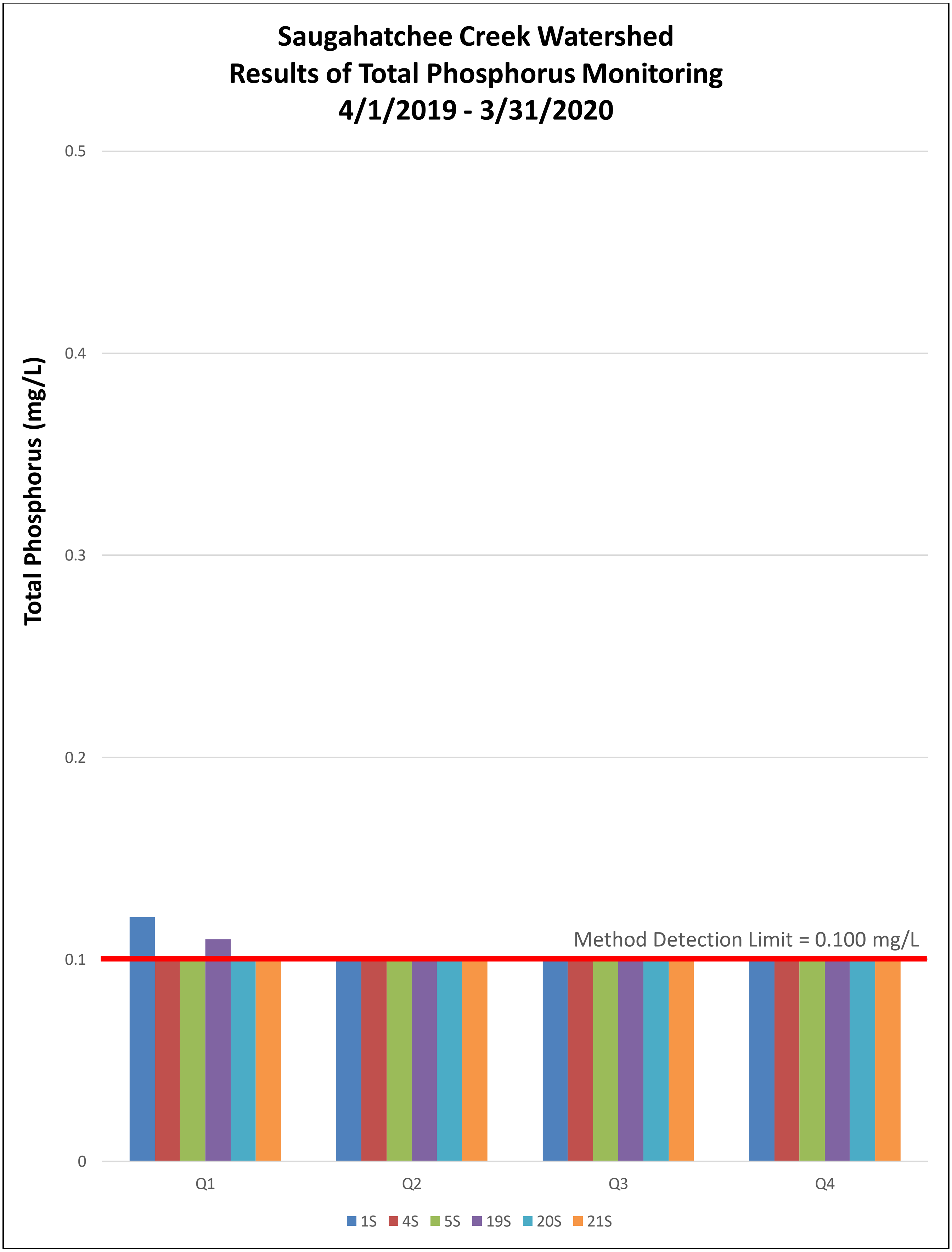
The Saugahatchee Creek Embayment on Yates Reservoir was originally placed on the ADEM 303(d) list of impaired waterbodies in 1996 for OE/DO and nutrients. It remained on the State's 303(d) list after each consecutive two-year water quality assessment until 2008, at which time the Saugahatchee Creek Embayment (Yates Reservoir) TMDL was finalized. Additionally, Pepperell Branch, a tributary of Saugahatchee Creek which originates in Opelika, also remained on the State's 303(d) list for nutrient impairment until 2008. The impairment of Pepperell Branch was also addressed in the Saugahatchee Creek Embayment TMDL. In order to address water quality concerns within the Saugahatchee Creek Embayment, ADEM and the EPA jointly developed a "watershed based" TMDL, which would in turn address nutrient loading from both the main stem of Saugahatchee Creek and Pepperell Branch. The final Saugahatchee Creek Watershed TMDL was issued in April of 2008, identifying TP as the primary pollutant of concern (expressed as chlorophyll-a to satisfy numeric target criteria for assessing eutrophication in lakes). The Saugahatchee Creek Embayment TMDL establishes the TP limits in stormwater runoff of equal to or less than 0.1 mg/L (see Table 5-2 of the Saugahatchee Creek Embayment TMDL).

Monitoring TP at strategic locations along the main stem of Saugahatchee Creek and on tributaries within the Saugahatchee Creek watershed that drain portions of the City's MS4 provides sufficient data to evaluate the success of efforts to reduce TP in stormwater and meet TMDL concentrations. The City makes all reasonable efforts to conduct quarterly sampling for TP, water temperature, pH, dissolved oxygen, specific conductance, and turbidity at three locations along the main stem of Saugahatchee Creek, and also at three tributaries within the Saugahatchee Creek watershed. Streamflow in cubic feet per second (cfs) and million gallons per day (MGD) will also be recorded at each sample site when water samples are collected. Streamflow at sites 1S, 4S, and 19S will be determined by the City's streamgage located at site 4S on Saugahatchee Creek at the City's Northside Water Pollution Control Facility (WPCF). The City will make a reasonable effort to measure streamflow in-situ at sites 5S, 20S, and 21S after water samples are collected when flow conditions permit. Additionally, the City continues to reasonably support and participate in studies of water quality in the embayment.

Of the 24 samples collected for TP during this reporting period, only two sites had concentrations above the laboratory method detection limit of 0.100 mg/L. Since the City began quarterly monitoring of TP in June 2017, 85% of all samples collected have been below the method detection limit. These results suggest that the City's post-development water quality requirements are reducing the TP pollutant load in Saugahatchee Creek to very low numbers. The tables below include results from monitoring conducted during the reporting period 4/1/2019 to 3/31/2020.



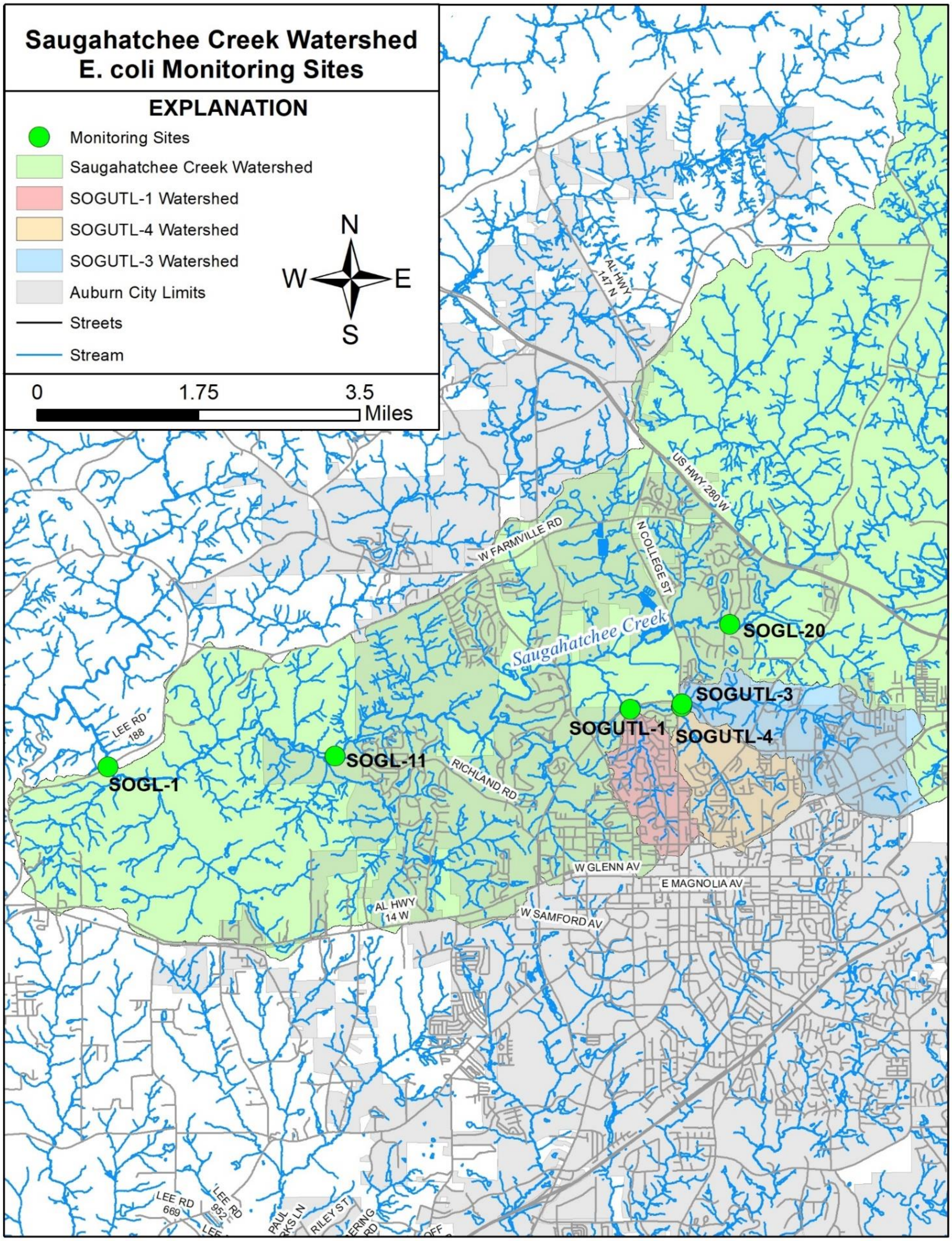
Saugahatchee Creek Watershed Total Phosphorus Monitoring Sites



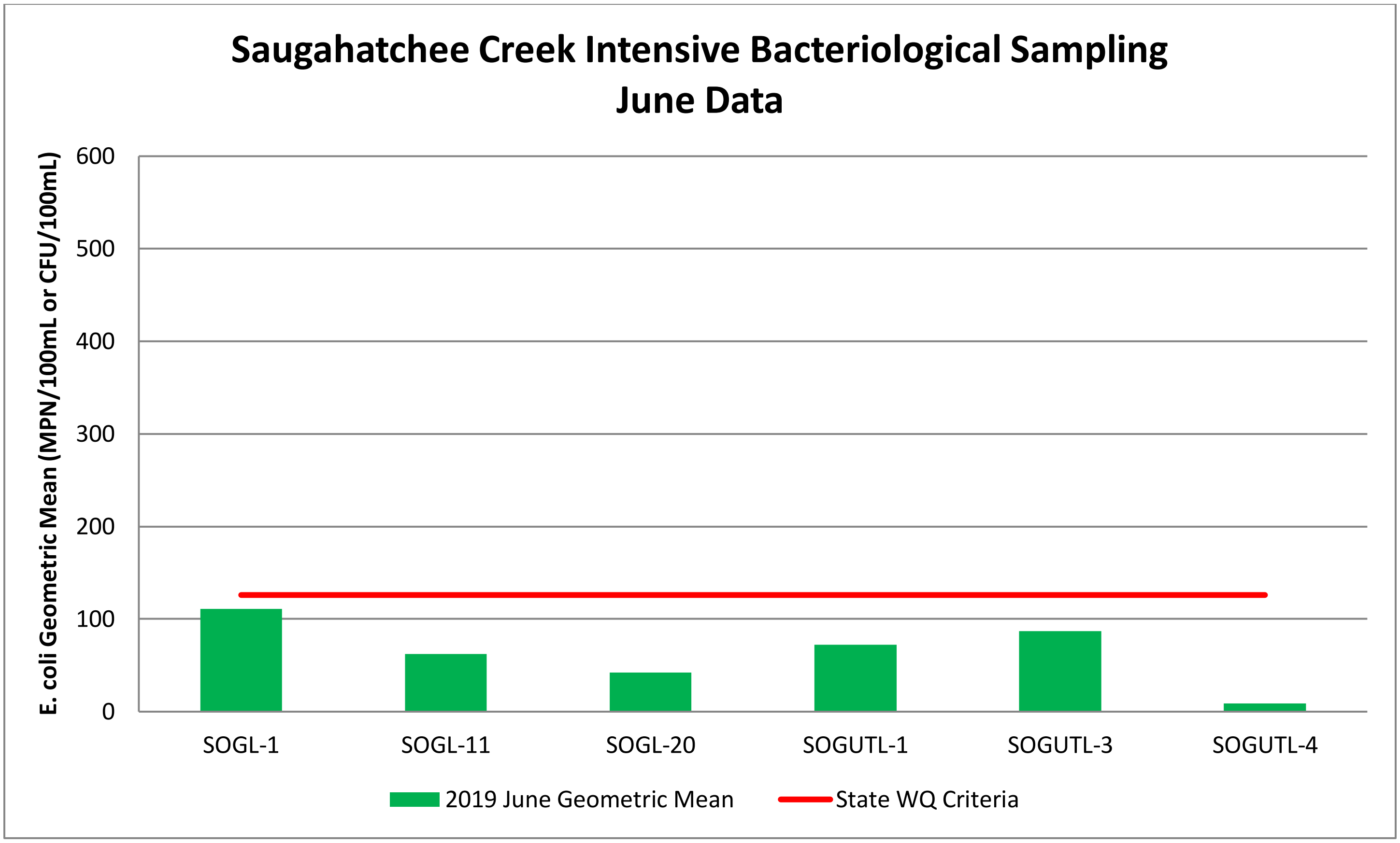
Saugahatchee Creek Watershed
Results of Total Phosphorus Monitoring
4/1/2019 - 3/31/2020
Total Phosphorus (mg/L)
0.5
0.4
0.3
0.2
0.1
0
Method Detection Limit = 0.100 mg/L
Q1
Q2
Q3
Q4
1S 4S 5S 19S 20S 21S

In 2018, Saugahatchee Creek was placed on the ADEM 303(d) list for pathogen impairment. The impaired reach is 33.42 mi., and includes waters from Saugahatchee Lake Dam to the confluence with Sycamore Creek in Tallapoosa County. ADEM considered collection system failure and pasture grazing as potential sources of the impairment. According to the 2018 303(d) list Fact Sheet http://www.adem.state.al.us/programs/water/wquality/2018AL303dFactSheet.pdf, ADEM collected samples at station SOGL-1 and SOGL-11 to determine the basis for adding Saugahatchee Creek to the 303(d) list. The City shall make all reasonable efforts to monitor E. coli concentrations in Saugahatchee Creek through annual intensive E. coli sampling at six (6) sites within the Saugahatchee Creek watershed. Monitoring E. coli at strategic locations along the main stem of Saugahatchee Creek and on tributaries within the Saugahatchee Creek watershed that drain portions of the City's MS4 will provide further insight into the high E. coli concentrations that were observed by ADEM and eventually led to the 2018 303(d) listing. Single samples are collected for E. coli once per month for April, May, July, September, October, and November. Weekly samples are collected at those sites during June and August. The 5-week geometric mean concentrations are calculated based on the results of the weekly sampling. Streamflow is determined from the USGS streamgage 02418230 for site SOGL-1, and streamflow at sites SOGL-11 and SOGL-20 is determined from the City's streamgage located at the Northside WPCF. The City makes a reasonable effort to measure streamflow (recorded in cfs and MGD) in-situ at sites SOGUTL-1, SOGUTL-3, and SOGUTL-4 after water samples are collected when flow conditions permit. Water temperature, pH, dissolved oxygen, specific conductance, and turbidity are also measured in-situ at each site.

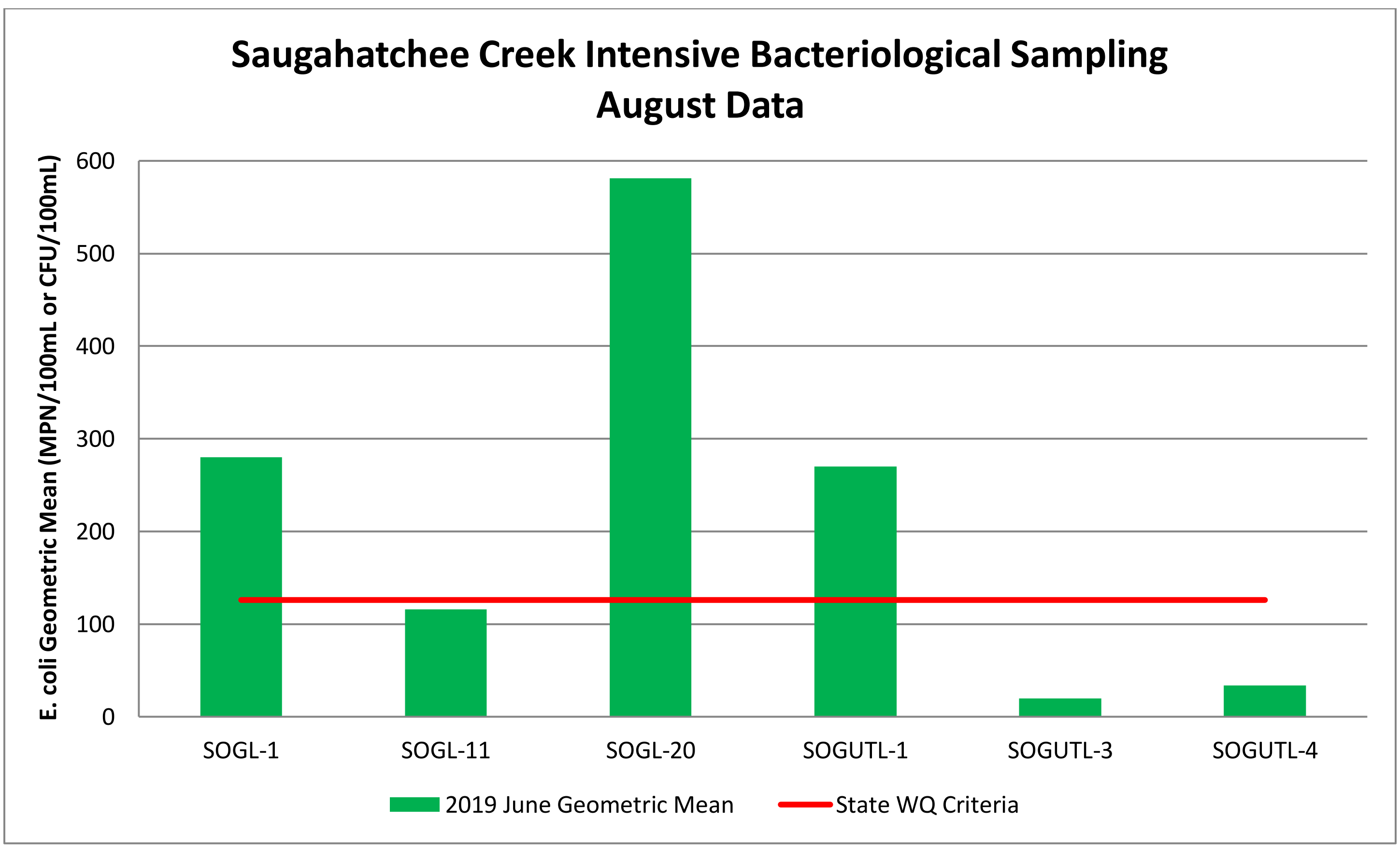
The June geomean data showed all six (6) sites below the state water quality criteria for Saugahatchee Creek's designated use of Fish and Wildlife (126 MPN or cfu/100mL). For the August geomean, three (3) sites were above the state water quality criteria, and three (3) were below the threshold.



Saugahatchee Creek Watershed E. coli Monitoring Sites



Saugahatchee Creek Intensive Bacteriological Sampling
June Data
E. coli Geometric Mean (MPN/100mL or CFU/100mL)
600
500
400
300
200
100
0
SOGL-1
SOGL-11
SOGL-20
SOGUTL-1
SOGUTL-3
SOGUTL-4
2019 June Geometric Mean
State WQ Criteria



Saugahatchee Creek Intensive Bacteriological Sampling
August Data
E. coli Geometric Mean (MPN/100mL or CFU/100mL)
600
500
400
300
200
100
0
SOGL-1
SOGL-11
SOGL-20
SOGUTL-1
SOGUTL-3
SOGUTL-4
2019 June Geometric Mean
State WQ Criteria

Saugahatchee Creek Monitoring Data

Site Number	Pollutant of Concern	Site Location	Site Coordinates
1S	Total Phosphorus	Saugahatchee Creek at US HWY 280	32.657413 N, 85.459656 W
19S	Total Phosphorus	Saugahatchee Creek 0.35 mi upstream of N. Donahue Dr.	32.642777 N, 85.498761 W
4S	Total Phosphorus	Saugahatchee Creek at Northside WPCF	32.628185 N, 85.545705 W
5S	Total Phosphorus	Unnamed Tributary to Saugahatchee Creek	32.625847 N, 85.546404 W
20S	Total Phosphorus	Unnamed Tributary to Saugahatchee Creek	32.642492 N, 85.498606 W
21S	Total Phosphorus	Swingle Creek above Lee Rd. 188	32.655618 N, 85.575517 W
SOGL-1	E. coli	Saugahatchee Creek at Lee Rd. 188	32.626569 N, 85.588019 W
SOGL-11	E. coli	Saugahatchee Creek at Northside WPCF	32.628185 N, 85.545705 W
SOGL-20	E. coli	Saugahatchee Creek at Watercrest Dr.	32.648751 N, 85.472166 W
SOGUTL-1	E. coli	Unnamed Tributary to Saugahatchee Creek	32.635379 N, 85.490675 W
SOGUTL-3	E. coli	Unnamed Tributary to Saugahatchee Creek	32.636313 N, 85.480916 W
SOGUTL-4	E. coli	Unnamed Tributary to Saugahatchee Creek	32.635890 N, 85.481219 W

Site Number	Sample Date	Sample Time	Sample Collected By	Total Phosphorus (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Streamflow (cfs)	Stream-flow (MGD)
1S	6/26/2019	1535	D. Kimbrow	0.121	EPA 365.4	7/3/2019	J. Andrews (ERA)	23.7	12.8
4S	6/26/2019	1130	D. Kimbrow	<0.100	EPA 365.4	7/3/2019	J. Andrews (ERA)	24.6	13.2
5S	6/26/2019	1100	D. Kimbrow	<0.100	EPA 365.4	7/3/2019	J. Andrews (ERA)	0.52	0.28
19S	6/26/2019	1415	D. Kimbrow	0.110	EPA 365.4	7/3/2019	J. Andrews (ERA)	7.08	3.81
20S	6/26/2019	1410	D. Kimbrow	<0.100	EPA 365.4	7/3/2019	J. Andrews (ERA)	1.58	0.85
21S	6/26/2019	1325	D. Kimbrow	<0.100	EPA 365.4	7/3/2019	J. Andrews (ERA)	1.9	1.02
Site Number	Sample Date	Sample Time	Sample Collected By	Total Phosphorus (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Streamflow (cfs)	Stream-flow (MGD)
1S	9/19/2019	0805	D. Kimbrow M. Smith	<0.100	EPA 365.4	9/25/2019	J. Andrews (ERA)	7.08	4.58
4S	9/19/2019	0940	D. Kimbrow M. Smith	<0.100	EPA 365.4	9/25/2019	J. Andrews (ERA)	6	3.88
5S	9/19/2019	0925	M. Smith	<0.100	EPA 365.4	9/25/2019	J. Andrews (ERA)	0.06	0.04
19S	9/19/2019	1040	D. Kimbrow	<0.100	EPA 365.4	9/25/2019	J. Andrews (ERA)	7.08	4.58
20S	9/19/2019	1015	D. Kimbrow	<0.100	EPA 365.4	9/25/2019	J. Andrews (ERA)	0.43	0.28
21S	9/19/2019	0835	M. Smith	<0.100	EPA 365.4	9/25/2019	J. Andrews (ERA)	0.03	0.02
Site Number	Sample Date	Sample Time	Sample Collected By	Total Phosphorus (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Streamflow (cfs)	Stream-flow (MGD)
1S	12/18/2019	1535	D. Kimbrow	<0.100	EPA 365.4	1/7/2020	J. Andrews (ERA)	46.9	30.3
4S	12/18/2019	1135	D. Kimbrow	<0.100	EPA 365.4	1/7/2020	J. Andrews (ERA)	52.8	34.1
5S	12/18/2019	1045	D. Kimbrow	<0.100	EPA 365.4	1/7/2020	J. Andrews (ERA)	5.13	3.32
19S	12/18/2019	1400	D. Kimbrow	<0.100	EPA 365.4	1/7/2020	J. Andrews (ERA)	48.2	31.2

Site Number	Sample Date	Sample Time	Sample Collected By	Total Phosphorus (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Streamflow (cfs)	Stream-flow (MGD)
20S	12/18/2019	1335	D. Kimbrow	<0.100	EPA 365.4	1/7/2020	J. Andrews (ERA)	6.43	4.16
21S	12/18/2019	1440	D. Kimbrow	<0.100	EPA 365.4	1/7/2020	J. Andrews (ERA)	9.88	6.39

Site Number	Sample Date	Sample Time	Sample Collected By	Total Phosphorus (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Streamflow (cfs)	Stream-flow (MGD)
1S	3/12/2020	0920	D. Kimbrow	<0.100	EPA 365.4	3/24/2020	J. Andrews (ERA)	102.5	66.2
4S	3/12/2020	1055	D. Kimbrow	<0.100	EPA 365.4	3/24/2020	J. Andrews (ERA)	100.7	65.1
5S	3/12/2020	1110	D. Kimbrow	<0.100	EPA 365.4	3/24/2020	J. Andrews (ERA)	6.6	4.27
19S	3/12/2020	1415	D. Kimbrow	<0.100	EPA 365.4	3/24/2020	J. Andrews (ERA)	99.8	64.5
20S	3/12/2020	1350	D. Kimbrow	<0.100	EPA 365.4	3/24/2020	J. Andrews (ERA)	8.18	5.29
21S	3/12/2020	1450	D. Kimbrow	<0.100	EPA 365.4	3/24/2020	J. Andrews (ERA)	17.3	11.2

Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By	Streamflow (cfs)	Stream-flow (MGD)
1S	6/26/2019	1535	D. Kimbrow	78	YSI 5560	6/26/2019	D. Kimbrow	23.7	12.8
4S	6/26/2019	1130	D. Kimbrow	77.3	YSI 5560	6/26/2019	D. Kimbrow	24.6	13.2
5S	6/26/2019	1100	D. Kimbrow	74	YSI 5560	6/26/2019	D. Kimbrow	0.52	0.28
19S	6/26/2019	1415	D. Kimbrow	77.7	YSI 5560	6/26/2019	D. Kimbrow	7.08	3.81
20S	6/26/2019	1410	D. Kimbrow	76.7	YSI 5560	6/26/2019	D. Kimbrow	1.58	0.85
21S	6/26/2019	1325	D. Kimbrow	74.6	YSI 5560	6/26/2019	D. Kimbrow	1.9	1.02

Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By	Streamflow (cfs)	Stream-flow (MGD)
1S	9/19/2019	0805	D. Kimbrow M. Smith	75.8	YSI 5560	9/19/2019	D. Kimbrow M. Smith	7.08	4.58
4S	9/19/2019	0940	D. Kimbrow M. Smith	74.8	YSI 5560	9/19/2019	D. Kimbrow M. Smith	6	3.88
5S	9/19/2019	0925	M. Smith	72.3	YSI 5560	9/19/2019	M. Smith	0.06	0.04
19S	9/19/2019	1040	D. Kimbrow	75.4	YSI 5560	9/19/2019	D. Kimbrow	7.08	4.58
20S	9/19/2019	1015	D. Kimbrow	73.7	YSI 5560	9/19/2019	D. Kimbrow	0.43	0.28
21S	9/19/2019	0835	M. Smith	71.8	YSI 5560	9/19/2019	M. Smith	0.03	0.02

Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By	Streamflow (cfs)	Stream-flow (MGD)
1S	12/18/2019	1535	D. Kimbrow	51.6	YSI 5560	12/18/2019	D. Kimbrow	46.9	30.3
4S	12/18/2019	1135	D. Kimbrow	49.6	YSI 5560	12/18/2019	D. Kimbrow	52.8	34.1
5S	12/18/2019	1045	D. Kimbrow	50.2	YSI 5560	12/18/2019	D. Kimbrow	5.13	3.32
19S	12/18/2019	1400	D. Kimbrow	50	YSI 5560	12/18/2019	D. Kimbrow	48.2	31.2
20S	12/18/2019	1335	D. Kimbrow	50.6	YSI 5560	12/18/2019	D. Kimbrow	6.43	4.16
21S	12/18/2019	1440	D. Kimbrow	48.5	YSI 5560	12/18/2019	D. Kimbrow	9.88	6.39

Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By	Streamflow (cfs)	Stream-flow (MGD)
1S	3/12/2020	0920	D. Kimbrow	56.3	YSI 5560	3/12/2020	D. Kimbrow	102.5	66.2
4S	3/12/2020	1055	D. Kimbrow	57.3	YSI 5560	3/12/2020	D. Kimbrow	100.7	65.1
5S	3/12/2020	1110	D. Kimbrow	58.6	YSI 5560	3/12/2020	D. Kimbrow	6.6	4.27
19S	3/12/2020	1415	D. Kimbrow	60.7	YSI 5560	3/12/2020	D. Kimbrow	99.8	64.5
20S	3/12/2020	1350	D. Kimbrow	63.9	YSI 5560	3/12/2020	D. Kimbrow	8.18	5.29
21S	3/12/2020	1450	D. Kimbrow	62.9	YSI 5560	3/12/2020	D. Kimbrow	17.3	11.2

Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By	Streamflow (cfs)	Stream-flow (MGD)
1S	6/26/2019	1535	D. Kimbrow	7.53	YSI 1001	6/26/2019	D. Kimbrow	23.7	12.8
4S	6/26/2019	1130	D. Kimbrow	7.29	YSI 1001	6/26/2019	D. Kimbrow	24.6	13.2
5S	6/26/2019	1100	D. Kimbrow	7.14	YSI 1001	6/26/2019	D. Kimbrow	0.52	0.28
19S	6/26/2019	1415	D. Kimbrow	7.28	YSI 1001	6/26/2019	D. Kimbrow	7.08	3.81
20S	6/26/2019	1410	D. Kimbrow	7.28	YSI 1001	6/26/2019	D. Kimbrow	1.58	0.85
21S	6/26/2019	1325	D. Kimbrow	7.15	YSI 1001	6/26/2019	D. Kimbrow	1.9	1.02
Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By	Streamflow (cfs)	Stream-flow (MGD)
1S	9/19/2019	0805	D. Kimbrow M. Smith	7.35	YSI 1001	9/19/2019	D. Kimbrow M. Smith	7.08	4.58
4S	9/19/2019	0940	D. Kimbrow M. Smith	7.35	YSI 1001	9/19/2019	D. Kimbrow M. Smith	6	3.88
5S	9/19/2019	0925	M. Smith	7.07	YSI 1001	9/19/2019	M. Smith	0.06	0.04
19S	9/19/2019	1040	D. Kimbrow	7.32	YSI 1001	9/19/2019	D. Kimbrow	7.08	4.58
20S	9/19/2019	1015	D. Kimbrow	7.43	YSI 1001	9/19/2019	D. Kimbrow	0.43	0.28
21S	9/19/2019	0835	M. Smith	6.78	YSI 1001	9/19/2019	M. Smith	0.03	0.02
Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By	Streamflow (cfs)	Stream-flow (MGD)
1S	12/18/2019	1535	D. Kimbrow	7.14	YSI 1001	12/18/2019	D. Kimbrow	46.9	30.3
4S	12/18/2019	1135	D. Kimbrow	7.16	YSI 1001	12/18/2019	D. Kimbrow	52.8	34.1
5S	12/18/2019	1045	D. Kimbrow	7.18	YSI 1001	12/18/2019	D. Kimbrow	5.13	3.32
19S	12/18/2019	1400	D. Kimbrow	7.21	YSI 1001	12/18/2019	D. Kimbrow	48.2	31.2
20S	12/18/2019	1335	D. Kimbrow	7.13	YSI 1001	12/18/2019	D. Kimbrow	6.43	4.16
21S	12/18/2019	1440	D. Kimbrow	7.13	YSI 1001	12/18/2019	D. Kimbrow	9.88	6.39
Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By	Streamflow (cfs)	Stream-flow (MGD)
1S	3/12/2020	0920	D. Kimbrow	7.51	YSI 1001	3/12/2020	D. Kimbrow	102.5	66.2
4S	3/12/2020	1055	D. Kimbrow	7.14	YSI 1001	3/12/2020	D. Kimbrow	100.7	65.1
5S	3/12/2020	1110	D. Kimbrow	6.97	YSI 1001	3/12/2020	D. Kimbrow	6.6	4.27
19S	3/12/2020	1415	D. Kimbrow	7.15	YSI 1001	3/12/2020	D. Kimbrow	99.8	64.5
20S	3/12/2020	1350	D. Kimbrow	7.25	YSI 1001	3/12/2020	D. Kimbrow	8.18	5.29
21S	3/12/2020	1450	D. Kimbrow	7.06	YSI 1001	3/12/2020	D. Kimbrow	17.3	11.2
Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Streamflow (cfs)	Stream-flow (MGD)
1S	6/26/2019	1535	D. Kimbrow	8.35	YSI 2003 polarographic	6/26/2019	D. Kimbrow	23.7	12.8
4S	6/26/2019	1130	D. Kimbrow	7.25	YSI 2003 polarographic	6/26/2019	D. Kimbrow	24.6	13.2
5S	6/26/2019	1100	D. Kimbrow	6.98	YSI 2003 polarographic	6/26/2019	D. Kimbrow	0.52	0.28
19S	6/26/2019	1415	D. Kimbrow	7.25	YSI 2003 polarographic	6/26/2019	D. Kimbrow	7.08	3.81
20S	6/26/2019	1410	D. Kimbrow	7.15	YSI 2003 polarographic	6/26/2019	D. Kimbrow	1.58	0.85
21S	6/26/2019	1325	D. Kimbrow	8.47	YSI 2003 polarographic	6/26/2019	D. Kimbrow	1.9	1.02

Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Streamflow (cfs)	Stream-flow (MGD)
1S	9/19/2019	0805	D. Kimbrow M. Smith	6.85	YSI 2003 polarographic	9/19/2019	D. Kimbrow M. Smith	7.08	4.58
4S	9/19/2019	0940	D. Kimbrow M. Smith	6.95	YSI 2003 polarographic	9/19/2019	D. Kimbrow M. Smith	6	3.88
5S	9/19/2019	0925	M. Smith	6.15	YSI 2003 polarographic	9/19/2019	M. Smith	0.06	0.04
19S	9/19/2019	1040	D. Kimbrow	7.51	YSI 2003 polarographic	9/19/2019	D. Kimbrow	7.08	4.58
20S	9/19/2019	1015	D. Kimbrow	6.82	YSI 2003 polarographic	9/19/2019	D. Kimbrow	0.43	0.28
21S	9/19/2019	0835	M. Smith	6.81	YSI 2003 polarographic	9/19/2019	M. Smith	0.03	0.02
Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Streamflow (cfs)	Stream-flow (MGD)
1S	12/18/2019	1535	D. Kimbrow	11.15	YSI 2003 polarographic	12/18/2019	D. Kimbrow	46.9	30.3
4S	12/18/2019	1135	D. Kimbrow	10.75	YSI 2003 polarographic	12/18/2019	D. Kimbrow	52.8	34.1
5S	12/18/2019	1045	D. Kimbrow	10.57	YSI 2003 polarographic	12/18/2019	D. Kimbrow	5.13	3.32
19S	12/18/2019	1400	D. Kimbrow	10.37	YSI 2003 polarographic	12/18/2019	D. Kimbrow	48.2	31.2
20S	12/18/2019	1335	D. Kimbrow	10.7	YSI 2003 polarographic	12/18/2019	D. Kimbrow	6.43	4.16
21S	12/18/2019	1440	D. Kimbrow	11.48	YSI 2003 polarographic	12/18/2019	D. Kimbrow	9.88	6.39
Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Streamflow (cfs)	Stream-flow (MGD)
1S	3/12/2020	0920	D. Kimbrow	10.33	YSI 2003 polarographic	3/12/2020	D. Kimbrow	102.5	66.2
4S	3/12/2020	1055	D. Kimbrow	10.57	YSI 2003 polarographic	3/12/2020	D. Kimbrow	100.7	65.1
5S	3/12/2020	1110	D. Kimbrow	9.46	YSI 2003 polarographic	3/12/2020	D. Kimbrow	6.6	4.27
19S	3/12/2020	1415	D. Kimbrow	9.54	YSI 2003 polarographic	3/12/2020	D. Kimbrow	99.8	64.5
20S	3/12/2020	1350	D. Kimbrow	10.7	YSI 2003 polarographic	3/12/2020	D. Kimbrow	8.18	5.29
21S	3/12/2020	1450	D. Kimbrow	11.48	YSI 2003 polarographic	3/12/2020	D. Kimbrow	17.3	11.2
Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By	Streamflow (cfs)	Stream-flow (MGD)
1S	6/26/2019	1535	D. Kimbrow	136.2	YSI 5560	6/26/2019	D. Kimbrow	23.7	12.8
4S	6/26/2019	1130	D. Kimbrow	130	YSI 5560	6/26/2019	D. Kimbrow	24.6	13.2
5S	6/26/2019	1100	D. Kimbrow	96.4	YSI 5560	6/26/2019	D. Kimbrow	0.52	0.28
19S	6/26/2019	1415	D. Kimbrow	121.1	YSI 5560	6/26/2019	D. Kimbrow	7.08	3.81
20S	6/26/2019	1410	D. Kimbrow	129.7	YSI 5560	6/26/2019	D. Kimbrow	1.58	0.85
21S	6/26/2019	1325	D. Kimbrow	65.3	YSI 5560	6/26/2019	D. Kimbrow	1.9	1.02

Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By	Streamflow (cfs)	Stream-flow (MGD)
1S	9/19/2019	0805	D. Kimbrow M. Smith	200.6	YSI 5560	9/19/2019	D. Kimbrow M. Smith	7.08	4.58
4S	9/19/2019	0940	D. Kimbrow M. Smith	180.8	YSI 5560	9/19/2019	D. Kimbrow M. Smith	6	3.88
5S	9/19/2019	0925	M. Smith	126.3	YSI 5560	9/19/2019	M. Smith	0.06	0.04
19S	9/19/2019	1040	D. Kimbrow	207.9	YSI 5560	9/19/2019	D. Kimbrow	7.08	4.58
20S	9/19/2019	1015	D. Kimbrow	135.3	YSI 5560	9/19/2019	D. Kimbrow	0.43	0.28
21S	9/19/2019	0835	M. Smith	46.8	YSI 5560	9/19/2019	M. Smith	0.03	0.02
Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By	Streamflow (cfs)	Stream-flow (MGD)
1S	12/18/2019	1535	D. Kimbrow	121.5	YSI 5560	12/18/2019	D. Kimbrow	46.9	30.3
4S	12/18/2019	1135	D. Kimbrow	98.5	YSI 5560	12/18/2019	D. Kimbrow	52.8	34.1
5S	12/18/2019	1045	D. Kimbrow	61.9	YSI 5560	12/18/2019	D. Kimbrow	5.13	3.32
19S	12/18/2019	1400	D. Kimbrow	106.4	YSI 5560	12/18/2019	D. Kimbrow	48.2	31.2
20S	12/18/2019	1335	D. Kimbrow	83.7	YSI 5560	12/18/2019	D. Kimbrow	6.43	4.16
21S	12/18/2019	1440	D. Kimbrow	57.3	YSI 5560	12/18/2019	D. Kimbrow	9.88	6.39
Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By	Streamflow (cfs)	Stream-flow (MGD)
1S	3/12/2020	0920	D. Kimbrow	67.6	YSI 5560	3/12/2020	D. Kimbrow	102.5	66.2
4S	3/12/2020	1055	D. Kimbrow	76.3	YSI 5560	3/12/2020	D. Kimbrow	100.7	65.1
5S	3/12/2020	1110	D. Kimbrow	52.7	YSI 5560	3/12/2020	D. Kimbrow	6.6	4.27
19S	3/12/2020	1415	D. Kimbrow	73.8	YSI 5560	3/12/2020	D. Kimbrow	99.8	64.5
20S	3/12/2020	1350	D. Kimbrow	97	YSI 5560	3/12/2020	D. Kimbrow	8.18	5.29
21S	3/12/2020	1450	D. Kimbrow	47.4	YSI 5560	3/12/2020	D. Kimbrow	17.3	11.2
Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By	Streamflow (cfs)	Stream-flow (MGD)
1S	6/26/2019	1535	D. Kimbrow	6.6	SM 2130 B	6/26/2019	D. Kimbrow	23.7	12.8
4S	6/26/2019	1130	D. Kimbrow	6.86	SM 2130 B	6/26/2019	D. Kimbrow	24.6	13.2
5S	6/26/2019	1100	D. Kimbrow	6.84	SM 2130 B	6/26/2019	D. Kimbrow	0.52	0.28
19S	6/26/2019	1415	D. Kimbrow	3.7	SM 2130 B	6/26/2019	D. Kimbrow	7.08	3.81
20S	6/26/2019	1410	D. Kimbrow	5.6	SM 2130 B	6/26/2019	D. Kimbrow	1.58	0.85
21S	6/26/2019	1325	D. Kimbrow	11.8	SM 2130 B	6/26/2019	D. Kimbrow	1.9	1.02
Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By	Streamflow (cfs)	Stream-flow (MGD)
1S	9/19/2019	0805	D. Kimbrow M. Smith	8.82	SM 2130 B	9/19/2019	D. Kimbrow M. Smith	7.08	4.58
4S	9/19/2019	0940	D. Kimbrow M. Smith	9.51	SM 2130 B	9/19/2019	D. Kimbrow M. Smith	6	3.88
5S	9/19/2019	0925	M. Smith	8.74	SM 2130 B	9/19/2019	M. Smith	0.06	0.04
19S	9/19/2019	1040	D. Kimbrow	6.2	SM 2130 B	9/19/2019	D. Kimbrow	7.08	4.58
20S	9/19/2019	1015	D. Kimbrow	5.96	SM 2130 B	9/19/2019	D. Kimbrow	0.43	0.28
21S	9/19/2019	0835	M. Smith	4.75	SM 2130 B	9/19/2019	M. Smith	0.03	0.02
Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By	Streamflow (cfs)	Stream-flow (MGD)
1S	12/18/2019	1535	D. Kimbrow	11.17	SM 2130 B	12/18/2019	D. Kimbrow	46.9	30.3
4S	12/18/2019	1135	D. Kimbrow	21.6	SM 2130 B	12/18/2019	D. Kimbrow	52.8	34.1
5S	12/18/2019	1045	D. Kimbrow	11.6	SM 2130 B	12/18/2019	D. Kimbrow	5.13	3.32
19S	12/18/2019	1400	D. Kimbrow	14.5	SM 2130 B	12/18/2019	D. Kimbrow	48.2	31.2
20S	12/18/2019	1335	D. Kimbrow	16.3	SM 2130 B	12/18/2019	D. Kimbrow	6.43	4.16
21S	12/18/2019	1440	D. Kimbrow	26.3	SM 2130 B	12/18/2019	D. Kimbrow	9.88	6.39

Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By	Streamflow (cfs)	Stream-flow (MGD)
1S	3/12/2020	0920	D. Kimbrow	17.4	SM 2130 B	3/12/2020	D. Kimbrow	102.5	66.2
4S	3/12/2020	1055	D. Kimbrow	20.8	SM 2130 B	3/12/2020	D. Kimbrow	100.7	65.1
5S	3/12/2020	1110	D. Kimbrow	11.48	SM 2130 B	3/12/2020	D. Kimbrow	6.6	4.27
19S	3/12/2020	1415	D. Kimbrow	16.5	SM 2130 B	3/12/2020	D. Kimbrow	99.8	64.5
20S	3/12/2020	1350	D. Kimbrow	7.76	SM 2130 B	3/12/2020	D. Kimbrow	8.18	5.29
21S	3/12/2020	1450	D. Kimbrow	11.5	SM 2130 B	3/12/2020	D. Kimbrow	17.3	11.2

Site Number	Sample Date	Sample Time	Sample Collected By	E. coli (cfu/100mL)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	4/24/2019	1015	D. Kimbrow	200	Alabama Water Watch (Coliscan Easygel)	4/25/2019	D. Kimbrow	107	69
SOGL-11	4/24/2019	1220	D. Kimbrow	150	Alabama Water Watch (Coliscan Easygel)	4/25/2019	D. Kimbrow	84.42	54.6
SOGL-20	4/24/2019	1435	D. Kimbrow	0	Alabama Water Watch (Coliscan Easygel)	4/25/2019	D. Kimbrow	107	69
SOGUTL-1	4/24/2019	1245	D. Kimbrow	200	Alabama Water Watch (Coliscan Easygel)	4/25/2019	D. Kimbrow	0.88	0.57
SOGUTL-3	4/24/2019	1325	D. Kimbrow	100	Alabama Water Watch (Coliscan Easygel)	4/25/2019	D. Kimbrow	1.7	1.1
SOGUTL-4	4/24/2019	1320	D. Kimbrow	0	Alabama Water Watch (Coliscan Easygel)	4/25/2019	D. Kimbrow	1.29	0.83

Site Number	Sample Date	Sample Time	Sample Collected By	E. coli (cfu/100mL)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	5/21/2019	1000	D. Kimbrow	150	Alabama Water Watch (Coliscan Easygel)	5/22/2019	M. Smith	91.8	59
SOGL-11	5/21/2019	1035	D. Kimbrow	50	Alabama Water Watch (Coliscan Easygel)	5/22/2019	M. Smith	56.26	36.4
SOGL-20	5/21/2019	1415	D. Kimbrow	100	Alabama Water Watch (Coliscan Easygel)	5/22/2019	M. Smith	46.63	30.1
SOGUTL-1	5/21/2019	1100	D. Kimbrow	200	Alabama Water Watch (Coliscan Easygel)	5/22/2019	M. Smith	0.49	0.32
SOGUTL-3	5/21/2019	1315	D. Kimbrow	100	Alabama Water Watch (Coliscan Easygel)	5/22/2019	M. Smith	1.55	1
SOGUTL-4	5/21/2019	1300	D. Kimbrow	100	Alabama Water Watch (Coliscan Easygel)	5/22/2019	M. Smith	1.47	0.95

Site Number	Sample Date	Sample Time	Sample Collected By	E. coli (cfu/100mL)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	6/5/2019	925	D. Kimbrow M. Smith	100	Alabama Water Watch (Coliscan Easygel)	6/6/2019	D. Kimbrow	47.7	30.8
SOGL-11	6/5/2019	1000	D. Kimbrow M. Smith	150	Alabama Water Watch (Coliscan Easygel)	6/6/2019	D. Kimbrow	30.93	20

Site Number	Sample Date	Sample Time	Sample Collected By	E. coli (cfu/100mL)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-20	6/5/2019	1135	D. Kimbrow M. Smith	50	Alabama Water Watch (Coliscan Easygel)	6/6/2019	D. Kimbrow	33.56	21.7
SOGUTL-1	6/5/2019	1020	D. Kimbrow M. Smith	100	Alabama Water Watch (Coliscan Easygel)	6/6/2019	D. Kimbrow	0.47	0.3
SOGUTL-3	6/5/2019	1105	D. Kimbrow M. Smith	100	Alabama Water Watch (Coliscan Easygel)	6/6/2019	D. Kimbrow	0.89	0.58
SOGUTL-4	6/5/2019	1045	D. Kimbrow M. Smith	100	Alabama Water Watch (Coliscan Easygel)	6/6/2019	D. Kimbrow	0.79	0.51
Site Number	Sample Date	Sample Time	Sample Collected By	E. coli (cfu/100mL)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	6/13/2019	1252	M. Smith R. McCurry	150	Alabama Water Watch (Coliscan Easygel)	6/14/2019	M. Smith	33.3	21.5
SOGL-11	6/13/2019	1421	M. Smith R. McCurry	50	Alabama Water Watch (Coliscan Easygel)	6/14/2019	M. Smith	34.8	22.5
SOGL-20	6/13/2019	1749	M. Smith R. McCurry	100	Alabama Water Watch (Coliscan Easygel)	6/14/2019	M. Smith	32.18	20.8
SOGUTL-1	6/13/2019	1701	M. Smith R. McCurry	50	Alabama Water Watch (Coliscan Easygel)	6/14/2019	M. Smith	0.4	0.26
SOGUTL-3	6/13/2019	1521	M. Smith R. McCurry	50	Alabama Water Watch (Coliscan Easygel)	6/14/2019	M. Smith	1.08	0.7
SOGUTL-4	6/13/2019	1449	M. Smith R. McCurry	0	Alabama Water Watch (Coliscan Easygel)	6/14/2019	M. Smith	0.42	0.27
Site Number	Sample Date	Sample Time	Sample Collected By	E. coli (cfu/100mL)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	6/19/2019	945	D. Kimbrow	150	Alabama Water Watch (Coliscan Easygel)	6/20/2019	D. Kimbrow	40	25.9
SOGL-11	6/19/2019	1020	D. Kimbrow	50	Alabama Water Watch (Coliscan Easygel)	6/20/2019	D. Kimbrow	39.45	25.5
SOGL-20	6/19/2019	1310	D. Kimbrow	500	Alabama Water Watch (Coliscan Easygel)	6/20/2019	D. Kimbrow	36.16	23.4
SOGUTL-1	6/19/2019	1045	D. Kimbrow	150	Alabama Water Watch (Coliscan Easygel)	6/20/2019	D. Kimbrow	0.31	0.2
SOGUTL-3	6/19/2019	1235	D. Kimbrow	100	Alabama Water Watch (Coliscan Easygel)	6/20/2019	D. Kimbrow	1.8	1.16
SOGUTL-4	6/19/2019	1215	D. Kimbrow	450	Alabama Water Watch (Coliscan Easygel)	6/20/2019	D. Kimbrow	1.01	0.65

Site Number	Sample Date	Sample Time	Sample Collected By	E. coli (cfu/100mL)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	6/27/2019	1030	D. Kimbrow	150	Alabama Water Watch (Coliscan Easygel)	6/28/2019	M. Smith	24.6	15.9
SOGL-11	6/27/2019	1105	D. Kimbrow	50	Alabama Water Watch (Coliscan Easygel)	6/28/2019	M. Smith	21.89	14.1
SOGL-20	6/27/2019	1420	D. Kimbrow	50	Alabama Water Watch (Coliscan Easygel)	6/28/2019	M. Smith	24	15.5
SOGUTL-1	6/27/2019	1300	D. Kimbrow	50	Alabama Water Watch (Coliscan Easygel)	6/28/2019	M. Smith	0.27	0.17
SOGUTL-3	6/27/2019	1330	D. Kimbrow	200	Alabama Water Watch (Coliscan Easygel)	6/28/2019	M. Smith	0.91	0.59
SOGUTL-4	6/27/2019	1325	D. Kimbrow	0	Alabama Water Watch (Coliscan Easygel)	6/28/2019	M. Smith	0.59	0.38
Site Number	Sample Date	Sample Time	Sample Collected By	E. coli (cfu/100mL)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	7/2/2019	930	D. Kimbrow	50	Alabama Water Watch (Coliscan Easygel)	7/3/2019	D. Kimbrow	20.2	13
SOGL-11	7/2/2019	955	D. Kimbrow	50	Alabama Water Watch (Coliscan Easygel)	7/3/2019	D. Kimbrow	19.62	12.7
SOGL-20	7/2/2019	1410	D. Kimbrow	0	Alabama Water Watch (Coliscan Easygel)	7/3/2019	D. Kimbrow	24.05	15.5
SOGUTL-1	7/2/2019	1025	D. Kimbrow	50	Alabama Water Watch (Coliscan Easygel)	7/3/2019	D. Kimbrow	0.24	0.15
SOGUTL-3	7/2/2019	1105	D. Kimbrow	50	Alabama Water Watch (Coliscan Easygel)	7/3/2019	D. Kimbrow	0.41	0.26
SOGUTL-4	7/2/2019	1055	D. Kimbrow	0	Alabama Water Watch (Coliscan Easygel)	7/3/2019	D. Kimbrow	0.42	0.27
Site Number	Sample Date	Sample Time	Sample Collected By	E. coli (cfu/100mL)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	7/25/2019	945	D. Kimbrow	50	Alabama Water Watch (Coliscan Easygel)	7/26/2019	D. Kimbrow	25.6	16.5
SOGL-11	7/25/2019	1220	D. Kimbrow	50	Alabama Water Watch (Coliscan Easygel)	7/26/2019	D. Kimbrow	17.5	11.3
SOGL-20	7/25/2019	1135	D. Kimbrow	50	Alabama Water Watch (Coliscan Easygel)	7/26/2019	D. Kimbrow	20.06	13
SOGUTL-1	7/25/2019	1005	D. Kimbrow	50	Alabama Water Watch (Coliscan Easygel)	7/26/2019	D. Kimbrow	0.29	0.19
SOGUTL-3	7/25/2019	1040	D. Kimbrow	0	Alabama Water Watch (Coliscan Easygel)	7/26/2019	D. Kimbrow	0.51	0.33

Site Number	Sample Date	Sample Time	Sample Collected By	E. coli (cfu/100mL)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGUTL-4	7/25/2019	1030	D. Kimbrow	50	Alabama Water Watch (Coliscan Easygel)	7/26/2019	D. Kimbrow	0.68	0.44
Site Number	Sample Date	Sample Time	Sample Collected By	E. coli (cfu/100mL)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	8/8/2019	1335	D. Kimbrow	450	Alabama Water Watch (Coliscan Easygel)	8/9/2019	D. Kimbrow	17.9	11.6
SOGL-11	8/8/2019	1600	D. Kimbrow	550	Alabama Water Watch (Coliscan Easygel)	8/9/2019	D. Kimbrow	16.62	10.7
SOGL-20	8/8/2019	1500	D. Kimbrow	950	Alabama Water Watch (Coliscan Easygel)	8/9/2019	D. Kimbrow	15.96	10.3
SOGUTL-1	8/8/2019	1400	D. Kimbrow	4100	Alabama Water Watch (Coliscan Easygel)	8/9/2019	D. Kimbrow	8.16	5.3
SOGUTL-3	8/8/2019	1535	D. Kimbrow	1900	Alabama Water Watch (Coliscan Easygel)	8/9/2019	D. Kimbrow	n/a	n/a
SOGUTL-4	8/8/2019	1425	D. Kimbrow	TNTC	Alabama Water Watch (Coliscan Easygel)	8/9/2019	D. Kimbrow	n/a	n/a
Site Number	Sample Date	Sample Time	Sample Collected By	E. coli (MPN)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	8/14/2019	1030	D. Kimbrow	461.1	IDEXX	8/14/2019	R. Blackburn (ERA)	13.4	8.7
SOGL-11	8/14/2019	1250	D. Kimbrow	344.8	IDEXX	8/14/2019	R. Blackburn (ERA)	10.24	6.6
SOGL-20	8/14/2019	1215	D. Kimbrow	478.6	IDEXX	8/14/2019	R. Blackburn (ERA)	17.31	11.2
SOGUTL-1	8/14/2019	1100	D. Kimbrow	172.3	IDEXX	8/14/2019	R. Blackburn (ERA)	0.22	0.14
SOGUTL-3	8/14/2019	1125	D. Kimbrow	52	IDEXX	8/14/2019	R. Blackburn (ERA)	0.39	0.25
SOGUTL-4	8/14/2019	1120	D. Kimbrow	85.7	IDEXX	8/14/2019	R. Blackburn (ERA)	0.27	0.17
Site Number	Sample Date	Sample Time	Sample Collected By	E. coli (MPN)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	8/22/2019	930	D. Kimbrow	275.5	IDEXX	8/22/2019	R. Blackburn (ERA)	20.2	13
SOGL-11	8/22/2019	1255	D. Kimbrow	435.2	IDEXX	8/22/2019	R. Blackburn (ERA)	12.34	8
SOGL-20	8/22/2019	1220	D. Kimbrow	2419.6	IDEXX	8/22/2019	R. Blackburn (ERA)	10.37	6.7
SOGUTL-1	8/22/2019	1115	D. Kimbrow	686.7	IDEXX	8/22/2019	R. Blackburn (ERA)	0.06	0.04
SOGUTL-3	8/22/2019	1150	D. Kimbrow	34.6	IDEXX	8/22/2019	R. Blackburn (ERA)	0.41	0.26
SOGUTL-4	8/22/2019	1135	D. Kimbrow	214.2	IDEXX	8/22/2019	R. Blackburn (ERA)	0.38	0.25

Site Number	Sample Date	Sample Time	Sample Collected By	E. coli (cfu/100mL)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	8/30/2019	1015	D. Kimbrow	200	Alabama Water Watch (Coliscan Easygel)	9/3/2019	D. Kimbrow	17.2	11.1
SOGL-11	8/30/2019	1045	D. Kimbrow	250	Alabama Water Watch (Coliscan Easygel)	9/3/2019	D. Kimbrow	11.98	7.7
SOGL-20	8/30/2019	1120	D. Kimbrow	400	Alabama Water Watch (Coliscan Easygel)	9/3/2019	D. Kimbrow	9.74	6.3
SOGUTL-1	8/30/2019	1340	D. Kimbrow	50	Alabama Water Watch (Coliscan Easygel)	9/3/2019	D. Kimbrow	0.16	0.1
SOGUTL-3	8/30/2019	1315	D. Kimbrow	0	Alabama Water Watch (Coliscan Easygel)	9/3/2019	D. Kimbrow	0.3	0.2
SOGUTL-4	8/30/2019	1255	D. Kimbrow	0	Alabama Water Watch (Coliscan Easygel)	9/3/2019	D. Kimbrow	0.41	0.26
Site Number	Sample Date	Sample Time	Sample Collected By	E. coli (cfu/100mL)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	9/4/2019	1045	D. Kimbrow	150	Alabama Water Watch (Coliscan Easygel)	9/5/2019	D. Kimbrow	13.9	9
SOGL-11	9/4/2019	1115	D. Kimbrow	0	Alabama Water Watch (Coliscan Easygel)	9/5/2019	D. Kimbrow	13.9	9
SOGL-20	9/4/2019	1225	D. Kimbrow	150	Alabama Water Watch (Coliscan Easygel)	9/5/2019	D. Kimbrow	13.9	9
SOGUTL-1	9/4/2019	1135	D. Kimbrow	100	Alabama Water Watch (Coliscan Easygel)	9/5/2019	D. Kimbrow	n/a	n/a
SOGUTL-3	9/4/2019	1200	D. Kimbrow	0	Alabama Water Watch (Coliscan Easygel)	9/5/2019	D. Kimbrow	n/a	n/a
SOGUTL-4	9/4/2019	1145	D. Kimbrow	0	Alabama Water Watch (Coliscan Easygel)	9/5/2019	D. Kimbrow	n/a	n/a
Site Number	Sample Date	Sample Time	Sample Collected By	E. coli (cfu/100mL)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	9/25/2019	1045	D. Kimbrow	300	Alabama Water Watch (Coliscan Easygel)	9/27/2019	M. Smith	4.52	2.9
SOGL-11	9/25/2019	1325	D. Kimbrow	200	Alabama Water Watch (Coliscan Easygel)	9/27/2019	M. Smith	3.58	2.3
SOGL-20	9/25/2019	1305	D. Kimbrow	TNTC	Alabama Water Watch (Coliscan Easygel)	9/27/2019	M. Smith	3.11	2
SOGUTL-1	9/25/2019	1110	D. Kimbrow	0	Alabama Water Watch (Coliscan Easygel)	9/27/2019	M. Smith	0.05	0.03
SOGUTL-3	9/25/2019	1245	D. Kimbrow	50	Alabama Water Watch (Coliscan Easygel)	9/27/2019	M. Smith	0.14	0.09

Site Number	Sample Date	Sample Time	Sample Collected By	E. coli (cfu/100mL)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGUTL-4	9/25/2019	1240	D. Kimbrow	200	Alabama Water Watch (Coliscan Easygel)	9/27/2019	M. Smith	0.33	0.2
Site Number	Sample Date	Sample Time	Sample Collected By	E. coli (cfu/100mL)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	10/25/2019	1000	D. Kimbrow	100	Alabama Water Watch (Coliscan Easygel)	10/28/2019	D. Kimbrow	7.78	5
SOGL-11	10/25/2019	1210	D. Kimbrow	100	Alabama Water Watch (Coliscan Easygel)	10/28/2019	D. Kimbrow	7.11	4.6
SOGL-20	10/25/2019	1135	D. Kimbrow	150	Alabama Water Watch (Coliscan Easygel)	10/28/2019	D. Kimbrow	6.27	4.05
SOGUTL-1	10/25/2019	1030	D. Kimbrow	1600	Alabama Water Watch (Coliscan Easygel)	10/28/2019	D. Kimbrow	n/a	n/a
SOGUTL-3	10/25/2019	1100	D. Kimbrow	700	Alabama Water Watch (Coliscan Easygel)	10/28/2019	D. Kimbrow	2.01	1.3
SOGUTL-4	10/25/2019	1045	D. Kimbrow	1600	Alabama Water Watch (Coliscan Easygel)	10/28/2019	D. Kimbrow	4.32	2.8
Site Number	Sample Date	Sample Time	Sample Collected By	E. coli (cfu/100mL)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	11/14/2019	1315	D. Kimbrow	400	Alabama Water Watch (Coliscan Easygel)	11/15/2019	D. Kimbrow	17.2	11.1
SOGL-11	11/14/2019	1345	D. Kimbrow	50	Alabama Water Watch (Coliscan Easygel)	11/15/2019	D. Kimbrow	11.62	7.5
SOGL-20	11/14/2019	1455	D. Kimbrow	0	Alabama Water Watch (Coliscan Easygel)	11/15/2019	D. Kimbrow	8.82	5.7
SOGUTL-1	11/14/2019	1415	D. Kimbrow	350	Alabama Water Watch (Coliscan Easygel)	11/15/2019	D. Kimbrow	n/a	n/a
SOGUTL-3	11/14/2019	1430	D. Kimbrow	0	Alabama Water Watch (Coliscan Easygel)	11/15/2019	D. Kimbrow	n/a	n/a
SOGUTL-4	11/14/2019	1425	D. Kimbrow	0	Alabama Water Watch (Coliscan Easygel)	11/15/2019	D. Kimbrow	n/a	n/a
Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	4/24/2019	1015	D. Kimbrow	64.4	YSI 5560	4/24/2019	D. Kimbrow	107	69
SOGL-11	4/24/2019	1220	D. Kimbrow	66	YSI 5560	4/24/2019	D. Kimbrow	84.42	54.6
SOGL-20	4/24/2019	1435	D. Kimbrow	68.6	YSI 5560	4/24/2019	D. Kimbrow	107	69
SOGUTL-1	4/24/2019	1245	D. Kimbrow	64.3	YSI 5560	4/24/2019	D. Kimbrow	0.88	0.57
SOGUTL-3	4/24/2019	1325	D. Kimbrow	65.7	YSI 5560	4/24/2019	D. Kimbrow	1.7	1.1
SOGUTL-4	4/24/2019	1320	D. Kimbrow	65.5	YSI 5560	4/24/2019	D. Kimbrow	1.29	0.83

Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	5/21/2019	1000	D. Kimbrow	70.7	YSI 5560	5/21/2019	D. Kimbrow	91.8	59
SOGL-11	5/21/2019	1035	D. Kimbrow	71.5	YSI 5560	5/21/2019	D. Kimbrow	56.26	36.4
SOGL-20	5/21/2019	1415	D. Kimbrow	73.8	YSI 5560	5/21/2019	D. Kimbrow	46.63	30.1
SOGUTL-1	5/21/2019	1100	D. Kimbrow	69.4	YSI 5560	5/21/2019	D. Kimbrow	0.49	0.32
SOGUTL-3	5/21/2019	1000	D. Kimbrow	72	YSI 5560	5/21/2019	D. Kimbrow	1.55	1
SOGUTL-4	5/21/2019	1035	D. Kimbrow	71.6	YSI 5560	5/21/2019	D. Kimbrow	1.47	0.95
Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	6/5/2019	925	D. Kimbrow M. Smith	71.9	YSI 5560	6/5/2019	D. Kimbrow M. Smith	47.7	30.8
SOGL-11	6/5/2019	1000	D. Kimbrow M. Smith	72.5	YSI 5560	6/5/2019	D. Kimbrow M. Smith	30.93	20
SOGL-20	6/5/2019	1135	D. Kimbrow M. Smith	70.7	YSI 5560	6/5/2019	D. Kimbrow M. Smith	33.56	21.7
SOGUTL-1	6/5/2019	1020	D. Kimbrow M. Smith	70.6	YSI 5560	6/5/2019	D. Kimbrow M. Smith	0.47	0.3
SOGUTL-3	6/5/2019	1105	D. Kimbrow M. Smith	72.1	YSI 5560	6/5/2019	D. Kimbrow M. Smith	0.89	0.58
SOGUTL-4	6/5/2019	1045	D. Kimbrow M. Smith	72.1	YSI 5560	6/5/2019	D. Kimbrow M. Smith	0.79	0.51
Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	6/13/2019	1252	M. Smith R. McCurry	74.4	YSI 5560	6/13/2019	M. Smith R. McCurry	33.3	21.5
SOGL-11	6/13/2019	1421	M. Smith R. McCurry	76.9	YSI 5560	6/13/2019	M. Smith R. McCurry	34.8	22.5
SOGL-20	6/13/2019	1749	M. Smith R. McCurry	75.5	YSI 5560	6/13/2019	M. Smith R. McCurry	32.18	20.8
SOGUTL-1	6/13/2019	1701	M. Smith R. McCurry	71.7	YSI 5560	6/13/2019	M. Smith R. McCurry	0.4	0.26
SOGUTL-3	6/13/2019	1521	M. Smith R. McCurry	73.3	YSI 5560	6/13/2019	M. Smith R. McCurry	1.08	0.7
SOGUTL-4	6/13/2019	1449	M. Smith R. McCurry	72.6	YSI 5560	6/13/2019	M. Smith R. McCurry	0.42	0.27
Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	6/19/2019	945	D. Kimbrow	73.6	YSI 5560	6/19/2019	D. Kimbrow	40	25.9
SOGL-11	6/19/2019	1020	D. Kimbrow	74	YSI 5560	6/19/2019	D. Kimbrow	39.45	25.5
SOGL-20	6/19/2019	1310	D. Kimbrow	76.8	YSI 5560	6/19/2019	D. Kimbrow	36.16	23.4
SOGUTL-1	6/19/2019	1045	D. Kimbrow	72.1	YSI 5560	6/19/2019	D. Kimbrow	0.31	0.2
SOGUTL-3	6/19/2019	1235	D. Kimbrow	76.3	YSI 5560	6/19/2019	D. Kimbrow	1.8	1.16
SOGUTL-4	6/19/2019	1215	D. Kimbrow	73.9	YSI 5560	6/19/2019	D. Kimbrow	1.01	0.65
Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	6/27/2019	1030	D. Kimbrow	74	YSI 5560	6/27/2019	D. Kimbrow	24.6	15.9
SOGL-11	6/27/2019	1105	D. Kimbrow	76.4	YSI 5560	6/27/2019	D. Kimbrow	21.89	14.1
SOGL-20	6/27/2019	1420	D. Kimbrow	77.7	YSI 5560	6/27/2019	D. Kimbrow	24	15.5
SOGUTL-1	6/27/2019	1300	D. Kimbrow	73.2	YSI 5560	6/27/2019	D. Kimbrow	0.27	0.17
SOGUTL-3	6/27/2019	1330	D. Kimbrow	75.1	YSI 5560	6/27/2019	D. Kimbrow	0.91	0.59
SOGUTL-4	6/27/2019	1325	D. Kimbrow	74.3	YSI 5560	6/27/2019	D. Kimbrow	0.59	0.38

Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	7/2/2019	930	D. Kimbrow	75.6	YSI 5560	7/2/2019	D. Kimbrow	20.2	13
SOGL-11	7/2/2019	955	D. Kimbrow	77.6	YSI 5560	7/2/2019	D. Kimbrow	19.62	12.7
SOGL-20	7/2/2019	1410	D. Kimbrow	81	YSI 5560	7/2/2019	D. Kimbrow	24.05	15.5
SOGUTL-1	7/2/2019	1025	D. Kimbrow	74.7	YSI 5560	7/2/2019	D. Kimbrow	0.24	0.15
SOGUTL-3	7/2/2019	1105	D. Kimbrow	77.1	YSI 5560	7/2/2019	D. Kimbrow	0.41	0.26
SOGUTL-4	7/2/2019	1055	D. Kimbrow	76.1	YSI 5560	7/2/2019	D. Kimbrow	0.42	0.27
Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	7/25/2019	945	D. Kimbrow	71.3	YSI 5560	7/25/2019	D. Kimbrow	25.6	16.5
SOGL-11	7/25/2019	1220	D. Kimbrow	77.6	YSI 5560	7/25/2019	D. Kimbrow	17.5	11.3
SOGL-20	7/25/2019	1135	D. Kimbrow	75.1	YSI 5560	7/25/2019	D. Kimbrow	20.06	13
SOGUTL-1	7/25/2019	1005	D. Kimbrow	70.1	YSI 5560	7/25/2019	D. Kimbrow	0.29	0.19
SOGUTL-3	7/25/2019	1040	D. Kimbrow	72.9	YSI 5560	7/25/2019	D. Kimbrow	0.51	0.33
SOGUTL-4	7/25/2019	1030	D. Kimbrow	70.8	YSI 5560	7/25/2019	D. Kimbrow	0.68	0.44
Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	8/8/2019	1335	D. Kimbrow	79.9	YSI 5560	8/8/2019	D. Kimbrow	17.9	11.6
SOGL-11	8/8/2019	1600	D. Kimbrow	81.3	YSI 5560	8/8/2019	D. Kimbrow	16.62	10.7
SOGL-20	8/8/2019	1500	D. Kimbrow	80.8	YSI 5560	8/8/2019	D. Kimbrow	15.96	10.3
SOGUTL-1	8/8/2019	1400	D. Kimbrow	80.2	YSI 5560	8/8/2019	D. Kimbrow	8.16	5.3
SOGUTL-3	8/8/2019	1535	D. Kimbrow	77.8	YSI 5560	8/8/2019	D. Kimbrow	n/a	n/a
SOGUTL-4	8/8/2019	1425	D. Kimbrow	81	YSI 5560	8/8/2019	D. Kimbrow	n/a	n/a
Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	8/14/2019	1030	D. Kimbrow	79.3	YSI 5560	8/14/2019	D. Kimbrow	13.4	8.7
SOGL-11	8/14/2019	1250	D. Kimbrow	85.9	YSI 5560	8/14/2019	D. Kimbrow	10.24	6.6
SOGL-20	8/14/2019	1215	D. Kimbrow	81.8	YSI 5560	8/14/2019	D. Kimbrow	17.31	11.2
SOGUTL-1	8/14/2019	1100	D. Kimbrow	77.5	YSI 5560	8/14/2019	D. Kimbrow	0.22	0.14
SOGUTL-3	8/14/2019	1125	D. Kimbrow	79.6	YSI 5560	8/14/2019	D. Kimbrow	0.39	0.25
SOGUTL-4	8/14/2019	1120	D. Kimbrow	77.9	YSI 5560	8/14/2019	D. Kimbrow	0.27	0.17
Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	8/22/2019	930	D. Kimbrow	76	YSI 5560	8/22/2019	D. Kimbrow	20.2	13
SOGL-11	8/22/2019	1255	D. Kimbrow	82	YSI 5560	8/22/2019	D. Kimbrow	12.34	8
SOGL-20	8/22/2019	1220	D. Kimbrow	79.6	YSI 5560	8/22/2019	D. Kimbrow	10.37	6.7
SOGUTL-1	8/22/2019	1115	D. Kimbrow	75.1	YSI 5560	8/22/2019	D. Kimbrow	0.06	0.04
SOGUTL-3	8/22/2019	1150	D. Kimbrow	76.8	YSI 5560	8/22/2019	D. Kimbrow	0.41	0.26
SOGUTL-4	8/22/2019	1135	D. Kimbrow	76	YSI 5560	8/22/2019	D. Kimbrow	0.38	0.25
Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	8/30/2019	1015	D. Kimbrow	69.6	YSI 5560	8/30/2019	D. Kimbrow	17.2	11.1
SOGL-11	8/30/2019	1045	D. Kimbrow	73	YSI 5560	8/30/2019	D. Kimbrow	11.98	7.7
SOGL-20	8/30/2019	1120	D. Kimbrow	73	YSI 5560	8/30/2019	D. Kimbrow	9.74	6.3
SOGUTL-1	8/30/2019	1340	D. Kimbrow	72.6	YSI 5560	8/30/2019	D. Kimbrow	0.16	0.1
SOGUTL-3	8/30/2019	1315	D. Kimbrow	74	YSI 5560	8/30/2019	D. Kimbrow	0.3	0.2
SOGUTL-4	8/30/2019	1255	D. Kimbrow	71.7	YSI 5560	8/30/2019	D. Kimbrow	0.41	0.26

Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	9/4/2019	1045	D. Kimbrow	73.7	YSI 5560	9/4/2019	D. Kimbrow	13.9	9
SOGL-11	9/4/2019	1115	D. Kimbrow	77.3	YSI 5560	9/4/2019	D. Kimbrow	13.9	9
SOGL-20	9/4/2019	1225	D. Kimbrow	77.9	YSI 5560	9/4/2019	D. Kimbrow	13.9	9
SOGUTL-1	9/4/2019	1135	D. Kimbrow	73.6	YSI 5560	9/4/2019	D. Kimbrow	n/a	n/a
SOGUTL-3	9/4/2019	1200	D. Kimbrow	75.8	YSI 5560	9/4/2019	D. Kimbrow	n/a	n/a
SOGUTL-4	9/4/2019	1145	D. Kimbrow	74.3	YSI 5560	9/4/2019	D. Kimbrow	n/a	n/a
Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	9/25/2019	1045	D. Kimbrow	69.4	YSI 5560	9/25/2019	D. Kimbrow	4.52	2.9
SOGL-11	9/25/2019	1325	D. Kimbrow	78.3	YSI 5560	9/25/2019	D. Kimbrow	3.58	2.3
SOGL-20	9/25/2019	1305	D. Kimbrow	74.7	YSI 5560	9/25/2019	D. Kimbrow	3.11	2
SOGUTL-1	9/25/2019	1110	D. Kimbrow	68.6	YSI 5560	9/25/2019	D. Kimbrow	0.05	0.03
SOGUTL-3	9/25/2019	1245	D. Kimbrow	71.2	YSI 5560	9/25/2019	D. Kimbrow	0.14	0.09
SOGUTL-4	9/25/2019	1240	D. Kimbrow	71.4	YSI 5560	9/25/2019	D. Kimbrow	4.52	2.9
Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	10/25/2019	1000	D. Kimbrow	61.3	YSI 5560	10/25/2019	D. Kimbrow	7.78	5
SOGL-11	10/25/2019	1210	D. Kimbrow	62.8	YSI 5560	10/25/2019	D. Kimbrow	7.11	4.6
SOGL-20	10/25/2019	1135	D. Kimbrow	65.1	YSI 5560	10/25/2019	D. Kimbrow	6.27	4.05
SOGUTL-1	10/25/2019	1030	D. Kimbrow	61.4	YSI 5560	10/25/2019	D. Kimbrow	n/a	n/a
SOGUTL-3	10/25/2019	1100	D. Kimbrow	61.6	YSI 5560	10/25/2019	D. Kimbrow	2.01	1.3
SOGUTL-4	10/25/2019	1045	D. Kimbrow	63.1	YSI 5560	10/25/2019	D. Kimbrow	4.32	2.8
Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	11/14/2019	1315	D. Kimbrow	45.7	YSI 5560	11/14/2019	D. Kimbrow	17.2	11.1
SOGL-11	11/14/2019	1345	D. Kimbrow	47	YSI 5560	11/14/2019	D. Kimbrow	11.62	7.5
SOGL-20	11/14/2019	1455	D. Kimbrow	49.5	YSI 5560	11/14/2019	D. Kimbrow	8.82	5.7
SOGUTL-1	11/14/2019	1415	D. Kimbrow	45.6	YSI 5560	11/14/2019	D. Kimbrow	n/a	n/a
SOGUTL-3	11/14/2019	1430	D. Kimbrow	47.2	YSI 5560	11/14/2019	D. Kimbrow	n/a	n/a
SOGUTL-4	11/14/2019	1425	D. Kimbrow	46.7	YSI 5560	11/14/2019	D. Kimbrow	n/a	n/a
Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	4/24/2019	1015	D. Kimbrow	7.26	YSI 1001	4/24/2019	D. Kimbrow	107	69
SOGL-11	4/24/2019	1220	D. Kimbrow	7.08	YSI 1001	4/24/2019	D. Kimbrow	84.42	54.6
SOGL-20	4/24/2019	1435	D. Kimbrow	7.16	YSI 1001	4/24/2019	D. Kimbrow	107	69
SOGUTL-1	4/24/2019	1245	D. Kimbrow	6.97	YSI 1001	4/24/2019	D. Kimbrow	0.88	0.57
SOGUTL-3	4/24/2019	1325	D. Kimbrow	6.89	YSI 1001	4/24/2019	D. Kimbrow	1.7	1.1
SOGUTL-4	4/24/2019	1320	D. Kimbrow	7.18	YSI 1001	4/24/2019	D. Kimbrow	1.29	0.83
Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	5/21/2019	1000	D. Kimbrow	7.34	YSI 1001	5/21/2019	D. Kimbrow	91.8	59
SOGL-11	5/21/2019	1035	D. Kimbrow	7.21	YSI 1001	5/21/2019	D. Kimbrow	56.26	36.4
SOGL-20	5/21/2019	1415	D. Kimbrow	7.2	YSI 1001	5/21/2019	D. Kimbrow	46.63	30.1
SOGUTL-1	5/21/2019	1100	D. Kimbrow	6.93	YSI 1001	5/21/2019	D. Kimbrow	0.49	0.32
SOGUTL-3	5/21/2019	1000	D. Kimbrow	6.98	YSI 1001	5/21/2019	D. Kimbrow	1.55	1
SOGUTL-4	5/21/2019	1035	D. Kimbrow	7.24	YSI 1001	5/21/2019	D. Kimbrow	1.47	0.95

Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	6/5/2019	925	D. Kimbrow M. Smith	7.31	YSI 1001	6/5/2019	D. Kimbrow M. Smith	47.7	30.8
SOGL-11	6/5/2019	1000	D. Kimbrow M. Smith	7.27	YSI 1001	6/5/2019	D. Kimbrow M. Smith	30.93	20
SOGL-20	6/5/2019	1135	D. Kimbrow M. Smith	7.23	YSI 1001	6/5/2019	D. Kimbrow M. Smith	33.56	21.7
SOGUTL-1	6/5/2019	1020	D. Kimbrow M. Smith	7.1	YSI 1001	6/5/2019	D. Kimbrow M. Smith	0.47	0.3
SOGUTL-3	6/5/2019	1105	D. Kimbrow M. Smith	7.16	YSI 1001	6/5/2019	D. Kimbrow M. Smith	0.89	0.58
SOGUTL-4	6/5/2019	1045	D. Kimbrow M. Smith	7.37	YSI 1001	6/5/2019	D. Kimbrow M. Smith	0.79	0.51
Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	6/13/2019	1252	M. Smith R. McCurry	7.37	YSI 1001	6/13/2019	M. Smith R. McCurry	33.3	21.5
SOGL-11	6/13/2019	1421	M. Smith R. McCurry	7.3	YSI 1001	6/13/2019	M. Smith R. McCurry	34.8	22.5
SOGL-20	6/13/2019	1749	M. Smith R. McCurry	7.27	YSI 1001	6/13/2019	M. Smith R. McCurry	32.18	20.8
SOGUTL-1	6/13/2019	1701	M. Smith R. McCurry	7.03	YSI 1001	6/13/2019	M. Smith R. McCurry	0.4	0.26
SOGUTL-3	6/13/2019	1521	M. Smith R. McCurry	7.06	YSI 1001	6/13/2019	M. Smith R. McCurry	1.08	0.7
SOGUTL-4	6/13/2019	1449	M. Smith R. McCurry	7.26	YSI 1001	6/13/2019	M. Smith R. McCurry	0.42	0.27
Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	6/19/2019	945	D. Kimbrow	7.35	YSI 1001	6/19/2019	D. Kimbrow	40	25.9
SOGL-11	6/19/2019	1020	D. Kimbrow	7.35	YSI 1001	6/19/2019	D. Kimbrow	39.45	25.5
SOGL-20	6/19/2019	1310	D. Kimbrow	7.26	YSI 1001	6/19/2019	D. Kimbrow	36.16	23.4
SOGUTL-1	6/19/2019	1045	D. Kimbrow	6.99	YSI 1001	6/19/2019	D. Kimbrow	0.31	0.2
SOGUTL-3	6/19/2019	1235	D. Kimbrow	7.14	YSI 1001	6/19/2019	D. Kimbrow	1.8	1.16
SOGUTL-4	6/19/2019	1215	D. Kimbrow	7.12	YSI 1001	6/19/2019	D. Kimbrow	1.01	0.65
Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	6/27/2019	1030	D. Kimbrow	7.31	YSI 1001	6/27/2019	D. Kimbrow	24.6	15.9
SOGL-11	6/27/2019	1105	D. Kimbrow	7.29	YSI 1001	6/27/2019	D. Kimbrow	21.89	14.1
SOGL-20	6/27/2019	1420	D. Kimbrow	7.24	YSI 1001	6/27/2019	D. Kimbrow	24	15.5
SOGUTL-1	6/27/2019	1300	D. Kimbrow	7.07	YSI 1001	6/27/2019	D. Kimbrow	0.27	0.17
SOGUTL-3	6/27/2019	1330	D. Kimbrow	6.97	YSI 1001	6/27/2019	D. Kimbrow	0.91	0.59
SOGUTL-4	6/27/2019	1325	D. Kimbrow	7.32	YSI 1001	6/27/2019	D. Kimbrow	0.59	0.38
Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	7/2/2019	930	D. Kimbrow	7.31	YSI 1001	7/2/2019	D. Kimbrow	20.2	13
SOGL-11	7/2/2019	955	D. Kimbrow	7.33	YSI 1001	7/2/2019	D. Kimbrow	19.62	12.7
SOGL-20	7/2/2019	1410	D. Kimbrow	7.27	YSI 1001	7/2/2019	D. Kimbrow	24.05	15.5
SOGUTL-1	7/2/2019	1025	D. Kimbrow	7.13	YSI 1001	7/2/2019	D. Kimbrow	0.24	0.15
SOGUTL-3	7/2/2019	1105	D. Kimbrow	7.05	YSI 1001	7/2/2019	D. Kimbrow	0.41	0.26
SOGUTL-4	7/2/2019	1055	D. Kimbrow	7.34	YSI 1001	7/2/2019	D. Kimbrow	0.42	0.27

Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	7/25/2019	945	D. Kimbrow	7.39	YSI 1001	7/25/2019	D. Kimbrow	25.6	16.5
SOGL-11	7/25/2019	1220	D. Kimbrow	7.4	YSI 1001	7/25/2019	D. Kimbrow	17.5	11.3
SOGL-20	7/25/2019	1135	D. Kimbrow	7.26	YSI 1001	7/25/2019	D. Kimbrow	20.06	13
SOGUTL-1	7/25/2019	1005	D. Kimbrow	7.19	YSI 1001	7/25/2019	D. Kimbrow	0.29	0.19
SOGUTL-3	7/25/2019	1040	D. Kimbrow	7.05	YSI 1001	7/25/2019	D. Kimbrow	0.51	0.33
SOGUTL-4	7/25/2019	1030	D. Kimbrow	7.31	YSI 1001	7/25/2019	D. Kimbrow	0.68	0.44
Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	8/8/2019	1335	D. Kimbrow	7.47	YSI 1001	8/8/2019	D. Kimbrow	17.9	11.6
SOGL-11	8/8/2019	1600	D. Kimbrow	7.32	YSI 1001	8/8/2019	D. Kimbrow	16.62	10.7
SOGL-20	8/8/2019	1500	D. Kimbrow	7.28	YSI 1001	8/8/2019	D. Kimbrow	15.96	10.3
SOGUTL-1	8/8/2019	1400	D. Kimbrow	6.96	YSI 1001	8/8/2019	D. Kimbrow	8.16	5.3
SOGUTL-3	8/8/2019	1535	D. Kimbrow	7.22	YSI 1001	8/8/2019	D. Kimbrow	n/a	n/a
SOGUTL-4	8/8/2019	1425	D. Kimbrow	7.07	YSI 1001	8/8/2019	D. Kimbrow	n/a	n/a
Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	8/14/2019	1030	D. Kimbrow	7.39	YSI 1001	8/14/2019	D. Kimbrow	13.4	8.7
SOGL-11	8/14/2019	1250	D. Kimbrow	7.45	YSI 1001	8/14/2019	D. Kimbrow	10.24	6.6
SOGL-20	8/14/2019	1215	D. Kimbrow	7.36	YSI 1001	8/14/2019	D. Kimbrow	17.31	11.2
SOGUTL-1	8/14/2019	1100	D. Kimbrow	7.12	YSI 1001	8/14/2019	D. Kimbrow	0.22	0.14
SOGUTL-3	8/14/2019	1125	D. Kimbrow	7.1	YSI 1001	8/14/2019	D. Kimbrow	0.39	0.25
SOGUTL-4	8/14/2019	1120	D. Kimbrow	7.33	YSI 1001	8/14/2019	D. Kimbrow	0.27	0.17
Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	8/22/2019	930	D. Kimbrow	7.29	YSI 1001	8/22/2019	D. Kimbrow	20.2	13
SOGL-11	8/22/2019	1255	D. Kimbrow	7.32	YSI 1001	8/22/2019	D. Kimbrow	12.34	8
SOGL-20	8/22/2019	1220	D. Kimbrow	7.18	YSI 1001	8/22/2019	D. Kimbrow	10.37	6.7
SOGUTL-1	8/22/2019	1115	D. Kimbrow	7.03	YSI 1001	8/22/2019	D. Kimbrow	0.06	0.04
SOGUTL-3	8/22/2019	1150	D. Kimbrow	7.06	YSI 1001	8/22/2019	D. Kimbrow	0.41	0.26
SOGUTL-4	8/22/2019	1135	D. Kimbrow	7.15	YSI 1001	8/22/2019	D. Kimbrow	0.38	0.25
Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	8/30/2019	1015	D. Kimbrow	7.32	YSI 1001	8/30/2019	D. Kimbrow	17.2	11.1
SOGL-11	8/30/2019	1045	D. Kimbrow	7.33	YSI 1001	8/30/2019	D. Kimbrow	11.98	7.7
SOGL-20	8/30/2019	1120	D. Kimbrow	7.22	YSI 1001	8/30/2019	D. Kimbrow	9.74	6.3
SOGUTL-1	8/30/2019	1340	D. Kimbrow	7.23	YSI 1001	8/30/2019	D. Kimbrow	0.16	0.1
SOGUTL-3	8/30/2019	1315	D. Kimbrow	7.05	YSI 1001	8/30/2019	D. Kimbrow	0.3	0.2
SOGUTL-4	8/30/2019	1255	D. Kimbrow	7.3	YSI 1001	8/30/2019	D. Kimbrow	0.41	0.26
Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	9/4/2019	1045	D. Kimbrow	7.33	YSI 1001	9/4/2019	D. Kimbrow	13.9	9
SOGL-11	9/4/2019	1115	D. Kimbrow	7.35	YSI 1001	9/4/2019	D. Kimbrow	13.9	9
SOGL-20	9/4/2019	1225	D. Kimbrow	7.17	YSI 1001	9/4/2019	D. Kimbrow	13.9	9
SOGUTL-1	9/4/2019	1135	D. Kimbrow	7.19	YSI 1001	9/4/2019	D. Kimbrow	n/a	n/a
SOGUTL-3	9/4/2019	1200	D. Kimbrow	7.11	YSI 1001	9/4/2019	D. Kimbrow	n/a	n/a
SOGUTL-4	9/4/2019	1145	D. Kimbrow	7.32	YSI 1001	9/4/2019	D. Kimbrow	n/a	n/a

Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	9/25/2019	1045	D. Kimbrow	7.37	YSI 1001	9/25/2019	D. Kimbrow	4.52	2.9
SOGL-11	9/25/2019	1325	D. Kimbrow	7.41	YSI 1001	9/25/2019	D. Kimbrow	3.58	2.3
SOGL-20	9/25/2019	1305	D. Kimbrow	7.13	YSI 1001	9/25/2019	D. Kimbrow	3.11	2
SOGUTL-1	9/25/2019	1110	D. Kimbrow	7.22	YSI 1001	9/25/2019	D. Kimbrow	0.05	0.03
SOGUTL-3	9/25/2019	1245	D. Kimbrow	6.91	YSI 1001	9/25/2019	D. Kimbrow	0.14	0.09
SOGUTL-4	9/25/2019	1240	D. Kimbrow	7.23	YSI 1001	9/25/2019	D. Kimbrow	4.52	2.9
Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	10/25/2019	1000	D. Kimbrow	7.55	YSI 1001	10/25/2019	D. Kimbrow	7.78	5
SOGL-11	10/25/2019	1210	D. Kimbrow	7.47	YSI 1001	10/25/2019	D. Kimbrow	7.11	4.6
SOGL-20	10/25/2019	1135	D. Kimbrow	7.33	YSI 1001	10/25/2019	D. Kimbrow	6.27	4.05
SOGUTL-1	10/25/2019	1030	D. Kimbrow	5.71	YSI 1001	10/25/2019	D. Kimbrow	n/a	n/a
SOGUTL-3	10/25/2019	1100	D. Kimbrow	7.27	YSI 1001	10/25/2019	D. Kimbrow	2.01	1.3
SOGUTL-4	10/25/2019	1045	D. Kimbrow	7.35	YSI 1001	10/25/2019	D. Kimbrow	4.32	2.8
Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	11/14/2019	1315	D. Kimbrow	7.26	YSI 1001	11/14/2019	D. Kimbrow	17.2	11.1
SOGL-11	11/14/2019	1345	D. Kimbrow	7.18	YSI 1001	11/14/2019	D. Kimbrow	11.62	7.5
SOGL-20	11/14/2019	1455	D. Kimbrow	7.12	YSI 1001	11/14/2019	D. Kimbrow	8.82	5.7
SOGUTL-1	11/14/2019	1415	D. Kimbrow	7.06	YSI 1001	11/14/2019	D. Kimbrow	n/a	n/a
SOGUTL-3	11/14/2019	1430	D. Kimbrow	7.08	YSI 1001	11/14/2019	D. Kimbrow	n/a	n/a
SOGUTL-4	11/14/2019	1425	D. Kimbrow	7.08	YSI 1001	11/14/2019	D. Kimbrow	n/a	n/a
Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	4/24/2019	1015	D. Kimbrow	8.54	YSI 2003 polarographic	4/24/2019	D. Kimbrow	107	69
SOGL-11	4/24/2019	1220	D. Kimbrow	9.04	YSI 2003 polarographic	4/24/2019	D. Kimbrow	84.42	54.6
SOGL-20	4/24/2019	1435	D. Kimbrow	9.19	YSI 2003 polarographic	4/24/2019	D. Kimbrow	107	69
SOGUTL-1	4/24/2019	1245	D. Kimbrow	8.72	YSI 2003 polarographic	4/24/2019	D. Kimbrow	0.88	0.57
SOGUTL-3	4/24/2019	1325	D. Kimbrow	8.61	YSI 2003 polarographic	4/24/2019	D. Kimbrow	1.7	1.1
SOGUTL-4	4/24/2019	1320	D. Kimbrow	9.12	YSI 2003 polarographic	4/24/2019	D. Kimbrow	1.29	0.83
Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	5/21/2019	1000	D. Kimbrow	7.99	YSI 2003 polarographic	5/21/2019	D. Kimbrow	91.8	59
SOGL-11	5/21/2019	1035	D. Kimbrow	7.67	YSI 2003 polarographic	5/21/2019	D. Kimbrow	56.26	36.4
SOGL-20	5/21/2019	1415	D. Kimbrow	7.9	YSI 2003 polarographic	5/21/2019	D. Kimbrow	46.63	30.1
SOGUTL-1	5/21/2019	1100	D. Kimbrow	7.84	YSI 2003 polarographic	5/21/2019	D. Kimbrow	0.49	0.32
SOGUTL-3	5/21/2019	1000	D. Kimbrow	7.68	YSI 2003 polarographic	5/21/2019	D. Kimbrow	1.55	1
SOGUTL-4	5/21/2019	1035	D. Kimbrow	8.19	YSI 2003 polarographic	5/21/2019	D. Kimbrow	1.47	0.95

Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	6/5/2019	925	D. Kimbrow M. Smith	7.47	YSI 2003 polarographic	6/5/2019	D. Kimbrow M. Smith	47.7	30.8
SOGL-11	6/5/2019	1000	D. Kimbrow M. Smith	7.73	YSI 2003 polarographic	6/5/2019	D. Kimbrow M. Smith	30.93	20
SOGL-20	6/5/2019	1135	D. Kimbrow M. Smith	8.02	YSI 2003 polarographic	6/5/2019	D. Kimbrow M. Smith	33.56	21.7
SOGUTL-1	6/5/2019	1020	D. Kimbrow M. Smith	7.73	YSI 2003 polarographic	6/5/2019	D. Kimbrow M. Smith	0.47	0.3
SOGUTL-3	6/5/2019	1105	D. Kimbrow M. Smith	7.25	YSI 2003 polarographic	6/5/2019	D. Kimbrow M. Smith	0.89	0.58
SOGUTL-4	6/5/2019	1045	D. Kimbrow M. Smith	7.75	YSI 2003 polarographic	6/5/2019	D. Kimbrow M. Smith	0.79	0.51
Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	6/13/2019	1252	M. Smith R. McCurry	7.83	YSI 2003 polarographic	6/13/2019	M. Smith R. McCurry	33.3	21.5
SOGL-11	6/13/2019	1421	M. Smith R. McCurry	8.55	YSI 2003 polarographic	6/13/2019	M. Smith R. McCurry	34.8	22.5
SOGL-20	6/13/2019	1749	M. Smith R. McCurry	8.61	YSI 2003 polarographic	6/13/2019	M. Smith R. McCurry	32.18	20.8
SOGUTL-1	6/13/2019	1701	M. Smith R. McCurry	7.99	YSI 2003 polarographic	6/13/2019	M. Smith R. McCurry	0.4	0.26
SOGUTL-3	6/13/2019	1521	M. Smith R. McCurry	7.29	YSI 2003 polarographic	6/13/2019	M. Smith R. McCurry	1.08	0.7
SOGUTL-4	6/13/2019	1449	M. Smith R. McCurry	8.27	YSI 2003 polarographic	6/13/2019	M. Smith R. McCurry	0.42	0.27
Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	6/19/2019	945	D. Kimbrow	7.35	YSI 2003 polarographic	6/19/2019	D. Kimbrow	40	25.9
SOGL-11	6/19/2019	1020	D. Kimbrow	7.9	YSI 2003 polarographic	6/19/2019	D. Kimbrow	39.45	25.5
SOGL-20	6/19/2019	1310	D. Kimbrow	7.79	YSI 2003 polarographic	6/19/2019	D. Kimbrow	36.16	23.4
SOGUTL-1	6/19/2019	1045	D. Kimbrow	6.83	YSI 2003 polarographic	6/19/2019	D. Kimbrow	0.31	0.2
SOGUTL-3	6/19/2019	1235	D. Kimbrow	6.91	YSI 2003 polarographic	6/19/2019	D. Kimbrow	1.8	1.16
SOGUTL-4	6/19/2019	1215	D. Kimbrow	7.38	YSI 2003 polarographic	6/19/2019	D. Kimbrow	1.01	0.65
Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	6/27/2019	1030	D. Kimbrow	8	YSI 2003 polarographic	6/27/2019	D. Kimbrow	24.6	15.9
SOGL-11	6/27/2019	1105	D. Kimbrow	7.56	YSI 2003 polarographic	6/27/2019	D. Kimbrow	21.89	14.1
SOGL-20	6/27/2019	1420	D. Kimbrow	7.79	YSI 2003 polarographic	6/27/2019	D. Kimbrow	24	15.5
SOGUTL-1	6/27/2019	1300	D. Kimbrow	7.57	YSI 2003 polarographic	6/27/2019	D. Kimbrow	0.27	0.17
SOGUTL-3	6/27/2019	1330	D. Kimbrow	6.55	YSI 2003 polarographic	6/27/2019	D. Kimbrow	0.91	0.59
SOGUTL-4	6/27/2019	1325	D. Kimbrow	7.76	YSI 2003 polarographic	6/27/2019	D. Kimbrow	0.59	0.38

Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	7/2/2019	930	D. Kimbrow	7.4	YSI 2003 polarographic	7/2/2019	D. Kimbrow	20.2	13
SOGL-11	7/2/2019	955	D. Kimbrow	7.27	YSI 2003 polarographic	7/2/2019	D. Kimbrow	19.62	12.7
SOGL-20	7/2/2019	1410	D. Kimbrow	7.34	YSI 2003 polarographic	7/2/2019	D. Kimbrow	24.05	15.5
SOGUTL-1	7/2/2019	1025	D. Kimbrow	7.05	YSI 2003 polarographic	7/2/2019	D. Kimbrow	0.24	0.15
SOGUTL-3	7/2/2019	1105	D. Kimbrow	6.46	YSI 2003 polarographic	7/2/2019	D. Kimbrow	0.41	0.26
SOGUTL-4	7/2/2019	1055	D. Kimbrow	7.83	YSI 2003 polarographic	7/2/2019	D. Kimbrow	0.42	0.27
Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	7/25/2019	945	D. Kimbrow	7.93	YSI 2003 polarographic	7/25/2019	D. Kimbrow	25.6	16.5
SOGL-11	7/25/2019	1220	D. Kimbrow	7.68	YSI 2003 polarographic	7/25/2019	D. Kimbrow	17.5	11.3
SOGL-20	7/25/2019	1135	D. Kimbrow	7.97	YSI 2003 polarographic	7/25/2019	D. Kimbrow	20.06	13
SOGUTL-1	7/25/2019	1005	D. Kimbrow	7.5	YSI 2003 polarographic	7/25/2019	D. Kimbrow	0.29	0.19
SOGUTL-3	7/25/2019	1040	D. Kimbrow	7.3	YSI 2003 polarographic	7/25/2019	D. Kimbrow	0.51	0.33
SOGUTL-4	7/25/2019	1030	D. Kimbrow	8.55	YSI 2003 polarographic	7/25/2019	D. Kimbrow	0.68	0.44
Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	8/8/2019	1335	D. Kimbrow	7.49	YSI 2003 polarographic	8/8/2019	D. Kimbrow	17.9	11.6
SOGL-11	8/8/2019	1600	D. Kimbrow	7.07	YSI 2003 polarographic	8/8/2019	D. Kimbrow	16.62	10.7
SOGL-20	8/8/2019	1500	D. Kimbrow	7.1	YSI 2003 polarographic	8/8/2019	D. Kimbrow	15.96	10.3
SOGUTL-1	8/8/2019	1400	D. Kimbrow	7.03	YSI 2003 polarographic	8/8/2019	D. Kimbrow	8.16	5.3
SOGUTL-3	8/8/2019	1535	D. Kimbrow	7.94	YSI 2003 polarographic	8/8/2019	D. Kimbrow	n/a	n/a
SOGUTL-4	8/8/2019	1425	D. Kimbrow	7.24	YSI 2003 polarographic	8/8/2019	D. Kimbrow	n/a	n/a
Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	8/14/2019	1030	D. Kimbrow	6.94	YSI 2003 polarographic	8/14/2019	D. Kimbrow	13.4	8.7
SOGL-11	8/14/2019	1250	D. Kimbrow	6.7	YSI 2003 polarographic	8/14/2019	D. Kimbrow	10.24	6.6
SOGL-20	8/14/2019	1215	D. Kimbrow	7.08	YSI 2003 polarographic	8/14/2019	D. Kimbrow	17.31	11.2
SOGUTL-1	8/14/2019	1100	D. Kimbrow	6.18	YSI 2003 polarographic	8/14/2019	D. Kimbrow	0.22	0.14
SOGUTL-3	8/14/2019	1125	D. Kimbrow	6.51	YSI 2003 polarographic	8/14/2019	D. Kimbrow	0.39	0.25
SOGUTL-4	8/14/2019	1120	D. Kimbrow	7.83	YSI 2003 polarographic	8/14/2019	D. Kimbrow	0.27	0.17

Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	8/22/2019	930	D. Kimbrow	6.88	YSI 2003 polarographic	8/22/2019	D. Kimbrow	20.2	13
SOGL-11	8/22/2019	1255	D. Kimbrow	6.99	YSI 2003 polarographic	8/22/2019	D. Kimbrow	12.34	8
SOGL-20	8/22/2019	1220	D. Kimbrow	6.44	YSI 2003 polarographic	8/22/2019	D. Kimbrow	10.37	6.7
SOGUTL-1	8/22/2019	1115	D. Kimbrow	7.06	YSI 2003 polarographic	8/22/2019	D. Kimbrow	0.06	0.04
SOGUTL-3	8/22/2019	1150	D. Kimbrow	6.41	YSI 2003 polarographic	8/22/2019	D. Kimbrow	0.41	0.26
SOGUTL-4	8/22/2019	1135	D. Kimbrow	6.88	YSI 2003 polarographic	8/22/2019	D. Kimbrow	0.38	0.25
Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	8/30/2019	1015	D. Kimbrow	7.88	YSI 2003 polarographic	8/30/2019	D. Kimbrow	17.2	11.1
SOGL-11	8/30/2019	1045	D. Kimbrow	7.02	YSI 2003 polarographic	8/30/2019	D. Kimbrow	11.98	7.7
SOGL-20	8/30/2019	1120	D. Kimbrow	8.38	YSI 2003 polarographic	8/30/2019	D. Kimbrow	9.74	6.3
SOGUTL-1	8/30/2019	1340	D. Kimbrow	7.17	YSI 2003 polarographic	8/30/2019	D. Kimbrow	0.16	0.1
SOGUTL-3	8/30/2019	1315	D. Kimbrow	6.56	YSI 2003 polarographic	8/30/2019	D. Kimbrow	0.3	0.2
SOGUTL-4	8/30/2019	1255	D. Kimbrow	8.02	YSI 2003 polarographic	8/30/2019	D. Kimbrow	0.41	0.26
Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	9/4/2019	1045	D. Kimbrow	7.38	YSI 2003 polarographic	9/4/2019	D. Kimbrow	13.9	9
SOGL-11	9/4/2019	1115	D. Kimbrow	7.12	YSI 2003 polarographic	9/4/2019	D. Kimbrow	13.9	9
SOGL-20	9/4/2019	1225	D. Kimbrow	5.85	YSI 2003 polarographic	9/4/2019	D. Kimbrow	13.9	9
SOGUTL-1	9/4/2019	1135	D. Kimbrow	6.84	YSI 2003 polarographic	9/4/2019	D. Kimbrow	n/a	n/a
SOGUTL-3	9/4/2019	1200	D. Kimbrow	6.59	YSI 2003 polarographic	9/4/2019	D. Kimbrow	n/a	n/a
SOGUTL-4	9/4/2019	1145	D. Kimbrow	7.4	YSI 2003 polarographic	9/4/2019	D. Kimbrow	n/a	n/a
Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	9/25/2019	1045	D. Kimbrow	6.65	YSI 2003 polarographic	9/25/2019	D. Kimbrow	4.52	2.9
SOGL-11	9/25/2019	1325	D. Kimbrow	7.55	YSI 2003 polarographic	9/25/2019	D. Kimbrow	3.58	2.3
SOGL-20	9/25/2019	1305	D. Kimbrow	5.45	YSI 2003 polarographic	9/25/2019	D. Kimbrow	3.11	2
SOGUTL-1	9/25/2019	1110	D. Kimbrow	5.66	YSI 2003 polarographic	9/25/2019	D. Kimbrow	0.05	0.03
SOGUTL-3	9/25/2019	1245	D. Kimbrow	6.45	YSI 2003 polarographic	9/25/2019	D. Kimbrow	0.14	0.09
SOGUTL-4	9/25/2019	1240	D. Kimbrow	7.7	YSI 2003 polarographic	9/25/2019	D. Kimbrow	4.52	2.9

Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	10/25/2019	1000	D. Kimbrow	9.34	YSI 2003 polarographic	10/25/2019	D. Kimbrow	7.78	5
SOGL-11	10/25/2019	1210	D. Kimbrow	9.06	YSI 2003 polarographic	10/25/2019	D. Kimbrow	7.11	4.6
SOGL-20	10/25/2019	1135	D. Kimbrow	7.83	YSI 2003 polarographic	10/25/2019	D. Kimbrow	6.27	4.05
SOGUTL-1	10/25/2019	1030	D. Kimbrow	8.15	YSI 2003 polarographic	10/25/2019	D. Kimbrow	n/a	n/a
SOGUTL-3	10/25/2019	1100	D. Kimbrow	8.31	YSI 2003 polarographic	10/25/2019	D. Kimbrow	2.01	1.3
SOGUTL-4	10/25/2019	1045	D. Kimbrow	9.13	YSI 2003 polarographic	10/25/2019	D. Kimbrow	4.32	2.8
Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	11/14/2019	1315	D. Kimbrow	12.18	YSI 2003 polarographic	11/14/2019	D. Kimbrow	17.2	11.1
SOGL-11	11/14/2019	1345	D. Kimbrow	11.1	YSI 2003 polarographic	11/14/2019	D. Kimbrow	11.62	7.5
SOGL-20	11/14/2019	1455	D. Kimbrow	10.57	YSI 2003 polarographic	11/14/2019	D. Kimbrow	8.82	5.7
SOGUTL-1	11/14/2019	1415	D. Kimbrow	10.87	YSI 2003 polarographic	11/14/2019	D. Kimbrow	n/a	n/a
SOGUTL-3	11/14/2019	1430	D. Kimbrow	10.48	YSI 2003 polarographic	11/14/2019	D. Kimbrow	n/a	n/a
SOGUTL-4	11/14/2019	1425	D. Kimbrow	11.1	YSI 2003 polarographic	11/14/2019	D. Kimbrow	n/a	n/a
Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	4/24/2019	1015	D. Kimbrow	91.5	YSI 5560	4/24/2019	D. Kimbrow	107	69
SOGL-11	4/24/2019	1220	D. Kimbrow	99.9	YSI 5560	4/24/2019	D. Kimbrow	84.42	54.6
SOGL-20	4/24/2019	1435	D. Kimbrow	77.6	YSI 5560	4/24/2019	D. Kimbrow	107	69
SOGUTL-1	4/24/2019	1245	D. Kimbrow	118.8	YSI 5560	4/24/2019	D. Kimbrow	0.88	0.57
SOGUTL-3	4/24/2019	1325	D. Kimbrow	91.1	YSI 5560	4/24/2019	D. Kimbrow	1.7	1.1
SOGUTL-4	4/24/2019	1320	D. Kimbrow	146.8	YSI 5560	4/24/2019	D. Kimbrow	1.29	0.83
Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	5/21/2019	1000	D. Kimbrow	99.4	YSI 5560	5/21/2019	D. Kimbrow	91.8	59
SOGL-11	5/21/2019	1035	D. Kimbrow	108.7	YSI 5560	5/21/2019	D. Kimbrow	56.26	36.4
SOGL-20	5/21/2019	1415	D. Kimbrow	113.8	YSI 5560	5/21/2019	D. Kimbrow	46.63	30.1
SOGUTL-1	5/21/2019	1100	D. Kimbrow	124.4	YSI 5560	5/21/2019	D. Kimbrow	0.49	0.32
SOGUTL-3	5/21/2019	1000	D. Kimbrow	97.2	YSI 5560	5/21/2019	D. Kimbrow	1.55	1
SOGUTL-4	5/21/2019	1035	D. Kimbrow	154.5	YSI 5560	5/21/2019	D. Kimbrow	1.47	0.95
Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	6/5/2019	925	D. Kimbrow M. Smith	109	YSI 5560	6/5/2019	D. Kimbrow M. Smith	47.7	30.8
SOGL-11	6/5/2019	1000	D. Kimbrow M. Smith	117.2	YSI 5560	6/5/2019	D. Kimbrow M. Smith	30.93	20
SOGL-20	6/5/2019	1135	D. Kimbrow M. Smith	107	YSI 5560	6/5/2019	D. Kimbrow M. Smith	33.56	21.7
SOGUTL-1	6/5/2019	1020	D. Kimbrow M. Smith	118	YSI 5560	6/5/2019	D. Kimbrow M. Smith	0.47	0.3
SOGUTL-3	6/5/2019	1105	D. Kimbrow M. Smith	118.9	YSI 5560	6/5/2019	D. Kimbrow M. Smith	0.89	0.58

Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGUTL-4	6/5/2019	1045	D. Kimbrow M. Smith	156.2	YSI 5560	6/5/2019	D. Kimbrow M. Smith	0.79	0.51
Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	6/13/2019	1252	M. Smith R. McCurry	107.8	YSI 5560	6/13/2019	M. Smith R. McCurry	33.3	21.5
SOGL-11	6/13/2019	1421	M. Smith R. McCurry	115.5	YSI 5560	6/13/2019	M. Smith R. McCurry	34.8	22.5
SOGL-20	6/13/2019	1749	M. Smith R. McCurry	115.9	YSI 5560	6/13/2019	M. Smith R. McCurry	32.18	20.8
SOGUTL-1	6/13/2019	1701	M. Smith R. McCurry	118.9	YSI 5560	6/13/2019	M. Smith R. McCurry	0.4	0.26
SOGUTL-3	6/13/2019	1521	M. Smith R. McCurry	113.3	YSI 5560	6/13/2019	M. Smith R. McCurry	1.08	0.7
SOGUTL-4	6/13/2019	1449	M. Smith R. McCurry	146	YSI 5560	6/13/2019	M. Smith R. McCurry	0.42	0.27
Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	6/19/2019	945	D. Kimbrow	106.4	YSI 5560	6/19/2019	D. Kimbrow	40	25.9
SOGL-11	6/19/2019	1020	D. Kimbrow	114.5	YSI 5560	6/19/2019	D. Kimbrow	39.45	25.5
SOGL-20	6/19/2019	1310	D. Kimbrow	116.7	YSI 5560	6/19/2019	D. Kimbrow	36.16	23.4
SOGUTL-1	6/19/2019	1045	D. Kimbrow	104.4	YSI 5560	6/19/2019	D. Kimbrow	0.31	0.2
SOGUTL-3	6/19/2019	1235	D. Kimbrow	112.6	YSI 5560	6/19/2019	D. Kimbrow	1.8	1.16
SOGUTL-4	6/19/2019	1215	D. Kimbrow	119.1	YSI 5560	6/19/2019	D. Kimbrow	1.01	0.65
Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	6/27/2019	1030	D. Kimbrow	116	YSI 5560	6/27/2019	D. Kimbrow	24.6	15.9
SOGL-11	6/27/2019	1105	D. Kimbrow	130.2	YSI 5560	6/27/2019	D. Kimbrow	21.89	14.1
SOGL-20	6/27/2019	1420	D. Kimbrow	124.6	YSI 5560	6/27/2019	D. Kimbrow	24	15.5
SOGUTL-1	6/27/2019	1300	D. Kimbrow	112.9	YSI 5560	6/27/2019	D. Kimbrow	0.27	0.17
SOGUTL-3	6/27/2019	1330	D. Kimbrow	122.6	YSI 5560	6/27/2019	D. Kimbrow	0.91	0.59
SOGUTL-4	6/27/2019	1325	D. Kimbrow	154.8	YSI 5560	6/27/2019	D. Kimbrow	0.59	0.38
Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	7/2/2019	930	D. Kimbrow	120.2	YSI 5560	7/2/2019	D. Kimbrow	20.2	13
SOGL-11	7/2/2019	955	D. Kimbrow	134.1	YSI 5560	7/2/2019	D. Kimbrow	19.62	12.7
SOGL-20	7/2/2019	1410	D. Kimbrow	128.4	YSI 5560	7/2/2019	D. Kimbrow	24.05	15.5
SOGUTL-1	7/2/2019	1025	D. Kimbrow	114	YSI 5560	7/2/2019	D. Kimbrow	0.24	0.15
SOGUTL-3	7/2/2019	1105	D. Kimbrow	126	YSI 5560	7/2/2019	D. Kimbrow	0.41	0.26
SOGUTL-4	7/2/2019	1055	D. Kimbrow	154.9	YSI 5560	7/2/2019	D. Kimbrow	0.42	0.27
Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	7/25/2019	945	D. Kimbrow	121.2	YSI 5560	7/25/2019	D. Kimbrow	25.6	16.5
SOGL-11	7/25/2019	1220	D. Kimbrow	137.3	YSI 5560	7/25/2019	D. Kimbrow	17.5	11.3
SOGL-20	7/25/2019	1135	D. Kimbrow	125.5	YSI 5560	7/25/2019	D. Kimbrow	20.06	13
SOGUTL-1	7/25/2019	1005	D. Kimbrow	111.9	YSI 5560	7/25/2019	D. Kimbrow	0.29	0.19
SOGUTL-3	7/25/2019	1040	D. Kimbrow	113.4	YSI 5560	7/25/2019	D. Kimbrow	0.51	0.33
SOGUTL-4	7/25/2019	1030	D. Kimbrow	150.5	YSI 5560	7/25/2019	D. Kimbrow	0.68	0.44

Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	8/8/2019	1335	D. Kimbrow	130	YSI 5560	8/8/2019	D. Kimbrow	17.9	11.6
SOGL-11	8/8/2019	1600	D. Kimbrow	135.7	YSI 5560	8/8/2019	D. Kimbrow	16.62	10.7
SOGL-20	8/8/2019	1500	D. Kimbrow	142.6	YSI 5560	8/8/2019	D. Kimbrow	15.96	10.3
SOGUTL-1	8/8/2019	1400	D. Kimbrow	43.6	YSI 5560	8/8/2019	D. Kimbrow	8.16	5.3
SOGUTL-3	8/8/2019	1535	D. Kimbrow	81.1	YSI 5560	8/8/2019	D. Kimbrow	n/a	n/a
SOGUTL-4	8/8/2019	1425	D. Kimbrow	60.4	YSI 5560	8/8/2019	D. Kimbrow	n/a	n/a
Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	8/14/2019	1030	D. Kimbrow	155	YSI 5560	8/14/2019	D. Kimbrow	13.4	8.7
SOGL-11	8/14/2019	1250	D. Kimbrow	155.6	YSI 5560	8/14/2019	D. Kimbrow	10.24	6.6
SOGL-20	8/14/2019	1215	D. Kimbrow	146.3	YSI 5560	8/14/2019	D. Kimbrow	17.31	11.2
SOGUTL-1	8/14/2019	1100	D. Kimbrow	110.7	YSI 5560	8/14/2019	D. Kimbrow	0.22	0.14
SOGUTL-3	8/14/2019	1125	D. Kimbrow	111.1	YSI 5560	8/14/2019	D. Kimbrow	0.39	0.25
SOGUTL-4	8/14/2019	1120	D. Kimbrow	156.9	YSI 5560	8/14/2019	D. Kimbrow	0.27	0.17
Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	8/22/2019	930	D. Kimbrow	144.8	YSI 5560	8/22/2019	D. Kimbrow	20.2	13
SOGL-11	8/22/2019	1255	D. Kimbrow	163.9	YSI 5560	8/22/2019	D. Kimbrow	12.34	8
SOGL-20	8/22/2019	1220	D. Kimbrow	191.3	YSI 5560	8/22/2019	D. Kimbrow	10.37	6.7
SOGUTL-1	8/22/2019	1115	D. Kimbrow	81.3	YSI 5560	8/22/2019	D. Kimbrow	0.06	0.04
SOGUTL-3	8/22/2019	1150	D. Kimbrow	114.1	YSI 5560	8/22/2019	D. Kimbrow	0.41	0.26
SOGUTL-4	8/22/2019	1135	D. Kimbrow	139	YSI 5560	8/22/2019	D. Kimbrow	0.38	0.25
Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	8/30/2019	1015	D. Kimbrow	135.3	YSI 5560	8/30/2019	D. Kimbrow	17.2	11.1
SOGL-11	8/30/2019	1045	D. Kimbrow	139.9	YSI 5560	8/30/2019	D. Kimbrow	11.98	7.7
SOGL-20	8/30/2019	1120	D. Kimbrow	168.2	YSI 5560	8/30/2019	D. Kimbrow	9.74	6.3
SOGUTL-1	8/30/2019	1340	D. Kimbrow	104.9	YSI 5560	8/30/2019	D. Kimbrow	0.16	0.1
SOGUTL-3	8/30/2019	1315	D. Kimbrow	108.7	YSI 5560	8/30/2019	D. Kimbrow	0.3	0.2
SOGUTL-4	8/30/2019	1255	D. Kimbrow	142.3	YSI 5560	8/30/2019	D. Kimbrow	0.41	0.26
Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	9/4/2019	1045	D. Kimbrow	145.3	YSI 5560	9/4/2019	D. Kimbrow	13.9	9
SOGL-11	9/4/2019	1115	D. Kimbrow	146.1	YSI 5560	9/4/2019	D. Kimbrow	13.9	9
SOGL-20	9/4/2019	1225	D. Kimbrow	163.5	YSI 5560	9/4/2019	D. Kimbrow	13.9	9
SOGUTL-1	9/4/2019	1135	D. Kimbrow	105.7	YSI 5560	9/4/2019	D. Kimbrow	n/a	n/a
SOGUTL-3	9/4/2019	1200	D. Kimbrow	110.7	YSI 5560	9/4/2019	D. Kimbrow	n/a	n/a
SOGUTL-4	9/4/2019	1145	D. Kimbrow	141.5	YSI 5560	9/4/2019	D. Kimbrow	n/a	n/a
Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	9/25/2019	1045	D. Kimbrow	209.2	YSI 5560	9/25/2019	D. Kimbrow	4.52	2.9
SOGL-11	9/25/2019	1325	D. Kimbrow	234.6	YSI 5560	9/25/2019	D. Kimbrow	3.58	2.3
SOGL-20	9/25/2019	1305	D. Kimbrow	340.6	YSI 5560	9/25/2019	D. Kimbrow	3.11	2
SOGUTL-1	9/25/2019	1110	D. Kimbrow	108.9	YSI 5560	9/25/2019	D. Kimbrow	0.05	0.03
SOGUTL-3	9/25/2019	1245	D. Kimbrow	130.4	YSI 5560	9/25/2019	D. Kimbrow	0.14	0.09
SOGUTL-4	9/25/2019	1240	D. Kimbrow	161.1	YSI 5560	9/25/2019	D. Kimbrow	4.52	2.9

Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	10/25/2019	1000	D. Kimbrow	172	YSI 5560	10/25/2019	D. Kimbrow	7.78	5
SOGL-11	10/25/2019	1210	D. Kimbrow	192.5	YSI 5560	10/25/2019	D. Kimbrow	7.11	4.6
SOGL-20	10/25/2019	1135	D. Kimbrow	210.2	YSI 5560	10/25/2019	D. Kimbrow	6.27	4.05
SOGUTL-1	10/25/2019	1030	D. Kimbrow	102.4	YSI 5560	10/25/2019	D. Kimbrow	n/a	n/a
SOGUTL-3	10/25/2019	1100	D. Kimbrow	98.6	YSI 5560	10/25/2019	D. Kimbrow	2.01	1.3
SOGUTL-4	10/25/2019	1045	D. Kimbrow	119.8	YSI 5560	10/25/2019	D. Kimbrow	4.32	2.8
Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	11/14/2019	1315	D. Kimbrow	127.6	YSI 5560	11/14/2019	D. Kimbrow	17.2	11.1
SOGL-11	11/14/2019	1345	D. Kimbrow	138	YSI 5560	11/14/2019	D. Kimbrow	11.62	7.5
SOGL-20	11/14/2019	1455	D. Kimbrow	156.3	YSI 5560	11/14/2019	D. Kimbrow	8.82	5.7
SOGUTL-1	11/14/2019	1415	D. Kimbrow	99.8	YSI 5560	11/14/2019	D. Kimbrow	n/a	n/a
SOGUTL-3	11/14/2019	1430	D. Kimbrow	102.8	YSI 5560	11/14/2019	D. Kimbrow	n/a	n/a
SOGUTL-4	11/14/2019	1425	D. Kimbrow	125.6	YSI 5560	11/14/2019	D. Kimbrow	n/a	n/a
Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	4/24/2019	1015	D. Kimbrow	17.6	SM 2130 B	4/24/2019	D. Kimbrow	107	69
SOGL-11	4/24/2019	1220	D. Kimbrow	14.1	SM 2130 B	4/24/2019	D. Kimbrow	84.42	54.6
SOGL-20	4/24/2019	1435	D. Kimbrow	11.78	SM 2130 B	4/24/2019	D. Kimbrow	107	69
SOGUTL-1	4/24/2019	1245	D. Kimbrow	5.38	SM 2130 B	4/24/2019	D. Kimbrow	0.88	0.57
SOGUTL-3	4/24/2019	1325	D. Kimbrow	10.78	SM 2130 B	4/24/2019	D. Kimbrow	1.7	1.1
SOGUTL-4	4/24/2019	1320	D. Kimbrow	6.73	SM 2130 B	4/24/2019	D. Kimbrow	1.29	0.83
Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	5/21/2019	1000	D. Kimbrow	12.7	SM 2130 B	5/21/2019	D. Kimbrow	91.8	59
SOGL-11	5/21/2019	1035	D. Kimbrow	12.29	SM 2130 B	5/21/2019	D. Kimbrow	56.26	36.4
SOGL-20	5/21/2019	1415	D. Kimbrow	9.79	SM 2130 B	5/21/2019	D. Kimbrow	46.63	30.1
SOGUTL-1	5/21/2019	1100	D. Kimbrow	5.03	SM 2130 B	5/21/2019	D. Kimbrow	0.49	0.32
SOGUTL-3	5/21/2019	1000	D. Kimbrow	7.14	SM 2130 B	5/21/2019	D. Kimbrow	1.55	1
SOGUTL-4	5/21/2019	1035	D. Kimbrow	4.61	SM 2130 B	5/21/2019	D. Kimbrow	1.47	0.95
Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	6/5/2019	925	D. Kimbrow M. Smith	9.8	SM 2130 B	6/5/2019	D. Kimbrow M. Smith	47.7	30.8
SOGL-11	6/5/2019	1000	D. Kimbrow M. Smith	8.4	SM 2130 B	6/5/2019	D. Kimbrow M. Smith	30.93	20
SOGL-20	6/5/2019	1135	D. Kimbrow M. Smith	7.92	SM 2130 B	6/5/2019	D. Kimbrow M. Smith	33.56	21.7
SOGUTL-1	6/5/2019	1020	D. Kimbrow M. Smith	4.36	SM 2130 B	6/5/2019	D. Kimbrow M. Smith	0.47	0.3
SOGUTL-3	6/5/2019	1105	D. Kimbrow M. Smith	8.23	SM 2130 B	6/5/2019	D. Kimbrow M. Smith	0.89	0.58
SOGUTL-4	6/5/2019	1045	D. Kimbrow M. Smith	4.87	SM 2130 B	6/5/2019	D. Kimbrow M. Smith	0.79	0.51
Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	6/13/2019	1252	M. Smith R. McCurry	16.4	SM 2130 B	6/13/2019	M. Smith R. McCurry	33.3	21.5
SOGL-11	6/13/2019	1421	M. Smith R. McCurry	8.9	SM 2130 B	6/13/2019	M. Smith R. McCurry	34.8	22.5
SOGL-20	6/13/2019	1749	M. Smith R. McCurry	7.38	SM 2130 B	6/13/2019	M. Smith R. McCurry	32.18	20.8

Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGUTL-1	6/13/2019	1701	M. Smith R. McCurry	4.78	SM 2130 B	6/13/2019	M. Smith R. McCurry	0.4	0.26
SOGUTL-3	6/13/2019	1521	M. Smith R. McCurry	10.63	SM 2130 B	6/13/2019	M. Smith R. McCurry	1.08	0.7
SOGUTL-4	6/13/2019	1449	M. Smith R. McCurry	7.25	SM 2130 B	6/13/2019	M. Smith R. McCurry	0.42	0.27
Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	6/19/2019	945	D. Kimbrow	12.1	SM 2130 B	6/19/2019	D. Kimbrow	40	25.9
SOGL-11	6/19/2019	1020	D. Kimbrow	12	SM 2130 B	6/19/2019	D. Kimbrow	39.45	25.5
SOGL-20	6/19/2019	1310	D. Kimbrow	6.85	SM 2130 B	6/19/2019	D. Kimbrow	36.16	23.4
SOGUTL-1	6/19/2019	1045	D. Kimbrow	7.66	SM 2130 B	6/19/2019	D. Kimbrow	0.31	0.2
SOGUTL-3	6/19/2019	1235	D. Kimbrow	6.05	SM 2130 B	6/19/2019	D. Kimbrow	1.8	1.16
SOGUTL-4	6/19/2019	1215	D. Kimbrow	9	SM 2130 B	6/19/2019	D. Kimbrow	1.01	0.65
Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	6/27/2019	1030	D. Kimbrow	7.75	SM 2130 B	6/27/2019	D. Kimbrow	24.6	15.9
SOGL-11	6/27/2019	1105	D. Kimbrow	7.21	SM 2130 B	6/27/2019	D. Kimbrow	21.89	14.1
SOGL-20	6/27/2019	1420	D. Kimbrow	6.4	SM 2130 B	6/27/2019	D. Kimbrow	24	15.5
SOGUTL-1	6/27/2019	1300	D. Kimbrow	4.17	SM 2130 B	6/27/2019	D. Kimbrow	0.27	0.17
SOGUTL-3	6/27/2019	1330	D. Kimbrow	8.61	SM 2130 B	6/27/2019	D. Kimbrow	0.91	0.59
SOGUTL-4	6/27/2019	1325	D. Kimbrow	7.32	SM 2130 B	6/27/2019	D. Kimbrow	0.59	0.38
Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	7/2/2019	930	D. Kimbrow	7.75	SM 2130 B	7/2/2019	D. Kimbrow	20.2	13
SOGL-11	7/2/2019	955	D. Kimbrow	7.07	SM 2130 B	7/2/2019	D. Kimbrow	19.62	12.7
SOGL-20	7/2/2019	1410	D. Kimbrow	6.89	SM 2130 B	7/2/2019	D. Kimbrow	24.05	15.5
SOGUTL-1	7/2/2019	1025	D. Kimbrow	3.76	SM 2130 B	7/2/2019	D. Kimbrow	0.24	0.15
SOGUTL-3	7/2/2019	1105	D. Kimbrow	6.97	SM 2130 B	7/2/2019	D. Kimbrow	0.41	0.26
SOGUTL-4	7/2/2019	1055	D. Kimbrow	4.6	SM 2130 B	7/2/2019	D. Kimbrow	0.42	0.27
Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	7/25/2019	945	D. Kimbrow	9.07	SM 2130 B	7/25/2019	D. Kimbrow	25.6	16.5
SOGL-11	7/25/2019	1220	D. Kimbrow	7.96	SM 2130 B	7/25/2019	D. Kimbrow	17.5	11.3
SOGL-20	7/25/2019	1135	D. Kimbrow	8.64	SM 2130 B	7/25/2019	D. Kimbrow	20.06	13
SOGUTL-1	7/25/2019	1005	D. Kimbrow	4.86	SM 2130 B	7/25/2019	D. Kimbrow	0.29	0.19
SOGUTL-3	7/25/2019	1040	D. Kimbrow	7.84	SM 2130 B	7/25/2019	D. Kimbrow	0.51	0.33
SOGUTL-4	7/25/2019	1030	D. Kimbrow	4.61	SM 2130 B	7/25/2019	D. Kimbrow	0.68	0.44
Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	8/8/2019	1335	D. Kimbrow	11.48	SM 2130 B	8/8/2019	D. Kimbrow	17.9	11.6
SOGL-11	8/8/2019	1600	D. Kimbrow	20.7	SM 2130 B	8/8/2019	D. Kimbrow	16.62	10.7
SOGL-20	8/8/2019	1500	D. Kimbrow	23.2	SM 2130 B	8/8/2019	D. Kimbrow	15.96	10.3
SOGUTL-1	8/8/2019	1400	D. Kimbrow	20	SM 2130 B	8/8/2019	D. Kimbrow	8.16	5.3
SOGUTL-3	8/8/2019	1535	D. Kimbrow	54.9	SM 2130 B	8/8/2019	D. Kimbrow	n/a	n/a
SOGUTL-4	8/8/2019	1425	D. Kimbrow	63	SM 2130 B	8/8/2019	D. Kimbrow	n/a	n/a

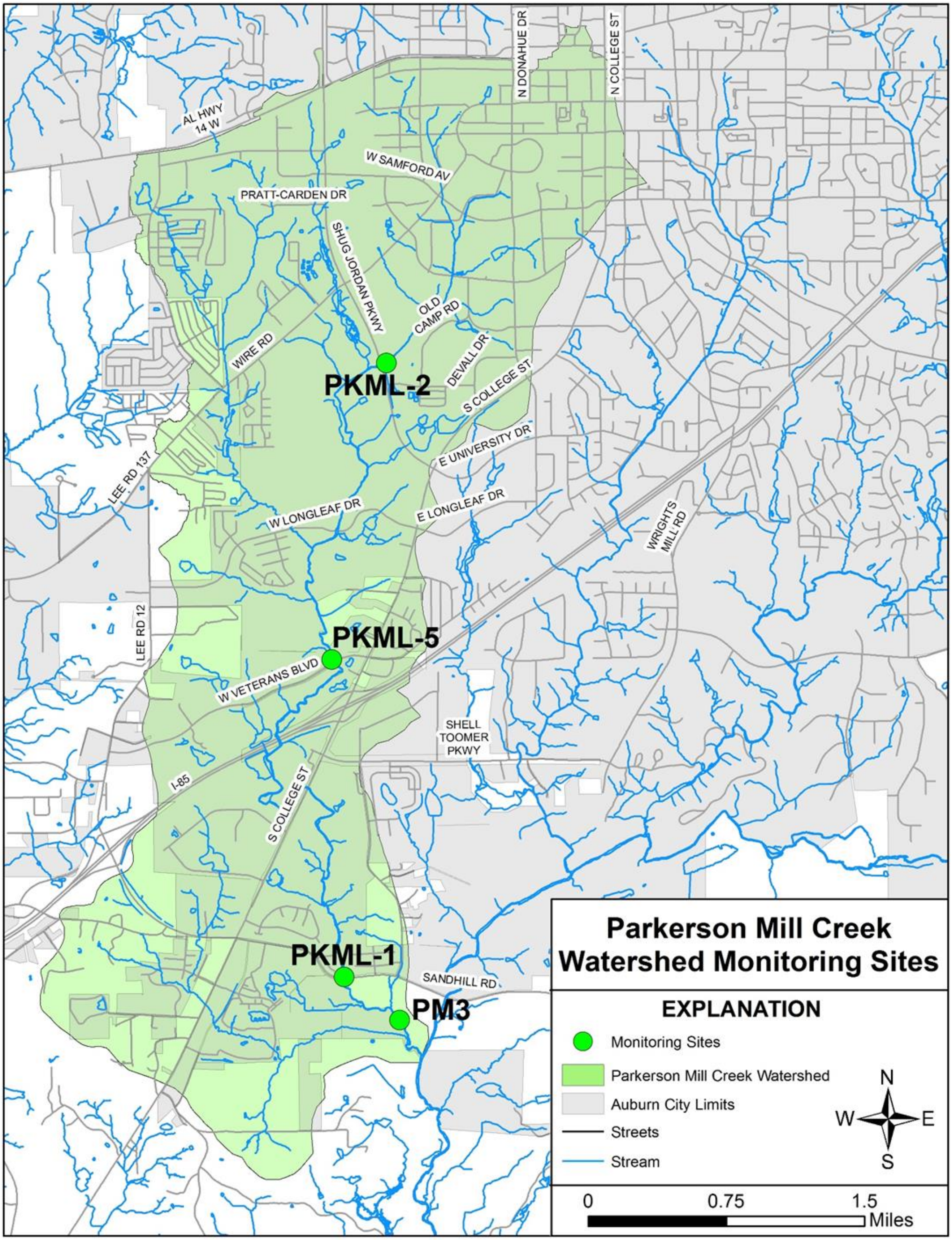
Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	8/14/2019	1030	D. Kimbrow	11.7	SM 2130 B	8/14/2019	D. Kimbrow	13.4	8.7
SOGL-11	8/14/2019	1250	D. Kimbrow	7.22	SM 2130 B	8/14/2019	D. Kimbrow	10.24	6.6
SOGL-20	8/14/2019	1215	D. Kimbrow	7.03	SM 2130 B	8/14/2019	D. Kimbrow	17.31	11.2
SOGUTL-1	8/14/2019	1100	D. Kimbrow	3.5	SM 2130 B	8/14/2019	D. Kimbrow	0.22	0.14
SOGUTL-3	8/14/2019	1125	D. Kimbrow	6.92	SM 2130 B	8/14/2019	D. Kimbrow	0.39	0.25
SOGUTL-4	8/14/2019	1120	D. Kimbrow	3.81	SM 2130 B	8/14/2019	D. Kimbrow	0.27	0.17
Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	8/22/2019	930	D. Kimbrow	14.6	SM 2130 B	8/22/2019	D. Kimbrow	20.2	13
SOGL-11	8/22/2019	1255	D. Kimbrow	10.63	SM 2130 B	8/22/2019	D. Kimbrow	12.34	8
SOGL-20	8/22/2019	1220	D. Kimbrow	6.6	SM 2130 B	8/22/2019	D. Kimbrow	10.37	6.7
SOGUTL-1	8/22/2019	1115	D. Kimbrow	97.5	SM 2130 B	8/22/2019	D. Kimbrow	0.06	0.04
SOGUTL-3	8/22/2019	1150	D. Kimbrow	5.04	SM 2130 B	8/22/2019	D. Kimbrow	0.41	0.26
SOGUTL-4	8/22/2019	1135	D. Kimbrow	5.07	SM 2130 B	8/22/2019	D. Kimbrow	0.38	0.25
Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	8/30/2019	1015	D. Kimbrow	11.9	SM 2130 B	8/30/2019	D. Kimbrow	17.2	11.1
SOGL-11	8/30/2019	1045	D. Kimbrow	9.92	SM 2130 B	8/30/2019	D. Kimbrow	11.98	7.7
SOGL-20	8/30/2019	1120	D. Kimbrow	8.92	SM 2130 B	8/30/2019	D. Kimbrow	9.74	6.3
SOGUTL-1	8/30/2019	1340	D. Kimbrow	6.21	SM 2130 B	8/30/2019	D. Kimbrow	0.16	0.1
SOGUTL-3	8/30/2019	1315	D. Kimbrow	6.23	SM 2130 B	8/30/2019	D. Kimbrow	0.3	0.2
SOGUTL-4	8/30/2019	1255	D. Kimbrow	3.87	SM 2130 B	8/30/2019	D. Kimbrow	0.41	0.26
Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	9/4/2019	1045	D. Kimbrow	11.5	SM 2130 B	9/4/2019	D. Kimbrow	13.9	9
SOGL-11	9/4/2019	1115	D. Kimbrow	7.63	SM 2130 B	9/4/2019	D. Kimbrow	13.9	9
SOGL-20	9/4/2019	1225	D. Kimbrow	7.83	SM 2130 B	9/4/2019	D. Kimbrow	13.9	9
SOGUTL-1	9/4/2019	1135	D. Kimbrow	4.7	SM 2130 B	9/4/2019	D. Kimbrow	n/a	n/a
SOGUTL-3	9/4/2019	1200	D. Kimbrow	4.63	SM 2130 B	9/4/2019	D. Kimbrow	n/a	n/a
SOGUTL-4	9/4/2019	1145	D. Kimbrow	3.39	SM 2130 B	9/4/2019	D. Kimbrow	n/a	n/a
Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	9/25/2019	1045	D. Kimbrow	10.8	SM 2130 B	9/25/2019	D. Kimbrow	4.52	2.9
SOGL-11	9/25/2019	1325	D. Kimbrow	4.5	SM 2130 B	9/25/2019	D. Kimbrow	3.58	2.3
SOGL-20	9/25/2019	1305	D. Kimbrow	3.77	SM 2130 B	9/25/2019	D. Kimbrow	3.11	2
SOGUTL-1	9/25/2019	1110	D. Kimbrow	3.46	SM 2130 B	9/25/2019	D. Kimbrow	0.05	0.03
SOGUTL-3	9/25/2019	1245	D. Kimbrow	7.61	SM 2130 B	9/25/2019	D. Kimbrow	0.14	0.09
SOGUTL-4	9/25/2019	1240	D. Kimbrow	2.65	SM 2130 B	9/25/2019	D. Kimbrow	4.52	2.9
Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	10/25/2019	1000	D. Kimbrow	7.17	SM 2130 B	10/25/2019	D. Kimbrow	7.78	5
SOGL-11	10/25/2019	1210	D. Kimbrow	5.85	SM 2130 B	10/25/2019	D. Kimbrow	7.11	4.6
SOGL-20	10/25/2019	1135	D. Kimbrow	6.05	SM 2130 B	10/25/2019	D. Kimbrow	6.27	4.05
SOGUTL-1	10/25/2019	1030	D. Kimbrow	6.83	SM 2130 B	10/25/2019	D. Kimbrow	n/a	n/a
SOGUTL-3	10/25/2019	1100	D. Kimbrow	45.7	SM 2130 B	10/25/2019	D. Kimbrow	2.01	1.3
SOGUTL-4	10/25/2019	1045	D. Kimbrow	6.6	SM 2130 B	10/25/2019	D. Kimbrow	4.32	2.8

Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
SOGL-1	11/14/2019	1315	D. Kimbrow	9.25	SM 2130 B	11/14/2019	D. Kimbrow	17.2	11.1
SOGL-11	11/14/2019	1345	D. Kimbrow	7.84	SM 2130 B	11/14/2019	D. Kimbrow	11.62	7.5
SOGL-20	11/14/2019	1455	D. Kimbrow	6.63	SM 2130 B	11/14/2019	D. Kimbrow	8.82	5.7
SOGUTL-1	11/14/2019	1415	D. Kimbrow	22.7	SM 2130 B	11/14/2019	D. Kimbrow	n/a	n/a
SOGUTL-3	11/14/2019	1430	D. Kimbrow	7.04	SM 2130 B	11/14/2019	D. Kimbrow	n/a	n/a
SOGUTL-4	11/14/2019	1425	D. Kimbrow	8.14	SM 2130 B	11/14/2019	D. Kimbrow	n/a	n/a

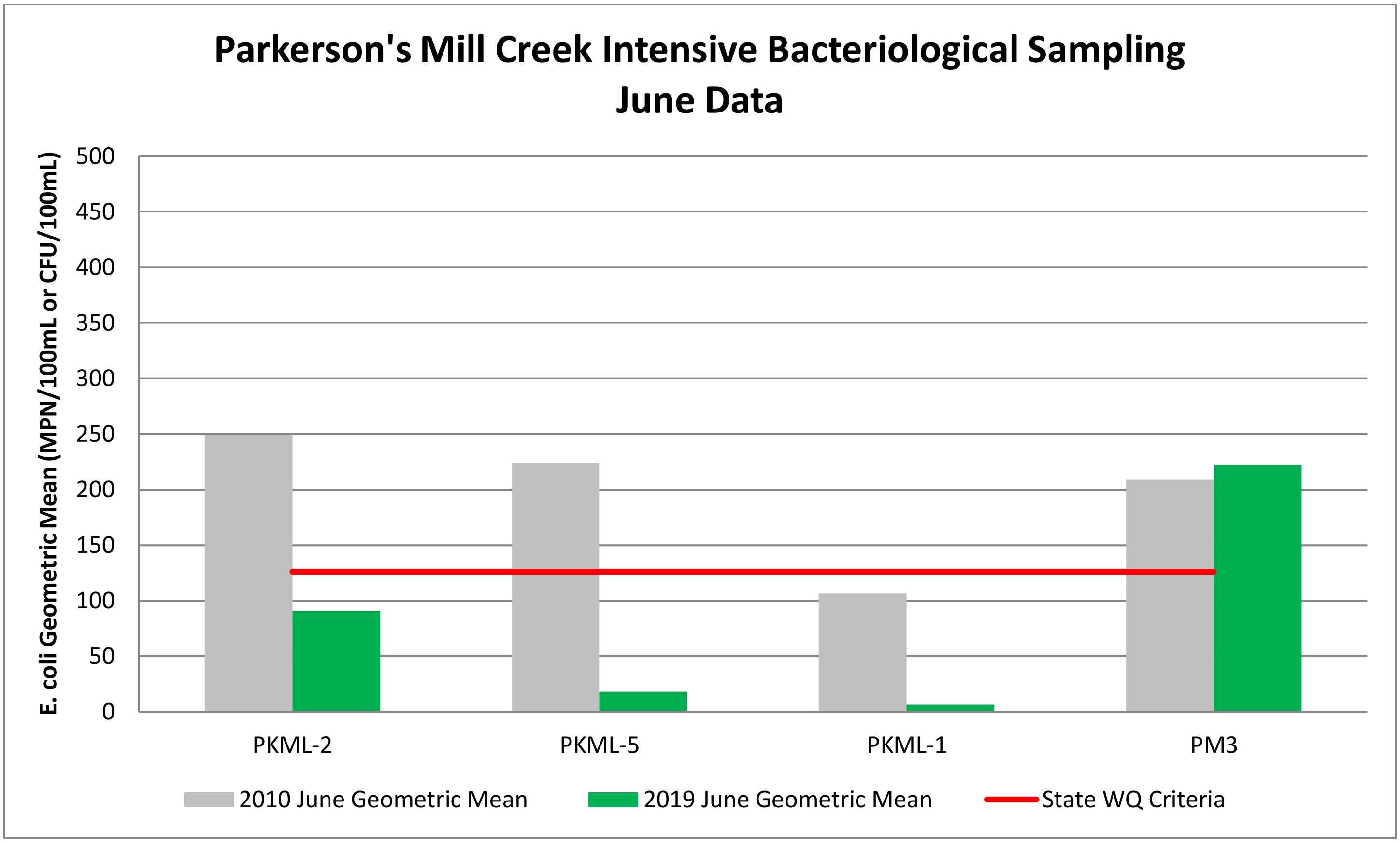
2.5 Parkerson's Mill Creek Compliance Monitoring Data

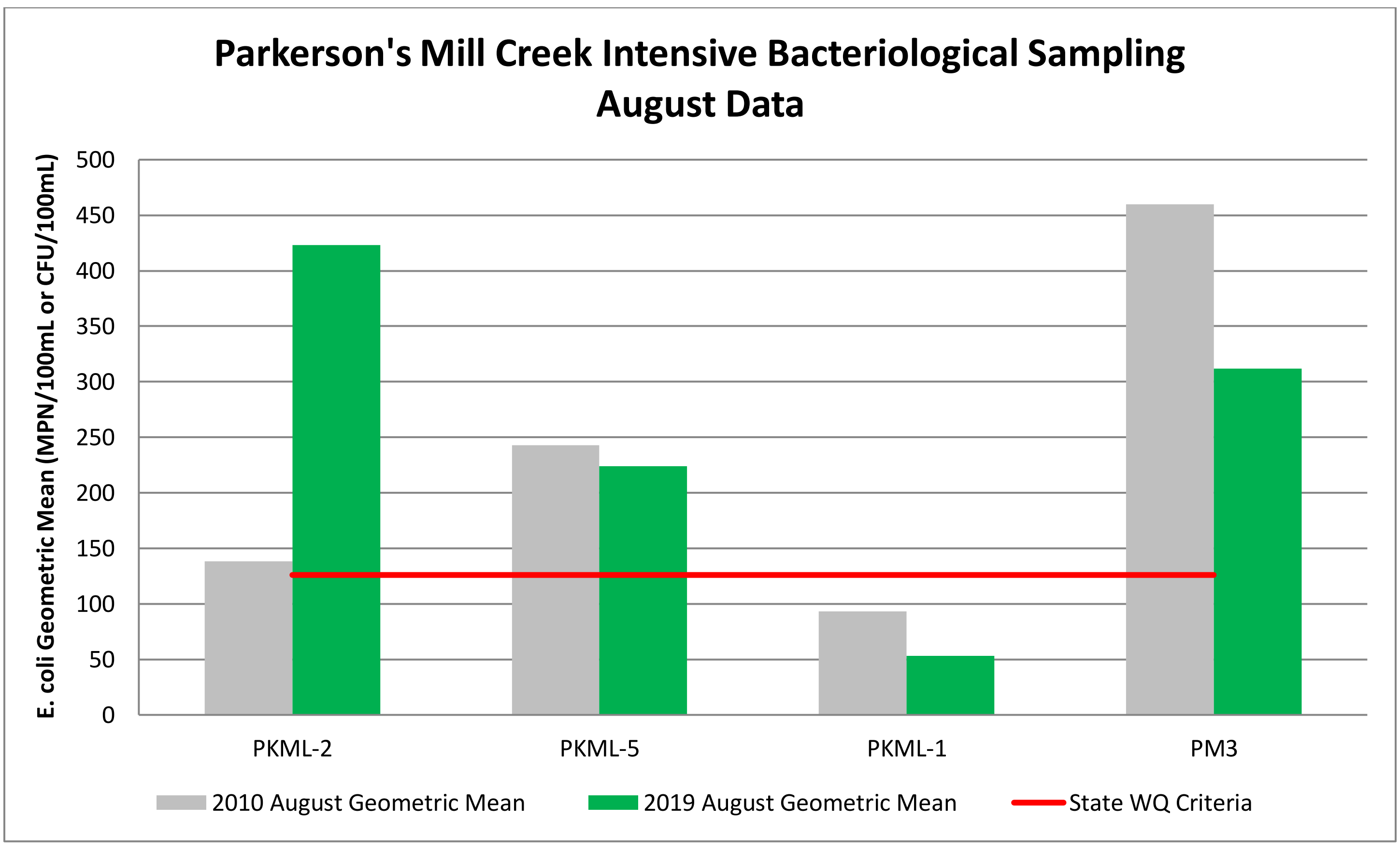
Parkerson's Mill Creek was placed on the ADEM 303(d) list of impaired waterbodies for pathogens in 2008. The impaired reach is 6.85 mi. long and includes all waters from its source (near the intersection of N. College St. and Glenn Ave. in downtown Auburn) to its confluence with Chewacla Creek. Potential sources of the impairment were listed as sanitary sewer overflows and urban runoff. The final Parkerson's Mill Creek TMDL was issued in September 2011, identifying E.coli as the pollutant of concern. The Parkerson's Mill Creek TMDL establishes the E. coli limits in stormwater at 3.42E+09 colonies/day, also expressed as a 61% reduction in non-point sources. This TMDL was established using the geometric mean criterion of 126 CFU/100mL.

The City makes all reasonable efforts to monitor E. coli concentrations in Parkerson's Mill Creek through annual intensive E. coli sampling. The intensive E. coli sampling provides sufficient data to evaluate the success of efforts to reduce pathogens in stormwater and meet TMDL concentrations. The intensive sampling is conducted in the same manner as the study performed by ADEM in 2010 at the same four (4) reference sites. Single samples are collected for E. coli once per month for April, May, July, September, October, and November. Weekly samples are collected at those sites during June and August. The 5-week geometric mean E. coli concentrations are calculated based on the results of the weekly sampling. The City makes a reasonable effort to measure streamflow in-situ (recorded in cfs and MGD) at each sample site after water samples are collected when flow conditions permit. Water temperature, pH, dissolved oxygen, specific conductance, and turbidity are also measured in-situ at each site. Additionally, the City continues to reasonably support and participate in studies of water quality in the Parkerson's Mill Creek watershed. Sample sites for monitoring in the Parkerson's Mill Creek watershed are shown in the map below. Monitoring results are shown in the following charts and tables.



Parkerson Mill Creek Watershed Monitoring Sites


Parkerson's Mill Creek Intensive Bacteriological Sampling
June Data
E. coli Geometric Mean (MPN/100mL or CFU/100mL)
500
450
400
350
300
250
200
150
100
50
0
PKML-2
PKML-5
PKML-1
PM3
2010 June Geometric Mean
2019 June Geometric Mean
State WQ Criteria


Parkerson's Mill Creek Intensive Bacteriological Sampling
August Data
E. coli Geometric Mean (MPN/100mL or CFU/100mL)
500
450
400
350
300
250
200
150
100
50
0
PKML-2
PKML-5
PKML-1
PM3
2010 August Geometric Mean
2019 August Geometric Mean
State WQ Criteria

Parkerson Mill Creek Watershed Monitoring Data

Site Number	Site Location	Site Coordinates
PKML-1	Parkerson's Mill Creek at Sand Hill Rd	32.53744 N, 85.50601 W
PKML-2	Parkerson's Mill Creek at Shug Jordan Pkwy	32.58551 N, 85.50249 W
PKML-5	Parkerson's Mill Creek at W. Veterans Blvd	32.56243 N, 85.50716 W
PM-3	Parkerson's Mill Creek below HC Morgan WPCF	32.53427 N, 85.50156 W

Site Number	Sample Date	Sample Time	Sample Collected By	E. coli (cfu/100mL)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	4/15/2019	1355	D. Kimbrow	1300	Alabama Water Watch (Coliscan Easygel)	4/16/2019	D. Kimbrow	10.62	6.86
PKML-2	4/15/2019	1500	D. Kimbrow	300	Alabama Water Watch (Coliscan Easygel)	4/16/2019	D. Kimbrow	2.4	1.55
PKML-5	4/15/2019	1415	D. Kimbrow	1850	Alabama Water Watch (Coliscan Easygel)	4/16/2019	D. Kimbrow	10.23	6.61
PM-3	4/15/2019	1245	D. Kimbrow	550	Alabama Water Watch (Coliscan Easygel)	4/16/2019	D. Kimbrow	23.55	15.2
Site Number	Sample Date	Sample Time	Sample Collected By	E. coli (cfu/100mL)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	5/20/2019	1140	D. Kimbrow	100	Alabama Water Watch (Coliscan Easygel)	5/21/2019	D. Kimbrow	4	2.59
PKML-2	5/20/2019	1515	D. Kimbrow	500	Alabama Water Watch (Coliscan Easygel)	5/21/2019	D. Kimbrow	0.75	0.48
PKML-5	5/20/2019	1355	D. Kimbrow	250	Alabama Water Watch (Coliscan Easygel)	5/21/2019	D. Kimbrow	3.23	2.09
PM-3	5/20/2019	1000	D. Kimbrow	200	Alabama Water Watch (Coliscan Easygel)	5/21/2019	D. Kimbrow	12.9	8.34
Site Number	Sample Date	Sample Time	Sample Collected By	E. coli (cfu/100mL)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	6/4/2019	1220	D. Kimbrow M. Smith	0	Alabama Water Watch (Coliscan Easygel)	6/5/2019	M. Smith	1.62	1.05
PKML-2	6/4/2019	1455	D. Kimbrow M. Smith	0	Alabama Water Watch (Coliscan Easygel)	6/5/2019	M. Smith	0.45	0.29
PKML-5	6/4/2019	1355	D. Kimbrow M. Smith	0	Alabama Water Watch (Coliscan Easygel)	6/5/2019	M. Smith	1.59	1.03
PM-3	6/4/2019	1035	D. Kimbrow M. Smith	150	Alabama Water Watch (Coliscan Easygel)	6/5/2019	M. Smith	9.82	6.35

Site Number	Sample Date	Sample Time	Sample Collected By	E. coli (cfu/100mL)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	6/10/2019	1200	M. Smith R. McCurry	150	Alabama Water Watch (Coliscan Easygel)	6/11/2019	M. Smith	4.08	2.64
PKML-2	6/10/2019	1455	M. Smith R. McCurry	5000	Alabama Water Watch (Coliscan Easygel)	6/11/2019	M. Smith	n/a	n/a
PKML-5	6/10/2019	1357	M. Smith R. McCurry	200	Alabama Water Watch (Coliscan Easygel)	6/11/2019	R. McCurry	3.11	2.01
PM-3	6/10/2019	1046	M. Smith R. McCurry	100	Alabama Water Watch (Coliscan Easygel)	6/11/2019	R. McCurry	14.13	9.13
Site Number	Sample Date	Sample Time	Sample Collected By	E. coli (cfu/100mL)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	6/17/2019	1100	D. Kimbrow	50	Alabama Water Watch (Coliscan Easygel)	6/18/2019	D. Kimbrow	1.12	0.72
PKML-2	6/17/2019	1330	D. Kimbrow	100	Alabama Water Watch (Coliscan Easygel)	6/18/2019	D. Kimbrow	0.5	0.32
PKML-5	6/17/2019	1240	D. Kimbrow	100	Alabama Water Watch (Coliscan Easygel)	6/18/2019	D. Kimbrow	1.06	0.69
PM-3	6/17/2019	1000	D. Kimbrow	100	Alabama Water Watch (Coliscan Easygel)	6/18/2019	D. Kimbrow	10.28	6.64
Site Number	Sample Date	Sample Time	Sample Collected By	E. coli (cfu/100mL)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	6/24/2019	1155	D. Kimbrow	0	Alabama Water Watch (Coliscan Easygel)	6/25/2019	D. Kimbrow	1.7	1.1
PKML-2	6/24/2019	1425	D. Kimbrow	50	Alabama Water Watch (Coliscan Easygel)	6/25/2019	D. Kimbrow	0.6	0.39
PKML-5	6/24/2019	1335	D. Kimbrow	0	Alabama Water Watch (Coliscan Easygel)	6/25/2019	D. Kimbrow	2.02	1.31
PM-3	6/24/2019	1100	D. Kimbrow	150	Alabama Water Watch (Coliscan Easygel)	6/25/2019	D. Kimbrow	11.64	7.52
Site Number	Sample Date	Sample Time	Sample Collected By	E. coli (cfu/100mL)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	7/1/2019	1120	D. Kimbrow	0	Alabama Water Watch (Coliscan Easygel)	7/2/2019	D. Kimbrow	0.81	0.52
PKML-2	7/1/2019	1440	D. Kimbrow	250	Alabama Water Watch (Coliscan Easygel)	7/2/2019	D. Kimbrow	0.5	0.32
PKML-5	7/1/2019	1350	D. Kimbrow	No sample	Alabama Water Watch (Coliscan Easygel)	7/2/2019	D. Kimbrow	n/a	n/a
PM-3	7/1/2019	1035	D. Kimbrow	50	Alabama Water Watch (Coliscan Easygel)	7/2/2019	D. Kimbrow	7.74	5

Site Number	Sample Date	Sample Time	Sample Collected By	E. coli (cfu/100mL)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	7/22/2019	1055	D. Kimbrow	50	Alabama Water Watch (Coliscan Easygel)	7/23/2019	D. Kimbrow	2.76	1.78
PKML-2	7/22/2019	1435	D. Kimbrow	1700	Alabama Water Watch (Coliscan Easygel)	7/23/2019	D. Kimbrow	0.89	0.58
PKML-5	7/22/2019	1350	D. Kimbrow	0	Alabama Water Watch (Coliscan Easygel)	7/23/2019	D. Kimbrow	2.06	1.33
PM-3	7/22/2019	1000	D. Kimbrow	100	Alabama Water Watch (Coliscan Easygel)	7/23/2019	D. Kimbrow	10.88	7.03
Site Number	Sample Date	Sample Time	Sample Collected By	E. coli (cfu/100mL)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	8/8/2019	1000	D. Kimbrow	200	Alabama Water Watch (Coliscan Easygel)	8/9/2019	M. Smith	0.82	0.53
PKML-2	8/8/2019	1110	D. Kimbrow	300	Alabama Water Watch (Coliscan Easygel)	8/9/2019	M. Smith	0.64	0.41
PKML-5	8/8/2019	1030	D. Kimbrow	100	Alabama Water Watch (Coliscan Easygel)	8/9/2019	M. Smith	1.22	0.79
PM-3	8/8/2019	930	D. Kimbrow	150	Alabama Water Watch (Coliscan Easygel)	8/9/2019	M. Smith	7.74	5
Site Number	Sample Date	Sample Time	Sample Collected By	E. coli (MPN)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	8/13/2019	1220	D. Kimbrow	25.6	IDEXX	8/13/2019	R. Blackburn (ERA)	0.4	0.26
PKML-2	8/13/2019	1420	D. Kimbrow	2419.6	IDEXX	8/13/2019	R. Blackburn (ERA)	n/a	n/a
PKML-5	8/13/2019	1350	D. Kimbrow	1119.9	IDEXX	8/13/2019	R. Blackburn (ERA)	n/a	n/a
PM-3	8/13/2019	1240	D. Kimbrow	524.7	IDEXX	8/13/2019	R. Blackburn (ERA)	11.88	7.68
Site Number	Sample Date	Sample Time	Sample Collected By	E. coli (cfu/100mL)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	8/23/2019	835	D. Kimbrow	0	Alabama Water Watch (Coliscan Easygel)	8/24/2019	D. Kimbrow	2.09	1.35
PKML-2	8/23/2019	950	D. Kimbrow	50	Alabama Water Watch (Coliscan Easygel)	8/24/2019	D. Kimbrow	0.51	0.33
PKML-5	8/23/2019	910	D. Kimbrow	100	Alabama Water Watch (Coliscan Easygel)	8/24/2019	D. Kimbrow	1.53	0.99
PM-3	8/23/2019	815	D. Kimbrow	250	Alabama Water Watch (Coliscan Easygel)	8/24/2019	D. Kimbrow	12.14	7.85

Site Number	Sample Date	Sample Time	Sample Collected By	E. coli (cfu/100mL)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	8/28/2019	1145	D. Kimbrow	1650	Alabama Water Watch (Coliscan Easygel)	8/30/2019	D. Kimbrow	6.4	4.14
PKML-2	8/28/2019	1235	D. Kimbrow	750	Alabama Water Watch (Coliscan Easygel)	8/30/2019	D. Kimbrow	1.22	0.79
PKML-5	8/28/2019	1205	D. Kimbrow	1000	Alabama Water Watch (Coliscan Easygel)	8/30/2019	D. Kimbrow	4.99	3.23
PM-3	8/28/2019	1100	D. Kimbrow	1500	Alabama Water Watch (Coliscan Easygel)	8/30/2019	D. Kimbrow	18.7	12.1
Site Number	Sample Date	Sample Time	Sample Collected By	E. coli (cfu/100mL)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	9/5/2019	1050	D. Kimbrow	50	Alabama Water Watch (Coliscan Easygel)	8/29/2018	D. Kimbrow	0.9	0.58
PKML-2	9/5/2019	1350	D. Kimbrow	500	Alabama Water Watch (Coliscan Easygel)	8/29/2018	D. Kimbrow	0.62	0.4
PKML-5	9/5/2019	1315	D. Kimbrow	50	Alabama Water Watch (Coliscan Easygel)	8/29/2018	D. Kimbrow	1.73	1.12
PM-3	9/5/2019	1010	D. Kimbrow	100	Alabama Water Watch (Coliscan Easygel)	8/29/2018	D. Kimbrow	12.11	7.83
Site Number	Sample Date	Sample Time	Sample Collected By	E. coli (cfu/100mL)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	9/25/2019	940	D. Kimbrow	100	Alabama Water Watch (Coliscan Easygel)	9/27/2019	M. Smith	0.56	0.36
PKML-2	9/25/2019	1020	D. Kimbrow	250	Alabama Water Watch (Coliscan Easygel)	9/27/2019	M. Smith	0.32	0.21
PKML-5	9/25/2019	955	D. Kimbrow	150	Alabama Water Watch (Coliscan Easygel)	9/27/2019	M. Smith	0.37	0.24
PM-3	9/25/2019	920	D. Kimbrow	550	Alabama Water Watch (Coliscan Easygel)	9/27/2019	M. Smith	10.86	7.02
Site Number	Sample Date	Sample Time	Sample Collected By	E. coli (cfu/100mL)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	10/17/2019	1205	D. Kimbrow	0	Alabama Water Watch (Coliscan Easygel)	10/18/2019	D. Kimbrow	n/a	n/a
PKML-2	10/17/2019	1425	D. Kimbrow	1750	Alabama Water Watch (Coliscan Easygel)	10/18/2019	D. Kimbrow	n/a	n/a
PKML-5	10/17/2019	1355	D. Kimbrow	50	Alabama Water Watch (Coliscan Easygel)	10/18/2019	D. Kimbrow	1.17	0.76
PM-3	10/17/2019	1110	D. Kimbrow	150	Alabama Water Watch (Coliscan Easygel)	10/18/2019	D. Kimbrow	13.05	8.43

Site Number	Sample Date	Sample Time	Sample Collected By	E. coli (cfu/100mL)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	11/25/2019	1125	D. Kimbrow	50	Alabama Water Watch (Coliscan Easygel)	11/26/2019	D. Kimbrow	2.73	1.76
PKML-2	11/25/2019	1335	D. Kimbrow	750	Alabama Water Watch (Coliscan Easygel)	11/26/2019	D. Kimbrow	1.07	0.69
PKML-5	11/25/2019	1255	D. Kimbrow	550	Alabama Water Watch (Coliscan Easygel)	11/26/2019	D. Kimbrow	2.21	1.43
PM-3	11/25/2019	1045	D. Kimbrow	150	Alabama Water Watch (Coliscan Easygel)	11/26/2019	D. Kimbrow	11.25	7.27
Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	4/15/2019	1355	D. Kimbrow	66.9	YSI 5560	4/15/2019	D. Kimbrow	10.62	6.86
PKML-2	4/15/2019	1500	D. Kimbrow	62.4	YSI 5560	4/15/2019	D. Kimbrow	2.4	1.55
PKML-5	4/15/2019	1415	D. Kimbrow	65.2	YSI 5560	4/15/2019	D. Kimbrow	10.23	6.61
PM-3	4/15/2019	1245	D. Kimbrow	67.3	YSI 5560	4/15/2019	D. Kimbrow	23.55	15.2
Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	5/20/2019	1140	D. Kimbrow	74.7	YSI 5560	5/20/2019	D. Kimbrow	4	2.59
PKML-2	5/20/2019	1515	D. Kimbrow	71.9	YSI 5560	5/20/2019	D. Kimbrow	0.75	0.48
PKML-5	5/20/2019	1355	D. Kimbrow	74.5	YSI 5560	5/20/2019	D. Kimbrow	3.23	2.09
PM-3	5/20/2019	1000	D. Kimbrow	72.7	YSI 5560	5/20/2019	D. Kimbrow	12.9	8.34
Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	6/4/2019	1220	D. Kimbrow M. Smith	78.7	YSI 5560	6/4/2019	D. Kimbrow M. Smith	1.62	1.05
PKML-2	6/4/2019	1455	D. Kimbrow M. Smith	75.8	YSI 5560	6/4/2019	D. Kimbrow M. Smith	0.45	0.29
PKML-5	6/4/2019	1355	D. Kimbrow M. Smith	77.8	YSI 5560	6/4/2019	D. Kimbrow M. Smith	1.59	1.03
PM-3	6/4/2019	1035	D. Kimbrow M. Smith	76.4	YSI 5560	6/4/2019	D. Kimbrow M. Smith	9.82	6.35
Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	6/10/2019	1200	M. Smith R. McCurry	75.9	YSI 5560	6/10/2019	M. Smith R. McCurry	4.08	2.64
PKML-2	6/10/2019	1455	M. Smith R. McCurry	81.1	YSI 5560	6/10/2019	M. Smith R. McCurry	n/a	n/a
PKML-5	6/10/2019	1357	M. Smith R. McCurry	77.3	YSI 5560	6/10/2019	M. Smith R. McCurry	3.11	2.01
PM-3	6/10/2019	1046	M. Smith R. McCurry	75.3	YSI 5560	6/10/2019	M. Smith R. McCurry	14.13	9.13
Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	6/17/2019	1100	D. Kimbrow	77.2	YSI 5560	6/17/2019	D. Kimbrow	1.12	0.72
PKML-2	6/17/2019	1330	D. Kimbrow	76	YSI 5560	6/17/2019	D. Kimbrow	0.5	0.32
PKML-5	6/17/2019	1240	D. Kimbrow	77.6	YSI 5560	6/17/2019	D. Kimbrow	1.06	0.69
PM-3	6/17/2019	1000	D. Kimbrow	76.7	YSI 5560	6/17/2019	D. Kimbrow	10.28	6.64

Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	6/24/2019	1155	D. Kimbrow	81	YSI 5560	6/24/2019	D. Kimbrow	1.7	1.1
PKML-2	6/24/2019	1425	D. Kimbrow	78.2	YSI 5560	6/24/2019	D. Kimbrow	0.6	0.39
PKML-5	6/24/2019	1335	D. Kimbrow	80.4	YSI 5560	6/24/2019	D. Kimbrow	2.02	1.31
PM-3	6/24/2019	1100	D. Kimbrow	78.7	YSI 5560	6/24/2019	D. Kimbrow	11.64	7.52
Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	7/1/2019	1120	D. Kimbrow	79.3	YSI 5560	7/1/2019	D. Kimbrow	0.81	0.52
PKML-2	7/1/2019	1440	D. Kimbrow	77.7	YSI 5560	7/1/2019	D. Kimbrow	0.5	0.32
PKML-5	7/1/2019	1350	D. Kimbrow	80.4	YSI 5560	7/1/2019	D. Kimbrow	n/a	n/a
PM-3	7/1/2019	1035	D. Kimbrow	78.9	YSI 5560	7/1/2019	D. Kimbrow	7.74	5
Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	7/22/2019	1055	D. Kimbrow	78.2	YSI 5560	7/22/2019	D. Kimbrow	2.76	1.78
PKML-2	7/22/2019	1435	D. Kimbrow	77.7	YSI 5560	7/22/2019	D. Kimbrow	0.89	0.58
PKML-5	7/22/2019	1350	D. Kimbrow	80.3	YSI 5560	7/22/2019	D. Kimbrow	2.06	1.33
PM-3	7/22/2019	1000	D. Kimbrow	79.2	YSI 5560	7/22/2019	D. Kimbrow	10.88	7.03
Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	8/8/2019	1000	D. Kimbrow	78.5	YSI 5560	8/8/2019	D. Kimbrow	0.82	0.53
PKML-2	8/8/2019	1110	D. Kimbrow	77.3	YSI 5560	8/8/2019	D. Kimbrow	0.64	0.41
PKML-5	8/8/2019	1030	D. Kimbrow	77.2	YSI 5560	8/8/2019	D. Kimbrow	1.22	0.79
PM-3	8/8/2019	930	D. Kimbrow	79.4	YSI 5560	8/8/2019	D. Kimbrow	7.74	5
Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	8/13/2019	1220	D. Kimbrow	85.1	YSI 5560	8/13/2019	D. Kimbrow	0.4	0.26
PKML-2	8/13/2019	1420	D. Kimbrow	82.3	YSI 5560	8/13/2019	D. Kimbrow	n/a	n/a
PKML-5	8/13/2019	1350	D. Kimbrow	81	YSI 5560	8/13/2019	D. Kimbrow	n/a	n/a
PM-3	8/13/2019	1240	D. Kimbrow	83	YSI 5560	8/13/2019	D. Kimbrow	11.88	7.68
Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	8/23/2019	835	D. Kimbrow	77.9	YSI 5560	8/23/2019	D. Kimbrow	2.09	1.35
PKML-2	8/23/2019	950	D. Kimbrow	76.3	YSI 5560	8/23/2019	D. Kimbrow	0.51	0.33
PKML-5	8/23/2019	910	D. Kimbrow	77.1	YSI 5560	8/23/2019	D. Kimbrow	1.53	0.99
PM-3	8/23/2019	815	D. Kimbrow	79.6	YSI 5560	8/23/2019	D. Kimbrow	12.14	7.85
Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	8/28/2019	1145	D. Kimbrow	77	YSI 5560	8/28/2019	D. Kimbrow	6.4	4.14
PKML-2	8/28/2019	1235	D. Kimbrow	75.9	YSI 5560	8/28/2019	D. Kimbrow	1.22	0.79
PKML-5	8/28/2019	1205	D. Kimbrow	76.8	YSI 5560	8/28/2019	D. Kimbrow	4.99	3.23
PM-3	8/28/2019	1100	D. Kimbrow	79	YSI 5560	8/28/2019	D. Kimbrow	18.7	12.1
Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	9/5/2019	1050	D. Kimbrow	77.7	YSI 5560	9/5/2019	D. Kimbrow	0.9	0.58
PKML-2	9/5/2019	1350	D. Kimbrow	77.4	YSI 5560	9/5/2019	D. Kimbrow	0.62	0.4
PKML-5	9/5/2019	1315	D. Kimbrow	79.2	YSI 5560	9/5/2019	D. Kimbrow	1.73	1.12
PM-3	9/5/2019	1010	D. Kimbrow	79.8	YSI 5560	9/5/2019	D. Kimbrow	12.11	7.83

Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	9/25/2019	940	D. Kimbrow	71.7	YSI 5560	9/25/2019	D. Kimbrow	0.56	0.36
PKML-2	9/25/2019	1020	D. Kimbrow	69.9	YSI 5560	9/25/2019	D. Kimbrow	0.32	0.21
PKML-5	9/25/2019	955	D. Kimbrow	70.3	YSI 5560	9/25/2019	D. Kimbrow	0.37	0.24
PM-3	9/25/2019	920	D. Kimbrow	77.7	YSI 5560	9/25/2019	D. Kimbrow	10.86	7.02
Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	10/17/2019	1205	D. Kimbrow	63.9	YSI 5560	10/17/2019	D. Kimbrow	n/a	n/a
PKML-2	10/17/2019	1425	D. Kimbrow	63.3	YSI 5560	10/17/2019	D. Kimbrow	n/a	n/a
PKML-5	10/17/2019	1355	D. Kimbrow	63.8	YSI 5560	10/17/2019	D. Kimbrow	1.17	0.76
PM-3	10/17/2019	1110	D. Kimbrow	73.2	YSI 5560	10/17/2019	D. Kimbrow	13.05	8.43
Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	11/25/2019	1125	D. Kimbrow	52.7	YSI 5560	11/25/2019	D. Kimbrow	2.73	1.76
PKML-2	11/25/2019	1335	D. Kimbrow	53	YSI 5560	11/25/2019	D. Kimbrow	1.07	0.69
PKML-5	11/25/2019	1255	D. Kimbrow	52.9	YSI 5560	11/25/2019	D. Kimbrow	2.21	1.43
PM-3	11/25/2019	1045	D. Kimbrow	63.3	YSI 5560	11/25/2019	D. Kimbrow	11.25	7.27
Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	4/15/2019	1355	D. Kimbrow	7.87	YSI 1001	4/15/2019	D. Kimbrow	10.62	6.86
PKML-2	4/15/2019	1500	D. Kimbrow	7.63	YSI 1001	4/15/2019	D. Kimbrow	2.4	1.55
PKML-5	4/15/2019	1415	D. Kimbrow	7.53	YSI 1001	4/15/2019	D. Kimbrow	10.23	6.61
PM-3	4/15/2019	1245	D. Kimbrow	7.29	YSI 1001	4/15/2019	D. Kimbrow	23.55	15.2
Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	5/20/2019	1140	D. Kimbrow	7.86	YSI 1001	5/20/2019	D. Kimbrow	4	2.59
PKML-2	5/20/2019	1515	D. Kimbrow	7.7	YSI 1001	5/20/2019	D. Kimbrow	0.75	0.48
PKML-5	5/20/2019	1355	D. Kimbrow	7.56	YSI 1001	5/20/2019	D. Kimbrow	3.23	2.09
PM-3	5/20/2019	1000	D. Kimbrow	7.39	YSI 1001	5/20/2019	D. Kimbrow	12.9	8.34
Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	6/4/2019	1220	D. Kimbrow M. Smith	8.16	YSI 1001	6/4/2019	D. Kimbrow M. Smith	1.62	1.05
PKML-2	6/4/2019	1455	D. Kimbrow M. Smith	8.01	YSI 1001	6/4/2019	D. Kimbrow M. Smith	0.45	0.29
PKML-5	6/4/2019	1355	D. Kimbrow M. Smith	7.88	YSI 1001	6/4/2019	D. Kimbrow M. Smith	1.59	1.03
PM-3	6/4/2019	1035	D. Kimbrow M. Smith	6.46	YSI 1001	6/4/2019	D. Kimbrow M. Smith	9.82	6.35
Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	6/10/2019	1200	M. Smith R. McCurry	7.81	YSI 1001	6/10/2019	M. Smith R. McCurry	4.08	2.64
PKML-2	6/10/2019	1455	M. Smith R. McCurry	7.57	YSI 1001	6/10/2019	M. Smith R. McCurry	n/a	n/a
PKML-5	6/10/2019	1357	M. Smith R. McCurry	7.47	YSI 1001	6/10/2019	M. Smith R. McCurry	3.11	2.01
PM-3	6/10/2019	1046	M. Smith R. McCurry	7.26	YSI 1001	6/10/2019	M. Smith R. McCurry	14.13	9.13

Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	6/17/2019	1100	D. Kimbrow	7.77	YSI 1001	6/17/2019	D. Kimbrow	1.12	0.72
PKML-2	6/17/2019	1330	D. Kimbrow	7.9	YSI 1001	6/17/2019	D. Kimbrow	0.5	0.32
PKML-5	6/17/2019	1240	D. Kimbrow	7.6	YSI 1001	6/17/2019	D. Kimbrow	1.06	0.69
PM-3	6/17/2019	1000	D. Kimbrow	7.28	YSI 1001	6/17/2019	D. Kimbrow	10.28	6.64
Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	6/24/2019	1155	D. Kimbrow	8.09	YSI 1001	6/24/2019	D. Kimbrow	1.7	1.1
PKML-2	6/24/2019	1425	D. Kimbrow	7.85	YSI 1001	6/24/2019	D. Kimbrow	0.6	0.39
PKML-5	6/24/2019	1335	D. Kimbrow	7.6	YSI 1001	6/24/2019	D. Kimbrow	2.02	1.31
PM-3	6/24/2019	1100	D. Kimbrow	7.4	YSI 1001	6/24/2019	D. Kimbrow	11.64	7.52
Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	7/1/2019	1120	D. Kimbrow	7.83	YSI 1001	7/1/2019	D. Kimbrow	0.81	0.52
PKML-2	7/1/2019	1440	D. Kimbrow	7.93	YSI 1001	7/1/2019	D. Kimbrow	0.5	0.32
PKML-5	7/1/2019	1350	D. Kimbrow	7.66	YSI 1001	7/1/2019	D. Kimbrow	n/a	n/a
PM-3	7/1/2019	1035	D. Kimbrow	7.44	YSI 1001	7/1/2019	D. Kimbrow	7.74	5
Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	7/22/2019	1055	D. Kimbrow	7.79	YSI 1001	7/22/2019	D. Kimbrow	2.76	1.78
PKML-2	7/22/2019	1435	D. Kimbrow	7.87	YSI 1001	7/22/2019	D. Kimbrow	0.89	0.58
PKML-5	7/22/2019	1350	D. Kimbrow	7.57	YSI 1001	7/22/2019	D. Kimbrow	2.06	1.33
PM-3	7/22/2019	1000	D. Kimbrow	7.48	YSI 1001	7/22/2019	D. Kimbrow	10.88	7.03
Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	8/8/2019	1000	D. Kimbrow	7.72	YSI 1001	8/8/2019	D. Kimbrow	0.82	0.53
PKML-2	8/8/2019	1110	D. Kimbrow	7.84	YSI 1001	8/8/2019	D. Kimbrow	0.64	0.41
PKML-5	8/8/2019	1030	D. Kimbrow	7.52	YSI 1001	8/8/2019	D. Kimbrow	1.22	0.79
PM-3	8/8/2019	930	D. Kimbrow	7.48	YSI 1001	8/8/2019	D. Kimbrow	7.74	5
Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	8/13/2019	1220	D. Kimbrow	7.95	YSI 1001	8/13/2019	D. Kimbrow	0.4	0.26
PKML-2	8/13/2019	1420	D. Kimbrow	7.3	YSI 1001	8/13/2019	D. Kimbrow	n/a	n/a
PKML-5	8/13/2019	1350	D. Kimbrow	7.58	YSI 1001	8/13/2019	D. Kimbrow	n/a	n/a
PM-3	8/13/2019	1240	D. Kimbrow	7.31	YSI 1001	8/13/2019	D. Kimbrow	11.88	7.68
Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	8/23/2019	835	D. Kimbrow	7.7	YSI 1001	8/23/2019	D. Kimbrow	2.09	1.35
PKML-2	8/23/2019	950	D. Kimbrow	7.7	YSI 1001	8/23/2019	D. Kimbrow	0.51	0.33
PKML-5	8/23/2019	910	D. Kimbrow	7.47	YSI 1001	8/23/2019	D. Kimbrow	1.53	0.99
PM-3	8/23/2019	815	D. Kimbrow	7.39	YSI 1001	8/23/2019	D. Kimbrow	12.14	7.85
Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	8/28/2019	1145	D. Kimbrow	7.79	YSI 1001	8/28/2019	D. Kimbrow	6.4	4.14
PKML-2	8/28/2019	1235	D. Kimbrow	7.65	YSI 1001	8/28/2019	D. Kimbrow	1.22	0.79
PKML-5	8/28/2019	1205	D. Kimbrow	7.54	YSI 1001	8/28/2019	D. Kimbrow	4.99	3.23
PM-3	8/28/2019	1100	D. Kimbrow	7.42	YSI 1001	8/28/2019	D. Kimbrow	18.7	12.1

Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	9/5/2019	1050	D. Kimbrow	7.71	YSI 1001	9/5/2019	D. Kimbrow	0.9	0.58
PKML-2	9/5/2019	1350	D. Kimbrow	7.9	YSI 1001	9/5/2019	D. Kimbrow	0.62	0.4
PKML-5	9/5/2019	1315	D. Kimbrow	7.54	YSI 1001	9/5/2019	D. Kimbrow	1.73	1.12
PM-3	9/5/2019	1010	D. Kimbrow	7.39	YSI 1001	9/5/2019	D. Kimbrow	12.11	7.83
Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	9/25/2019	940	D. Kimbrow	7.66	YSI 1001	9/25/2019	D. Kimbrow	0.56	0.36
PKML-2	9/25/2019	1020	D. Kimbrow	7.59	YSI 1001	9/25/2019	D. Kimbrow	0.32	0.21
PKML-5	9/25/2019	955	D. Kimbrow	7.46	YSI 1001	9/25/2019	D. Kimbrow	0.37	0.24
PM-3	9/25/2019	920	D. Kimbrow	7.32	YSI 1001	9/25/2019	D. Kimbrow	10.86	7.02
Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	10/17/2019	1205	D. Kimbrow	7.53	YSI 1001	10/17/2019	D. Kimbrow	n/a	n/a
PKML-2	10/17/2019	1425	D. Kimbrow	7.41	YSI 1001	10/17/2019	D. Kimbrow	n/a	n/a
PKML-5	10/17/2019	1355	D. Kimbrow	7.32	YSI 1001	10/17/2019	D. Kimbrow	1.17	0.76
PM-3	10/17/2019	1110	D. Kimbrow	7.2	YSI 1001	10/17/2019	D. Kimbrow	13.05	8.43
Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	11/25/2019	1125	D. Kimbrow	7.59	YSI 1001	11/25/2019	D. Kimbrow	2.73	1.76
PKML-2	11/25/2019	1335	D. Kimbrow	7.57	YSI 1001	11/25/2019	D. Kimbrow	1.07	0.69
PKML-5	11/25/2019	1255	D. Kimbrow	7.36	YSI 1001	11/25/2019	D. Kimbrow	2.21	1.43
PM-3	11/25/2019	1045	D. Kimbrow	7.2	YSI 1001	11/25/2019	D. Kimbrow	11.25	7.27
Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	4/15/2019	1355	D. Kimbrow	9.68	YSI 2003 polarographic	4/15/2019	D. Kimbrow	10.62	6.86
PKML-2	4/15/2019	1500	D. Kimbrow	9.93	YSI 2003 polarographic	4/15/2019	D. Kimbrow	2.4	1.55
PKML-5	4/15/2019	1415	D. Kimbrow	9.34	YSI 2003 polarographic	4/15/2019	D. Kimbrow	10.23	6.61
PM-3	4/15/2019	1245	D. Kimbrow	8.82	YSI 2003 polarographic	4/15/2019	D. Kimbrow	23.55	15.2
Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	5/20/2019	1140	D. Kimbrow	8.05	YSI 2003 polarographic	5/20/2019	D. Kimbrow	4	2.59
PKML-2	5/20/2019	1515	D. Kimbrow	8.6	YSI 2003 polarographic	5/20/2019	D. Kimbrow	0.75	0.48
PKML-5	5/20/2019	1355	D. Kimbrow	8.74	YSI 2003 polarographic	5/20/2019	D. Kimbrow	3.23	2.09
PM-3	5/20/2019	1000	D. Kimbrow	7.64	YSI 2003 polarographic	5/20/2019	D. Kimbrow	12.9	8.34
Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	6/4/2019	1220	D. Kimbrow M. Smith	8.86	YSI 2003 polarographic	6/4/2019	D. Kimbrow M. Smith	1.62	1.05
PKML-2	6/4/2019	1455	D. Kimbrow M. Smith	9.02	YSI 2003 polarographic	6/4/2019	D. Kimbrow M. Smith	0.45	0.29
PKML-5	6/4/2019	1355	D. Kimbrow M. Smith	9.56	YSI 2003 polarographic	6/4/2019	D. Kimbrow M. Smith	1.59	1.03
PM-3	6/4/2019	1035	D. Kimbrow M. Smith	7.17	YSI 2003 polarographic	6/4/2019	D. Kimbrow M. Smith	9.82	6.35

Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	6/10/2019	1200	M. Smith R. McCurry	9.2	YSI 2003 polarographic	6/10/2019	M. Smith R. McCurry	4.08	2.64
PKML-2	6/10/2019	1455	M. Smith R. McCurry	7.44	YSI 2003 polarographic	6/10/2019	M. Smith R. McCurry	n/a	n/a
PKML-5	6/10/2019	1357	M. Smith R. McCurry	8.49	YSI 2003 polarographic	6/10/2019	M. Smith R. McCurry	3.11	2.01
PM-3	6/10/2019	1046	M. Smith R. McCurry	7.96	YSI 2003 polarographic	6/10/2019	M. Smith R. McCurry	14.13	9.13
Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	6/17/2019	1100	D. Kimbrow	8.24	YSI 2003 polarographic	6/17/2019	D. Kimbrow	1.12	0.72
PKML-2	6/17/2019	1330	D. Kimbrow	8.44	YSI 2003 polarographic	6/17/2019	D. Kimbrow	0.5	0.32
PKML-5	6/17/2019	1240	D. Kimbrow	8.19	YSI 2003 polarographic	6/17/2019	D. Kimbrow	1.06	0.69
PM-3	6/17/2019	1000	D. Kimbrow	6.73	YSI 2003 polarographic	6/17/2019	D. Kimbrow	10.28	6.64
Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	6/24/2019	1155	D. Kimbrow	8.26	YSI 2003 polarographic	6/24/2019	D. Kimbrow	1.7	1.1
PKML-2	6/24/2019	1425	D. Kimbrow	8.15	YSI 2003 polarographic	6/24/2019	D. Kimbrow	0.6	0.39
PKML-5	6/24/2019	1335	D. Kimbrow	8.06	YSI 2003 polarographic	6/24/2019	D. Kimbrow	2.02	1.31
PM-3	6/24/2019	1100	D. Kimbrow	7.24	YSI 2003 polarographic	6/24/2019	D. Kimbrow	11.64	7.52
Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	7/1/2019	1120	D. Kimbrow	8.16	YSI 2003 polarographic	7/1/2019	D. Kimbrow	0.81	0.52
PKML-2	7/1/2019	1440	D. Kimbrow	8.34	YSI 2003 polarographic	7/1/2019	D. Kimbrow	0.5	0.32
PKML-5	7/1/2019	1350	D. Kimbrow	8.19	YSI 2003 polarographic	7/1/2019	D. Kimbrow	n/a	n/a
PM-3	7/1/2019	1035	D. Kimbrow	7.24	YSI 2003 polarographic	7/1/2019	D. Kimbrow	7.74	5
Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	7/22/2019	1055	D. Kimbrow	8	YSI 2003 polarographic	7/22/2019	D. Kimbrow	2.76	1.78
PKML-2	7/22/2019	1435	D. Kimbrow	8.01	YSI 2003 polarographic	7/22/2019	D. Kimbrow	0.89	0.58
PKML-5	7/22/2019	1350	D. Kimbrow	7.85	YSI 2003 polarographic	7/22/2019	D. Kimbrow	2.06	1.33
PM-3	7/22/2019	1000	D. Kimbrow	7.38	YSI 2003 polarographic	7/22/2019	D. Kimbrow	10.88	7.03

Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	8/8/2019	1000	D. Kimbrow	8.05	YSI 2003 polarographic	8/8/2019	D. Kimbrow	0.82	0.53
PKML-2	8/8/2019	1110	D. Kimbrow	8.05	YSI 2003 polarographic	8/8/2019	D. Kimbrow	0.64	0.41
PKML-5	8/8/2019	1030	D. Kimbrow	6.77	YSI 2003 polarographic	8/8/2019	D. Kimbrow	1.22	0.79
PM-3	8/8/2019	930	D. Kimbrow	6.84	YSI 2003 polarographic	8/8/2019	D. Kimbrow	7.74	5
Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	8/13/2019	1220	D. Kimbrow	7.82	YSI 2003 polarographic	8/13/2019	D. Kimbrow	0.4	0.26
PKML-2	8/13/2019	1420	D. Kimbrow	6.74	YSI 2003 polarographic	8/13/2019	D. Kimbrow	n/a	n/a
PKML-5	8/13/2019	1350	D. Kimbrow	7.01	YSI 2003 polarographic	8/13/2019	D. Kimbrow	n/a	n/a
PM-3	8/13/2019	1240	D. Kimbrow	7.32	YSI 2003 polarographic	8/13/2019	D. Kimbrow	11.88	7.68
Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	8/23/2019	835	D. Kimbrow	7.4	YSI 2003 polarographic	8/23/2019	D. Kimbrow	2.09	1.35
PKML-2	8/23/2019	950	D. Kimbrow	7.5	YSI 2003 polarographic	8/23/2019	D. Kimbrow	0.51	0.33
PKML-5	8/23/2019	910	D. Kimbrow	7.28	YSI 2003 polarographic	8/23/2019	D. Kimbrow	1.53	0.99
PM-3	8/23/2019	815	D. Kimbrow	6.56	YSI 2003 polarographic	8/23/2019	D. Kimbrow	12.14	7.85
Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	8/28/2019	1145	D. Kimbrow	7.85	YSI 2003 polarographic	8/28/2019	D. Kimbrow	6.4	4.14
PKML-2	8/28/2019	1235	D. Kimbrow	8.65	YSI 2003 polarographic	8/28/2019	D. Kimbrow	1.22	0.79
PKML-5	8/28/2019	1205	D. Kimbrow	7.76	YSI 2003 polarographic	8/28/2019	D. Kimbrow	4.99	3.23
PM-3	8/28/2019	1100	D. Kimbrow	7.51	YSI 2003 polarographic	8/28/2019	D. Kimbrow	18.7	12.1
Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	9/5/2019	1050	D. Kimbrow	8.75	YSI 2003 polarographic	9/5/2019	D. Kimbrow	0.9	0.58
PKML-2	9/5/2019	1350	D. Kimbrow	8.5	YSI 2003 polarographic	9/5/2019	D. Kimbrow	0.62	0.4
PKML-5	9/5/2019	1315	D. Kimbrow	7.78	YSI 2003 polarographic	9/5/2019	D. Kimbrow	1.73	1.12
PM-3	9/5/2019	1010	D. Kimbrow	7.14	YSI 2003 polarographic	9/5/2019	D. Kimbrow	12.11	7.83

Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	9/25/2019	940	D. Kimbrow	7.92	YSI 2003 polarographic	9/25/2019	D. Kimbrow	0.56	0.36
PKML-2	9/25/2019	1020	D. Kimbrow	6.92	YSI 2003 polarographic	9/25/2019	D. Kimbrow	0.32	0.21
PKML-5	9/25/2019	955	D. Kimbrow	6.29	YSI 2003 polarographic	9/25/2019	D. Kimbrow	0.37	0.24
PM-3	9/25/2019	920	D. Kimbrow	6.2	YSI 2003 polarographic	9/25/2019	D. Kimbrow	10.86	7.02
Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	10/17/2019	1205	D. Kimbrow	9.45	YSI 2003 polarographic	10/17/2019	D. Kimbrow	n/a	n/a
PKML-2	10/17/2019	1425	D. Kimbrow	9.94	YSI 2003 polarographic	10/17/2019	D. Kimbrow	n/a	n/a
PKML-5	10/17/2019	1355	D. Kimbrow	8.74	YSI 2003 polarographic	10/17/2019	D. Kimbrow	1.17	0.76
PM-3	10/17/2019	1110	D. Kimbrow	7.71	YSI 2003 polarographic	10/17/2019	D. Kimbrow	13.05	8.43
Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	11/25/2019	1125	D. Kimbrow	11.59	YSI 2003 polarographic	11/25/2019	D. Kimbrow	2.73	1.76
PKML-2	11/25/2019	1335	D. Kimbrow	11.28	YSI 2003 polarographic	11/25/2019	D. Kimbrow	1.07	0.69
PKML-5	11/25/2019	1255	D. Kimbrow	11.3	YSI 2003 polarographic	11/25/2019	D. Kimbrow	2.21	1.43
PM-3	11/25/2019	1045	D. Kimbrow	9.13	YSI 2003 polarographic	11/25/2019	D. Kimbrow	11.25	7.27
Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	4/15/2019	1355	D. Kimbrow	123.6	YSI 5560	4/15/2019	D. Kimbrow	10.62	6.86
PKML-2	4/15/2019	1500	D. Kimbrow	206.7	YSI 5560	4/15/2019	D. Kimbrow	2.4	1.55
PKML-5	4/15/2019	1415	D. Kimbrow	130.7	YSI 5560	4/15/2019	D. Kimbrow	10.23	6.61
PM-3	4/15/2019	1245	D. Kimbrow	232.7	YSI 5560	4/15/2019	D. Kimbrow	23.55	15.2
Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	5/20/2019	1140	D. Kimbrow	171.3	YSI 5560	5/20/2019	D. Kimbrow	4	2.59
PKML-2	5/20/2019	1515	D. Kimbrow	306.5	YSI 5560	5/20/2019	D. Kimbrow	0.75	0.48
PKML-5	5/20/2019	1355	D. Kimbrow	198.6	YSI 5560	5/20/2019	D. Kimbrow	3.23	2.09
PM-3	5/20/2019	1000	D. Kimbrow	269.6	YSI 5560	5/20/2019	D. Kimbrow	12.9	8.34
Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	6/4/2019	1220	D. Kimbrow M. Smith	212.7	YSI 5560	6/4/2019	D. Kimbrow M. Smith	1.62	1.05
PKML-2	6/4/2019	1455	D. Kimbrow M. Smith	366.3	YSI 5560	6/4/2019	D. Kimbrow M. Smith	0.45	0.29
PKML-5	6/4/2019	1355	D. Kimbrow M. Smith	221.9	YSI 5560	6/4/2019	D. Kimbrow M. Smith	1.59	1.03
PM-3	6/4/2019	1035	D. Kimbrow M. Smith	357	YSI 5560	6/4/2019	D. Kimbrow M. Smith	9.82	6.35

Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	6/10/2019	1200	M. Smith R. McCurry	132.2	YSI 5560	6/10/2019	M. Smith R. McCurry	4.08	2.64
PKML-2	6/10/2019	1455	M. Smith R. McCurry	53.6	YSI 5560	6/10/2019	M. Smith R. McCurry	n/a	n/a
PKML-5	6/10/2019	1357	M. Smith R. McCurry	126.6	YSI 5560	6/10/2019	M. Smith R. McCurry	3.11	2.01
PM-3	6/10/2019	1046	M. Smith R. McCurry	301.4	YSI 5560	6/10/2019	M. Smith R. McCurry	14.13	9.13
Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	6/17/2019	1100	D. Kimbrow	187.2	YSI 5560	6/17/2019	D. Kimbrow	1.12	0.72
PKML-2	6/17/2019	1330	D. Kimbrow	347.1	YSI 5560	6/17/2019	D. Kimbrow	0.5	0.32
PKML-5	6/17/2019	1240	D. Kimbrow	207.5	YSI 5560	6/17/2019	D. Kimbrow	1.06	0.69
PM-3	6/17/2019	1000	D. Kimbrow	334.5	YSI 5560	6/17/2019	D. Kimbrow	10.28	6.64
Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	6/24/2019	1155	D. Kimbrow	204	YSI 5560	6/24/2019	D. Kimbrow	1.7	1.1
PKML-2	6/24/2019	1425	D. Kimbrow	322.3	YSI 5560	6/24/2019	D. Kimbrow	0.6	0.39
PKML-5	6/24/2019	1335	D. Kimbrow	182.7	YSI 5560	6/24/2019	D. Kimbrow	2.02	1.31
PM-3	6/24/2019	1100	D. Kimbrow	322.6	YSI 5560	6/24/2019	D. Kimbrow	11.64	7.52
Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	7/1/2019	1120	D. Kimbrow	201	YSI 5560	7/1/2019	D. Kimbrow	0.81	0.52
PKML-2	7/1/2019	1440	D. Kimbrow	370.6	YSI 5560	7/1/2019	D. Kimbrow	0.5	0.32
PKML-5	7/1/2019	1350	D. Kimbrow	212.1	YSI 5560	7/1/2019	D. Kimbrow	n/a	n/a
PM-3	7/1/2019	1035	D. Kimbrow	344.1	YSI 5560	7/1/2019	D. Kimbrow	7.74	5
Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	7/22/2019	1055	D. Kimbrow	149.7	YSI 5560	7/22/2019	D. Kimbrow	2.76	1.78
PKML-2	7/22/2019	1435	D. Kimbrow	361.1	YSI 5560	7/22/2019	D. Kimbrow	0.89	0.58
PKML-5	7/22/2019	1350	D. Kimbrow	146.9	YSI 5560	7/22/2019	D. Kimbrow	2.06	1.33
PM-3	7/22/2019	1000	D. Kimbrow	293.2	YSI 5560	7/22/2019	D. Kimbrow	10.88	7.03
Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	8/8/2019	1000	D. Kimbrow	153.7	YSI 5560	8/8/2019	D. Kimbrow	0.82	0.53
PKML-2	8/8/2019	1110	D. Kimbrow	511	YSI 5560	8/8/2019	D. Kimbrow	0.64	0.41
PKML-5	8/8/2019	1030	D. Kimbrow	187.7	YSI 5560	8/8/2019	D. Kimbrow	1.22	0.79
PM-3	8/8/2019	930	D. Kimbrow	348.8	YSI 5560	8/8/2019	D. Kimbrow	7.74	5
Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	8/13/2019	1220	D. Kimbrow	166.4	YSI 5560	8/13/2019	D. Kimbrow	0.4	0.26
PKML-2	8/13/2019	1420	D. Kimbrow	61.3	YSI 5560	8/13/2019	D. Kimbrow	n/a	n/a
PKML-5	8/13/2019	1350	D. Kimbrow	219.3	YSI 5560	8/13/2019	D. Kimbrow	n/a	n/a
PM-3	8/13/2019	1240	D. Kimbrow	374.4	YSI 5560	8/13/2019	D. Kimbrow	11.88	7.68
Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	8/23/2019	835	D. Kimbrow	132.9	YSI 5560	8/23/2019	D. Kimbrow	2.09	1.35
PKML-2	8/23/2019	950	D. Kimbrow	371.6	YSI 5560	8/23/2019	D. Kimbrow	0.51	0.33
PKML-5	8/23/2019	910	D. Kimbrow	164.1	YSI 5560	8/23/2019	D. Kimbrow	1.53	0.99
PM-3	8/23/2019	815	D. Kimbrow	291	YSI 5560	8/23/2019	D. Kimbrow	12.14	7.85

Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	8/28/2019	1145	D. Kimbrow	100.7	YSI 5560	8/28/2019	D. Kimbrow	6.4	4.14
PKML-2	8/28/2019	1235	D. Kimbrow	190.9	YSI 5560	8/28/2019	D. Kimbrow	1.22	0.79
PKML-5	8/28/2019	1205	D. Kimbrow	98	YSI 5560	8/28/2019	D. Kimbrow	4.99	3.23
PM-3	8/28/2019	1100	D. Kimbrow	254.4	YSI 5560	8/28/2019	D. Kimbrow	18.7	12.1
Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	9/5/2019	1050	D. Kimbrow	152.3	YSI 5560	9/5/2019	D. Kimbrow	0.9	0.58
PKML-2	9/5/2019	1350	D. Kimbrow	370	YSI 5560	9/5/2019	D. Kimbrow	0.62	0.4
PKML-5	9/5/2019	1315	D. Kimbrow	178.2	YSI 5560	9/5/2019	D. Kimbrow	1.73	1.12
PM-3	9/5/2019	1010	D. Kimbrow	337.4	YSI 5560	9/5/2019	D. Kimbrow	12.11	7.83
Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	9/25/2019	940	D. Kimbrow	223.3	YSI 5560	9/25/2019	D. Kimbrow	0.56	0.36
PKML-2	9/25/2019	1020	D. Kimbrow	409.2	YSI 5560	9/25/2019	D. Kimbrow	0.32	0.21
PKML-5	9/25/2019	955	D. Kimbrow	241.8	YSI 5560	9/25/2019	D. Kimbrow	0.37	0.24
PM-3	9/25/2019	920	D. Kimbrow	392.8	YSI 5560	9/25/2019	D. Kimbrow	10.86	7.02
Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	10/17/2019	1205	D. Kimbrow	138.5	YSI 5560	10/17/2019	D. Kimbrow	n/a	n/a
PKML-2	10/17/2019	1425	D. Kimbrow	322.9	YSI 5560	10/17/2019	D. Kimbrow	n/a	n/a
PKML-5	10/17/2019	1355	D. Kimbrow	147.3	YSI 5560	10/17/2019	D. Kimbrow	1.17	0.76
PM-3	10/17/2019	1110	D. Kimbrow	351.3	YSI 5560	10/17/2019	D. Kimbrow	13.05	8.43
Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	11/25/2019	1125	D. Kimbrow	131.1	YSI 5560	11/25/2019	D. Kimbrow	2.73	1.76
PKML-2	11/25/2019	1335	D. Kimbrow	274.9	YSI 5560	11/25/2019	D. Kimbrow	1.07	0.69
PKML-5	11/25/2019	1255	D. Kimbrow	136.9	YSI 5560	11/25/2019	D. Kimbrow	2.21	1.43
PM-3	11/25/2019	1045	D. Kimbrow	302.9	YSI 5560	11/25/2019	D. Kimbrow	11.25	7.27
Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	4/15/2019	1355	D. Kimbrow	12.4	SM 2130 B	4/15/2019	D. Kimbrow	10.62	6.86
PKML-2	4/15/2019	1500	D. Kimbrow	9.55	SM 2130 B	4/15/2019	D. Kimbrow	2.4	1.55
PKML-5	4/15/2019	1415	D. Kimbrow	12.13	SM 2130 B	4/15/2019	D. Kimbrow	10.23	6.61
PM-3	4/15/2019	1245	D. Kimbrow	9.72	SM 2130 B	4/15/2019	D. Kimbrow	23.55	15.2
Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	5/20/2019	1140	D. Kimbrow	2.85	SM 2130 B	5/20/2019	D. Kimbrow	4	2.59
PKML-2	5/20/2019	1515	D. Kimbrow	4.3	SM 2130 B	5/20/2019	D. Kimbrow	0.75	0.48
PKML-5	5/20/2019	1355	D. Kimbrow	3.12	SM 2130 B	5/20/2019	D. Kimbrow	3.23	2.09
PM-3	5/20/2019	1000	D. Kimbrow	3.57	SM 2130 B	5/20/2019	D. Kimbrow	12.9	8.34
Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	6/4/2019	1220	D. Kimbrow M. Smith	2.14	SM 2130 B	6/4/2019	D. Kimbrow M. Smith	1.62	1.05
PKML-2	6/4/2019	1455	D. Kimbrow M. Smith	1.36	SM 2130 B	6/4/2019	D. Kimbrow M. Smith	0.45	0.29
PKML-5	6/4/2019	1355	D. Kimbrow M. Smith	1.54	SM 2130 B	6/4/2019	D. Kimbrow M. Smith	1.59	1.03
PM-3	6/4/2019	1035	D. Kimbrow M. Smith	3.81	SM 2130 B	6/4/2019	D. Kimbrow M. Smith	9.82	6.35

Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	6/10/2019	1200	M. Smith R. McCurry	6.75	SM 2130 B	6/10/2019	M. Smith R. McCurry	4.08	2.64
PKML-2	6/10/2019	1455	M. Smith R. McCurry	143	SM 2130 B	6/10/2019	M. Smith R. McCurry	n/a	n/a
PKML-5	6/10/2019	1357	M. Smith R. McCurry	4.37	SM 2130 B	6/10/2019	M. Smith R. McCurry	3.11	2.01
PM-3	6/10/2019	1046	M. Smith R. McCurry	3.63	SM 2130 B	6/10/2019	M. Smith R. McCurry	14.13	9.13
Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	6/17/2019	1100	D. Kimbrow	2.28	SM 2130 B	6/17/2019	D. Kimbrow	1.12	0.72
PKML-2	6/17/2019	1330	D. Kimbrow	1.5	SM 2130 B	6/17/2019	D. Kimbrow	0.5	0.32
PKML-5	6/17/2019	1240	D. Kimbrow	2.61	SM 2130 B	6/17/2019	D. Kimbrow	1.06	0.69
PM-3	6/17/2019	1000	D. Kimbrow	3.54	SM 2130 B	6/17/2019	D. Kimbrow	10.28	6.64
Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	6/24/2019	1155	D. Kimbrow	2.25	SM 2130 B	6/24/2019	D. Kimbrow	1.7	1.1
PKML-2	6/24/2019	1425	D. Kimbrow	3.37	SM 2130 B	6/24/2019	D. Kimbrow	0.6	0.39
PKML-5	6/24/2019	1335	D. Kimbrow	2.92	SM 2130 B	6/24/2019	D. Kimbrow	2.02	1.31
PM-3	6/24/2019	1100	D. Kimbrow	2.79	SM 2130 B	6/24/2019	D. Kimbrow	11.64	7.52
Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	7/1/2019	1120	D. Kimbrow	1.42	SM 2130 B	7/1/2019	D. Kimbrow	0.81	0.52
PKML-2	7/1/2019	1440	D. Kimbrow	0.98	SM 2130 B	7/1/2019	D. Kimbrow	0.5	0.32
PKML-5	7/1/2019	1350	D. Kimbrow	n/a	SM 2130 B	7/1/2019	D. Kimbrow	n/a	n/a
PM-3	7/1/2019	1035	D. Kimbrow	1.79	SM 2130 B	7/1/2019	D. Kimbrow	7.74	5
Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	7/22/2019	1055	D. Kimbrow	3.38	SM 2130 B	7/22/2019	D. Kimbrow	2.76	1.78
PKML-2	7/22/2019	1435	D. Kimbrow	n/a	SM 2130 B	7/22/2019	D. Kimbrow	0.89	0.58
PKML-5	7/22/2019	1350	D. Kimbrow	3.08	SM 2130 B	7/22/2019	D. Kimbrow	2.06	1.33
PM-3	7/22/2019	1000	D. Kimbrow	3.33	SM 2130 B	7/22/2019	D. Kimbrow	10.88	7.03
Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	8/8/2019	1000	D. Kimbrow	3.56	SM 2130 B	8/8/2019	D. Kimbrow	0.82	0.53
PKML-2	8/8/2019	1110	D. Kimbrow	1.87	SM 2130 B	8/8/2019	D. Kimbrow	0.64	0.41
PKML-5	8/8/2019	1030	D. Kimbrow	2.29	SM 2130 B	8/8/2019	D. Kimbrow	1.22	0.79
PM-3	8/8/2019	930	D. Kimbrow	2.83	SM 2130 B	8/8/2019	D. Kimbrow	7.74	5
Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	8/13/2019	1220	D. Kimbrow	4.09	SM 2130 B	8/13/2019	D. Kimbrow	0.4	0.26
PKML-2	8/13/2019	1420	D. Kimbrow	647	SM 2130 B	8/13/2019	D. Kimbrow	n/a	n/a
PKML-5	8/13/2019	1350	D. Kimbrow	14.4	SM 2130 B	8/13/2019	D. Kimbrow	n/a	n/a
PM-3	8/13/2019	1240	D. Kimbrow	4	SM 2130 B	8/13/2019	D. Kimbrow	11.88	7.68
Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	8/23/2019	835	D. Kimbrow	2.98	SM 2130 B	8/23/2019	D. Kimbrow	2.09	1.35
PKML-2	8/23/2019	950	D. Kimbrow	2.89	SM 2130 B	8/23/2019	D. Kimbrow	0.51	0.33
PKML-5	8/23/2019	910	D. Kimbrow	3.67	SM 2130 B	8/23/2019	D. Kimbrow	1.53	0.99
PM-3	8/23/2019	815	D. Kimbrow	4.07	SM 2130 B	8/23/2019	D. Kimbrow	12.14	7.85

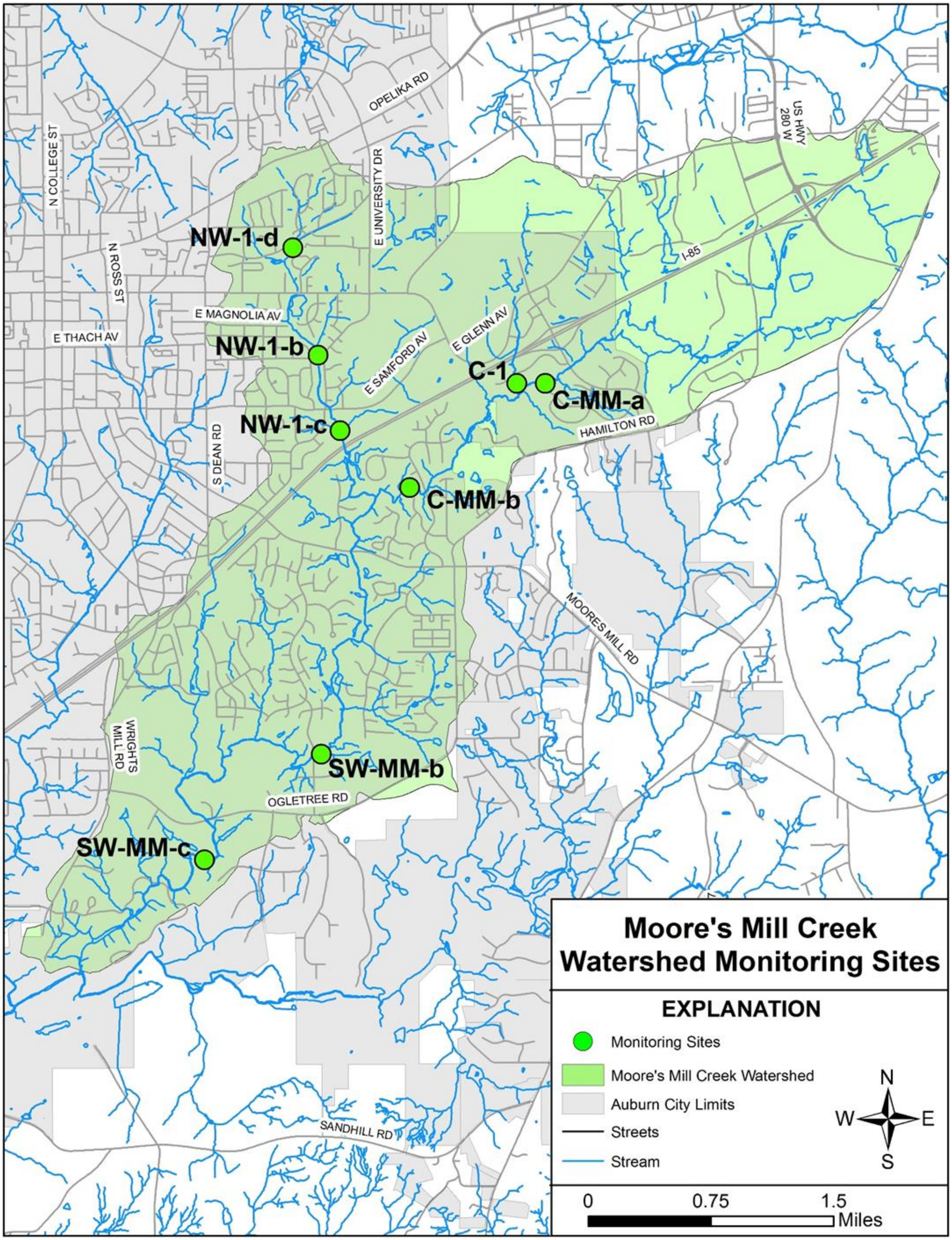
Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	8/28/2019	1145	D. Kimbrow	n/a	SM 2130 B	8/28/2019	D. Kimbrow	6.4	4.14
PKML-2	8/28/2019	1235	D. Kimbrow	n/a	SM 2130 B	8/28/2019	D. Kimbrow	1.22	0.79
PKML-5	8/28/2019	1205	D. Kimbrow	n/a	SM 2130 B	8/28/2019	D. Kimbrow	4.99	3.23
PM-3	8/28/2019	1100	D. Kimbrow	n/a	SM 2130 B	8/28/2019	D. Kimbrow	18.7	12.1
Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	9/5/2019	1050	D. Kimbrow	3.5	SM 2130 B	9/5/2019	D. Kimbrow	0.9	0.58
PKML-2	9/5/2019	1350	D. Kimbrow	3.38	SM 2130 B	9/5/2019	D. Kimbrow	0.62	0.4
PKML-5	9/5/2019	1315	D. Kimbrow	8.04	SM 2130 B	9/5/2019	D. Kimbrow	1.73	1.12
PM-3	9/5/2019	1010	D. Kimbrow	3.3	SM 2130 B	9/5/2019	D. Kimbrow	12.11	7.83
Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	9/25/2019	940	D. Kimbrow	1.12	SM 2130 B	9/25/2019	D. Kimbrow	0.56	0.36
PKML-2	9/25/2019	1020	D. Kimbrow	1.14	SM 2130 B	9/25/2019	D. Kimbrow	0.32	0.21
PKML-5	9/25/2019	955	D. Kimbrow	1.16	SM 2130 B	9/25/2019	D. Kimbrow	0.37	0.24
PM-3	9/25/2019	920	D. Kimbrow	1.97	SM 2130 B	9/25/2019	D. Kimbrow	10.86	7.02
Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	10/17/2019	1205	D. Kimbrow	8.71	SM 2130 B	10/17/2019	D. Kimbrow	n/a	n/a
PKML-2	10/17/2019	1425	D. Kimbrow	13.6	SM 2130 B	10/17/2019	D. Kimbrow	n/a	n/a
PKML-5	10/17/2019	1355	D. Kimbrow	6.38	SM 2130 B	10/17/2019	D. Kimbrow	1.17	0.76
PM-3	10/17/2019	1110	D. Kimbrow	3.74	SM 2130 B	10/17/2019	D. Kimbrow	13.05	8.43
Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	11/25/2019	1125	D. Kimbrow	5.71	SM 2130 B	11/25/2019	D. Kimbrow	2.73	1.76
PKML-2	11/25/2019	1335	D. Kimbrow	3.18	SM 2130 B	11/25/2019	D. Kimbrow	1.07	0.69
PKML-5	11/25/2019	1255	D. Kimbrow	4.02	SM 2130 B	11/25/2019	D. Kimbrow	2.21	1.43
PM-3	11/25/2019	1045	D. Kimbrow	2.92	SM 2130 B	11/25/2019	D. Kimbrow	11.25	7.27

2.5 Moore's Mill Creek Compliance Monitoring Data

Moore's Mill Creek was placed on the draft 303(d) list for siltation in 1998, and has been on the final 303(d) list since 2000. The impaired reach is 10.51 mi. and includes all waters from its source to its confluence with Chewacla Creek. Habitat degradation due to sedimentation/siltation is the impairment in Moore's Mill Creek. Potential sources of the impairment are listed as land development and urban runoff/storm sewers. The Moore's Mill Creek Watershed Management Plan was completed in 2008. This plan outlined several objectives aimed to reduce sedimentation and mitigate habitat degradation. Included in the plan were geomorphic surveys and Bank Erosion Hazard Index (BEHI) assessments of stream reaches on both the main stem and tributaries throughout the watershed. Findings from these geomorphic surveys and BEHI assessments identified in-stream sediment loading from streambank erosion as a significant contributor to the impairment. The watershed management plan recommended continued monitoring of these sites to evaluate the success of future efforts aimed to reduce bank erosion.

The City makes reasonable efforts to monitor streambank erosion at eight (8) reaches in the Moore's Mill Creek watershed with annual stream geomorphic surveys. These annual surveys measure geomorphic parameters that are used as indicators of stability of a stream reach. A stream condition rapid assessment is performed annually at each of the 8 reaches. The stream condition rapid assessment was developed with a grant from EPA (EPA Region IV Wetlands Program Development Grant CD00D01412, "Eco-Morphological Mitigation Design and Assessment Tools for the Alabama and Tennessee Appalachian Plateau"), and rates stream condition and function based on eco-geomorphic indicators. Quarterly samples of total suspended solids (TSS), water temperature, pH, dissolved oxygen, specific conductance, and turbidity are measured in-situ at each site. Additionally, the City continues to reasonably support and participate in studies of water quality in the Moore's Mill Creek watershed. Sample reaches for monitoring in the Moore's Mill Creek watershed are shown below.

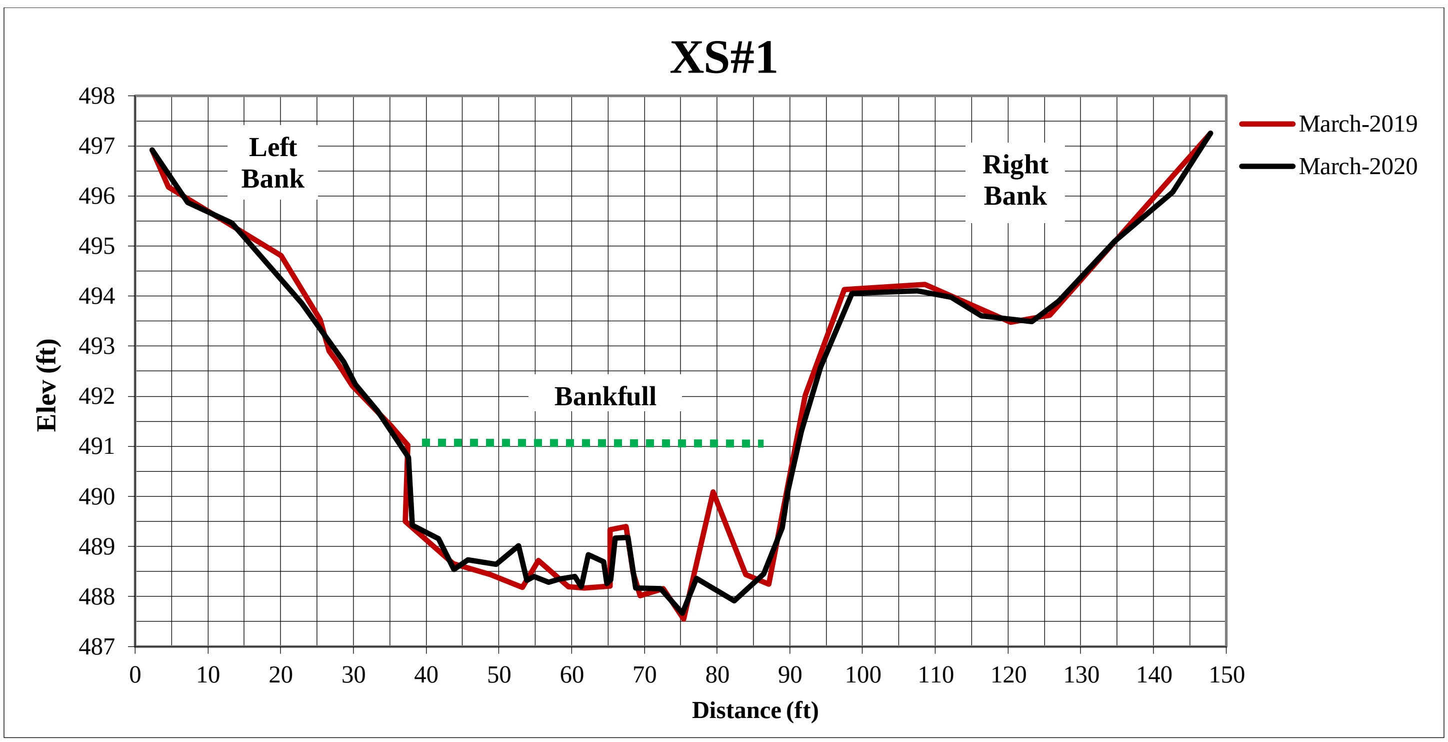
Data from the geomorphic surveys conducted for this reporting period show that streambank erosion continues to be a problem and likely contributes to the sediment load in Moore's Mill Creek. Several of the sites where the annual geomorphic surveys are conducted exhibit bank failure as well as a moderate to high BEHI index.



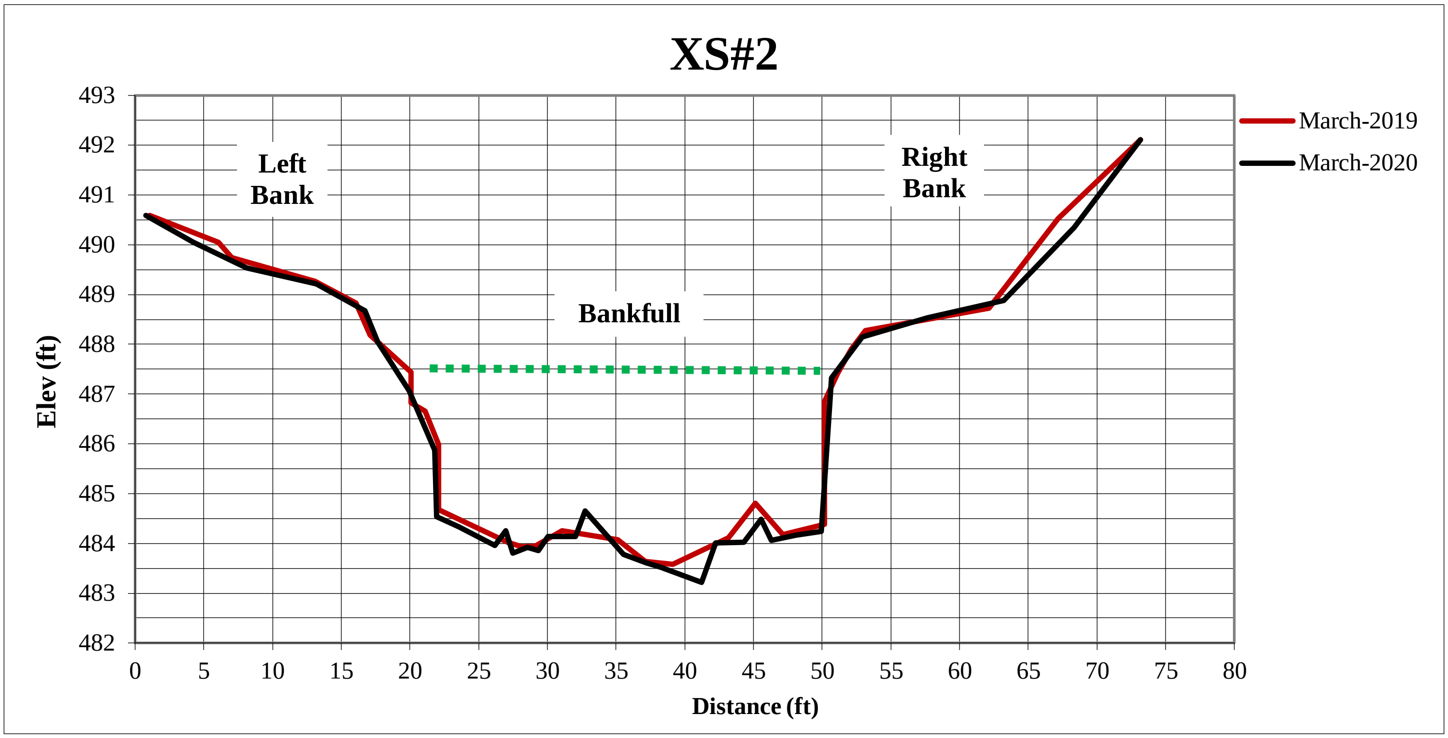
Moore’s Mill Creek Watershed Monitoring Sites

Site	Stream Condition and Function	Score (0 – 2)*
SW-MM-c	Upstream watershed impacts from stormwater, wastewater, or sediment	2
	Local stream reach impacts from ditches, pipes, livestock, utilities, or roads	2
	Channel dimension related to bankfull cross-section measurements	2
	Channel pattern related to planform measurements	2
	Channel bed profile related to longitudinal profile measurements	2
	Streambank stability and protection from erosion	2
	Floodplain connection for bankfull flood access	1
	Floodplain morphology to dissipate flood energy and minimize erosion	2
	Riparian vegetation to provide shade, nutrient uptake, and food sources	2
	Habitats including diverse bedform, large woody debris, leaf packs, root hairs	2
	Water quality and stream bed sediments	2
	Presence of desirable fish and macroinvertebrates expected for watershed	2
*Score indicates natural function and health: 2 = Good; 1 = Fair; 0 = Poor	TOTAL	23

Site	Cross-Section	Geomorphic Parameter	Value	Units
SW-MM-c	1	Bankfull Area	117	$ft.^2$
		Bankfull Width	56	ft.
		Bankfull Depth	2.1	ft.
		Maximum Bankfull Depth	3.1	ft.
		Low Bank Height	6.4	ft.
		Width of the Flood-prone Area	140	ft.
		Width to Depth Ratio	27.2	n/a
		Bank Height Ratio	2.1	n/a
		Entrenchment Ratio	2.5	n/a
		Right Bank BEHI	High	n/a
		Left Bank BEHI	Low	n/a

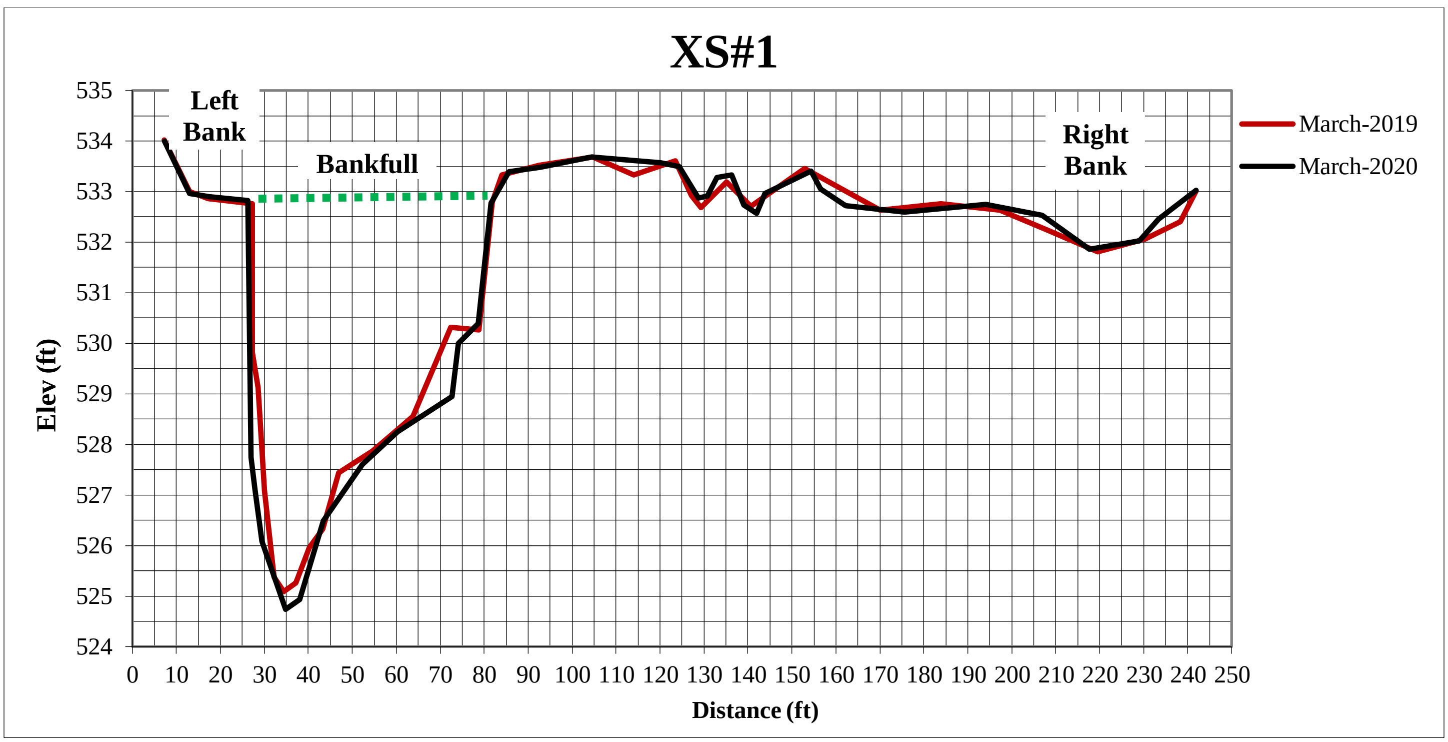


Site	Cross-Section	Geomorphic Parameter	Value	Units
SW-MM-c	2	Bankfull Area	122	$ft.^2$
		Bankfull Width	35	ft.
		Bankfull Depth	3.5	ft.
		Maximum Bankfull Depth	4.9	ft.
		Low Bank Height	7.4	ft.
		Width of the Flood-prone Area	220	ft.
		Width to Depth Ratio	10.2	n/a
		Bank Height Ratio	1.5	n/a
		Entrenchment Ratio	6.2	n/a
		Right Bank BEHI	High	n/a
		Left Bank BEHI	Moderate	n/a

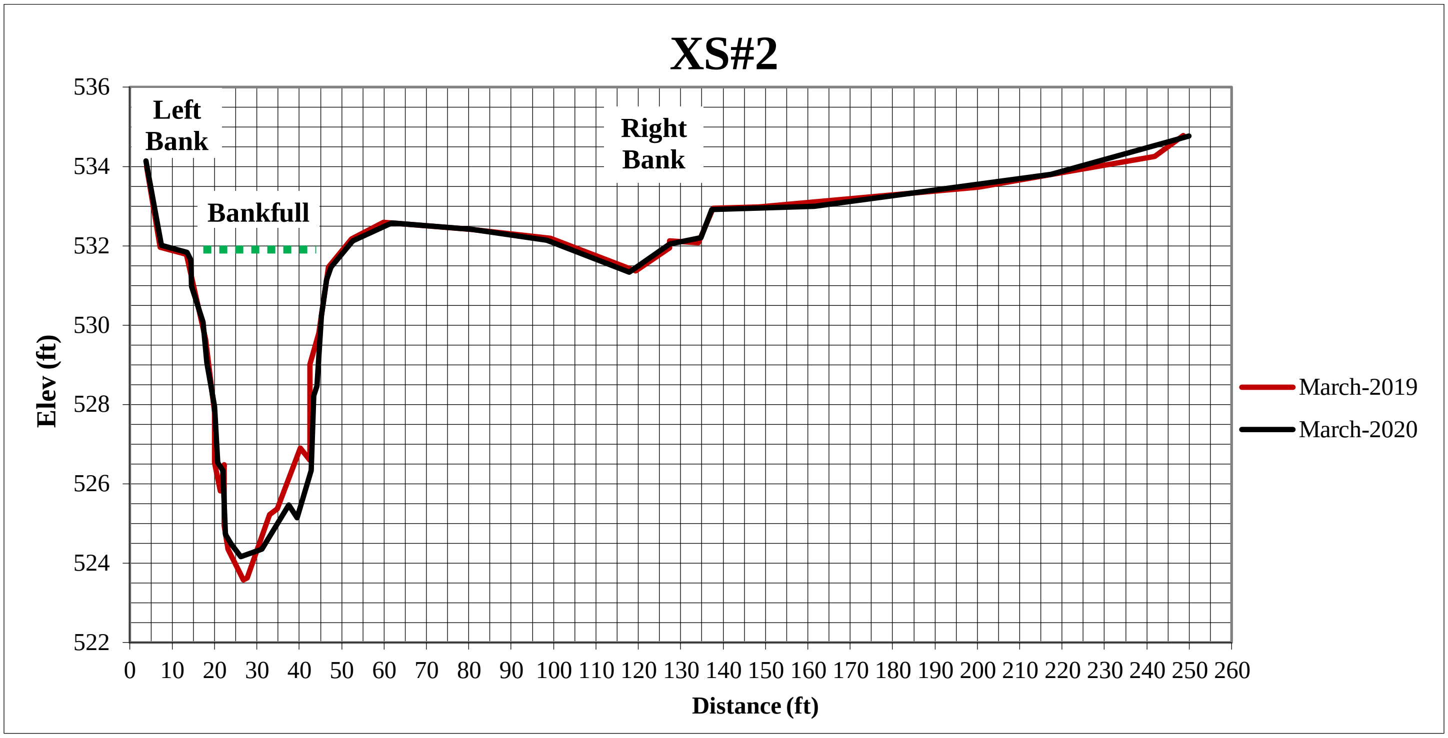


Site	Stream Condition and Function	Score (0 – 2)*
SW-MM-b	Upstream watershed impacts from stormwater, wastewater, or sediment	1
	Local stream reach impacts from ditches, pipes, livestock, utilities, or roads	2
	Channel dimension related to bankfull cross-section measurements	2
	Channel pattern related to planform measurements	2
	Channel bed profile related to longitudinal profile measurements	2
	Streambank stability and protection from erosion	0
	Floodplain connection for bankfull flood access	2
	Floodplain morphology to dissipate flood energy and minimize erosion	2
	Riparian vegetation to provide shade, nutrient uptake, and food sources	1
	Habitats including diverse bedform, large woody debris, leaf packs, root hairs	1
	Water quality and stream bed sediments	1
	Presence of desirable fish and macroinvertebrates expected for watershed	2
*Score indicates natural function and health: 2 = Good; 1 = Fair; 0 = Poor	TOTAL	18

Site	Cross-Section	Geomorphic Parameter	Value	Units
SW-MM-b	1	Bankfull Area	266	$ft.^2$
		Bankfull Width	55	ft.
		Bankfull Depth	4.8	ft.
		Maximum Bankfull Depth	7.9	ft.
		Low Bank Height	8.9	ft.
		Width of the Flood-prone Area	450	ft.
		Width to Depth Ratio	11.4	n/a
		Bank Height Ratio	1.1	n/a
		Entrenchment Ratio	8.1	n/a
		Right Bank BEHI	High	n/a
		Left Bank BEHI	Moderate	n/a

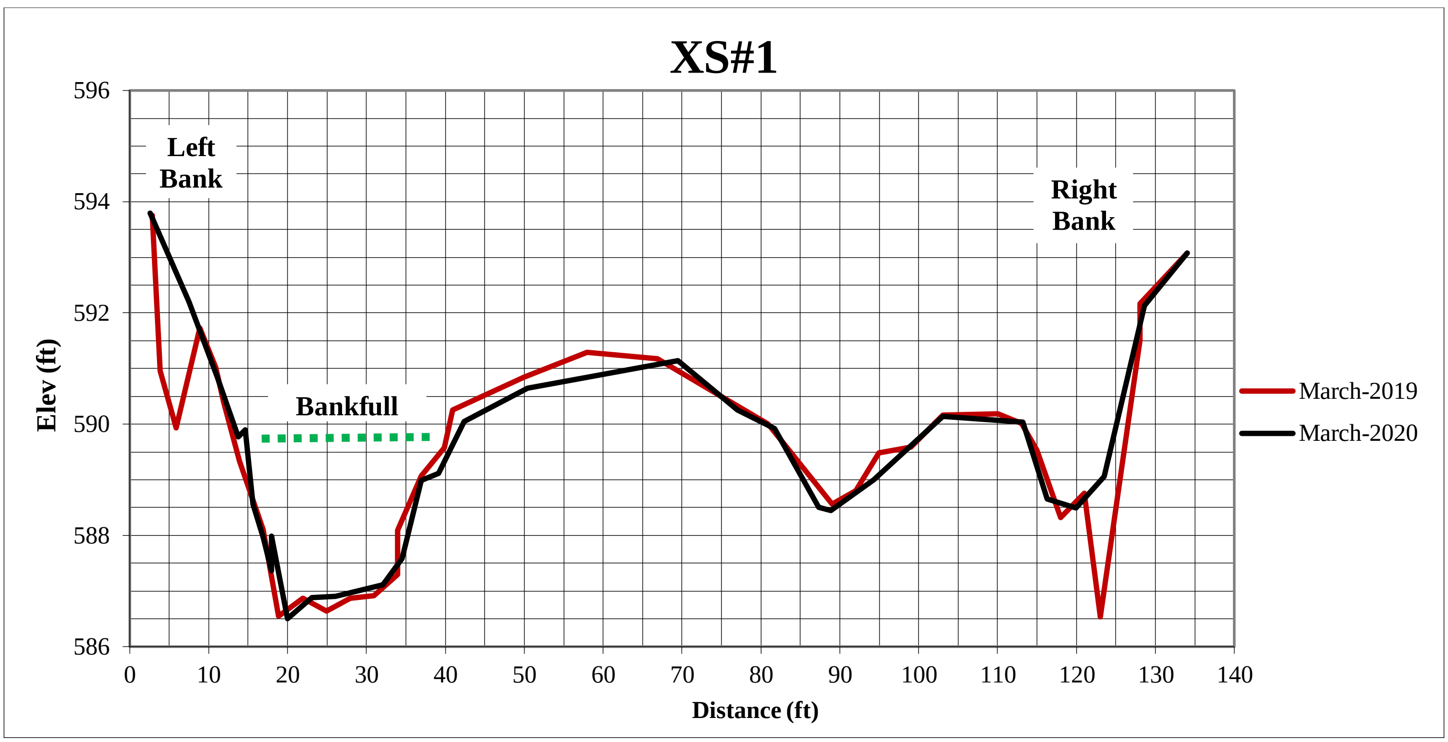


Site	Cross-Section	Geomorphic Parameter	Value	Units
SW-MM-b	2	Bankfull Area	167	$ft.^2$
		Bankfull Width	34	ft.
		Bankfull Depth	4.9	ft.
		Maximum Bankfull Depth	7.5	ft.
		Low Bank Height	8.4	ft.
		Width of the Flood-prone Area	425	ft.
		Width to Depth Ratio	6.9	n/a
		Bank Height Ratio	1.1	n/a
		Entrenchment Ratio	12.5	n/a
		Right Bank BEHI	Low	n/a
		Left Bank BEHI	Low	n/a

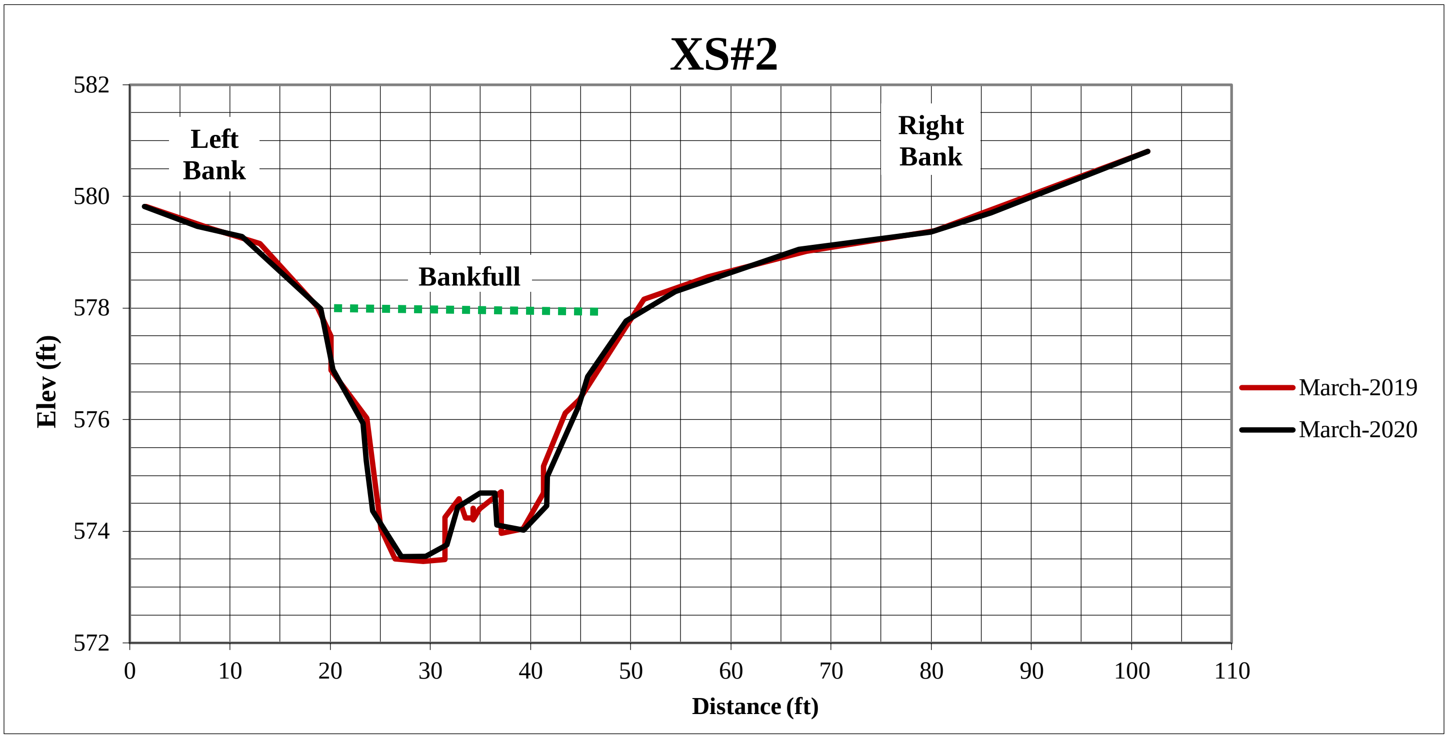


Site	Stream Condition and Function	Score (0 – 2)*
C-MM-b	Upstream watershed impacts from stormwater, wastewater, or sediment	1
	Local stream reach impacts from ditches, pipes, livestock, utilities, or roads	1
	Channel dimension related to bankfull cross-section measurements	1
	Channel pattern related to planform measurements	2
	Channel bed profile related to longitudinal profile measurements	2
	Streambank stability and protection from erosion	2
	Floodplain connection for bankfull flood access	1
	Floodplain morphology to dissipate flood energy and minimize erosion	2
	Riparian vegetation to provide shade, nutrient uptake, and food sources	1
	Habitats including diverse bedform, large woody debris, leaf packs, root hairs	2
	Water quality and stream bed sediments	2
	Presence of desirable fish and macroinvertebrates expected for watershed	0
*Score indicates natural function and health: 2 = Good; 1 = Fair; 0 = Poor	TOTAL	17

Site	Cross-Section	Geomorphic Parameter	Value	Units
C-MM-b	1	Bankfull Area	67	$ft.^2$
		Bankfull Width	37	ft.
		Bankfull Depth	1.8	ft.
		Maximum Bankfull Depth	3.5	ft.
		Low Bank Height	4.1	ft.
		Width of the Flood-prone Area	135	ft.
		Width to Depth Ratio	20.1	n/a
		Bank Height Ratio	1.2	n/a
		Entrenchment Ratio	4.53.7	n/a
		Right Bank BEHI	Low	n/a
		Left Bank BEHI	Low	n/a

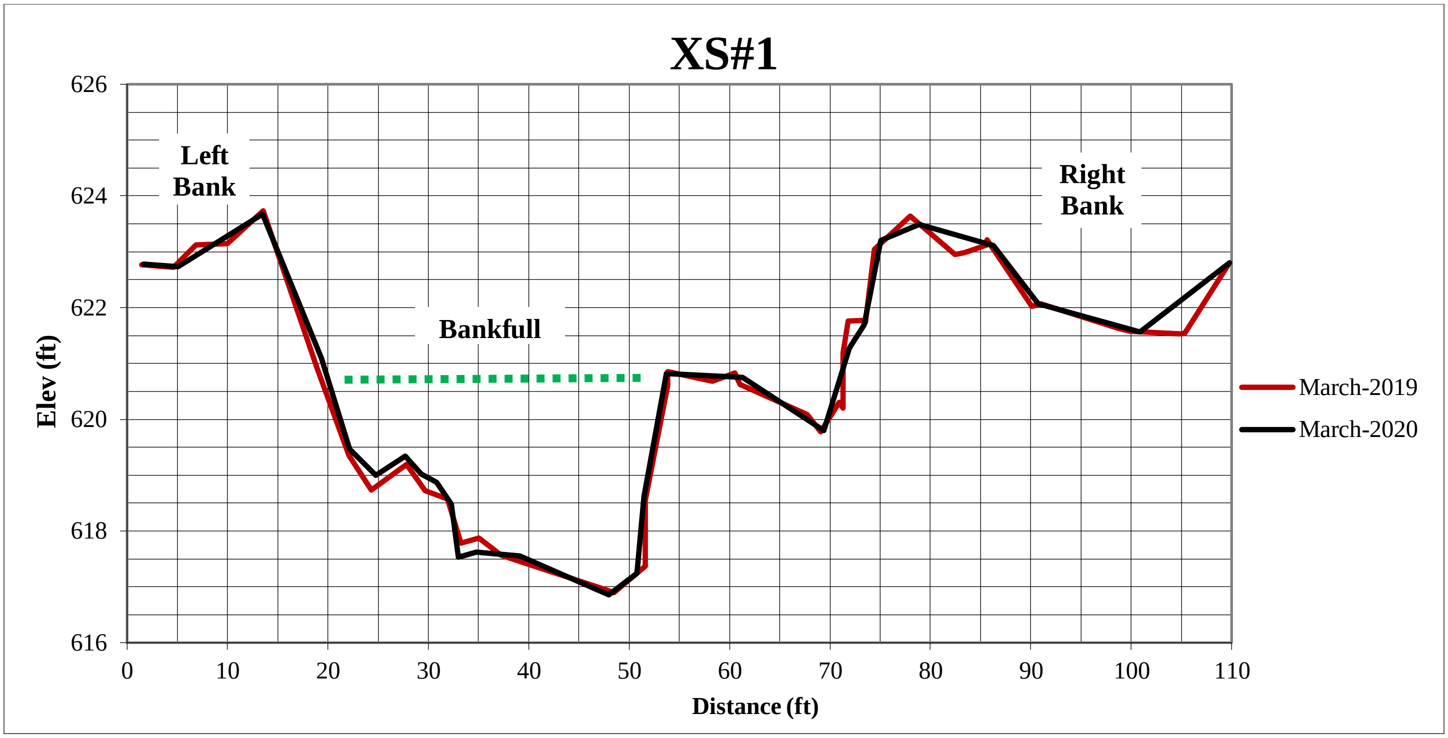


Site	Cross-Section	Geomorphic Parameter	Value	Units
C-MM-b	2	Bankfull Area	86	$ft.^2$
		Bankfull Width	38	ft.
		Bankfull Depth	2.2	ft.
		Maximum Bankfull Depth	4.4	ft.
		Low Bank Height	5.5	ft.
		Width of the Flood-prone Area	315	ft.
		Width to Depth Ratio	17.1	n/a
		Bank Height Ratio	1.2	n/a
		Entrenchment Ratio	8.2	n/a
		Right Bank BEHI	Low	n/a
		Left Bank BEHI	Low	n/a

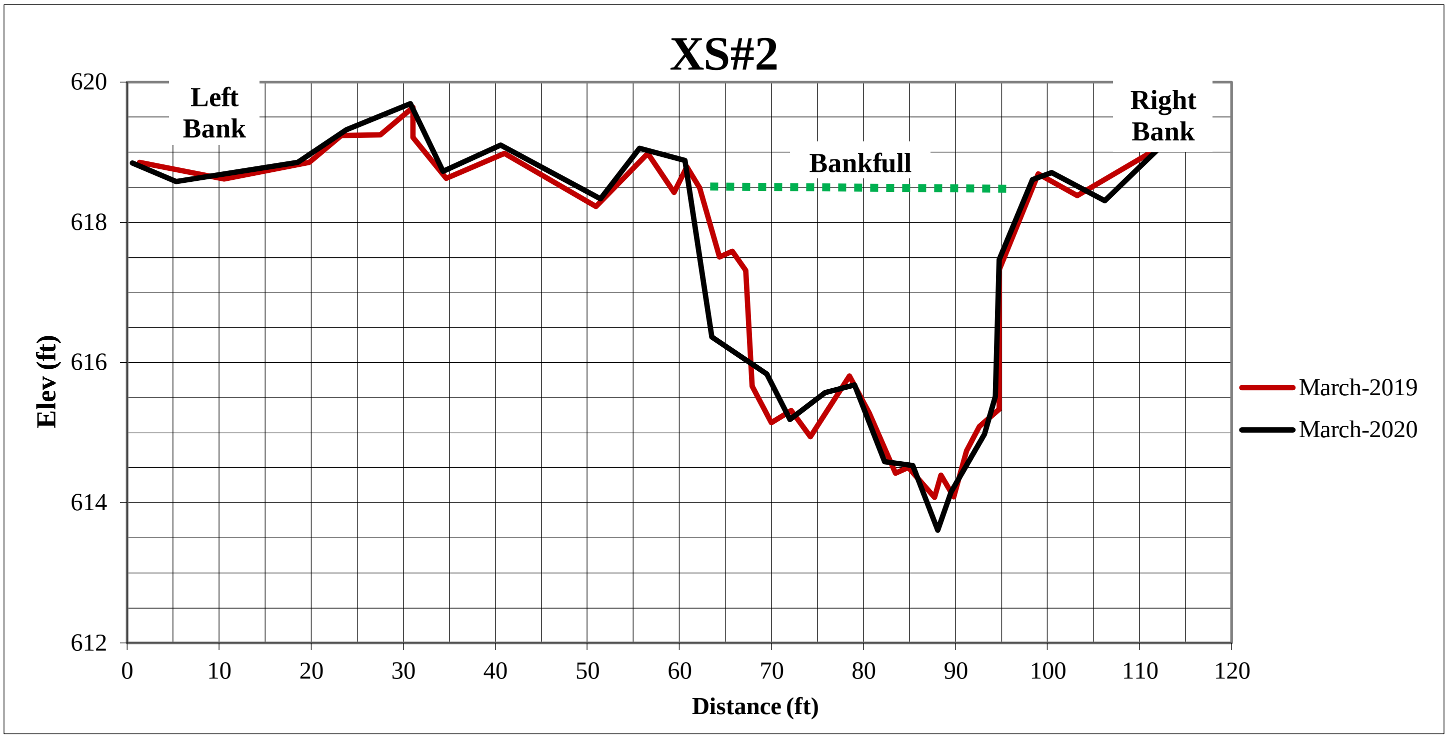


Site	Stream Condition and Function	Score (0 – 2)*
C-MM-a	Upstream watershed impacts from stormwater, wastewater, or sediment	1
	Local stream reach impacts from ditches, pipes, livestock, utilities, or roads	0
	Channel dimension related to bankfull cross-section measurements	1
	Channel pattern related to planform measurements	1
	Channel bed profile related to longitudinal profile measurements	1
	Streambank stability and protection from erosion	1
	Floodplain connection for bankfull flood access	2
	Floodplain morphology to dissipate flood energy and minimize erosion	2
	Riparian vegetation to provide shade, nutrient uptake, and food sources	2
	Habitats including diverse bedform, large woody debris, leaf packs, root hairs	1
	Water quality and stream bed sediments	1
	Presence of desirable fish and macroinvertebrates expected for watershed	1
*Score indicates natural function and health: 2 = Good; 1 = Fair; 0 = Poor	TOTAL	14

Site	Cross-Section	Geomorphic Parameter	Value	Units
C-MM-a	1	Bankfull Area	90	$ft.^2$
		Bankfull Width	34	ft.
		Bankfull Depth	2.6	ft.
		Maximum Bankfull Depth	4.0	ft.
		Low Bank Height	6.6	ft.
		Width of the Flood-prone Area	365	ft.
		Width to Depth Ratio	13.1	n/a
		Bank Height Ratio	1.7	n/a
		Entrenchment Ratio	10.6	n/a
		Right Bank BEHI	Moderate	n/a
		Left Bank BEHI	High	n/a

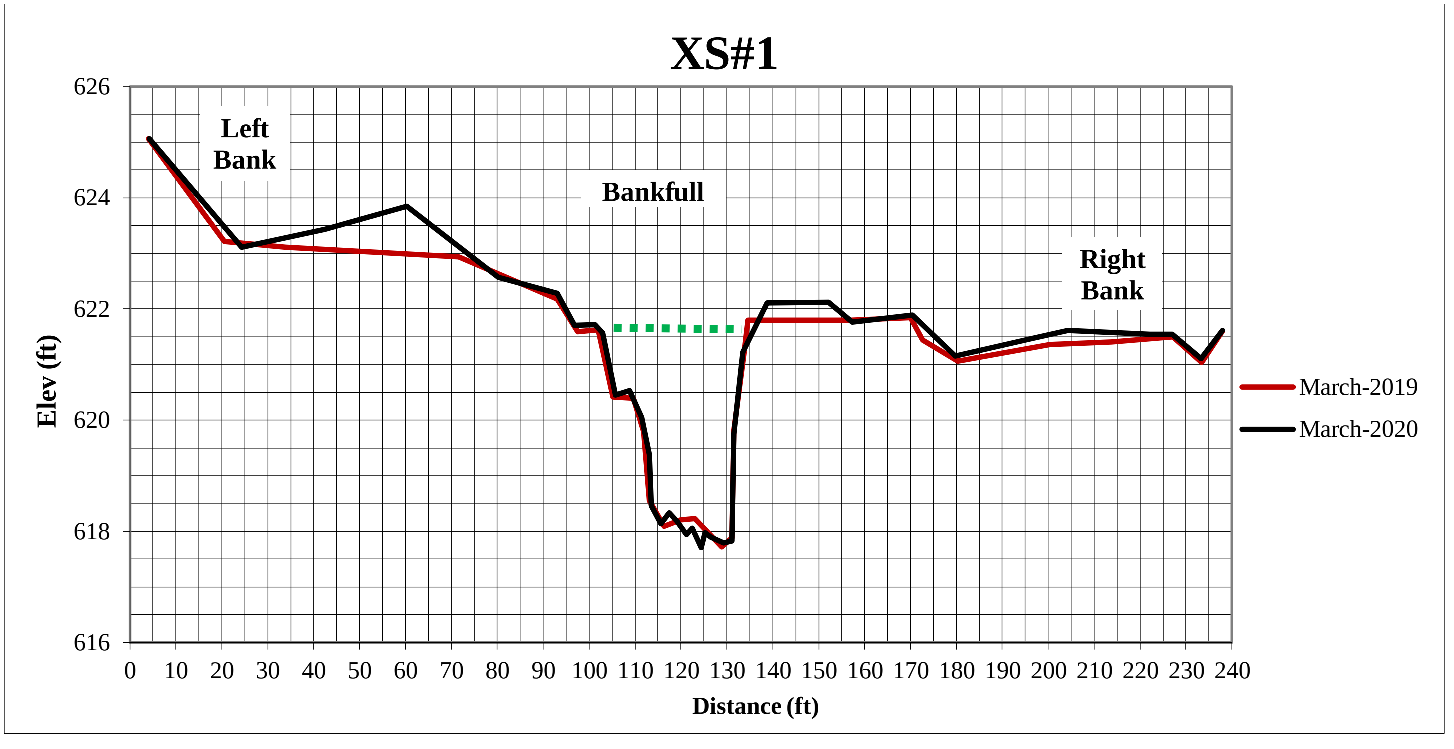


Site	Cross-Section	Geomorphic Parameter	Value	Units
C-MM-a	2	Bankfull Area	116	$ft.^2$
		Bankfull Width	38	ft.
		Bankfull Depth	3.1	ft.
		Maximum Bankfull Depth	5.0	ft.
		Low Bank Height	5.1	ft.
		Width of the Flood-prone Area	320	ft.
		Width to Depth Ratio	12.3	n/a
		Bank Height Ratio	1.0	n/a
		Entrenchment Ratio	8.5	n/a
		Right Bank BEHI	Low	n/a
		Left Bank BEHI	Low	n/a

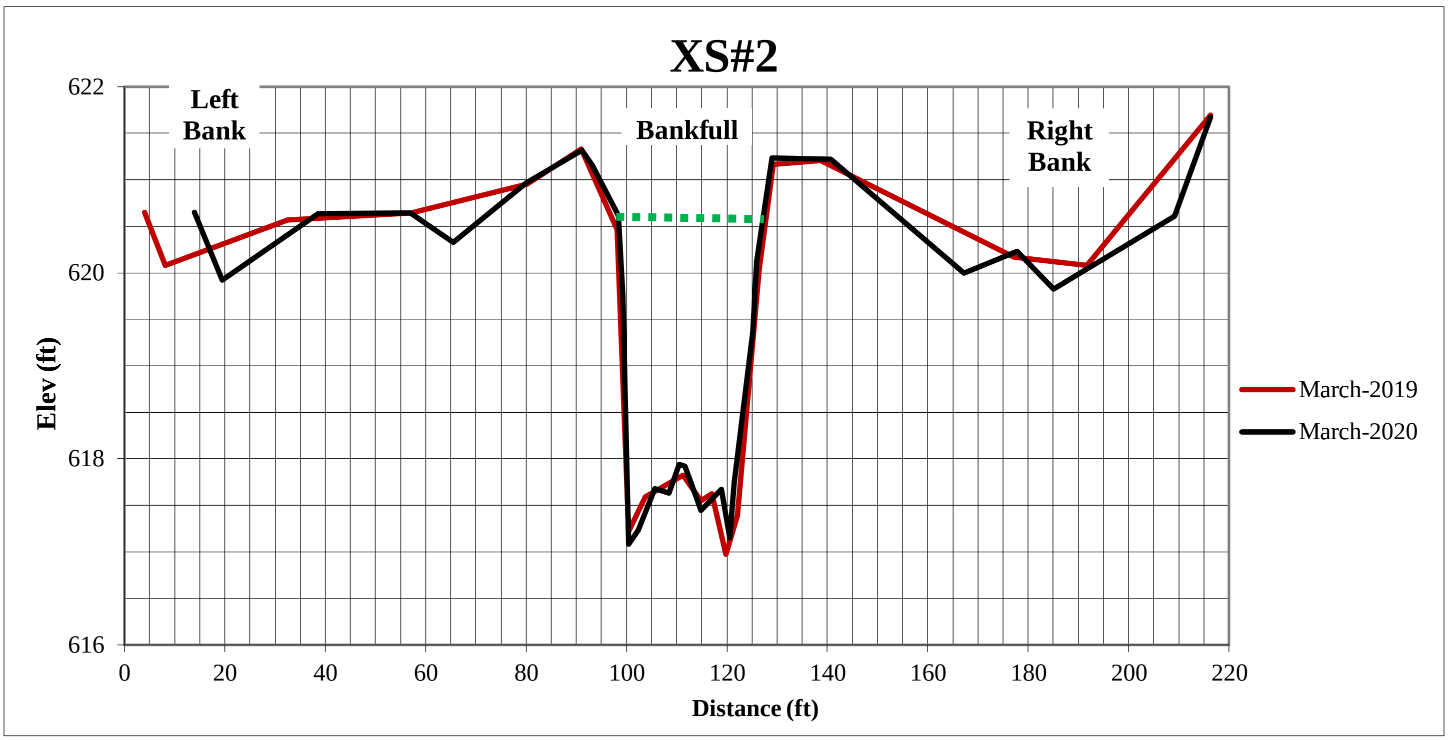


Site	Stream Condition and Function	Score (0 – 2)*
C-1	Upstream watershed impacts from stormwater, wastewater, or sediment	1
	Local stream reach impacts from ditches, pipes, livestock, utilities, or roads	2
	Channel dimension related to bankfull cross-section measurements	2
	Channel pattern related to planform measurements	2
	Channel bed profile related to longitudinal profile measurements	2
	Streambank stability and protection from erosion	1
	Floodplain connection for bankfull flood access	2
	Floodplain morphology to dissipate flood energy and minimize erosion	1
	Riparian vegetation to provide shade, nutrient uptake, and food sources	2
	Habitats including diverse bedform, large woody debris, leaf packs, root hairs	2
	Water quality and stream bed sediments	2
	Presence of desirable fish and macroinvertebrates expected for watershed	0
*Score indicates natural function and health: 2 = Good; 1 = Fair; 0 = Poor	TOTAL	19

Site	Cross-Section	Geomorphic Parameter	Value	Units
C-1	1	Bankfull Area	101	$ft.^2$
		Bankfull Width	46	ft.
		Bankfull Depth	2.2	ft.
		Maximum Bankfull Depth	4.4	ft.
		Low Bank Height	4.4	ft.
		Width of the Flood-prone Area	180	ft.
		Width to Depth Ratio	20.8	n/a
		Bank Height Ratio	1.0	n/a
		Entrenchment Ratio	3.9	n/a
		Right Bank BEHI	Moderate	n/a
		Left Bank BEHI	Low	n/a

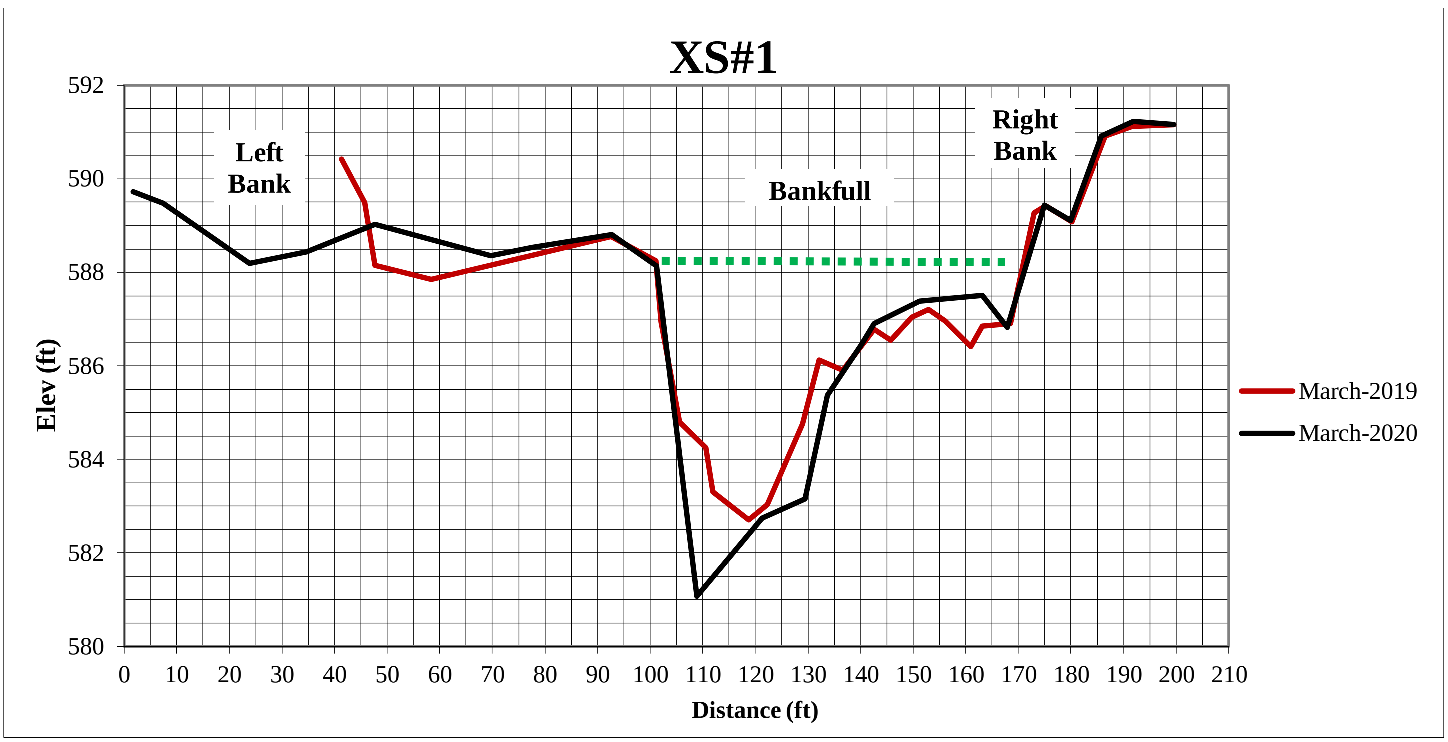


Site	Cross-Section	Geomorphic Parameter	Value	Units
C-1	2	Bankfull Area	93	ft.^{2}
		Bankfull Width	38	ft.
		Bankfull Depth	2.5	ft.
		Maximum Bankfull Depth	4.2	ft.
		Low Bank Height	4.2	ft.
		Width of the Flood-prone Area	232	ft.
		Width to Depth Ratio	15.4	n/a
		Bank Height Ratio	1.0	n/a
		Entrenchment Ratio	6.1	n/a
		Right Bank BEHI	Moderate	n/a
		Left Bank BEHI	Moderate	n/a

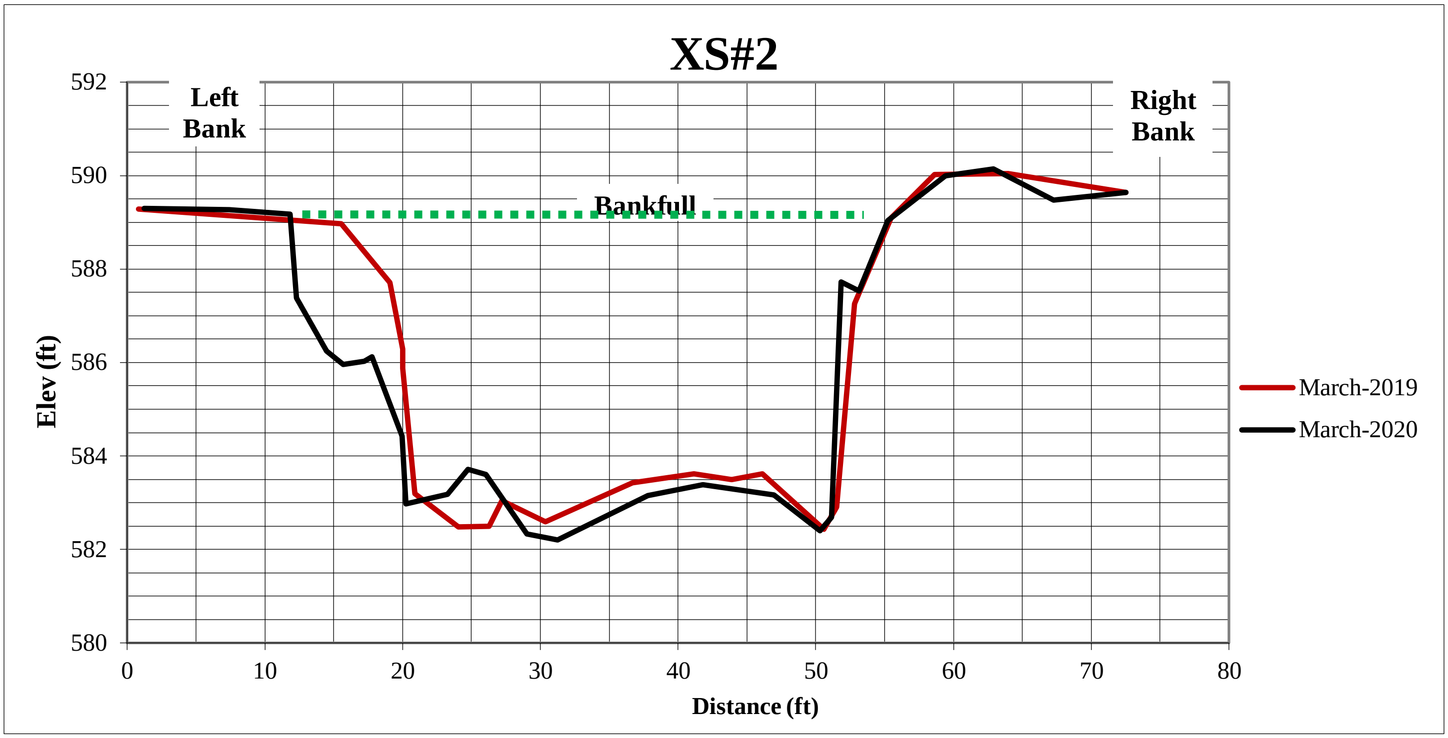


Site	Stream Condition and Function	Score (0 – 2)*
NW-1-c	Upstream watershed impacts from stormwater, wastewater, or sediment	0
	Local stream reach impacts from ditches, pipes, livestock, utilities, or roads	1
	Channel dimension related to bankfull cross-section measurements	0
	Channel pattern related to planform measurements	1
	Channel bed profile related to longitudinal profile measurements	0
	Streambank stability and protection from erosion	0
	Floodplain connection for bankfull flood access	2
	Floodplain morphology to dissipate flood energy and minimize erosion	2
	Riparian vegetation to provide shade, nutrient uptake, and food sources	1
	Habitats including diverse bedform, large woody debris, leaf packs, root hairs	2
	Water quality and stream bed sediments	1
	Presence of desirable fish and macroinvertebrates expected for watershed	0
*Score indicates natural function and health: 2 = Good; 1 = Fair; 0 = Poor	TOTAL	10

Site	Cross-Section	Geomorphic Parameter	Value	Units
NW-1-c	1	Bankfull Area	208	$ft.^2$
		Bankfull Width	75	ft.
		Bankfull Depth	2.8	ft.
		Maximum Bankfull Depth	7.1	ft.
		Low Bank Height	7.7	ft.
		Width of the Flood-prone Area	570	ft.
		Width to Depth Ratio	27.2	n/a
		Bank Height Ratio	1.1	n/a
		Entrenchment Ratio	7.6	n/a
		Right Bank BEHI	Low	n/a
		Left Bank BEHI	Moderate	n/a

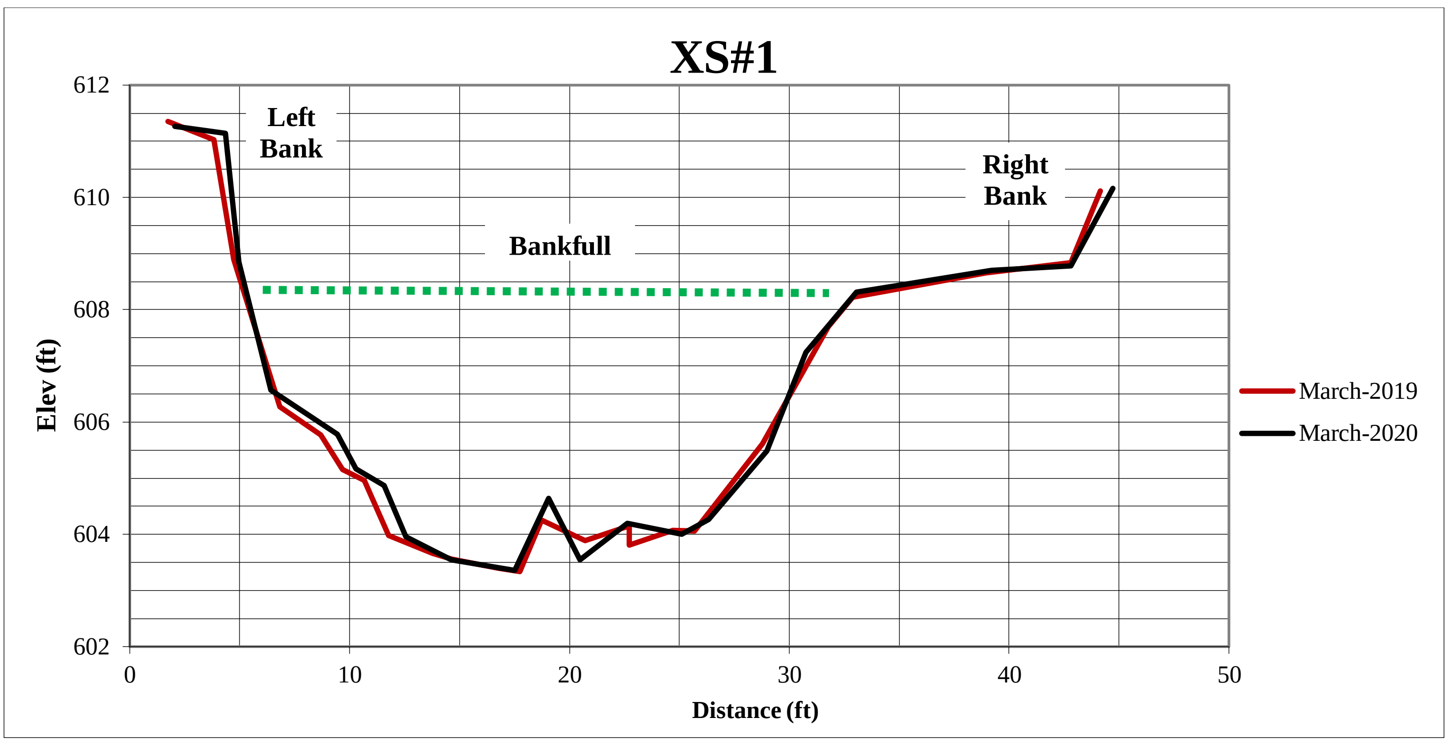


Site	Cross-Section	Geomorphic Parameter	Value	Units
NW-1-c	2	Bankfull Area	224	ft.^{2}
		Bankfull Width	48	ft.
		Bankfull Depth	4.7	ft.
		Maximum Bankfull Depth	7.0	ft.
		Low Bank Height	7.1	ft.
		Width of the Flood-prone Area	479	ft.
		Width to Depth Ratio	10.2	n/a
		Bank Height Ratio	1.0	n/a
		Entrenchment Ratio	10	n/a
		Right Bank BEHI	Moderate	n/a
		Left Bank BEHI	Low	n/a

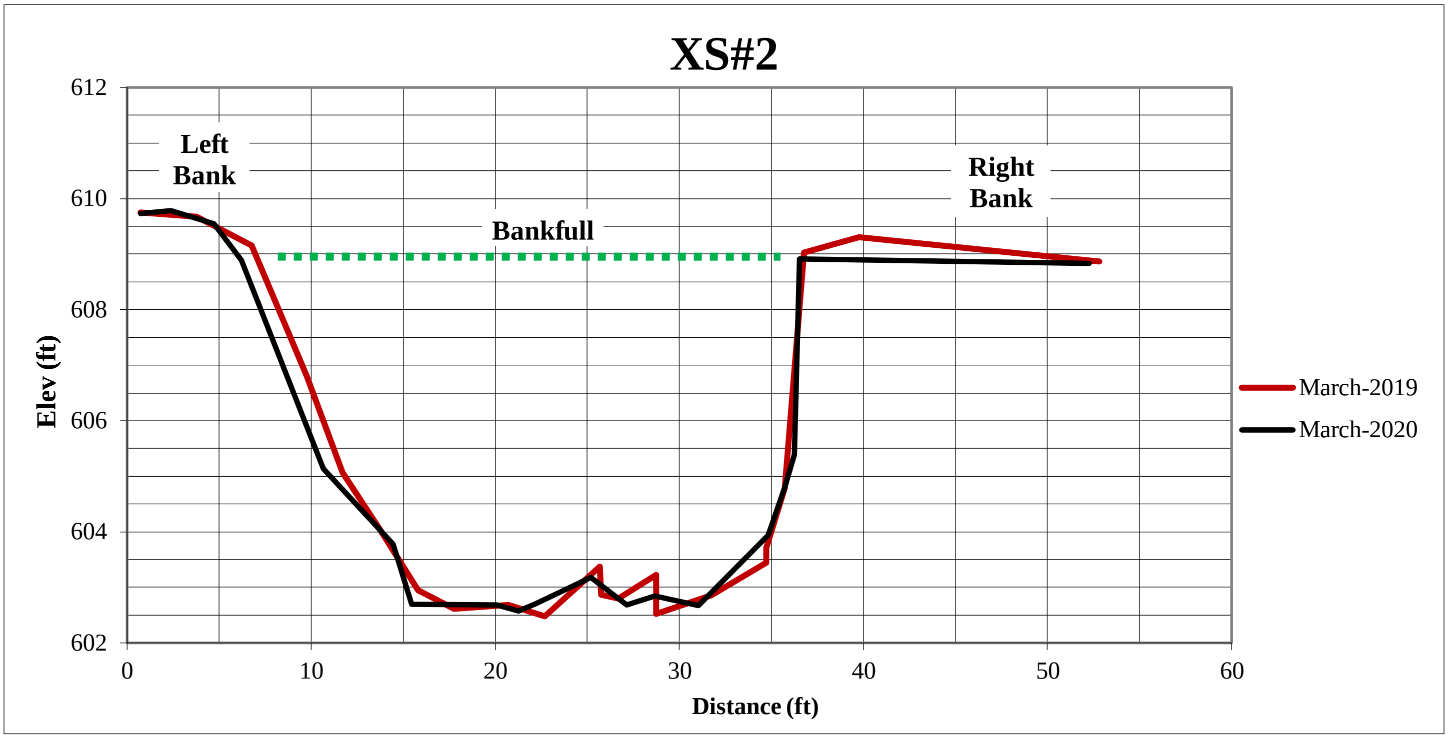


Site	Stream Condition and Function	Score (0 – 2)*
NW-1-b	Upstream watershed impacts from stormwater, wastewater, or sediment	0
	Local stream reach impacts from ditches, pipes, livestock, utilities, or roads	0
	Channel dimension related to bankfull cross-section measurements	0
	Channel pattern related to planform measurements	0
	Channel bed profile related to longitudinal profile measurements	1
	Streambank stability and protection from erosion	0
	Floodplain connection for bankfull flood access	1
	Floodplain morphology to dissipate flood energy and minimize erosion	2
	Riparian vegetation to provide shade, nutrient uptake, and food sources	0
	Habitats including diverse bedform, large woody debris, leaf packs, root hairs	1
	Water quality and stream bed sediments	1
	Presence of desirable fish and macroinvertebrates expected for watershed	0
*Score indicates natural function and health: 2 = Good; 1 = Fair; 0 = Poor	TOTAL	6

Site	Cross-Section	Geomorphic Parameter	Value	Units
NW-1-b	1	Bankfull Area	92	$ft.^2$
		Bankfull Width	28	ft.
		Bankfull Depth	3.3	ft.
		Maximum Bankfull Depth	5.0	ft.
		Low Bank Height	7.9	ft.
		Width of the Flood-prone Area	192	ft.
		Width to Depth Ratio	8.6	n/a
		Bank Height Ratio	1.6	n/a
		Entrenchment Ratio	6.8	n/a
		Right Bank BEHI	Low	n/a
		Left Bank BEHI	High	n/a

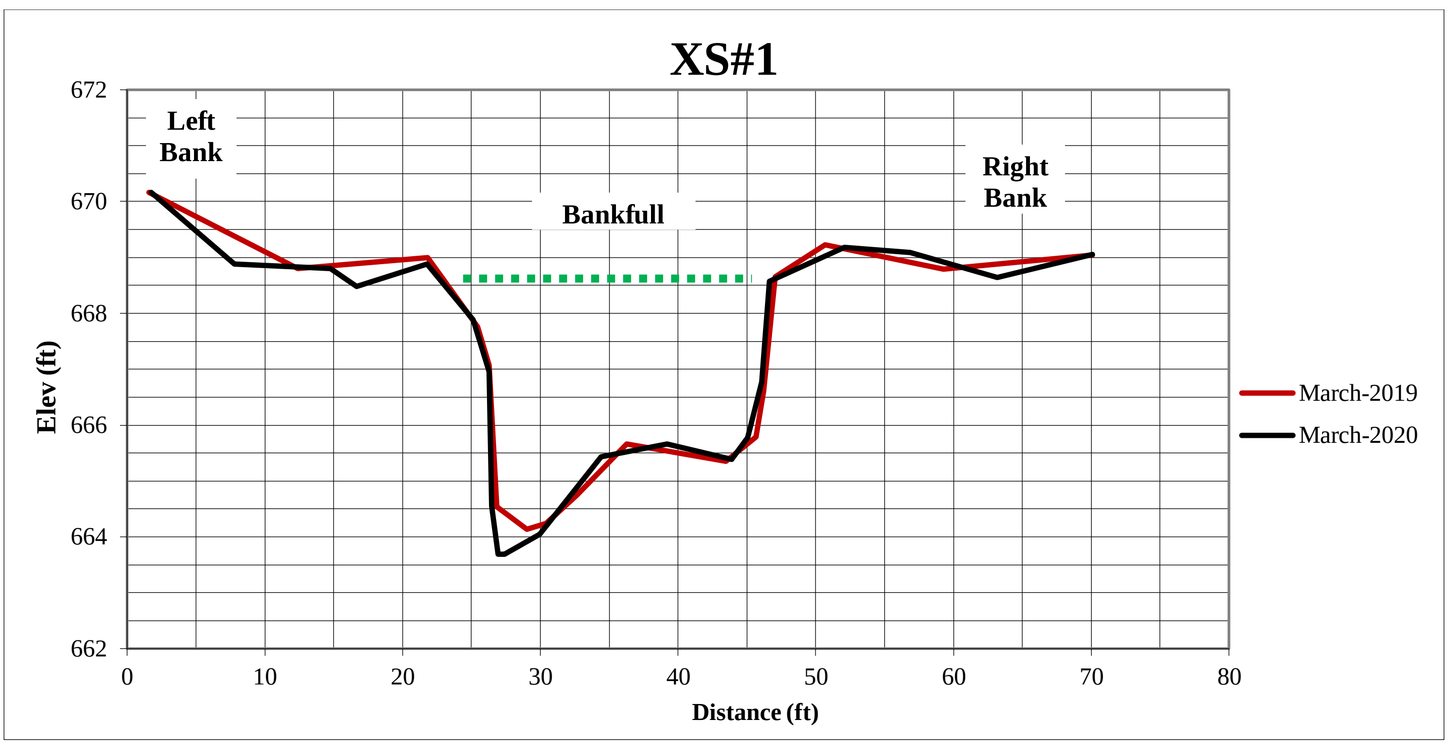


Site	Cross-Section	Geomorphic Parameter	Value	Units
NW-1-b	2	Bankfull Area	162	$ft.^2$
		Bankfull Width	32	ft.
		Bankfull Depth	5.1	ft.
		Maximum Bankfull Depth	6.3	ft.
		Low Bank Height	6.3	ft.
		Width of the Flood-prone Area	215	ft.
		Width to Depth Ratio	6.2	n/a
		Bank Height Ratio	1	n/a
		Entrenchment Ratio	6.8	n/a
		Right Bank BEHI	Low	n/a
		Left Bank BEHI	Low	n/a

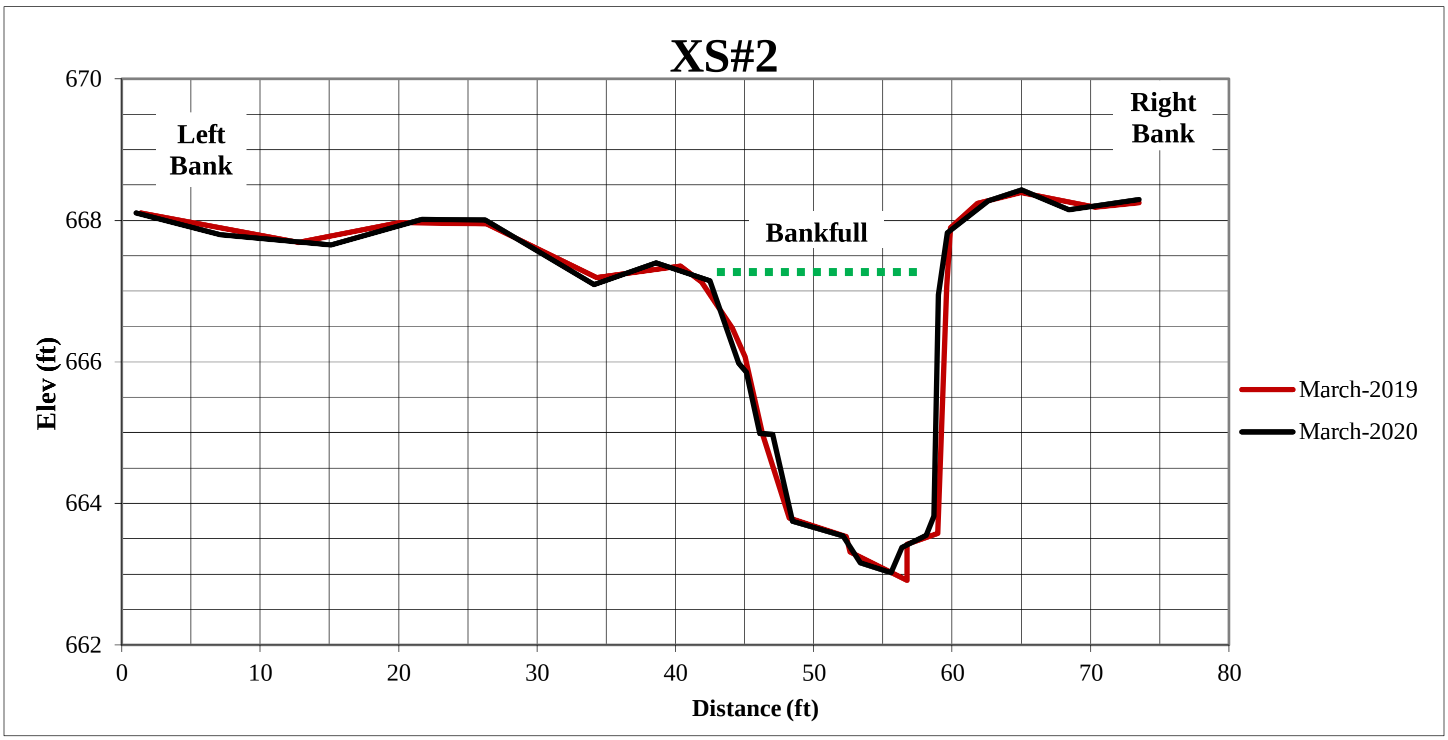


Site	Stream Condition and Function	Score (0 – 2)*
NW-1-d	Upstream watershed impacts from stormwater, wastewater, or sediment	1
	Local stream reach impacts from ditches, pipes, livestock, utilities, or roads	1
	Channel dimension related to bankfull cross-section measurements	1
	Channel pattern related to planform measurements	2
	Channel bed profile related to longitudinal profile measurements	2
	Streambank stability and protection from erosion	0
	Floodplain connection for bankfull flood access	2
	Floodplain morphology to dissipate flood energy and minimize erosion	2
	Riparian vegetation to provide shade, nutrient uptake, and food sources	1
	Habitats including diverse bedform, large woody debris, leaf packs, root hairs	1
	Water quality and stream bed sediments	2
	Presence of desirable fish and macroinvertebrates expected for watershed	1
*Score indicates natural function and health: 2 = Good; 1 = Fair; 0 = Poor	TOTAL	16

Site	Cross-Section	Geomorphic Parameter	Value	Units
NW-1-d	1	Bankfull Area	69	$ft.^2$
		Bankfull Width	25	ft.
		Bankfull Depth	2.8	ft.
		Maximum Bankfull Depth	4.9	ft.
		Low Bank Height	5.2	ft.
		Width of the Flood-prone Area	140	ft.
		Width to Depth Ratio	9.0	n/a
		Bank Height Ratio	1.1	n/a
		Entrenchment Ratio	5.6	n/a
		Right Bank BEHI	Low	n/a
		Left Bank BEHI	Low	n/a



Site	Cross-Section	Geomorphic Parameter	Value	Units
NW-1-d	2	Bankfull Area	51	ft.^{2}
		Bankfull Width	20	ft.
		Bankfull Depth	2.5	ft.
		Maximum Bankfull Depth	4.1	ft.
		Low Bank Height	4.4	ft.
		Width of the Flood-prone Area	100	ft.
		Width to Depth Ratio	8.2	n/a
		Bank Height Ratio	1.1	n/a
		Entrenchment Ratio	4.9	n/a
		Right Bank BEHI	Low	n/a
		Left Bank BEHI	Low	n/a



Site Number	Reach Length	Upstream Coordinates	Downstream Coordinates
C-1	550 ft.	32.601404 N, 85.432698 W	32.600192 N, 85.432044 W
C-MM-a	950 ft.	32.600874 N, 85.428538 W	32.600530 N, 85.431463 W
C-MM-b	1100 ft.	32.591034 N, 85.442119 W	32.590912 N, 85.444596 W
NW-1-b	600 ft.	32.603946 N, 85.453310 W	32.602333 N, 85.453047 W
NW-1-c	850 ft.	32.597506 N, 85.451326 W	32.595712 N, 85.450483 W
NW-1-d	950 ft.	32.613527 N, 85.455178 W	32.611580 N, 85.456570 W
SW-MM-b	650 ft.	32.568631 N, 85.451830 W	32.567873 N, 85.453612 W
SW-MM-c	1350 ft.	32.559094 N, 85.463712 W	32.558760 N, 85.466685 W

Site Number	Sample Date	Sample Time	Sample Collected By	Total Suspended Solids (mg/L)	Analytical Method	Analysis Date	Analysis Performed By
C-1	6/21/2019	1335	D. Kimbrow M. Smith	< 2.50	SM 2540D 1997	6/26/2019	T. Watson (ERA)
C-MM-a	6/21/2019	1345	D. Kimbrow M. Smith	< 2.50	SM 2540D 1997	6/26/2019	T. Watson (ERA)
C-MM-b	6/21/2019	1405	D. Kimbrow M. Smith	< 2.50	SM 2540D 1997	6/26/2019	T. Watson (ERA)
NW-1-b	6/21/2019	1115	D. Kimbrow M. Smith	< 2.50	SM 2540D 1997	6/26/2019	T. Watson (ERA)
NW-1-c	6/21/2019	1130	D. Kimbrow M. Smith	< 2.50	SM 2540D 1997	6/26/2019	T. Watson (ERA)
NW-1-d	6/21/2019	1105	D. Kimbrow M. Smith	< 2.50	SM 2540D 1997	6/26/2019	T. Watson (ERA)
SW-MM-b	6/21/2019	1420	D. Kimbrow M. Smith	< 2.50	SM 2540D 1997	6/26/2019	T. Watson (ERA)
SW-MM-c	6/21/2019	1440	D. Kimbrow M. Smith	< 2.50	SM 2540D 1997	6/26/2019	T. Watson (ERA)

Site Number	Sample Date	Sample Time	Sample Collected By	Total Suspended Solids (mg/L)	Analytical Method	Analysis Date	Analysis Performed By
C-1	9/17/2019	1435	D. Kimbrow	< 2.50	SM 2540D 1997	9/19/2019	T. Watson (ERA)
C-MM-a	9/17/2019	1445	D. Kimbrow	12.3	SM 2540D 1997	9/19/2019	T. Watson (ERA)
C-MM-b	9/17/2019	1505	D. Kimbrow	< 2.50	SM 2540D 1997	9/19/2019	T. Watson (ERA)
NW-1-b	9/17/2019	1210	D. Kimbrow	< 2.50	SM 2540D 1997	9/19/2019	T. Watson (ERA)
NW-1-c	9/17/2019	1420	D. Kimbrow	< 2.50	SM 2540D 1997	9/19/2019	T. Watson (ERA)
NW-1-d	9/17/2019	1200	D. Kimbrow	< 2.50	SM 2540D 1997	9/19/2019	T. Watson (ERA)
SW-MM-b	9/17/2019	1520	D. Kimbrow	< 2.50	SM 2540D 1997	9/19/2019	T. Watson (ERA)
SW-MM-c	9/17/2019	1535	D. Kimbrow	< 2.50	SM 2540D 1997	9/19/2019	T. Watson (ERA)

Site Number	Sample Date	Sample Time	Sample Collected By	Total Suspended Solids (mg/L)	Analytical Method	Analysis Date	Analysis Performed By
C-1	12/17/2019	1105	D. Kimbrow	7.16	SM 2540D 1997	12/18/2019	John Whitten (ERA)
C-MM-a	12/17/2019	1115	D. Kimbrow	20.0	SM 2540D 1997	12/18/2019	John Whitten (ERA)
C-MM-b	12/17/2019	1130	D. Kimbrow	14.0	SM 2540D 1997	12/18/2019	John Whitten (ERA)
NW-1-b	12/17/2019	1030	D. Kimbrow	8.37	SM 2540D 1997	12/18/2019	John Whitten (ERA)
NW-1-c	12/17/2019	1045	D. Kimbrow	17.3	SM 2540D 1997	12/18/2019	John Whitten (ERA)
NW-1-d	12/17/2019	1020	D. Kimbrow	8.95	SM 2540D 1997	12/18/2019	John Whitten (ERA)
SW-MM-b	12/17/2019	1145	D. Kimbrow	21.4	SM 2540D 1997	12/18/2019	John Whitten (ERA)
SW-MM-c	12/17/2019	1500	D. Kimbrow	19.7	SM 2540D 1997	12/18/2019	John Whitten (ERA)

Site Number	Sample Date	Sample Time	Sample Collected By	Total Suspended Solids (mg/L)	Analytical Method	Analysis Date	Analysis Performed By
C-1	3/16/2020	1505	D. Kimbrow	< 2.50	SM 2540D 1997	3/18/2020	Nathan Williams (ERA)
C-MM-a	3/16/2020	1515	D. Kimbrow	< 2.50	SM 2540D 1997	3/18/2020	Nathan Williams (ERA)
C-MM-b	3/16/2020	1530	D. Kimbrow	< 2.50	SM 2540D 1997	3/18/2020	Nathan Williams (ERA)
NW-1-b	3/16/2020	1420	D. Kimbrow	< 2.50	SM 2540D 1997	3/18/2020	Nathan Williams (ERA)
NW-1-c	3/16/2020	1435	D. Kimbrow	< 2.50	SM 2540D 1997	3/18/2020	Nathan Williams (ERA)
NW-1-d	3/16/2020	1410	D. Kimbrow	< 2.50	SM 2540D 1997	3/18/2020	Nathan Williams (ERA)
SW-MM-b	3/16/2020	1550	D. Kimbrow	< 2.50	SM 2540D 1997	3/18/2020	Nathan Williams (ERA)
SW-MM-c	3/16/2020	1605	D. Kimbrow	< 2.50	SM 2540D 1997	3/18/2020	Nathan Williams (ERA)

Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By
C-1	6/21/2019	1335	D. Kimbrow M. Smith	74.9	YSI 5560	6/21/2019	D. Kimbrow M. Smith
C-MM-a	6/21/2019	1345	D. Kimbrow M. Smith	80.7	YSI 5560	6/21/2019	D. Kimbrow M. Smith
C-MM-b	6/21/2019	1405	D. Kimbrow M. Smith	78.2	YSI 5560	6/21/2019	D. Kimbrow M. Smith
NW-1-b	6/21/2019	1115	D. Kimbrow M. Smith	77.7	YSI 5560	6/21/2019	D. Kimbrow M. Smith
NW-1-c	6/21/2019	1130	D. Kimbrow M. Smith	77.2	YSI 5560	6/21/2019	D. Kimbrow M. Smith
NW-1-d	6/21/2019	1105	D. Kimbrow M. Smith	73.5	YSI 5560	6/21/2019	D. Kimbrow M. Smith
SW-MM-b	6/21/2019	1420	D. Kimbrow M. Smith	82.5	YSI 5560	6/21/2019	D. Kimbrow M. Smith
SW-MM-c	6/21/2019	1440	D. Kimbrow M. Smith	81.9	YSI 5560	6/21/2019	D. Kimbrow M. Smith

Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By
C-1	9/17/2019	1435	D. Kimbrow	75.3	YSI 5560	9/17/2019	D. Kimbrow
C-MM-a	9/17/2019	1445	D. Kimbrow	77.5	YSI 5560	9/17/2019	D. Kimbrow
C-MM-b	9/17/2019	1505	D. Kimbrow	76.3	YSI 5560	9/17/2019	D. Kimbrow
NW-1-b	9/17/2019	1210	D. Kimbrow	76.2	YSI 5560	9/17/2019	D. Kimbrow
NW-1-c	9/17/2019	1420	D. Kimbrow	83.2	YSI 5560	9/17/2019	D. Kimbrow
NW-1-d	9/17/2019	1200	D. Kimbrow	75.5	YSI 5560	9/17/2019	D. Kimbrow
SW-MM-b	9/17/2019	1520	D. Kimbrow	79	YSI 5560	9/17/2019	D. Kimbrow
SW-MM-c	9/17/2019	1535	D. Kimbrow	81.5	YSI 5560	9/17/2019	D. Kimbrow

Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By
C-1	12/17/2019	1105	D. Kimbrow	58.5	YSI 5560	12/17/2019	D. Kimbrow
C-MM-a	12/17/2019	1115	D. Kimbrow	55.2	YSI 5560	12/17/2019	D. Kimbrow
C-MM-b	12/17/2019	1130	D. Kimbrow	56.7	YSI 5560	12/17/2019	D. Kimbrow
NW-1-b	12/17/2019	1030	D. Kimbrow	57.5	YSI 5560	12/17/2019	D. Kimbrow
NW-1-c	12/17/2019	1045	D. Kimbrow	58.1	YSI 5560	12/17/2019	D. Kimbrow
NW-1-d	12/17/2019	1020	D. Kimbrow	59.3	YSI 5560	12/17/2019	D. Kimbrow
SW-MM-b	12/17/2019	1145	D. Kimbrow	57.4	YSI 5560	12/17/2019	D. Kimbrow
SW-MM-c	12/17/2019	1500	D. Kimbrow	56.8	YSI 5560	12/17/2019	D. Kimbrow

Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By
C-1	3/16/2020	1505	D. Kimbrow	65.1	YSI 5560	3/16/2020	D. Kimbrow
C-MM-a	3/16/2020	1515	D. Kimbrow	69.6	YSI 5560	3/16/2020	D. Kimbrow
C-MM-b	3/16/2020	1530	D. Kimbrow	67.8	YSI 5560	3/16/2020	D. Kimbrow
NW-1-b	3/16/2020	1420	D. Kimbrow	66.4	YSI 5560	3/16/2020	D. Kimbrow
NW-1-c	3/16/2020	1435	D. Kimbrow	66.2	YSI 5560	3/16/2020	D. Kimbrow
NW-1-d	3/16/2020	1410	D. Kimbrow	65.4	YSI 5560	3/16/2020	D. Kimbrow
SW-MM-b	3/16/2020	1550	D. Kimbrow	69.4	YSI 5560	3/16/2020	D. Kimbrow
SW-MM-c	3/16/2020	1505	D. Kimbrow	66.8	YSI 5560	3/16/2020	D. Kimbrow

Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By
C-1	6/21/2019	1335	D. Kimbrow M. Smith	7.36	YSI 1001	6/21/2019	D. Kimbrow M. Smith
C-MM-a	6/21/2019	1345	D. Kimbrow M. Smith	7.1	YSI 1001	6/21/2019	D. Kimbrow M. Smith
C-MM-b	6/21/2019	1405	D. Kimbrow M. Smith	7.47	YSI 1001	6/21/2019	D. Kimbrow M. Smith
NW-1-b	6/21/2019	1115	D. Kimbrow M. Smith	7.63	YSI 1001	6/21/2019	D. Kimbrow M. Smith
NW-1-c	6/21/2019	1130	D. Kimbrow M. Smith	7.2	YSI 1001	6/21/2019	D. Kimbrow M. Smith
NW-1-d	6/21/2019	1105	D. Kimbrow M. Smith	7.25	YSI 1001	6/21/2019	D. Kimbrow M. Smith
SW-MM-b	6/21/2019	1420	D. Kimbrow M. Smith	7.28	YSI 1001	6/21/2019	D. Kimbrow M. Smith
SW-MM-c	6/21/2019	1440	D. Kimbrow M. Smith	8.19	YSI 1001	6/21/2019	D. Kimbrow M. Smith
Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By
C-1	9/17/2019	1435	D. Kimbrow	7.56	YSI 1001	9/17/2019	D. Kimbrow
C-MM-a	9/17/2019	1445	D. Kimbrow	6.94	YSI 1001	9/17/2019	D. Kimbrow
C-MM-b	9/17/2019	1505	D. Kimbrow	7.29	YSI 1001	9/17/2019	D. Kimbrow
NW-1-b	9/17/2019	1210	D. Kimbrow	7.51	YSI 1001	9/17/2019	D. Kimbrow
NW-1-c	9/17/2019	1420	D. Kimbrow	7.16	YSI 1001	9/17/2019	D. Kimbrow
NW-1-d	9/17/2019	1200	D. Kimbrow	7.4	YSI 1001	9/17/2019	D. Kimbrow
SW-MM-b	9/17/2019	1520	D. Kimbrow	7.19	YSI 1001	9/17/2019	D. Kimbrow
SW-MM-c	9/17/2019	1535	D. Kimbrow	8.33	YSI 1001	9/17/2019	D. Kimbrow
Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By
C-1	12/17/2019	1105	D. Kimbrow	7.19	YSI 1001	12/17/2019	D. Kimbrow
C-MM-a	12/17/2019	1115	D. Kimbrow	7.17	YSI 1001	12/17/2019	D. Kimbrow
C-MM-b	12/17/2019	1130	D. Kimbrow	7.23	YSI 1001	12/17/2019	D. Kimbrow
NW-1-b	12/17/2019	1030	D. Kimbrow	7.24	YSI 1001	12/17/2019	D. Kimbrow
NW-1-c	12/17/2019	1045	D. Kimbrow	7.17	YSI 1001	12/17/2019	D. Kimbrow
NW-1-d	12/17/2019	1020	D. Kimbrow	7.07	YSI 1001	12/17/2019	D. Kimbrow
SW-MM-b	12/17/2019	1145	D. Kimbrow	7.22	YSI 1001	12/17/2019	D. Kimbrow
SW-MM-c	12/17/2019	1500	D. Kimbrow	7.28	YSI 1001	12/17/2019	D. Kimbrow
Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By
C-1	3/16/2020	1505	D. Kimbrow	7.42	YSI 1001	3/16/2020	D. Kimbrow
C-MM-a	3/16/2020	1515	D. Kimbrow	7.38	YSI 1001	3/16/2020	D. Kimbrow
C-MM-b	3/16/2020	1530	D. Kimbrow	7.53	YSI 1001	3/16/2020	D. Kimbrow
NW-1-b	3/16/2020	1420	D. Kimbrow	7.76	YSI 1001	3/16/2020	D. Kimbrow
NW-1-c	3/16/2020	1435	D. Kimbrow	7.41	YSI 1001	3/16/2020	D. Kimbrow
NW-1-d	3/16/2020	1410	D. Kimbrow	7.37	YSI 1001	3/16/2020	D. Kimbrow
SW-MM-b	3/16/2020	1550	D. Kimbrow	7.53	YSI 1001	3/16/2020	D. Kimbrow
SW-MM-c	3/16/2020	1505	D. Kimbrow	7.9	YSI 1001	3/16/2020	D. Kimbrow

Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By
C-1	6/21/2019	1335	D. Kimbrow M. Smith	8.24	YSI 2003 polarographic	6/21/2019	D. Kimbrow M. Smith
C-MM-a	6/21/2019	1345	D. Kimbrow M. Smith	5.55	YSI 2003 polarographic	6/21/2019	D. Kimbrow M. Smith
C-MM-b	6/21/2019	1405	D. Kimbrow M. Smith	7.84	YSI 2003 polarographic	6/21/2019	D. Kimbrow M. Smith
NW-1-b	6/21/2019	1115	D. Kimbrow M. Smith	8.2	YSI 2003 polarographic	6/21/2019	D. Kimbrow M. Smith
NW-1-c	6/21/2019	1130	D. Kimbrow M. Smith	7.18	YSI 2003 polarographic	6/21/2019	D. Kimbrow M. Smith
NW-1-d	6/21/2019	1105	D. Kimbrow M. Smith	7.74	YSI 2003 polarographic	6/21/2019	D. Kimbrow M. Smith
SW-MM-b	6/21/2019	1420	D. Kimbrow M. Smith	6.82	YSI 2003 polarographic	6/21/2019	D. Kimbrow M. Smith
SW-MM-c	6/21/2019	1440	D. Kimbrow M. Smith	8.5	YSI 2003 polarographic	6/21/2019	D. Kimbrow M. Smith
Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By
C-1	9/17/2019	1435	D. Kimbrow	8.08	YSI 2003 polarographic	9/17/2019	D. Kimbrow
C-MM-a	9/17/2019	1445	D. Kimbrow	2.47	YSI 2003 polarographic	9/17/2019	D. Kimbrow
C-MM-b	9/17/2019	1505	D. Kimbrow	7.3	YSI 2003 polarographic	9/17/2019	D. Kimbrow
NW-1-b	9/17/2019	1210	D. Kimbrow	7.88	YSI 2003 polarographic	9/17/2019	D. Kimbrow
NW-1-c	9/17/2019	1420	D. Kimbrow	7.45	YSI 2003 polarographic	9/17/2019	D. Kimbrow
NW-1-d	9/17/2019	1200	D. Kimbrow	7.3	YSI 2003 polarographic	9/17/2019	D. Kimbrow
SW-MM-b	9/17/2019	1520	D. Kimbrow	4.94	YSI 2003 polarographic	9/17/2019	D. Kimbrow
SW-MM-c	9/17/2019	1535	D. Kimbrow	8.74	YSI 2003 polarographic	9/17/2019	D. Kimbrow
Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By
C-1	12/17/2019	1105	D. Kimbrow	9.8	YSI 2003 polarographic	12/17/2019	D. Kimbrow
C-MM-a	12/17/2019	1115	D. Kimbrow	9.81	YSI 2003 polarographic	12/17/2019	D. Kimbrow
C-MM-b	12/17/2019	1130	D. Kimbrow	10.03	YSI 2003 polarographic	12/17/2019	D. Kimbrow
NW-1-b	12/17/2019	1030	D. Kimbrow	9.96	YSI 2003 polarographic	12/17/2019	D. Kimbrow
NW-1-c	12/17/2019	1045	D. Kimbrow	9.52	YSI 2003 polarographic	12/17/2019	D. Kimbrow
NW-1-d	12/17/2019	1020	D. Kimbrow	9.15	YSI 2003 polarographic	12/17/2019	D. Kimbrow
SW-MM-b	12/17/2019	1145	D. Kimbrow	9.76	YSI 2003 polarographic	12/17/2019	D. Kimbrow
SW-MM-c	12/17/2019	1500	D. Kimbrow	10.4	YSI 2003 polarographic	12/17/2019	D. Kimbrow

Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By
C-1	3/16/2020	1505	D. Kimbrow	9.52	YSI 2003 polarographic	3/16/2020	D. Kimbrow
C-MM-a	3/16/2020	1515	D. Kimbrow	9.99	YSI 2003 polarographic	3/16/2020	D. Kimbrow
C-MM-b	3/16/2020	1530	D. Kimbrow	9.61	YSI 2003 polarographic	3/16/2020	D. Kimbrow
NW-1-b	3/16/2020	1420	D. Kimbrow	10.49	YSI 2003 polarographic	3/16/2020	D. Kimbrow
NW-1-c	3/16/2020	1435	D. Kimbrow	10.4	YSI 2003 polarographic	3/16/2020	D. Kimbrow
NW-1-d	3/16/2020	1410	D. Kimbrow	9.99	YSI 2003 polarographic	3/16/2020	D. Kimbrow
SW-MM-b	3/16/2020	1550	D. Kimbrow	9.58	YSI 2003 polarographic	3/16/2020	D. Kimbrow
SW-MM-c	3/16/2020	1505	D. Kimbrow	9.54	YSI 2003 polarographic	3/16/2020	D. Kimbrow
Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By
C-1	6/21/2019	1335	D. Kimbrow M. Smith	151.8	YSI 5560	6/21/2019	D. Kimbrow M. Smith
C-MM-a	6/21/2019	1345	D. Kimbrow M. Smith	122.3	YSI 5560	6/21/2019	D. Kimbrow M. Smith
C-MM-b	6/21/2019	1405	D. Kimbrow M. Smith	125.2	YSI 5560	6/21/2019	D. Kimbrow M. Smith
NW-1-b	6/21/2019	1115	D. Kimbrow M. Smith	142.4	YSI 5560	6/21/2019	D. Kimbrow M. Smith
NW-1-c	6/21/2019	1130	D. Kimbrow M. Smith	150.3	YSI 5560	6/21/2019	D. Kimbrow M. Smith
NW-1-d	6/21/2019	1105	D. Kimbrow M. Smith	174.9	YSI 5560	6/21/2019	D. Kimbrow M. Smith
SW-MM-b	6/21/2019	1420	D. Kimbrow M. Smith	145.6	YSI 5560	6/21/2019	D. Kimbrow M. Smith
SW-MM-c	6/21/2019	1440	D. Kimbrow M. Smith	132.7	YSI 5560	6/21/2019	D. Kimbrow M. Smith
Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By
C-1	9/17/2019	1435	D. Kimbrow	163.3	YSI 5560	9/17/2019	D. Kimbrow
C-MM-a	9/17/2019	1445	D. Kimbrow	192	YSI 5560	9/17/2019	D. Kimbrow
C-MM-b	9/17/2019	1505	D. Kimbrow	136.9	YSI 5560	9/17/2019	D. Kimbrow
NW-1-b	9/17/2019	1210	D. Kimbrow	126.9	YSI 5560	9/17/2019	D. Kimbrow
NW-1-c	9/17/2019	1420	D. Kimbrow	146.4	YSI 5560	9/17/2019	D. Kimbrow
NW-1-d	9/17/2019	1200	D. Kimbrow	161.6	YSI 5560	9/17/2019	D. Kimbrow
SW-MM-b	9/17/2019	1520	D. Kimbrow	181.7	YSI 5560	9/17/2019	D. Kimbrow
SW-MM-c	9/17/2019	1535	D. Kimbrow	152	YSI 5560	9/17/2019	D. Kimbrow
Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By
C-1	12/17/2019	1105	D. Kimbrow	64.8	YSI 5560	12/17/2019	D. Kimbrow
C-MM-a	12/17/2019	1115	D. Kimbrow	71.2	YSI 5560	12/17/2019	D. Kimbrow
C-MM-b	12/17/2019	1130	D. Kimbrow	69.5	YSI 5560	12/17/2019	D. Kimbrow
NW-1-b	12/17/2019	1030	D. Kimbrow	84	YSI 5560	12/17/2019	D. Kimbrow
NW-1-c	12/17/2019	1045	D. Kimbrow	73.8	YSI 5560	12/17/2019	D. Kimbrow
NW-1-d	12/17/2019	1020	D. Kimbrow	118.1	YSI 5560	12/17/2019	D. Kimbrow
SW-MM-b	12/17/2019	1145	D. Kimbrow	71.6	YSI 5560	12/17/2019	D. Kimbrow
SW-MM-c	12/17/2019	1500	D. Kimbrow	74.8	YSI 5560	12/17/2019	D. Kimbrow

Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By
C-1	3/16/2020	1505	D. Kimbrow	133.6	YSI 5560	3/16/2020	D. Kimbrow
C-MM-a	3/16/2020	1515	D. Kimbrow	91.8	YSI 5560	3/16/2020	D. Kimbrow
C-MM-b	3/16/2020	1530	D. Kimbrow	101.2	YSI 5560	3/16/2020	D. Kimbrow
NW-1-b	3/16/2020	1420	D. Kimbrow	133.2	YSI 5560	3/16/2020	D. Kimbrow
NW-1-c	3/16/2020	1435	D. Kimbrow	137.6	YSI 5560	3/16/2020	D. Kimbrow
NW-1-d	3/16/2020	1410	D. Kimbrow	181	YSI 5560	3/16/2020	D. Kimbrow
SW-MM-b	3/16/2020	1550	D. Kimbrow	120.5	YSI 5560	3/16/2020	D. Kimbrow
SW-MM-c	3/16/2020	1505	D. Kimbrow	114.9	YSI 5560	3/16/2020	D. Kimbrow
Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By
C-1	6/21/2019	1335	D. Kimbrow M. Smith	3.81	SM 2130 B	6/21/2019	D. Kimbrow M. Smith
C-MM-a	6/21/2019	1345	D. Kimbrow M. Smith	2.95	SM 2130 B	6/21/2019	D. Kimbrow M. Smith
C-MM-b	6/21/2019	1405	D. Kimbrow M. Smith	3.2	SM 2130 B	6/21/2019	D. Kimbrow M. Smith
NW-1-b	6/21/2019	1115	D. Kimbrow M. Smith	3.91	SM 2130 B	6/21/2019	D. Kimbrow M. Smith
NW-1-c	6/21/2019	1130	D. Kimbrow M. Smith	3.55	SM 2130 B	6/21/2019	D. Kimbrow M. Smith
NW-1-d	6/21/2019	1105	D. Kimbrow M. Smith	3.18	SM 2130 B	6/21/2019	D. Kimbrow M. Smith
SW-MM-b	6/21/2019	1420	D. Kimbrow M. Smith	4.87	SM 2130 B	6/21/2019	D. Kimbrow M. Smith
SW-MM-c	6/21/2019	1440	D. Kimbrow M. Smith	3.62	SM 2130 B	6/21/2019	D. Kimbrow M. Smith
Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By
C-1	9/17/2019	1435	D. Kimbrow	2.02	SM 2130 B	9/17/2019	D. Kimbrow
C-MM-a	9/17/2019	1445	D. Kimbrow	15.3	SM 2130 B	9/17/2019	D. Kimbrow
C-MM-b	9/17/2019	1505	D. Kimbrow	3.44	SM 2130 B	9/17/2019	D. Kimbrow
NW-1-b	9/17/2019	1210	D. Kimbrow	2.2	SM 2130 B	9/17/2019	D. Kimbrow
NW-1-c	9/17/2019	1420	D. Kimbrow	1.82	SM 2130 B	9/17/2019	D. Kimbrow
NW-1-d	9/17/2019	1200	D. Kimbrow	3.52	SM 2130 B	9/17/2019	D. Kimbrow
SW-MM-b	9/17/2019	1520	D. Kimbrow	11.7	SM 2130 B	9/17/2019	D. Kimbrow
SW-MM-c	9/17/2019	1535	D. Kimbrow	2.99	SM 2130 B	9/17/2019	D. Kimbrow
Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By
C-1	12/17/2019	1105	D. Kimbrow	14	SM 2130 B	12/17/2019	D. Kimbrow
C-MM-a	12/17/2019	1115	D. Kimbrow	14.7	SM 2130 B	12/17/2019	D. Kimbrow
C-MM-b	12/17/2019	1130	D. Kimbrow	15.9	SM 2130 B	12/17/2019	D. Kimbrow
NW-1-b	12/17/2019	1030	D. Kimbrow	16.8	SM 2130 B	12/17/2019	D. Kimbrow
NW-1-c	12/17/2019	1045	D. Kimbrow	39.2	SM 2130 B	12/17/2019	D. Kimbrow
NW-1-d	12/17/2019	1020	D. Kimbrow	28.5	SM 2130 B	12/17/2019	D. Kimbrow
SW-MM-b	12/17/2019	1145	D. Kimbrow	27.5	SM 2130 B	12/17/2019	D. Kimbrow
SW-MM-c	12/17/2019	1500	D. Kimbrow	26.6	SM 2130 B	12/17/2019	D. Kimbrow
Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By
C-1	3/16/2020	1505	D. Kimbrow	4.39	SM 2130 B	3/16/2020	D. Kimbrow
C-MM-a	3/16/2020	1515	D. Kimbrow	3.76	SM 2130 B	3/16/2020	D. Kimbrow
C-MM-b	3/16/2020	1530	D. Kimbrow	4.16	SM 2130 B	3/16/2020	D. Kimbrow
NW-1-b	3/16/2020	1420	D. Kimbrow	3.72	SM 2130 B	3/16/2020	D. Kimbrow
NW-1-c	3/16/2020	1435	D. Kimbrow	3.83	SM 2130 B	3/16/2020	D. Kimbrow
NW-1-d	3/16/2020	1410	D. Kimbrow	3.43	SM 2130 B	3/16/2020	D. Kimbrow
SW-MM-b	3/16/2020	1550	D. Kimbrow	3.8	SM 2130 B	3/16/2020	D. Kimbrow
SW-MM-c	3/16/2020	1505	D. Kimbrow	3.84	SM 2130 B	3/16/2020	D. Kimbrow

3.0 Water Quality at Short-term Monitoring Sites

3.1 Purpose

The City of Auburn has conducted routine turbidity measurements at 40 stations within its MS4 jurisdiction since 2006. In 2016, the City updated the Stormwater Quality Monitoring Plan to reflect changes in the ADEM Phase II NPDES General Permit ALR040003. Because the updated Stormwater Quality Monitoring Plan required sampling for TP, E. coli, and TSS at several of the existing turbidity monitoring stations, the City reduced the number of turbidity monitoring stations from 40 to 20. Regular sampling at these 20 sites was discontinued in 2019. This sampling was not included in the City's Water Quality Monitoring Plan, and is not required under the Phase II NPDES General Permit ALR040003. Currently, the City conducts monitoring at various sites within the MS4 jurisdiction if there are suspected illicit discharges or other water quality concerns in the area. The table below shows the monitoring data from these short-term monitoring sites. The location of each sample site is included within the site name (e.g. SAUG326173854965 is within the Saugahatchee watershed and located at 32.6173 N, 85.4965 S).

3.2 Data

Site Number	Sample Date	Water Temp. (F)	pH	Dissolved Oxygen (mg/L)	Specific Conductance (uS/cm)	Turbidity (NTU)	Ammonia (mg/L)	Nitrate (mg/L)	Surfactants (mg/L)	E. coli (MPN or cfu/100mL)
SAUG326173854965	4/16/2020	60.6	7.2	8.1	194.3	5.39	-	-	-	-
SAUG326173854965	4/10/2020	62.1	7.21	8.87	190.7	6.82	-	-	-	-
SAUG326173854965	4/2/2020	57.2	7.24	10.63	192.4	4.77	-	-	-	-
SAUG326173854965	3/23/2020	64.6	7.35	8.88	219.2	8.2	-	-	-	-
SAUG326173854965	3/17/2020	65.5	7.43	10.7	193.1	5.66	-	-	-	-
SAUG326196854998	4/16/2020	61.3	7.09	10.04	164.4	7.77	-	-	-	-
SAUG326196854998	4/10/2020	63.3	7.12	8.78	159.6	6.69	-	-	-	-
SAUG326196854998	4/2/2020	58.1	7.11	10.49	157.4	4.47	-	-	-	-
SAUG326196854998	3/23/2020	64.2	7.02	9.06	156.7	4.99	-	-	-	-
SAUG326196854998	3/17/2020	65.5	7.15	11.14	161.6	6.6	-	-	-	-
SAUG326207855021	4/16/2020	62.4	7.05	9.02	145.3	5.03	-	-	-	-
SAUG326207855021	4/10/2020	64.7	7.07	8.1	167.4	7.66	-	-	-	-
SAUG326207855021	4/2/2020	57.6	7.06	10.21	168.9	4.46	-	-	-	-
SAUG326207855021	3/23/2020	65.1	7.06	9.72	173.4	3.52	-	-	-	-
SAUG326207855021	3/17/2020	66.7	7.16	12.22	173	16.6	-	-	-	-
SAUG326213855047	4/16/2020	64.5	7.11	9.12	221.6	4.43	-	-	-	-
SAUG326213855047	4/10/2020	66.5	7.13	8.59	217.7	6.62	-	-	-	-
SAUG326213855047	4/2/2020	55.2	7.15	10.64	224.4	3.62	-	-	-	-
SAUG326213855047	3/23/2020	64.8	7.17	9.93	230.5	2.82	-	-	-	-
SAUG326213855047	3/17/2020	67.1	7.22	12.81	248	4.06	-	-	-	-
SAUG326219855376	7/18/2019	-	-	-	-	-	-	-	-	100
SAUG326219855376	7/10/2019	78	6.42	6.04	71.2	20.7	-	-	-	500
PARK323625852981	8/16/2019	-	-	-	-	-	-	-	-	1732.9
PARK323631852975	8/16/2019	-	-	-	-	-	-	-	-	1119.6
MOOR326146854549	8/7/2019	-	-	-	-	-	-	-	-	100
MOOR326146854549	8/5/2019	72.8	7.05	7.03	202.9	20	-	-	-	150
MOOR326146854549	7/31/2019	-	-	-	-	-	-	-	-	1350
MOOR326146854549	7/29/2019	-	-	-	-	-	-	-	-	2100

Site Number	Sample Date	Water Temp. (F)	pH	Dissolved Oxygen (mg/L)	Specific Conductance (uS/cm)	Turbidity (NTU)	Ammonia (mg/L)	Nitrate (mg/L)	Surfactants (mg/L)	E. coli (MPN or cfu/100mL)
MOOR326146854549	5/14/2019	66.6	7.11	8.47	192.1	9.84	-	-	-	500
MOOR326146854549	5/13/2019	66.6	7.07	8.34	200.5	16.1	-	-	-	200
MOOR326146854549	5/8/2019	69	7.07	8.2	170.3	4.32	0	0		500
MOOR326156854550	5/14/2019	68.3	7.2	8.27	205.2	11.76	-	-	-	100
MOOR326156854550	5/13/2019	66.7	7.19	8.33	208.6	18.2	-	-	-	400
MOOR326156854550	5/8/2019	69.5	7.18	8.04	187.7	5.25	0	0		800
MOOR32616185451	8/7/2019	-	-	-	-	-	-	-	-	0
MOOR32616185451	8/5/2019	73.5	7.19	7.29	255.3	12.5	-	-	-	50
MOOR32616185451	7/31/2019	-	-	-	-	-	-	-	-	1100
MOOR32616185451	7/29/2019	-	-	-	-	-	-	-	-	TNTC
MOOR32616185451	5/14/2019	68	7.22	8.45	198.1	12.21	-	-	-	50
MOOR32616185451	5/13/2019	66.9	7.2	8.46	201.7	18.5	-	-	-	300
MOOR32616185451	5/8/2019	70.1	7.24	8.23	178.7	4.81	0	0	-	250
MOOR326180854557	9/4/2019	75.8	7.51	8.4	265.9	-	-	-	-	null
MOOR326180854557	8/7/2019	-	-	-	-	-	-	-	-	150
MOOR326180854557	8/6/2019	-	-	-	-	-	-	-	-	1350
MOOR326180854557	8/5/2019	73.3	6.99	6.48	271.3	11.8	-	-	-	350
MOOR326180854557	7/31/2019	-	-	-	-	-	-	-	-	500
MOOR326180854557	7/29/2019	-	-	-	-	-	-	-	-	TNTC
MOOR326180854557	2/15/2019	59.6	6.48	7.63	122.5	8.74	0.5	-	-	0
MOOR326180854557	2/14/2019	57.5	6.49	8.31	155	-	-	-	-	0
MOOR326180854557	2/13/2019	59.5	6.47	8.76	114.6	6.91	0.75	-	-	0
MOOR326180854557	2/12/2019	61.6	6.59	8.86	169	132	0.75	-	-	350
MOOR326180854557	2/8/2019	59.5	6.48	8.29	140.3	-	0.75	-	-	100
MOOR326180854557	2/4/2019	60.3	6.43	5.32	155	-	0.75	-	-	2150
MOOR326180854557	1/22/2019	54.7	6.46	8.41	134.6	-	0.75	-	-	0
MOOR326180854557	1/17/2019	56.3	6.47	4.62	222	-	-	-	-	-
MOOR326189854564	1/17/2019	56.8	6.95	3	455	-	-	-	-	7050
MOOR326192854568	2/13/2019	61.8	9.26	3.78	245.8	45.4	0.75	-	-	50
MOOR326193854569	2/13/2019	51.1	7.64	9.5	295.3	-	-	-	-	-
TOWN325820854766	8/21/2019	80.5	6.86	4.18	90	-	-	-	110.3	-
TOWN325824854776	8/21/2019	75.6	7.13	6.46	171.9	-	-	-	-	-
TOWN325828854792	8/21/2019	76.2	6.98	6.88	176.3	-	-	-	-	-
TOWN325835854802	8/21/2019	77.7	6.96	6.65	160.3	-	-	-	-	-
TOWN325988854717	12/5/2019	51.4	7.17	10.05	133.7	-	-	-	-	-
TOWN325988854717	11/5/2019	60.1	7.36	9.78	138.3	-	-	-	-	2419
TOWN325989854717	11/5/2019	-	-	-	-	-	-	-	-	2419.6
TOWN325990854718	11/5/2019	60.1	7.14	8.99	138	-	-	-	-	2419.6
TOWN325998854717	12/5/2019	50.2	7.14	8.17	89.5	-	-	-	-	-
TOWN325998854717	11/8/2019	58.9	6.86	8	69.1	-	-	-	-	2419.6
TOWN325998854717	11/5/2019	59.7	7.23	7.44	79.8	-	-	-	-	-
TOWN325998854719	11/8/2019	59.4	6.73	9.16	140.7	-	-	-	-	1986.3
TOWN325998854719	11/5/2019	60.5	7.25	9.45	152.1	-	-	-	-	-
TOWN326005854715	11/8/2019	59.3	6.96	8.28	67.8	-	-	-	-	143.9

Site Number	Sample Date	Water Temp. (F)	pH	Dissolved Oxygen (mg/L)	Specific Conductance (uS/cm)	Turbidity (NTU)	Ammonia (mg/L)	Nitrate (mg/L)	Surfactants (mg/L)	E. coli (MPN or cfu/100mL)
TOWN326007854725	11/8/2019	59.7	6.31	9.44	147.1	-	-	-	-	1732.9
TOWN326014854735	11/25/2019	56.3	5.43	9.26	166.7	-	-	-	-	150
TOWN326014854735	11/13/2019	51.9	6.13	10.44	168.8	-	-	-	-	2419.6
TOWN326016854737	11/25/2019	56.5	5.48	8.26	166.4	-	-	-	-	150
TOWN326016854737	11/13/2019	51.9	6.58	10	168.8	-	-	-	-	2419.6
TOWN326023854747	11/25/2019	51.3	5.51	7.38	221.8	-	-	-	-	200
TOWN326023854747	11/13/2019	47.9	6.8	-	143.6	-	-	-	-	648.8
TOWN326041854751	11/25/2019	57.2	5.83	8.96	194.8	-	-	-	-	200
TOWN326041854751	11/13/2019	54.7	6.49	-	200.9	-	-	-	-	2419.6
TOWN326061854759	12/5/2019	56.1	7.32	10.15	213.6	-	-	-	-	-
TOWN326061854759	11/25/2019	59	5.94	8.5	223.2	-	-	-	-	500
TOWN326061854759	11/13/2019	57	7.29	-	228.1	-	-	-	-	2419.6
TOWN326076854768	12/5/2019	55.8	6.94	3.4	334.7	-	-	-	-	-
TOWN326094854766	12/5/2019	54.8	7.17	9.2	178.6	-	-	-	-	-
TOWN326094854766	11/25/2019	61.5	5.9	8.94	190.5	-	-	-	-	0
TOWN326094854766	11/14/2019	53.4	6.86	10.08	200.4	-	-	-	-	50

4.0 Lake Ogletree Source Water Monitoring Program

4.1 Purpose

Lake Ogletree, located southeast of Auburn, Alabama, is the City of Auburn's primary drinking water source. At full pool its surface area is approximately 300 acres with a capacity of approximately 1.6 billion gallons of water. Chewacla Creek is the primary stream that feeds Lake Ogletree, which has a 33 square mile watershed (as delineated from the Lake Ogletree dam and spillway). Although mostly forested and agricultural lands, the Lake Ogletree watershed includes industrial, commercial/retail, and residential land-uses which are predicted to increase as the population of Lee County increases. Although a recently updated Source Water Assessment Program determined Lake Ogletree to be at low to moderate risk from stormwater-driven pollutants, it is imperative that water quality monitoring be performed to identify potential threats to water quality and to protect the health and vitality of Chewacla Creek and the encompassing watershed. Therefore, the Water Works Board of the City of Auburn (AWWB) is committed to performing monitoring and analysis of a wide range of physical, chemical, and mineral water quality parameters both in Lake Ogletree and its contributing watershed.

4.2 Methods

AWWB conducts water quality sampling and analysis at 14 locations throughout the Lake Ogletree Watershed. Water quality assessment includes sampling at locations along the main stem of Chewacla Creek ("C-Sites"), its smaller tributaries ("T-Sites"), and Lake Ogletree ("L-Sites"). Parameters monitored once every two months at these locations include E. coli, orthophosphate, total phosphorus, nitrate-nitrite, Kjeldahl-N, pH, temperature, turbidity, specific conductance, and dissolved oxygen. A QA/QC field blank for orthophosphate, total phosphorus, nitrate-nitrite, and kjeldahl-N is collected at a single randomly-selected site during each sampling round. Bi-weekly monitoring is also conducted at select sites for temperature, pH, specific conductance, dissolved oxygen, and turbidity. The following are the parameters which are included in this program and the method of analysis.

- Temperature – YSI 5560
- Specific Conductance – YSI 5560
- Dissolved Oxygen – YSI 2003 polarographic
- pH – YSI 1001
- Turbidity – LaMotte 2020WE turbidimeter
- Nitrate + Nitrite – EPA 353.2
- Total Kjeldahl Nitrogen – EPA 351.2
- Orthophosphate – SM 4500 PE-1999
- Total Phosphorus – EPA 365.4
- E. coli - SM 9223B-2004

4.3 Monitoring Stations and Data

T11 – Station T11 is located on lower Robinson Creek at Moore's Mill Road (CR 146). Latitude *32, 33, 48.221 N*; Longitude *85, 23, 23.423 W*

T12N – Station T12N is located upper Robinson Creek, just upstream of Highway 51 and downstream from an Opelika sanitary sewer lift station. Latitude *32, 37, 1.72 N*; Longitude *85, 22, 9.316 W*

T19 – Station T19 is located on an unnamed tributary upstream of Emerald Lake. Latitude *32, 35, 36.364 N*; Longitude *85, 20, 37.00 W*

T22 – Station T22 is located on upper Robinson Creek, just downstream of Highway 51 and downstream from three Opelika sanitary sewer lift stations. Latitude *32, 36, 2.361 N*; Longitude *85, 22, 45.426 W*

T32 – Station T32 is located near the mouth of Nash Creek just before the confluence with Chewacla Creek. Latitude *32, 33, 18.484 N*; Longitude *85, 25, 30.655 W*

T34 – Station T34 is located on Chewacla Creek, upstream of Station C8. Latitude *32, 34, 32.672 N*; Longitude *85, 21, 49.692 W*

C1 – Station C1 is located at the forebay of Lake Ogletree, immediately downstream of the Society Hill Road bridge crossing. Latitude *32, 33, 20.161 N*; Longitude *85, 25, 36.026 W*

C2 – Station C2 is located at the bridge crossing of CR 027 with Chewacla Creek. Latitude *32, 33, 21.387 N*; Longitude *85, 24, 46.384 W*

C5 – Station C5 is located at the bridge crossing of Lee Road. 112 with Chewacla Creek. Latitude *32, 33, 6.291 N*; Longitude *85, 23, 41.151 W*

C7 – Station C7 is located at the bridge crossing of Highway 51 (Marvyn Parkway) with Chewacla Creek. Latitude *32, 33, 41.868 N*; Longitude *85, 22, 20.559 W*

C8 – Station C8 is located upstream of the bridge crossing of CR 146 (Moore's Mill Road) with Chewacla Creek. Latitude *32, 34, 5.715 N*; Longitude *85, 21, 42.033 W*

L1 – Station L1 is located in Lake Ogletree, immediately northeast of the Lake Ogletree spillway. Latitude *32, 32, 50.846 N*; Longitude *85, 26, 52.83 W*

L2 – Station L2 is located in Lake Ogletree near the water intake pump house. Latitude *32, 33, 5.626 N*; Longitude *85, 26, 45.038 W*

L5 – Station L5 is located along the northwest finger of Lake Ogletree, near the confluence with the East Lake/Green Chapel tributary. Latitude *32, 33, 37.961 N*; Longitude *85, 25, 38.369 W*

Site Number	Sample Date	Water Temp. (F)	pH	Dissolved Oxygen (mg/L)	Specific Conductance (uS/cm)	Turbidity (NTU)	Nitrate + Nitrite (mg/L)	Total Kjeldahl Nitrogen (mg/L)	Orthophos-phate (mg/L)	Total Phosphorus (mg/L	E. coli (MPN)
C1	2/21/2020	52.3	6.99	9.78	43.9	19	-	-	-	-	-
C1	12/19/2019	45.9	7.29	12.67	71.7	10.87	0.253	0	0	0	321.4
C1	10/23/2019	65.3	7.35	8.98	79.1	11.1	0.059	0	0	0.105	37.1
C1	8/27/2019	76.8	7.53	7.81	84.7	11.5	0.147	0	0.059	0.132	1046.2
C1	6/20/2019	86	8.71	8	63.4	3.89	0	0	0	0	7.5
C1	4/22/2019	70	6.93	10.3	49	24.8	0.049	0.858	0.026	0.504	80.1
C2	2/21/2020	51.5	6.95	10.47	45.1	21.2	-	-	-	-	-
C2	12/19/2019	47	7.06	12.08	72.5	9.67	0.293	0	0	0	356
C2	10/23/2019	61.8	6.91	7.5	84.7	11.14	0.107	0	0	0	201.4
C2	8/27/2019	74.8	7.12	6.92	82.6	11.2	0.087	0	0.063	0.164	419.8
C2	6/20/2019	76.1	7.38	7.66	73.5	7.45	0.176	0	0	0.764	290.9
C2	4/22/2019	61.9	6.88	9.6	52	19	0.142	0.703	0.031	0	410.6
C5	12/19/2019	44.2	7.74	11.82	75.9	10.1	0.289	0	0	0	370
C5	10/23/2019	62	7.28	7.31	92.1	12	0	0	0	0.119	166.4
C5	8/27/2019	73.3	7.37	7.46	78.3	54	0.122	0	0.039	0.201	1986
C5	6/20/2019	77.1	7.37	7.6	76.5	9.46	0.229	0	0	0	298.7
C5	4/22/2019	58.9	6.96	9.62	54	21.3	0.128	0.57	0	0.482	328.2
C7	2/21/2020	50.6	6.9	10.52	51.4	28.6	-	-	-	-	-
C7	12/19/2019	44.8	7.35	11.56	75	10.9	0.469	0	0	0	471.8
C7	10/23/2019	57.9	6	4.78	89.1	7.98	0	0	0	0	290.9
C7	8/27/2019	73.6	6.76	4.9	76.6	7.83	0.0918	0	0	0.159	1119.9
C7	6/20/2019	76.2	7.25	6.97	76	6.92	0.228	0	0	0	325.5
C7	4/22/2019	59.7	6.87	8.8	57	29.7	0.157	0.654	0	0.472	410.6
C8	2/21/2020	52.7	6.96	10.6	55.5	29.2	-	-	-	-	-
C8	12/19/2019	48.1	7.23	11.61	74.1	10.04	0.155	0	0	0	335.8
C8	10/23/2019	66.9	7.15	7.46	203.4	2.34	0.146	0	0.186	0.282	0
C8	8/27/2019	76	7.11	6.14	111.1	7.21	0.121	0	0.116	0.244	235.9
C8	6/20/2019	79.5	7.3	7.22	77.2	5.98	0.157	0.617	0	0	231
C8	4/22/2019	62.3	6.8	8.9	56	44.1	0.154	0.645	0.043	0.467	517.2
L1	2/21/2020	54.5	7.63	9.6	46.5	28.3	-	-	-	-	-
L1	12/19/2019	54.5	7.43	10.49	143.3	24.6	0.177	0	0	0	162.6
L1	10/23/2019	68.7	7.52	7.5	116.6	53.3	0	0	0	0.114	7.4
L1	8/27/2019	81.5	7.69	6.37	80.5	5.31	0	0	0	0.147	1
L1	6/20/2019	83.4	8.73	8.33	61.6	4.09	0	0.923	0	0	1
L1	4/22/2019	69	7.12	8.45	48	23.9	0.036	0.571	0	0.466	210.5
L2	3/24/2020	68.2	7.71	10.01	46.8	4.24	-	-	-	-	-

Site Number	Sample Date	Water Temp. (F)	pH	Dissolved Oxygen (mg/L)	Specific Conductance (uS/cm)	Turbidity (NTU)	Nitrate + Nitrite (mg/L)	Total Kjeldahl Nitrogen (mg/L)	Orthophos-phate (mg/L)	Total Phosphorus (mg/L	E. coli (MPN)
L2	3/10/2020	56.2	7.01	11.13	42	15.2	-	-	-	-	-
L2	2/26/2020	55.1	7.2	10.8	46.3	13.5	-	-	-	-	-
L2	2/21/2020	54.6	7.23	8.99	47.2	33	0.117	0	0	0	393.6
L2	2/11/2020	55.4	6.97	9.65	46.5	24.2	-	-	-	-	-
L2	1/28/2020	52.8	7.34	10.68	61	9.19	-	-	-	-	-
L2	1/8/2020	54.5	7.12	10.37	76.9	11.33	-	-	-	-	-
L2	12/19/2019	51.2	7.68	10.01	126.4	17.5	0.121	0	0	0	197
L2	12/10/2019	57.4	7.59	10.06	140	10.37	-	-	-	-	-
L2	11/26/2019	59.3	7.79	10.17	145.2	-	-	-	-	-	-
L2	11/13/2019	56.1	7.58	10.32	133.6	-	-	-	-	-	-
L2	10/29/2019	69.5	8.15	9.77	121.8	6.28	-	-	-	-	-
L2	10/23/2019	68.8	7.57	7.07	117.3	11.25	0	0	0	0	7.5
L2	10/16/2019	75.4	8.6	9.14	113.7	7.4	-	-	-	-	-
L2	10/2/2019	86.4	8.95	8.04	97.5	5.19	-	-	-	-	-
L2	9/18/2019	85.9	9.1	8.67	90.5	5.54	-	-	-	-	-
L2	9/3/2019	85.2	8.99	9.8	83.4	5.75	-	-	-	-	-
L2	8/27/2019	82.3	7.58	5.65	78.5	5.84	0	0	0	0.127	1
L2	8/21/2019	90.1	8.65	8.1	78.5	11.31	-	-	-	-	-
L2	8/6/2019	87.9	8.53	8.66	69.2	6.03	-	-	-	-	-
L2	7/9/2019	89.8	9.11	8.37	66.6	4.49	-	-	-	-	-
L2	6/25/2019	86.8	8.96	9.49	63.3	4.36	-	-	-	-	-
L2	6/20/2019	83.6	8.89	8.64	61.9	4.55	0.047	0.533	0	0	3.1
L2	6/11/2019	-	-	-	-	4.7	-	-	-	-	-
L2	5/29/2019	89.1	9.2	8.86	59.7	3.06	-	-	-	-	-
L2	5/15/2019	75.5	8.63	9.27	53.4	10.61	-	-	-	-	-
L2	4/23/2019	73.9	7.69	10.97	47.8	15.3	-	-	-	-	-
L2	4/22/2019	67.1	7.04	8.02	48	24	0.04	0.584	0	0.452	261.3
L2	4/11/2019	68.7	8.27	11.33	59.1	2.35	-	-	-	-	-
L5	2/21/2020	56.2	6.76	10.28	58.7	21.5	-	-	-	-	-
L5	12/19/2019	51.4	7.2	11.19	80	6.29	0.112	0	0	0	172
L5	10/23/2019	60.7	7.25	8.78	80.6	3.93	0.284	12.9	0.026	0	66.3
L5	8/27/2019	77.5	7.41	7.13	85.2	2.28	0.208	0	0	0.173	157.6
L5	6/20/2019	85.9	8.65	9.02	64.5	3.81	0	0.491	0	0.206	5.2
L5	4/22/2019	79.3	7.25	9.41	49	26.2	0.057	0.779	0	0.474	83
T11	2/21/2020	52.2	7.03	10.82	43.7	16.5	-	-	-	-	-
T11	12/19/2019	44.8	7.21	12.25	78.3	9.58	0.075	0	0	0	82.8
T11	10/23/2019	59.8	6.96	8.5	83.3	18.3	0	0	0	0	59.8
T11	8/27/2019	74.5	7.23	7.36	78	87.8	0.187	0	0.068	0.21	1553.1
T11	6/20/2019	74.7	7.29	7.81	78	5.25	0.1	0	0	0	60.9
T11	4/22/2019	59.7	7.02	9.44	57	12.8	0.109	0	0.026	0.442	285.1
T12N	2/21/2020	52.9	7.06	10.79	92	9.14	-	-	-	-	-
T12N	10/23/2019	56.7	7.2	9.36	126.5	2.98	0.139	0	0	0	90.9
T12N	8/27/2019	72.7	7.17	7.2	83.5	17.1	0.196	0	0.029	0	2419.6

Site Number	Sample Date	Water Temp. (F)	pH	Dissolved Oxygen (mg/L)	Specific Conductance (uS/cm)	Turbidity (NTU)	Nitrate + Nitrite (mg/L)	Total Kjeldahl Nitrogen (mg/L)	Orthophos-phate (mg/L)	Total Phosphorus (mg/L	E. coli (MPN)
T12N	6/20/2019	73	7.24	8.93	134.3	2.53	0.207	0	0.059	0	235.9
T12N	4/22/2019	59.9	7.06	9.32	128	6.49	0.257	0	0	0.446	410.6
T19	2/21/2020	52.1	7.04	10.88	77	16.8	-	-	-	-	-
T19	12/19/2019	47.2	7.16	11.55	102.4	12	0.185	0	0	0	118.2
T19	10/23/2019	58.5	6.85	4.65	90.5	19.1	0	0	0	0	101.7
T19	8/27/2019	72.8	6.61	5.34	84.6	20.9	0.0753	0	0	0.109	488.4
T19	6/20/2019	79.6	7.24	6.27	94.5	7.15	0.137	0.576	0	0.217	387.3
T19	4/22/2019	62.7	7.1	8.9	102	20.1	0.083	0.562	0.033	0.454	228.2
T22	2/21/2020	52.2	7.07	10.88	78.6	13.2	-	-	-	-	-
T22	12/19/2019	45.6	7.17	11.77	119.2	7.16	0.26	0	0	0	232.4
T22	10/23/2019	57.6	7.05	7.7	135.5	5.92	0	0	0	0	980.4
T22	8/27/2019	73	7.12	6.54	93.1	26.6	0.211	0	0.026	0.158	2419.6
T22	6/20/2019	73.9	7.29	7.7	112.1	5.44	0.398	0	0	0	46.5
T22	4/22/2019	59.2	6.99	8.88	90	13.4	0.185	0.704	0.24	0.461	2419.6
T32	2/21/2020	53.4	7.12	10.58	40.2	15.8	-	-	-	-	-
T32	12/19/2019	46.9	7.36	12.29	67	12.01	0.155	0	0	0	332.8
T32	10/23/2019	60.3	7.3	9.17	63.9	3.64	0	0	0.024	0	72.3
T32	8/27/2019	74.8	7.59	7.79	69	11.1	0.171	0	0.079	0.135	290.9
T32	6/20/2019	83.9	8.57	8.09	63.4	3.76	0	0	0	0	3.1
T32	4/22/2019	null	7.01	9.67	51	23.2	0	0.672	0.033	0	108.1
T34	2/21/2020	52.9	6.96	10.5	54.2	27.7	-	-	-	-	-
T34	12/19/2019	48	7.29	11.51	70.4	11.67	0.125	0	0	0	162.6
T34	10/23/2019	58.8	6.71	4.25	79.5	2.91	0.05	0	0	0	122.3
T34	8/27/2019	74	7.07	5.29	77.1	17.5	0.165	0	0	0.204	1119.9
T34	6/20/2019	79.2	7.27	6.81	75.5	5.26	0.094	0	0	0	88.2
T34	4/22/2019	62.4	6.82	8.57	53	42.1	0.116	0.638	0	0.466	435.2

5.0 WPCF Dissolved Oxygen Monitoring

5.1 Purpose

Staff have been collecting in-stream dissolved oxygen data upstream and downstream of both WPCF's effluent discharge points since August of 2006. This monitoring provides valuable data assuring that the effluent discharged from Auburn's WPCF is not causing decreases in the dissolved oxygen content of Parkerson's Mill Creek during the critical summer months. Monitoring at the Northside WPCF was discontinued in 2013 due to closure of the plant, however data collection resumed in 2015. Monitoring is performed on a frequent basis (almost daily) using a YSI (Clark Cell) and/or Hach (LDO) dissolved oxygen probe at points both upstream and downstream of each effluent discharge location.

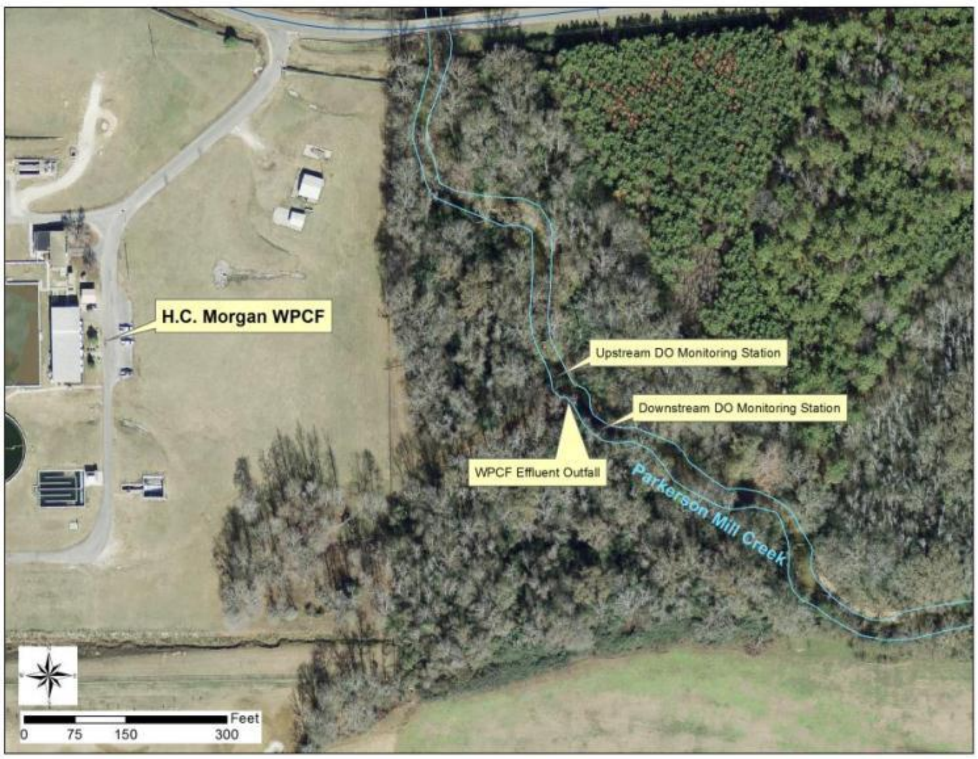
5.2 Methods

As noted above, dissolved oxygen measurements are taken with a YSI (Clark Cell) and/or HACH (Luminescent Dissolved Oxygen) probe.

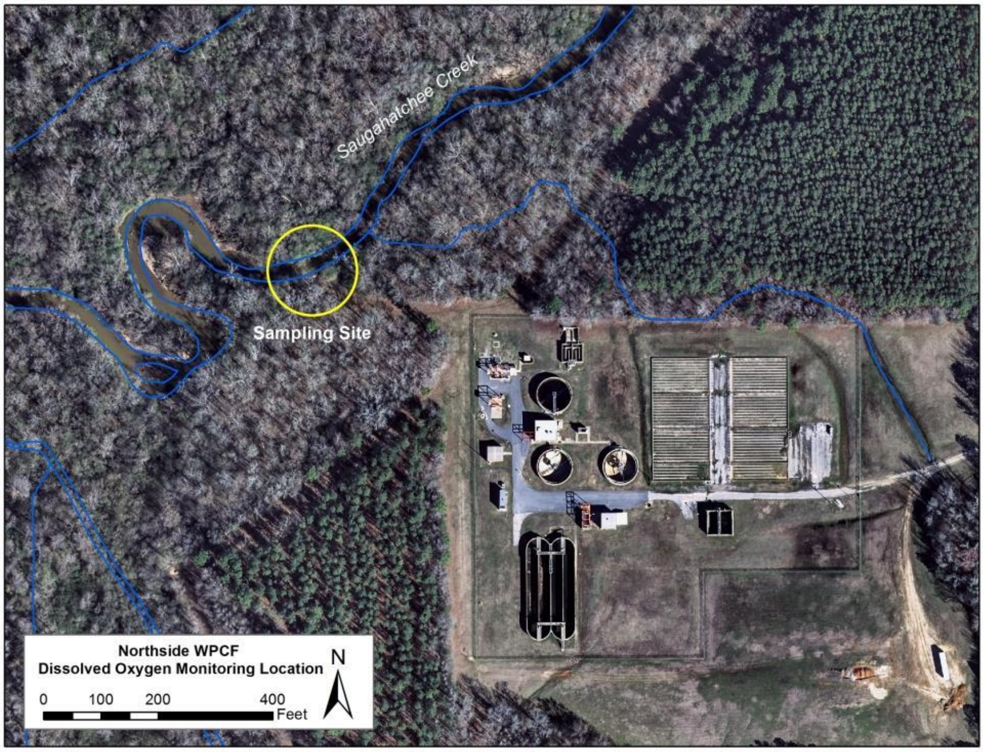
- Dissolved Oxygen – This is the amount of oxygen that has been dissolved in the water column, which comes from both the atmosphere and photosynthesis by aquatic plants.

5.3 Monitoring Stations

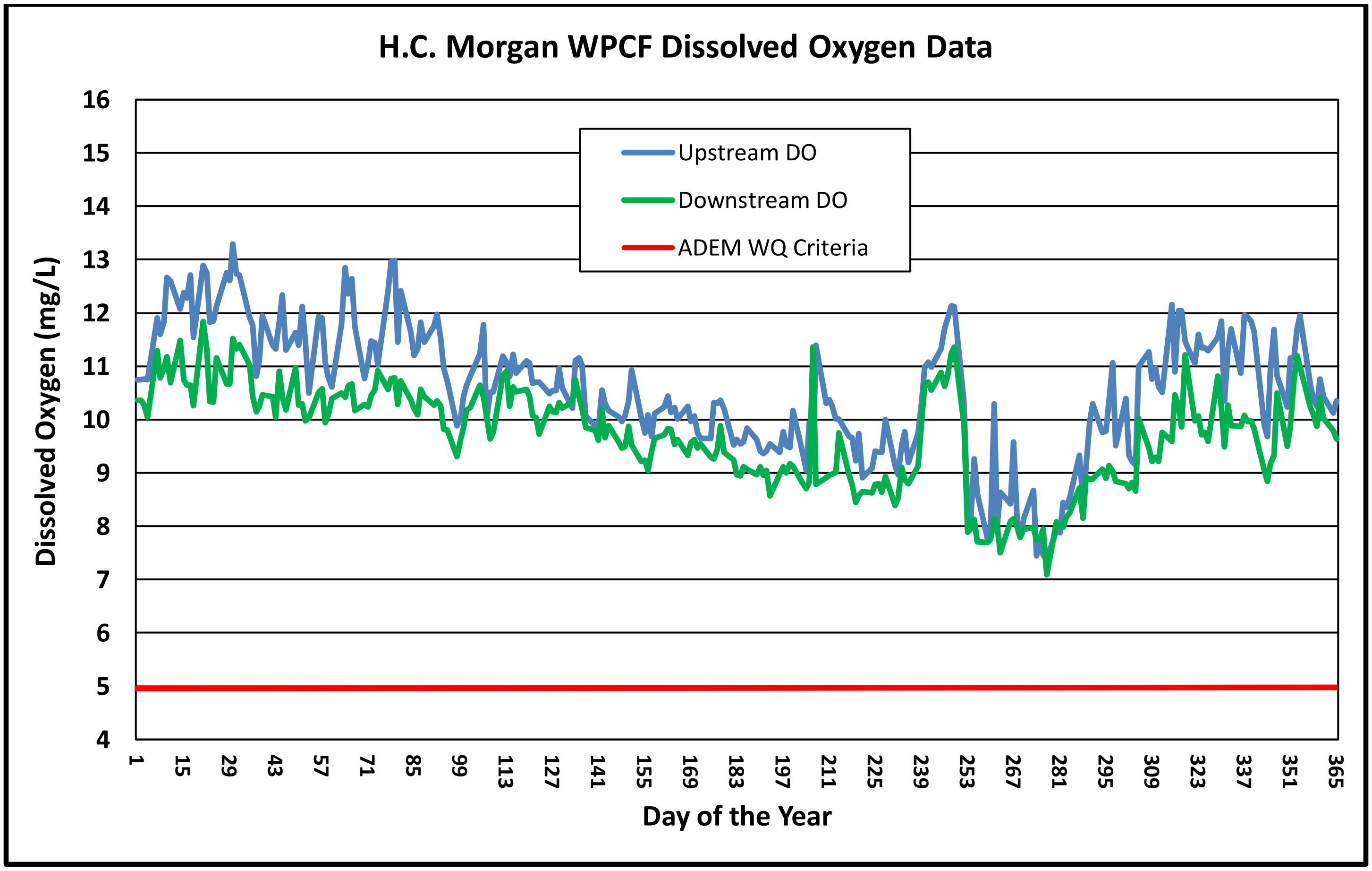
H.C. Morgan WPCF Upstream Latitude *32, 32, 9.890 N;* Longitude *85, 30, 20.443 W*
H.C. Morgan WPCF Downstream Latitude *32, 33, 9.077 N;* Longitude *85, 30, 19.699 W*

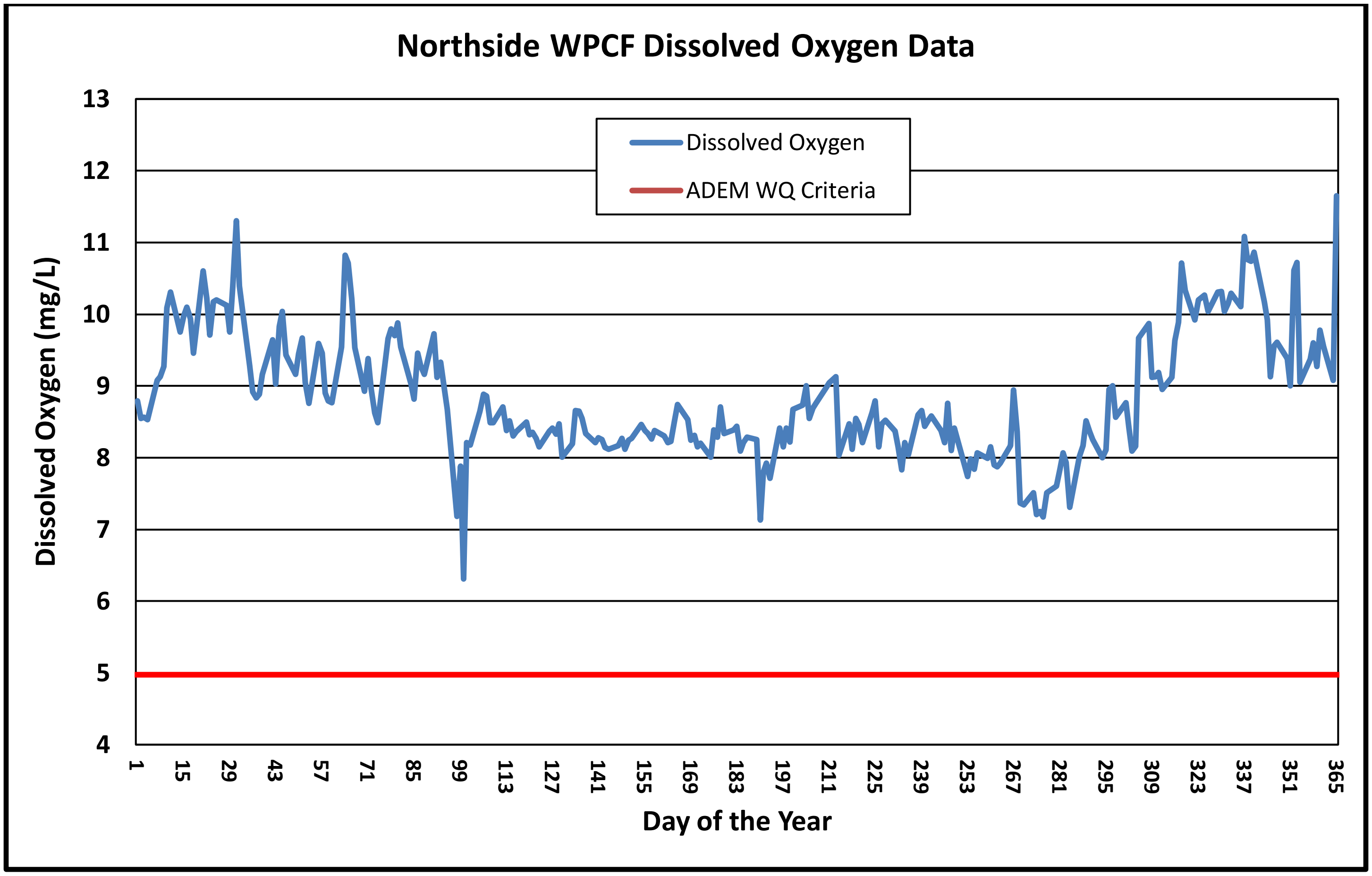


Northside WPCF Latitude *32, 37, 41.32 N;* Longitude *85, 32, 44.75 W*



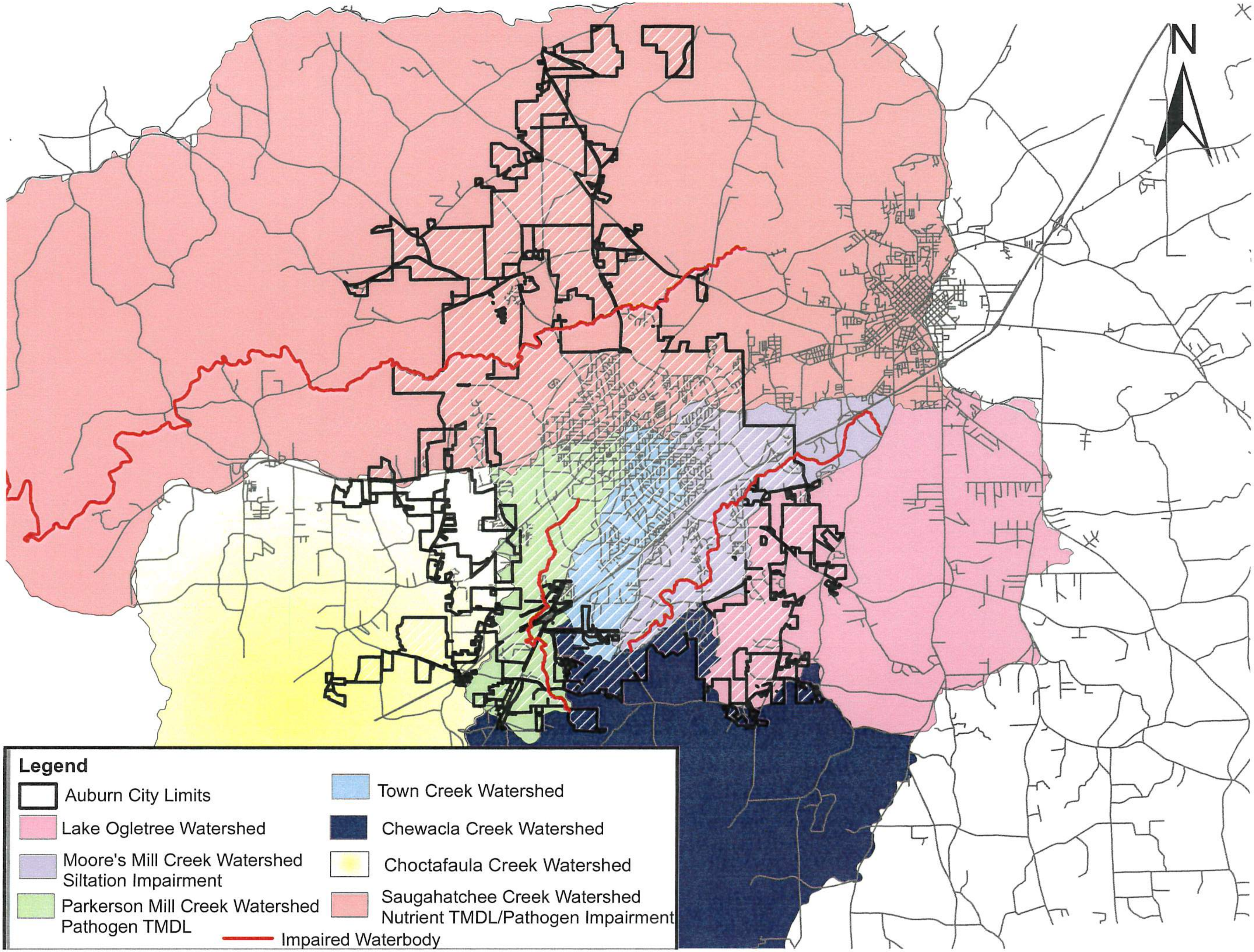
5.4 Data




Northside WPCF Dissolved Oxygen Data
Dissolved Oxygen
ADEM WQ Criteria
Dissolved Oxygen (mg/L)
13
12
11
10
9
8
7
6
5
4
1
15
29
43
57
71
85
99
113
127
141
155
169
183
197
211
225
239
253
267
281
295
309
323
337
351
365
Day of the Year

APPENDIX E

HYDROLOGY AND WATERSHEDS WITH APPROVED TMDLs MAP


N
Legend
Auburn City Limits
Lake Ogletree Watershed
Moore's Mill Creek Watershed
Siltation Impairment
Parkerson Mill Creek Watershed
Pathogen TMDL
Town Creek Watershed
Chewacla Creek Watershed
Choctafaula Creek Watershed
Saugahatchee Creek Watershed
Nutrient TMDL/Pathogen Impairment
Impaired Waterbody

APPENDIX F

MUNICIPAL FACILITIES

City Properties/Facilities	
280 Rest Stop	Lake Wilmore
Ambulance Properties	Lee County Humane Society
Auburn Public Library	Lynn St. Property
Baptist Hill Cemetery	Lynn St. Property
Bowden Park	Mall Parkway Parking Lot
Boy Scout Hut Property	Martin Luther King Park
Boykin Community Center	Memorial Cemetery
Camellia Dr @ Wrights Mill Rd Property	Moores Mill @ Society Hill Property
Choctafaula Lift Station	Moores Mill Park
City Hall	N Gay St. Parking Lot
City Meeting Room	N Ross @ Opelika Rd Property
Dean Road Rec Center	Northside WPCF
Dekalb St. Regional DP	Parking Deck
Doug Watson Municipal Complex	Pine Hill Cemetery
Duck Samford Park	Public Safety Training Facility
Dumas Drive Property	Public Works
E Glenn Municipal Parking Lot	S Brookwood Dr Property
Environmental Services	S Donahue @ EUD Property
Felton Little Park	Sam Harris Park
Fire Station 2 & Fields	School Bus Depot
Fire Station 3	Soccer Complex
Fire Station 4	Softball Complex
Firing Range	Summertrees Properties
Fleet Services	Tacoma Dr Regional DP
Forestdale @ Moores Mill Property	Tennis Center
Frank Brown Rec Center	Town Creek Cemetery
Graham McTeer Park	Town Creek Drive Trailhead
HC Morgan WPCF	Town Creek Park and Greenway
Hickory Dickory Park	Veterans Memorial Property
Human Resources	Westview Properties
Indian Pines Golf Course	White St Regional DP
Keisel Park	

APPENDIX G

REVISED MONITORING PLAN

City of Auburn

City of Auburn, Alabama
Phase II MS4
Stormwater Quality Monitoring Plan

Permit # ALR040003

Effective: October 1, 2016

Expiration: September 30, 2021

Updated: December 31, 2019

Table of Contents

1.0 Introduction

This document is the City of Auburn's Stormwater Monitoring Plan as required by the Alabama Department of Environmental Management (ADEM) Municipal Separate Storm Sewer System (MS4) Phase II NPDES General Permit No. ALR040003. The purpose of this monitoring plan is to provide environmental data that will be used to evaluate the conditions in each impaired stream within the City's MS4. These monitoring data will help determine the success of efforts to reduce pollutant loads within these waterbodies. This plan will be reviewed annually, and any revisions to the plan will be documented in the Stormwater Management Program Plan (SWMPP) Annual Report.

1.1 Watersheds and Impairments

The City of Auburn has three (3) streams within its jurisdiction that fail to meet the state's minimum water quality standards for their designated uses. Two streams have a finalized Total Maximum Daily Load (TMDL), and two streams are included on the 2018 final 303(d) list. A TMDL was approved for the Saugahatchee Creek watershed in 2008, with the pollutants of concern being total phosphorus (TP) and organic enrichment/dissolved oxygen (OE/DO). Saugahatchee Creek was listed on the 2018 303(d) list for pathogens, and E. coli monitoring for this impairment will begin during the next reporting period (4/1/2019 – 3/31/2020). A TMDL was finalized for Parkerson's Mill Creek in 2011 for pathogens, with E. coli as the indicator bacteria. Moore's Mill Creek was included on the 303(d) list of impaired streams in 2000 for siltation, and there is currently no TMDL for Moore's Mill Creek. This Stormwater Quality Monitoring Plan will address the TMDL pollutants of concern and 303(d) impairment for each of these streams.

1.2 Permit Requirements

According to Part V of the MS4 Phase II General Permit ALR040003 if there are no 303(d) listed or TMDL waters located in the permittee's MS4 area, no monitoring shall be required. However, if a waterbody within the MS4 jurisdiction is listed on the latest final 303(d) list, or otherwise designated impaired by ADEM, or for which a TMDL is approved or established by EPA, the MS4 permittee shall comply with the following:

1. Include a statement in the SWMPP stating if monitoring is required.
2. Implement a monitoring program within 6 months of permit coverage that addresses the impairment or TMDL. Include the monitoring plan in the SWMPP, and document the revisions to the monitoring plan in the SWMPP and SWMPP Annual Report.
3. Describe proposed monitoring locations and proposed monitoring frequency in the monitoring plan, with actual locations described in the SWMPP Annual Report.
4. Include in the monitoring program any parameters attributed with the latest final 303(d) list, or otherwise designated by ADEM as impaired, or are included in an EPA-approved or EPA-established TMDL.
5. Perform analysis and collection of samples in accordance with the methods specified at 40 CFR Part 136. If an approved 40 CFR Part 136 does not exist, then an ADEM approved method may be used.
6. If samples cannot be collected due to adverse conditions, permittee must submit a description of why samples could not be collected, including available documentation of the event (e.g. weather conditions that create dangerous conditions for personnel, or impracticable conditions such as drought or ice).
7. Monitoring results must be reported with the subsequent SWMPP Annual Report and shall include the following:
    a. The date, latitude/longitude of location, and time of sampling
    b. The name(s) of the individual(s) who performed the sampling
    c. The date(s) analysis was performed
    d. The name(s) of the individual(s) who performed the analysis
    e. The analytical techniques or methods used
    f. The results of such analysis

2.0 Monitoring

The City of Auburn understands that quality control and quality assurance are critical to a successful environmental monitoring program. In order to develop a dependable and credible database of water quality measurements for each sampling site in the City's MS4 area, the Water Resource Management (WRM) staff employ a stringent field and laboratory protocol. WRM staff are required to wear nitrile gloves when handling sample bottles, cleaning sample bottles, plating bacterial samples, handling bacterial plates and growth media, calibrating instruments, and collecting water samples. Before going to a sample site, water sample collection bottles are placed in clean, sealable plastic bags. They are carried to the sample site in a cooler, and after the samples are collected the bottles are immediately placed back into the bag and into the cooler to be chilled at 4 degrees Celsius. WRM staff calibrate all water quality instruments prior to field use. Calibration standards are never used outside the expiration date. A detailed calibration log is filled out each time an instrument is calibrated (Appendix A). Where applicable, instruments, sampling devices, and sample vials are cleaned using Liquinox™ phosphate-free detergent, followed by a tap water rinse, and then a final rinse with deionized water. At all sample sites, WRM staff utilize field sheets to document site characteristics and observations such as stream color, geomorphic setting (riffle, pool, etc.), and weather conditions (Appendix B). The field sheets are also used to document water quality data measured in-situ at each site. These in-situ data include temperature, pH, specific conductance (μS/cm), dissolved oxygen (mg/L), and dissolved oxygen (% saturation), and are collected using a YSI ProPlus instrument. Water samples are analyzed for turbidity in the field using a LaMotte 2020we portable turbidimeter. Streamflow is determined using the mid-section method, where the channel is divided into segments along a cross-section, and width, depth, and velocity are recorded at each segment. Velocity is measured at the center of each segment using a Price Pygmy Meter or a Sontek Flowtracker2 acoustic doppler velocimeter. The sum of flows of all the segments along a cross-section equals the total streamflow.

2.1 Saugahatchee Creek

The Saugahatchee Creek Embayment on Yates Reservoir was originally placed on the ADEM 303(d) list of impaired waterbodies in 1996 for OE/DO and nutrients. It remained on the State's 303(d) list after each consecutive two-year water quality assessment until 2008, at which time the Saugahatchee Creek Embayment (Yates Reservoir) TMDL was finalized. Additionally, Pepperell Branch, an unnamed tributary of Saugahatchee Creek which originates in Opelika, also remained on the State's 303(d) list for nutrient impairment until 2008. The impairment of Pepperell Branch was also addressed in the Saugahatchee Creek Embayment TMDL. At no time has the main stem of Saugahatchee Creek been added to the State's 303(d) list. In order to address water quality concerns within the Saugahatchee Creek Embayment, ADEM and the EPA jointly developed a "watershed based" TMDL, which would in turn address nutrient loading from both the main stem of Saugahatchee Creek and Pepperell Branch. The final Saugahatchee Creek Watershed TMDL was issued in April of 2008, identifying TP as the primary pollutant of concern (expressed as chlorophyll-a to satisfy numeric target criteria for assessing eutrophication in lakes). The Saugahatchee Creek Embayment TMDL establishes the TP limits in stormwater runoff of equal to or less than 0.1 mg/L (see Table 5-2 of the Saugahatchee Creek Embayment TMDL).

Monitoring TP at strategic locations along the main stem of Saugahatchee Creek and on tributaries within the Saugahatchee Creek watershed that drain portions of the City's MS4 will provide sufficient data to evaluate the success of efforts to reduce TP in stormwater and meet TMDL concentrations. The City shall make all reasonable efforts to conduct quarterly sampling for TP, water temperature, pH, dissolved oxygen, specific conductance, and turbidity at three locations along the main stem of Saugahatchee Creek, and also at three tributaries within the Saugahatchee Creek watershed (Figure 1.). Streamflow in cubic feet per second (cfs) and million gallons per day (MGD) will also be recorded at each sample site when water samples are collected. Streamflow at sites 1S, 4S, and 19S will be determined by the City's streamgage located at site 4S on Saugahatchee Creek at the City's Northside Water Pollution Control Facility (WPCF). The City will make a reasonable effort to measure streamflow in-situ at sites 5S, 20S, and 21S after water samples are collected when flow conditions permit. Additionally, the City will continue to reasonably support and participate in studies of water quality in the embayment. Sample sites for monitoring TP in the Saugahatchee Creek watershed are shown in Table 1. The sample parameters and corresponding analytical techniques are shown in Table 2.

In 2018, Saugahatchee Creek was placed on the ADEM 303(d) list for pathogen impairment. The impaired reach is 33.42 mi., and includes waters from Saugahatchee Lake Dam to the confluence with Sycamore Creek in Tallapoosa County. ADEM considered collection system failure and pasture grazing as potential sources of the impairment. According to the 2018 303(d) list Fact Sheet http://www.adem.state.al.us/programs/water/wquality/2018AL303dFactSheet.pdf, ADEM collected samples at station SOGL-1 and SOGL-11 to determine the basis for adding Saugahatchee Creek to the 303(d) list. The City shall make all reasonable efforts to monitor E. coli concentrations in Saugahatchee Creek through annual intensive E. coli sampling at six (6) sites within the Saugahatchee Creek watershed (Figure 2.). Monitoring E. coli at strategic locations along the main stem of Saugahatchee Creek and on tributaries within the Saugahatchee Creek watershed that drain portions of the City's MS4 will provide further insight into the high E. coli concentrations that were observed by ADEM and eventually led to the 2018 303(d) listing. Single samples will be collected for E. coli once per month for April, May, July, September, October, and November. Weekly samples will be collected at those sites during June and August. The 5-week geometric mean concentrations will be calculated based on the results of the weekly sampling. Streamflow will be determined from the USGS streamgage 02418230 for site SOGL-1, and streamflow at sites SOGL-11 and SOGL-20 will be determined from the City's streamgage located at the Northside WPCF. The City will make a reasonable effort to measure streamflow (recorded in cfs and MGD) in-situ at sites SOGUTL-1, SOGUTL-3, and SOGUTL-4 after water samples are collected when flow conditions permit. Water temperature, pH, dissolved oxygen, specific conductance, and turbidity will also be measured in-situ at each site. Sample sites for monitoring E. coli are shown in Table 1., and the sample parameters and corresponding analytical techniques are shown in Table 2.

Table 1. Saugahatchee Creek Monitoring Site Locations

Site Number	Pollutant of Concern	Site Location	Site Coordinates
1S	Total Phosphorus	Saugahatchee Creek at US HWY 280	32.657413 N, 85.459656 W
19S	Total Phosphorus	Saugahatchee Creek 0.35 mi upstream of N. Donahue Dr.	32.642777 N, 85.498761 W
4S	Total Phosphorus	Saugahatchee Creek at Northside WPCF	32.628185 N, 85.545705 W
5S	Total Phosphorus	Unnamed Tributary to Saugahatchee Creek	32.625847 N, 85.546404 W
20S	Total Phosphorus	Unnamed Tributary to Saugahatchee Creek	32.642492 N, 85.498606 W
21S	Total Phosphorus	Swingle Creek above Lee Rd. 188	32.655618 N, 85.575517 W
SOGL-1	E. coli	Saugahatchee Creek at Lee Rd. 188	32.626569 N, 85.588019 W
SOGL-11	E. coli	Saugahatchee Creek at Northside WPCF	32.628185 N, 85.545705 W
SOGL-20	E. coli	Saugahatchee Creek at Watercrest Dr.	32.648751 N, 85.472166 W
SOGUTL-1	E. coli	Unnamed Tributary to Saugahatchee Creek	32.635379 N, 85.490675 W
SOGUTL-3	E. coli	Unnamed Tributary to Saugahatchee Creek	32.636313 N, 85.480916 W
SOGUTL-4	E. coli	Unnamed Tributary to Saugahatchee Creek	32.635890 N, 85.481219 W

Table 2. Saugahatchee Creek Water Quality Parameters and Analytical Methods

Water Quality Parameter	Analytical Method
Total Phosphorus	EPA 365.4
E. coli	IDEXX System (Colilert) *or* Alabama Water Watch (Coliscan Easygel)
Water Temperature	YSI model 5560
pH	YSI model 1001
Dissolved Oxygen	YSI model 2003 polarographic
Specific Conductance	YSI model 5560
Turbidity	Standard Methods 2130 B

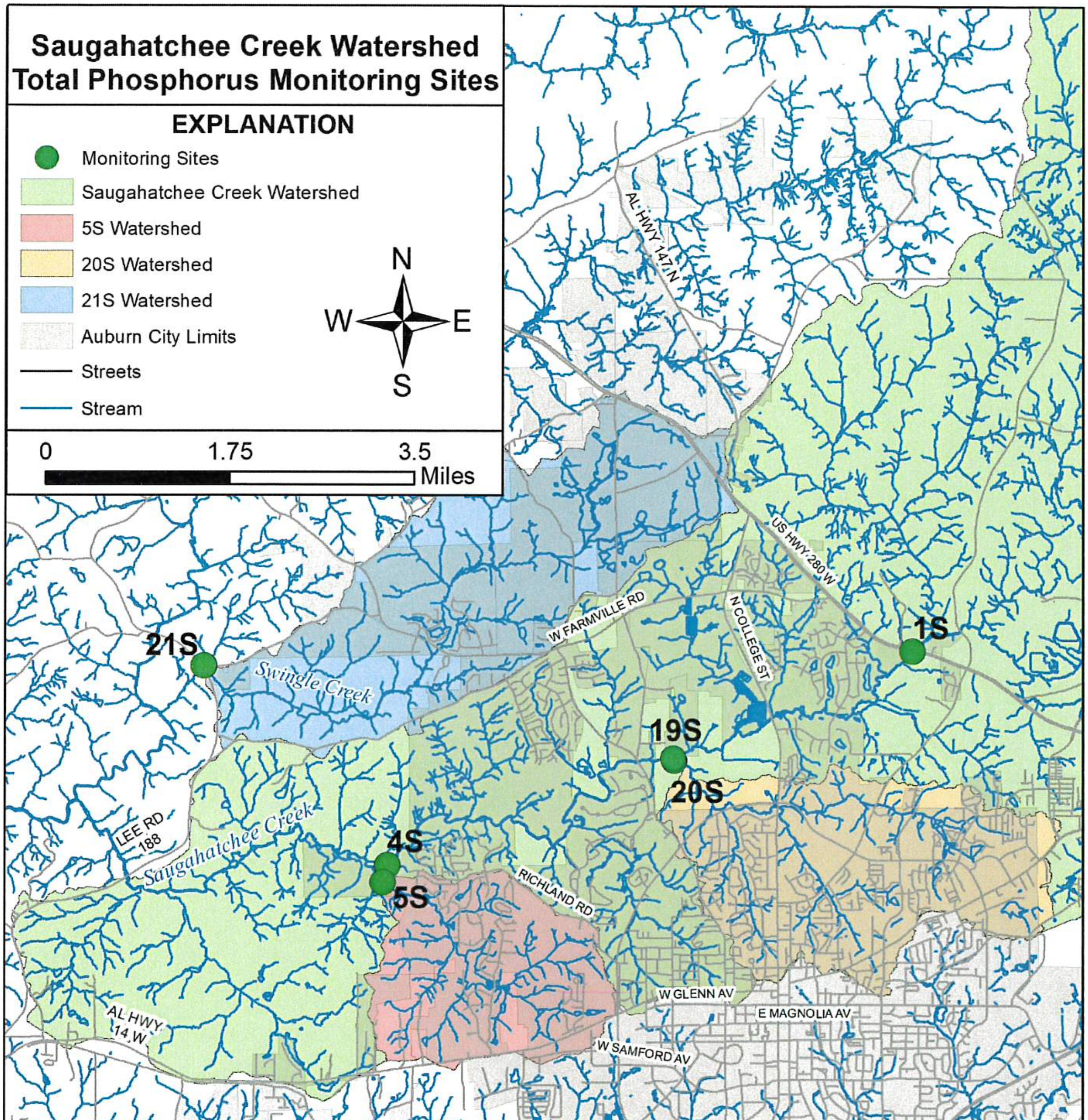


Figure 1. Saugahatchee Creek Watershed Total Phosphorus Monitoring Sites

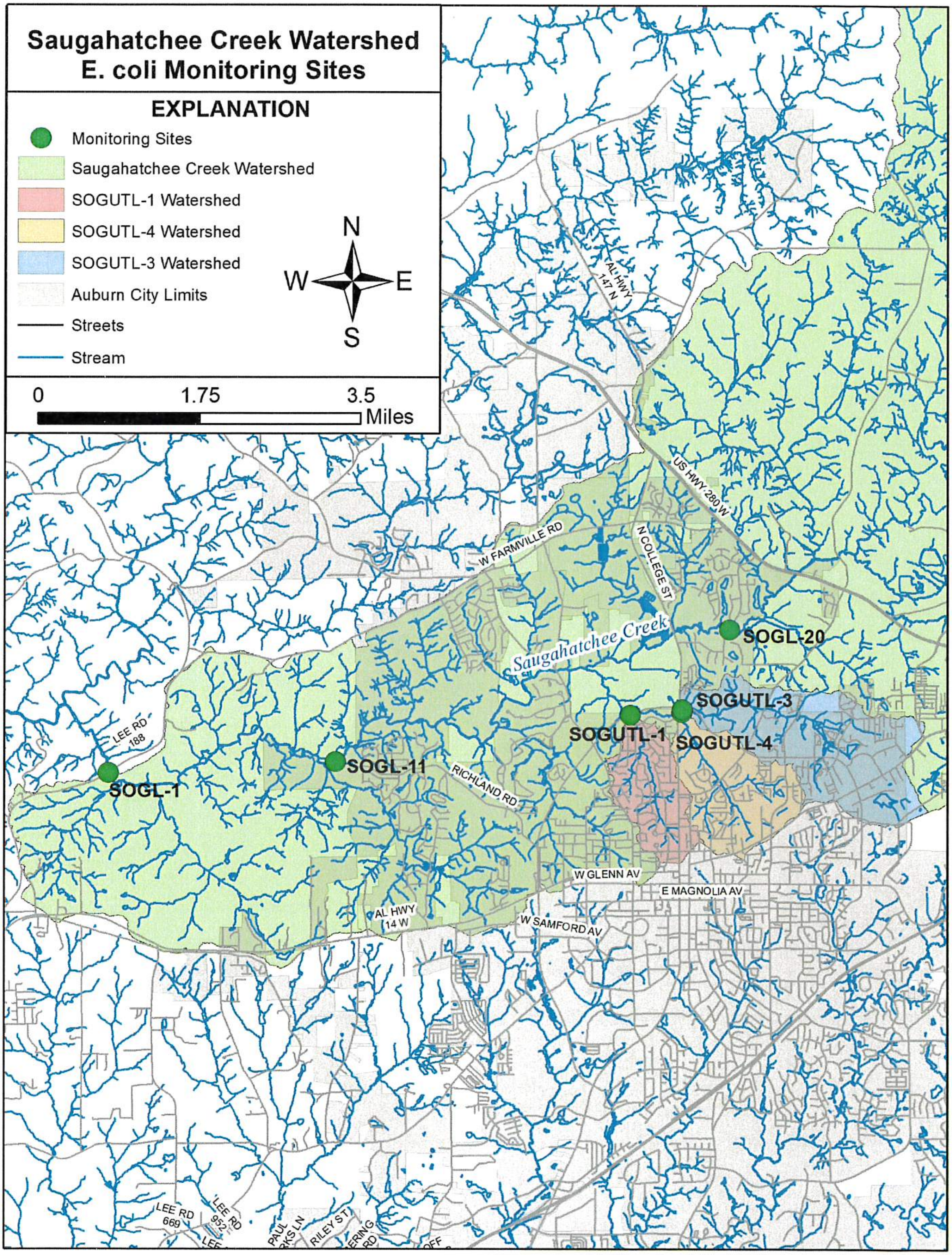


Figure 2. Saugahatchee Creek Watershed E. coli Monitoring Sites

2.2 Parkerson's Mill Creek

Parkerson's Mill Creek was placed on the ADEM 303(d) list of impaired waterbodies for pathogens in 2008. The impaired reach is 6.85 mi. and includes all waters from its source (near the intersection of N. College St. and Glenn Ave. in downtown Auburn) to its confluence with Chewacla Creek. Potential sources of the impairment were listed as sanitary sewer overflows and urban runoff. The final Parkerson's Mill Creek TMDL was issued in September 2011, identifying E.coli as the pollutant of concern. The Parkerson's Mill Creek TMDL establishes the E. coli limits in stormwater at 3.42E+09 colonies/day, also expressed as a 61% reduction in non-point sources. This TMDL was established using the geometric mean criterion of 126 CFU/100mL.

The City shall make all reasonable efforts to monitor E. coli concentrations in Parkerson's Mill Creek through annual intensive E. coli sampling. The intensive E. coli sampling will provide sufficient data to evaluate the success of efforts to reduce pathogens in stormwater and meet TMDL concentrations. The intensive sampling will be conducted in the same manner as the study performed by ADEM in 2010 at the same four (4) reference sites (Figure 2.). Single samples will be collected for E. coli once per month for April, May, July, September, October, and November. Weekly samples will be collected at those sites during June and August. The 5-week geometric mean concentrations will be calculated based on the results of the weekly sampling. Streamflow at site PKML-1 will be determined by the City's streamgage located at site PKML-1 on Parkerson's Mill Creek just downstream of the Sandhill Rd. bridge near the H.C. Morgan WPCF. The City will make a reasonable effort to measure streamflow (recorded in cfs and MGD) in-situ at sites PM3, PKML-5, and PKML-2 after water samples are collected when flow conditions permit. Water temperature, pH, dissolved oxygen, specific conductance, and turbidity will be measured in-situ at each site. Additionally, the City will continue to reasonably support and participate in studies of water quality in the Parkerson's Mill Creek watershed. Proposed sample sites for monitoring in the Parkerson's Mill Creek watershed are shown in Table 3. The sample parameters and corresponding analytical techniques are shown in Table 4.

Table 3. Parkerson's Mill Creek Monitoring Site Locations

Site Number	Site Location	Site Coordinates
PKML-1	Parkerson's Mill Creek at Sand Hill Rd	32.53744 N, 85.50601 W
PKML-2	Parkerson's Mill Creek at Shug Jordan Pkwy	32.58551 N, 85.50249 W
PKML-5	Parkerson's Mill Creek at W. Veterans Blvd	32.56243 N, 85.50716 W
PM-3	Parkerson's Mill Creek below HC Morgan WPCF	32.53427 N, 85.50156 W

Table 4. Parkerson's Mill Creek Water Quality Parameters and Analytical Methods

Water Quality Parameter	Analytical Method
E. coli	IDEXX System (Colilert) *or* Alabama Water Watch (Coliscan Easygel)
Water Temperature	YSI model 5560
pH	YSI model 1001
Dissolved Oxygen	YSI model 2003 polarographic
Specific Conductance	YSI model 5560
Turbidity	Standard Methods 2130 B

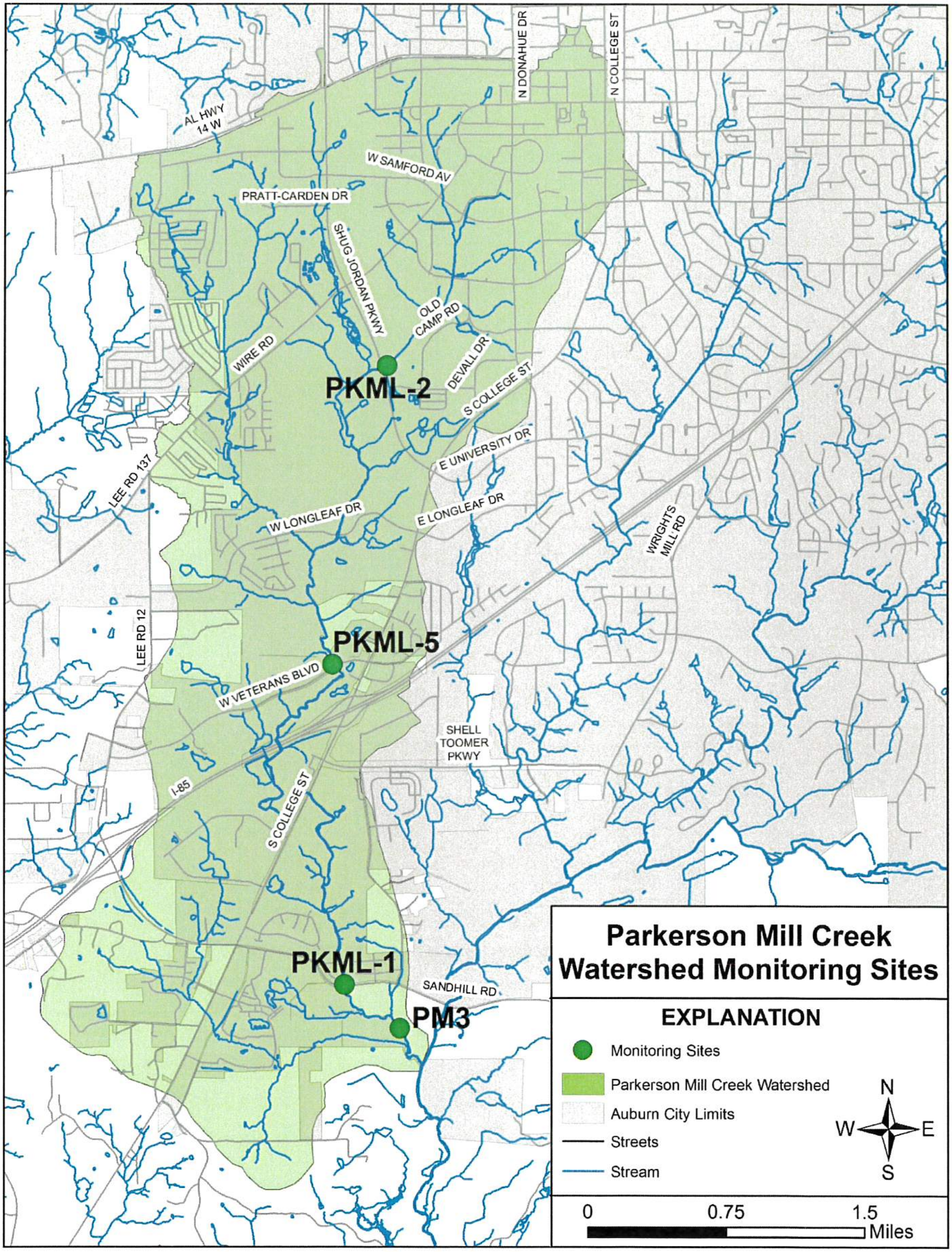


Figure 3. Parkerson's Mill Creek Watershed Monitoring Sites

2.3 Moore's Mill Creek

Moore's Mill Creek was placed on the draft 303(d) list for siltation in 1998, and has been on the final 303(d) list since 2000. The impaired reach is 10.51 mi. and includes all waters from its source to its confluence with Chewacla Creek. Habitat degradation due to sedimentation/siltation is the impairment in Moore's Mill Creek. Potential sources of the impairment are listed as land development and urban runoff/storm sewers. The Moore's Mill Creek Watershed Management Plan was completed in 2008. This plan outlined several objectives aimed to reduce sedimentation and mitigate habitat degradation. Included in the plan were geomorphic surveys and Bank Erosion Hazard Index (BEHI) assessments of stream reaches on both the main stem and tributaries throughout the watershed. Findings from these geomorphic surveys and BEHI assessments identified in-stream sediment loading from streambank erosion as a significant contributor to the impairment. The watershed management plan recommended continued monitoring of these sites to evaluate the success of future efforts aimed to reduce bank erosion.

The City shall make reasonable efforts to monitor streambank erosion at eight (8) reaches (Figure 3.) in the Moore's Mill Creek watershed with annual stream geomorphic surveys. These annual surveys will measure geomorphic parameters that are used as indicators of stability of a stream reach (Table 7.). A stream condition rapid assessment will also be performed annually at each of the 8 reaches. The stream condition rapid assessment (Appendix B) was developed with a grant from EPA (EPA Region IV Wetlands Program Development Grant CD00D01412, "Eco-Morphological Mitigation Design and Assessment Tools for the Alabama and Tennessee Appalachian Plateau"), and rates stream condition and function based on eco-geomorphic indicators. In addition, quarterly samples of turbidity, water temperature, pH, dissolved oxygen, specific conductance, and turbidity will be measured in-situ at each site. Additionally, the City will continue to reasonably support and participate in studies of water quality in the Moore's Mill Creek watershed. Proposed sample reaches for monitoring in the Moore's Mill Creek watershed are shown in Table 5. The water quality sampling parameters and corresponding analytical techniques are shown in Table 6, and geomorphic parameters are found in Table 7.

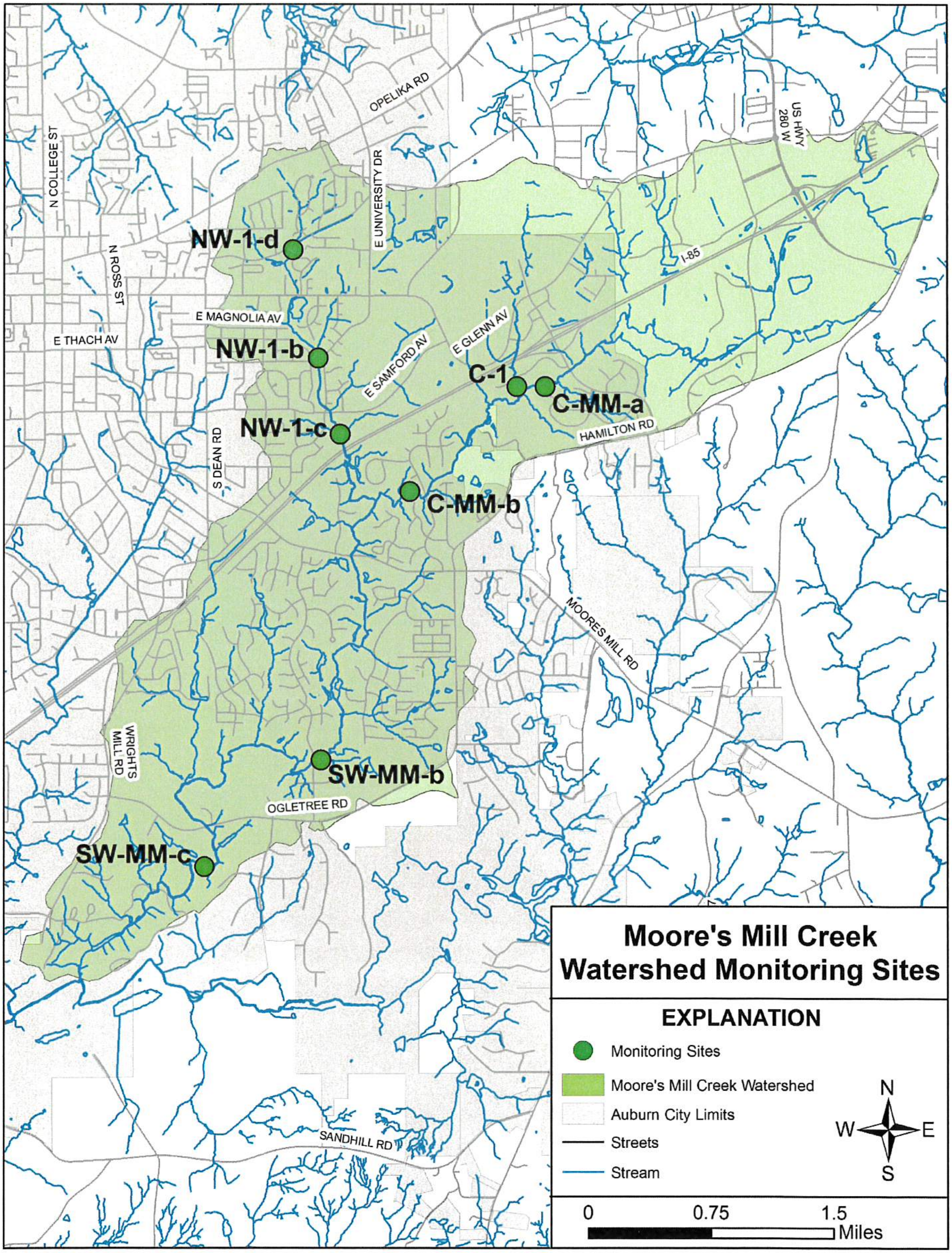


Figure 4. Moore's Mill Creek Watershed Monitoring Sites

Table 5. Moore's Mill Creek Monitoring Site Locations

Site Number	Reach Length	Upstream Coordinates	Downstream Coordinates
NW-1-b	600 ft.	32.603946 N, 85.453310 W	32.602333 N, 85.453047 W
NW-1-d	950 ft.	32.613527 N, 85.455178 W	32.611580 N, 85.456570 W
C-1	550 ft.	32.601404 N, 85.432698 W	32.600192 N, 85.432044 W
C-MM-a	950 ft.	32.600874 N, 85.428538 W	32.600530 N, 85.431463 W
NW-1-c	850 ft.	32.597506 N, 85.451326 W	32.595712 N, 85.450483 W
C-MM-b	1100 ft.	32.591034 N, 85.442119 W	32.590912 N, 85.444596 W
SW-MM-b	650 ft.	32.568631 N, 85.451830 W	32.567873 N, 85.453612 W
SW-MM-c	1350 ft.	32.559094 N, 85.463712 W	32.558760 N, 85.466685 W

Table 6. Moore's Mill Creek Water Quality Parameters and Analytical Methods

Water Quality Parameter	Analytical Method
Total Suspended Solids	Standard Methods 2540D Mod-1997
Water Temperature	YSI model 5560
pH	YSI model 1001
Dissolved Oxygen	YSI model 2003 polarographic
Specific Conductance	YSI model 5560
Turbidity	Standard Methods 2130 B

Table 7. Moore's Mill Creek Geomorphic Parameters

Geomorphic Parameter	Abbreviation
Geometric Bank Erosion Hazard Index	BEHI
Bankfull Area	A_{bkf}
Bankfull Width	W_{bkf}
Bankfull Depth	d_{bkf}
Maximum Bankfull Depth	d_{mbkf}
Low Bank Height	LBH
Width of the Flood-prone Area	W_{fpa}
Width to Depth Ratio	W/d
Bank Height Ratio	BHR
Entrenchment Ratio	ER

Appendix A. Water Quality Instrument Calibration Sheet

CITY OF AUBURN TURBIDITY METER CALIBRATION LOG

Turbidimeter Model________________________ Date____________

Calibrated by____________ Calibration Location__________ Time________ CST CDT

STANDARD	READING

CITY OF AUBURN WQ METER CALIBRATION LOG

WQ Meter Model________________________ Date____________

Calibrated by____________ Calibration Location__________ Time________ CST CDT

pH

pH Buffer	Buffer Temp (°C)	pH from table	pH before adj.	pH after adj.	mV
pH 7					
pH 4					

Specific Conductance

Std Value (µS/cm)	Std Temp	SC before adj.	SC after adj.

Dissolved Oxygen

Temp (°C)	Barometric Pressure (mm Hg)	Reading from DO table	DO after adjustment
Start Time	**Calibration Time**		

Appendix B. Water Sample Collection Field Sheet

CITY OF AUBURN WATER SAMPLE COLLECTION FIELD NOTES

Site No.____________________ Site Location____ Date_____________

Sampled by____ Mean Sample Time____________ CST CDT

FIELD MEASUREMENTS

WQ Meter: ProPlus A ProPlus B

Turbidity #1 __________ NTU

Temp. Air ____________ °F C°

Dissolved Oxygen____________ mg/L

Turbidity #2 __________ NTU

Temp. Water __________ °F C°

Dissolved Oxygen____________ % Sat.

Turbidity #3 __________ NTU

pH ____________________ Units

Sp. Conductance _______________ µS/cm

Mean __________ NTU

SAMPLING DATA

Location: **Wading** _____ ft upstream downstream of bridge **Boat** **Bank** **Bridge**

Sampling site: pool riffle open channel pipe/culvert pour-over spillway lake spigot basin

Sampling method: **hand** **pump** **Kemmerer** grab composite

Stream bottom: bedrock boulder cobble gravel sand silt/mud concrete other______________________

Stream/Lake color: clear brown green gray orange other____

Comments:

WEATHER CONDITIONS

Temp: cold cool warm hot **Wind:** calm light breeze windy **Sky:** clear partly cloudy cloudy

Precipitation: none light rain rain snow

48 hr Recent Precipitation: Yes No

SAMPLE CONSTITUENTS

Lab:________________________

No. of Containers_________

Constituents:

Lab:________________________

No. of Containers_________

Constituents:

Lab:________________________

No. of Containers_________

Constituents:

Lab:________________________

No. of Containers_________

Constituents:

Appendix C. Stream Condition Rapid Assessment Sheet from EPA Region IV Wetlands Program Development Grant CD00D01412, "Eco-Morphological Mitigation Design and Assessment Tools for the Alabama and Tennessee Appalachian Plateau"

Stream Condition Rapid Assessment

Stream name & location:	Assessed by:
Ecoregion:	Site visit date:
Watershed drainage area (sq mi):	Substrate (sand, gravel, cobble, bedrock):
Stream slope (ft/ft):	Stream reach length (ft):
Bankfull riffle area (sq ft):	Width/depth ratio (WDR):
Entrenchment ratio (ER):	Bank height ratio (BHR):
Sinuosity (K):	Streambank stability (BEHI):

Stream Condition and Function: Score from 0 to 2 indicating natural stream integrity and health:

2 = Good; 1 = Fair; 0 = Poor

1. Upstream watershed impacts from stormwater, wastewater, or sediment ______

Good: no impacts from upstream sources	Fair: some minor impacts from upstream sources	Poor: major impacts from upstream sources

2. Local stream reach impacts from ditches, pipes, livestock, utilities, or roads ______

Good: no impacts from local sources	Fair: some minor impacts from local sources	Poor: major impacts from local sources

3. Channel dimension related to bankfull cross-section measurements ______

Good: natural equilibrium width, depth, and area dimensions expected for the watershed	Fair: some disequilibrium indicated by unnatural dimensions	Poor: major disequilibrium indicated by incision, widening, high variability, or channelized system

4. Channel pattern related to planform measurements ______

Good: natural equilibrium meander pattern with sinuosity expected for the watershed	Fair: some disequilibrium indicated by unnatural pattern features	Poor: major disequilibrium indicated by tight bends, cutoffs, rapid down-valley meander migration, or straightening

5. Channel bed profile related to longitudinal profile measurements ______

Good: natural equilibrium riffles, pools, steps, glides, and runs with bedform expected for the watershed	Fair: some disequilibrium indicated by unnatural or missing bedform features	Poor: major disequilibrium indicated by head cutting, plane bed, aggradation, or riffle migration into pools

6. Streambank stability and protection from erosion ______

Good: low erodibility resulting from covered soil, low banks, deep roots, low stress	Fair: moderate erodibility resulting from some bare soil or erodible bank conditions	Poor: high erodibility resulting from bare soil, eroding bends, steep banks, high banks, lack of roots, high stress

7. Floodplain connection for bankfull flood access ______

Good: regular floodplain access with BHR < 1.2	Fair: some incision with BHR = 1.2–1.9	Poor: severely incised channel with BHR > 2

8. Floodplain morphology to dissipate flood energy and minimize erosion ______

Good: low entrenchment with ER > 5 and no contractions	Fair: moderate entrenchment with ER = 1.5–5 and/or minor contractions	Poor: severe entrenchment with ER < 1.5 and/or major contractions

9. Riparian vegetation to provide shade, nutrient uptake, and food sources ______

Good: healthy native plants growing in more than 90% of 50-ft buffer on both sides	Fair: healthy native plants growing in half to 90% of 50-ft buffer on both sides	Poor: healthy native plants growing in less than half of 50-ft buffer on both sides

10. Habitats including diverse bedform, large woody debris, leaf packs, root hairs ______

Good: healthy aquatic micro-and macro-habitat features expected for watershed	Fair: lacking up to half of expected aquatic habitat features	Poor: lacking more than half of expected aquatic habitat features

11. Water quality and stream bed sediments ______

Good: clear water with natural sediments expected for watershed	Fair: some turbidity and/or embeddedness affecting habitat conditions	Poor: excessive turbidity and/or embeddededness strongly affecting habitat conditions

12. Presence of desirable fish and macroinvertebrates expected for watershed ______

Good: healthy communities including intolerant taxa	Fair: missing some intolerant taxa	Poor: lacking expected communities and/or dominated by tolerant taxa

Notes: ____

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____

____

Total Score: __________

APPENDIX H

OUTFALL SCREENINGS 2019-2020

ID	Inspection Type	Inspection Date/Time	Location
33049	SW Outfall Inspection	04/12/2019 09:05	M107
33160	SW Outfall Inspection	09/19/2019 03:48	T32
33162	SW Outfall Inspection	09/19/2019 03:48	T31
33189	SW Outfall Inspection	02/14/2020 12:58	T109
33190	SW Outfall Inspection	02/14/2020 04:11	T110
33192	SW Outfall Inspection	02/12/2020 12:15	T136
33193	SW Outfall Inspection	02/12/2020 12:15	T137
33194	SW Outfall Inspection	02/12/2020 12:16	T135
33195	SW Outfall Inspection	02/12/2020 12:16	T134
33196	SW Outfall Inspection	02/12/2020 12:15	T133
33204	SW Outfall Inspection	02/12/2020 12:33	T138
33205	SW Outfall Inspection	02/17/2020 12:05	T295
33206	SW Outfall Inspection	02/12/2020 12:50	T115
33207	SW Outfall Inspection	02/14/2020 12:18	T103
33208	SW Outfall Inspection	02/14/2020 12:10	T102
33209	SW Outfall Inspection	02/14/2020 12:26	T97
33210	SW Outfall Inspection	02/14/2020 12:07	T101
33211	SW Outfall Inspection	02/14/2020 12:30	T96
33212	SW Outfall Inspection	02/12/2020 01:10	T95
33213	SW Outfall Inspection	02/12/2020 01:00	T93
33214	SW Outfall Inspection	02/12/2020 01:09	T94
33215	SW Outfall Inspection	02/12/2020 12:41	T116
33216	SW Outfall Inspection	02/14/2020 04:25	T92
33217	SW Outfall Inspection	02/14/2020 12:47	T122
33233	SW Outfall Inspection	04/12/2019 09:13	M211
33267	SW Outfall Inspection	04/12/2019 10:11	M127

ID	Inspection Type	Inspection Date/Time	Location
33281	SW Outfall Inspection	04/12/2019 10:19	M96
33282	SW Outfall Inspection	04/12/2019 10:37	M110
33285	SW Outfall Inspection	04/12/2019 10:47	M108
33287	SW Outfall Inspection	04/12/2019 09:37	M106
33288	SW Outfall Inspection	04/12/2019 09:24	M105
35480	SW Outfall Inspection	05/21/2019 11:31	S476
35481	SW Outfall Inspection	04/25/2019 03:45	S469
35482	SW Outfall Inspection	04/25/2019 03:51	S470
35483	SW Outfall Inspection	04/26/2019 01:24	S471
35484	SW Outfall Inspection	04/26/2019 01:47	S472
35485	SW Outfall Inspection	04/25/2019 03:14	S468
35486	SW Outfall Inspection	05/1/2019 02:44	S475
35487	SW Outfall Inspection	05/21/2019 12:10	S477
35488	SW Outfall Inspection	05/21/2019 12:55	S479
35489	SW Outfall Inspection	05/21/2019 01:25	S480
35490	SW Outfall Inspection	04/26/2019 03:00	S474
35491	SW Outfall Inspection	05/21/2019 12:31	S478
35492	SW Outfall Inspection	04/26/2019 02:42	S473
35493	SW Outfall Inspection	04/19/2019 01:48	S466
35494	SW Outfall Inspection	04/18/2019 02:40	S458
35495	SW Outfall Inspection	04/19/2019 02:13	S467
35496	SW Outfall Inspection	04/18/2019 02:27	S457
35497	SW Outfall Inspection	04/18/2019 02:20	S456
35498	SW Outfall Inspection	04/18/2019 04:22	S465
35499	SW Outfall Inspection	04/18/2019 04:03	S464

ID	Inspection Type	Inspection Date/Time	Location
35500	SW Outfall Inspection	04/18/2019 03:49	S463
35501	SW Outfall Inspection	04/18/2019 03:34	S462
35502	SW Outfall Inspection	04/18/2019 03:25	S461
35503	SW Outfall Inspection	04/18/2019 03:12	S460
35504	SW Outfall Inspection	04/26/2019 09:45	CW1
35505	SW Outfall Inspection	04/26/2019 09:53	CW2
35506	SW Outfall Inspection	04/26/2019 09:58	CW3
35507	SW Outfall Inspection	04/26/2019 10:50	CW4
35508	SW Outfall Inspection	04/26/2019 11:00	CW5
35509	SW Outfall Inspection	04/26/2019 11:09	CW6
35510	SW Outfall Inspection	04/26/2019 11:20	CW7
35511	SW Outfall Inspection	05/2/2019 02:48	CW10
35512	SW Outfall Inspection	04/26/2019 11:27	CW8
35513	SW Outfall Inspection	05/2/2019 03:07	CW11
35514	SW Outfall Inspection	05/2/2019 03:34	CW13
35515	SW Outfall Inspection	05/3/2019 09:20	CW14
35516	SW Outfall Inspection	05/2/2019 04:00	CW15
35800	SW Outfall Inspection	04/25/2019 03:03	S408
35801	SW Outfall Inspection	04/25/2019 03:24	S413
35802	SW Outfall Inspection	04/25/2019 03:34	S411
35803	SW Outfall Inspection	04/25/2019 03:29	S412
35815	SW Outfall Inspection	04/18/2019 02:56	S459
37986	SW Outfall Inspection	07/2/2019 11:42	M319
37987	SW Outfall Inspection	07/2/2019 11:23	M318
37988	SW Outfall Inspection	07/2/2019 11:20	M317

ID	Inspection Type	Inspection Date/Time	Location
37989	SW Outfall Inspection	07/2/2019 11:00	M316
37990	SW Outfall Inspection	07/2/2019 10:47	M315
37992	SW Outfall Inspection	06/27/2019 10:36	CW43
37993	SW Outfall Inspection	06/27/2019 10:13	CW40
37994	SW Outfall Inspection	06/27/2019 10:24	CW41
37995	SW Outfall Inspection	06/25/2019 01:15	M314
37996	SW Outfall Inspection	06/25/2019 12:43	M312
37997	SW Outfall Inspection	06/25/2019 01:02	M313
37998	SW Outfall Inspection	06/25/2019 12:28	M311
37999	SW Outfall Inspection	06/25/2019 11:48	CW38
38000	SW Outfall Inspection	06/25/2019 12:02	CW39
38046	SW Outfall Inspection	06/4/2019 10:53	CW24
38047	SW Outfall Inspection	06/20/2019 01:23	CW29
38048	SW Outfall Inspection	06/21/2019 09:23	CW30
38049	SW Outfall Inspection	06/21/2019 09:58	CW31
38050	SW Outfall Inspection	06/20/2019 01:18	CW28
38051	SW Outfall Inspection	07/16/2019 01:02	CW27
38052	SW Outfall Inspection	06/4/2019 11:24	CW26
38053	SW Outfall Inspection	06/4/2019 11:00	CW25
38054	SW Outfall Inspection	06/4/2019 10:27	CW22
38055	SW Outfall Inspection	06/4/2019 10:19	M310
38056	SW Outfall Inspection	06/4/2019 10:42	CW23
38057	SW Outfall Inspection	06/4/2019 10:11	M309
38065	SW Outfall Inspection	06/25/2019 09:32	CW32
38066	SW Outfall Inspection	06/25/2019 10:38	CW34

ID	Inspection Type	Inspection Date/Time	Location
38067	SW Outfall Inspection	06/25/2019 10:52	CW36
38068	SW Outfall Inspection	06/25/2019 11:24	CW37
38069	SW Outfall Inspection	06/25/2019 10:47	CW35
38070	SW Outfall Inspection	06/25/2019 09:48	CW33
38071	SW Outfall Inspection	06/6/2019 01:36	S491
38072	SW Outfall Inspection	06/20/2019 10:43	S503
38074	SW Outfall Inspection	06/11/2019 10:48	S493
38075	SW Outfall Inspection	06/11/2019 11:54	S496
38076	SW Outfall Inspection	06/11/2019 10:32	S492
38077	SW Outfall Inspection	07/11/2019 11:07	S494
38078	SW Outfall Inspection	06/11/2019 11:27	S495
38079	SW Outfall Inspection	05/30/2019 12:23	S488
38080	SW Outfall Inspection	05/30/2019 12:13	S487
38081	SW Outfall Inspection	06/6/2019 12:00	S490
38082	SW Outfall Inspection	06/6/2019 10:07	S489
38084	SW Outfall Inspection	04/18/2019 02:00	S330
38384	SW Outfall Inspection	05/28/2019 10:50	CW21
38387	SW Outfall Inspection	05/28/2019 09:56	CW17
38388	SW Outfall Inspection	05/28/2019 09:41	CW15
38389	SW Outfall Inspection	05/28/2019 09:48	CW16
38390	SW Outfall Inspection	05/28/2019 10:04	CW18
38391	SW Outfall Inspection	05/28/2019 10:16	CW19
38392	SW Outfall Inspection	05/28/2019 10:38	CW20

ID	Inspection Type	Inspection Date/Time	Location
38393	SW Outfall Inspection	05/30/2019 10:24	S484
38394	SW Outfall Inspection	05/30/2019 10:24	S483
38395	SW Outfall Inspection	05/30/2019 11:03	S485
38423	SW Outfall Inspection	06/18/2019 11:16	S501
38424	SW Outfall Inspection	06/18/2019 10:48	S500
38425	SW Outfall Inspection	06/18/2019 10:16	S498
38426	SW Outfall Inspection	06/18/2019 10:23	S499
38427	SW Outfall Inspection	06/18/2019 11:23	S502
38428	SW Outfall Inspection	07/9/2019 01:17	T306
38429	SW Outfall Inspection	07/9/2019 01:19	T307
38430	SW Outfall Inspection	05/23/2019 01:00	S481
38431	SW Outfall Inspection	05/23/2019 01:18	S482
38432	SW Outfall Inspection	06/13/2019 11:35	S482
38433	SW Outfall Inspection	07/9/2019 10:11	P96
38491	SW Outfall Inspection	04/26/2019 11:31	CW9
38492	SW Outfall Inspection	05/2/2019 03:17	CW12
38493	SW Outfall Inspection	04/19/2019 01:32	S317
38494	SW Outfall Inspection	07/12/2019 03:27	S504
38495	SW Outfall Inspection	07/12/2019 03:50	S505
38496	SW Outfall Inspection	07/16/2019 09:32	S506
38497	SW Outfall Inspection	07/16/2019 09:51	S507
42580	SW Outfall Inspection	08/26/2019 02:31	S158
42581	SW Outfall Inspection	09/19/2019 03:48	T32
42582	SW Outfall Inspection	09/19/2019 03:48	T31
42587	SW Outfall Inspection	10/3/2019 03:18	P112

ID	Inspection Type	Inspection Date/Time	Location
42588	SW Outfall Inspection	09/5/2019 03:55	S519
42589	SW Outfall Inspection	07/23/2019 10:00	CT16
42590	SW Outfall Inspection	07/23/2019 11:52	CT19
42591	SW Outfall Inspection	07/23/2019 11:15	CT17
42592	SW Outfall Inspection	07/23/2019 11:37	CT18
42593	SW Outfall Inspection	07/23/2019 09:56	CT15
42594	SW Outfall Inspection	07/23/2019 09:56	CT14
42595	SW Outfall Inspection	07/23/2019 09:20	CT12
42596	SW Outfall Inspection	07/23/2019 09:55	CT13
42597	SW Outfall Inspection	07/23/2019 09:21	CT11
42598	SW Outfall Inspection	07/18/2019 02:57	CT10
42599	SW Outfall Inspection	07/18/2019 02:42	CT9
42600	SW Outfall Inspection	07/18/2019 02:42	CT8
42601	SW Outfall Inspection	07/18/2019 02:14	CT7
42602	SW Outfall Inspection	07/18/2019 12:30	CT6
42603	SW Outfall Inspection	07/18/2019 12:18	CT5
42604	SW Outfall Inspection	07/18/2019 12:03	CT4
42605	SW Outfall Inspection	07/18/2019 11:57	CT3
42606	SW Outfall Inspection	07/18/2019 11:46	CT2
42607	SW Outfall Inspection	07/18/2019 11:24	CT1
42616	SW Outfall Inspection	07/23/2019 01:12	CT20
42617	SW Outfall Inspection	07/23/2019 01:17	CT21
42618	SW Outfall Inspection	08/19/2019 03:08	P174
42619	SW Outfall Inspection	08/19/2019 03:42	P178

ID	Inspection Type	Inspection Date/Time	Location
42620	SW Outfall Inspection	08/19/2019 02:38	P173
42621	SW Outfall Inspection	08/19/2019 03:21	P175
42622	SW Outfall Inspection	08/19/2019 02:38	P172
42623	SW Outfall Inspection	08/19/2019 03:40	P177
42624	SW Outfall Inspection	08/19/2019 03:35	P176
42625	SW Outfall Inspection	08/26/2019 03:48	P180
42626	SW Outfall Inspection	08/29/2019 03:56	P182
42627	SW Outfall Inspection	08/29/2019 04:10	P184
42628	SW Outfall Inspection	08/26/2019 03:45	P179
42629	SW Outfall Inspection	08/19/2019 02:56	P173
42630	SW Outfall Inspection	07/26/2019 10:30	M322
42631	SW Outfall Inspection	07/25/2019 04:05	M320
42632	SW Outfall Inspection	07/25/2019 04:05	M321
42633	SW Outfall Inspection	08/22/2019 03:10	M323
42634	SW Outfall Inspection	08/27/2019 03:53	S516
42635	SW Outfall Inspection	08/27/2019 03:53	S517
42636	SW Outfall Inspection	09/12/2019 04:16	M324
42638	SW Outfall Inspection	07/25/2019 12:00	S497
44003	SW Outfall Inspection	08/20/2019 02:25	S524
44004	SW Outfall Inspection	08/20/2019 02:21	S523
44217	SW Outfall Inspection	07/30/2019 01:25	S513
44218	SW Outfall Inspection	07/30/2019 01:15	S514
44219	SW Outfall Inspection	07/30/2019 01:27	S515

ID	Inspection Type	Inspection Date/Time	Location
42620	SW Outfall Inspection	08/19/2019 02:38	P173
42621	SW Outfall Inspection	08/19/2019 03:21	P175
42622	SW Outfall Inspection	08/19/2019 02:38	P172
42623	SW Outfall Inspection	08/19/2019 03:40	P177
42624	SW Outfall Inspection	08/19/2019 03:35	P176
42625	SW Outfall Inspection	08/26/2019 03:48	P180
42626	SW Outfall Inspection	08/29/2019 03:56	P182
42627	SW Outfall Inspection	08/29/2019 04:10	P184
42628	SW Outfall Inspection	08/26/2019 03:45	P179
42629	SW Outfall Inspection	08/19/2019 02:56	P173
42630	SW Outfall Inspection	07/26/2019 10:30	M322
42631	SW Outfall Inspection	07/25/2019 04:05	M320
42632	SW Outfall Inspection	07/25/2019 04:05	M321
42633	SW Outfall Inspection	08/22/2019 03:10	M323
42634	SW Outfall Inspection	08/27/2019 03:53	S516
42635	SW Outfall Inspection	08/27/2019 03:53	S517
42636	SW Outfall Inspection	09/12/2019 04:16	M324
42638	SW Outfall Inspection	07/25/2019 12:00	S497
44003	SW Outfall Inspection	08/20/2019 02:25	S524
44004	SW Outfall Inspection	08/20/2019 02:21	S523
44217	SW Outfall Inspection	07/30/2019 01:25	S513
44218	SW Outfall Inspection	07/30/2019 01:15	S514
44219	SW Outfall Inspection	07/30/2019 01:27	S515

ID	Inspection Type	Inspection Date/Time	Location
44220	SW Outfall Inspection	09/6/2019 10:14	S526
44221	SW Outfall Inspection	07/30/2019 09:48	S508
44222	SW Outfall Inspection	07/30/2019 09:21	S511
44223	SW Outfall Inspection	07/30/2019 10:43	S512
44224	SW Outfall Inspection	07/30/2019 09:24	S509
44225	SW Outfall Inspection	07/30/2019 09:27	S510
44226	SW Outfall Inspection	10/17/2019 03:35	CT22
44231	SW Outfall Inspection	10/10/2019 10:45	S521
44232	SW Outfall Inspection	10/10/2019 11:25	S522
44935	SW Outfall Inspection	11/26/2019 02:08	P191
44938	SW Outfall Inspection	11/26/2019 02:39	M325
45002	SW Outfall Inspection	12/3/2019 05:03	P188
45003	SW Outfall Inspection	12/4/2019 02:40	P186
45004	SW Outfall Inspection	12/4/2019 02:50	P188
45005	SW Outfall Inspection	11/21/2019 02:40	P187
45823	SW Outfall Inspection	12/10/2019 02:52	P186
45824	SW Outfall Inspection	11/21/2019 04:02	S525
45825	SW Outfall Inspection	11/21/2019 03:45	P189
45826	SW Outfall Inspection	12/5/2019 03:32	T310
45827	SW Outfall Inspection	10/31/2019 03:38	T309
45828	SW Outfall Inspection	10/31/2019 03:32	T308