

Appendix B: Task 3 Work Plan & Sampling Process Design and Monitoring Schedule (Plan)

TASK 3: WATER QUALITY MONITORING

Objectives: Water quality monitoring will focus on collecting information to characterize water quality in a variety of locations and conditions. These efforts will include a combination of:

- planning and coordinating basin-wide monitoring;
- routine, regularly-scheduled monitoring to collect long-term information and support statewide assessment of water quality; and
- systematic, regularly-scheduled short-term monitoring to screen water bodies for issues.

Task Description: The Performing Party will conduct long-term water quality monitoring in the Sulphur River Basin. The Performing Party will coordinate all monitoring plans with TCEQ regional offices and other monitoring entities to avoid duplication of effort.

The Performing Party will complete the following subtasks described below:

Monitoring Description – The Performing Party will monitor a minimum of 15 sites each year. Sampling will occur at a minimum of 10 sites monthly for routine field, conventional parameters, and bacteria. Diurnal studies will be conducted routinely at six sites and will be seasonally biased at nine sites. Additional details concerning the monitoring activities conducted by the Performing Party are outlined in the Performing Party's FY 2018-2019 CRP QAPP.

All monitoring procedures and methods will follow the guidelines prescribed in the Performing Party QAPP, the TCEQ Surface Water Quality Monitoring (SWQM) Procedures, Volume 1: Physical and Chemical Monitoring Methods (RG-415) and the TCEQ SWQM Procedures, Volume 2: Methods for Collecting and Analyzing Biological Assemblage and Habitat Data (RG-416).

Coordinated Monitoring Meeting - The Performing Party will hold an annual coordinated monitoring meeting as described in the CRP Guidance. Qualified monitoring organizations will be invited to attend the working meeting in which monitoring needs and purposes will be discussed segment by segment and station by station. Information from participants and stakeholders will be used to select stations and parameters that will enhance overall water quality monitoring coverage, eliminate duplication of effort, and address basin priorities. A summary of the changes to the monitoring schedule will be provided to the participants within two weeks of the meeting. The changes to the monitoring schedule will be entered into the statewide database on the Internet (<http://cms.lcra.org>) and communicated to meeting attendees. Changes to monitoring schedules that occur during the course of the year will be entered into the statewide database on the Internet and communicated to meeting attendees.

Monitoring Activities Report - Each QPR (Task 1) will include a Monitoring Activities Report with all types of monitoring and indicate the number of sampling events and the types of monitoring conducted in the quarter.

Deliverables and Dues Dates:

September 1, 2017 through August 31, 2018

- Conduct water quality monitoring, summarize activities in the Monitoring Activities Report, and submit with QPR - December 15, 2017; March 15 and June 15, 2018
- Coordinated Monitoring meeting - between March 15 and April 30, 2018
- Coordinated Monitoring meeting summary of changes - within 2 weeks of the meeting
- Email notification that CMS updates are complete - May 31, 2018

September 1, 2018 through August 31, 2019

- Conduct water quality monitoring, summarize activities in the Monitoring Activities Report, and submit with QPR - September 15 and December 15, 2018; March 15 and June 15 and August 31, 2019
- Coordinated Monitoring meeting - between March 15 and April 30, 2019
- Coordinated Monitoring meeting summary of Changes – within 2 weeks of the meeting
- Email notification that CMS updates are complete - May 31, 2019

Sample Design Rationale FY 2018

The sample design is based on the legislative intent of CRP. Under the legislation, the Basin Planning Agencies have been tasked with providing data to characterize water quality conditions in support of the Texas Water Quality Integrated Report, and to identify significant long-term water quality trends. Based on Steering Committee input, achievable water quality objectives and priorities and the identification of water quality issues are used to develop work plans which are in accord with available resources. As part of the Steering Committee process, the SRBA coordinates closely with the TCEQ and other participants to ensure a comprehensive water monitoring strategy within the watershed.

The following changes or additions have been made to the monitoring schedule. These changes have come about because of concerns or requests of steering committee members or monitoring entities.

TC

White Oak Creek – monitoring was dropped after an aquatic life assessment was conducted by TCEQ, the aquatic life use for this segment was revised to intermediate (Chapter 307 Appendix D). This revision changed the 24-hour average DO criteria to 4.0 mg/L and the minimum criteria to 3.0 mg/L. A Recreational Use Attainability Analysis was also conducted (<http://tiaer.tarleton.edu/ruaa/white-oak-creek.html>).

Dropped for FY18

21698 (Kickapoo Creek) – not representative of the creek

Added for FY18

17342 (Kickapoo Creek) – previously used site on same creek

NTMWD

Dropped for FY18

21711 (Jernigan Creek) – little to no flow and dries up in the summer

21712 (Doctor's Creek) – TCEQ has site near this one

21810 (John's Creek) – pH data has been collected over the past two years

21713 (Mid Lake) – moving to intake

21715 (Dam site) – TCEQ has site near this one.

Added for FY18

15211 (Intake) – replacing 21713

Site Selection Criteria

This data collection effort involves monitoring routine water quality, using procedures that are consistent with the TCEQ SWQM program, for the purpose of data submission into the SWQMIS database maintained by the TCEQ. To this end, some general guidelines are followed when selecting sampling sites, as outlined below, and discussed thoroughly in SWQM Procedures, Volumes I and II. Overall consideration is given to accessibility and safety. All monitoring activities have been developed in coordination with the CRP Steering Committee and with the TCEQ.

1. Locate stream sites so that samples can be safely collected from the centroid of flow. Centroid is defined as the midpoint of that portion of stream width which contains 50 percent of the total flow. If multiple potential sites on a stream segment are appropriate for monitoring, choose one that would best represent the water body, and not a site that displays unusual conditions or contaminant source(s). Avoid backwater areas or eddies when selecting a stream site.
2. At a minimum for reservoirs, locate sites near the dam (reservoirs) and in the major arms. Larger reservoirs might also include stations in the middle and upper (riverine) areas. Select sites that best represent the water body by avoiding coves and back water areas. A single monitoring site is considered representative of 25 percent of the total reservoir acres, but not more than 5,120 acres.
3. Routine monitoring sites are selected to maximize stream coverage or basin coverage. Very long segments may require more stations. As a rule of thumb, stream segments between 25 and 50 miles long require two stations, and longer than 50 miles require three or more depending on the existence of areas with significantly different sources of contamination or potential water quality concerns. Major hydrological features, such as the confluence of a major tributary or an instream dam, may also limit the spatial extent of an assessment based on one station.
4. Because historical water quality data can be very useful in assessing use attainment or impairment, it may be best to use sites that are on current or past monitoring schedules.
5. All classified segments (including reservoirs) should have at least one routine monitoring site that adequately characterizes the water body, and monitoring should be coordinated with the TCEQ or other qualified monitoring entities reporting routine data to TCEQ.
6. Routine monitoring sites may be selected to bracket sources of pollution, influence of tributaries, changes in land uses, and hydrological modifications.
7. Sites should be accessible. When possible, stream sites should have a USGS or IBWC stream flow gauge. If not, it should be possible to conduct flow measurement during routine visits.

Monitoring Sites for FY 2018

Table B1.1 Sample Design and Schedule, FY 2018

Site Description	Station ID	Waterbody ID	Region	SE	CE	MT	Field	Conv	Bacteria	Flow	24 hr DO	Metal Water	Comments
AIKEN CREEK AKA AKIN CREEK IMMEDIATELY DOWNSTREAM OF US HIGHWAY 67	18356	0301A	5	SU	TC	RT	4			4			
EAST FORK ELLIOTT CREEK AT FM991 APPROX 3.6KM NNE OF REDWATER	15946	0302	5	SU	TC	BS	2			2	2		Two monitoring events 3rd and 4th quarter
EAST FORK ELLIOTT CREEK AT FM991 APPROX 3.6KM NNE OF REDWATER	15946	0302	5	SU	TC	RT	4	4	4	4			
ELLIOTT CREEK AT FM 991 IN BOWIE COUNTY	21699	0302	5	SU	TC	BS	2			2	2		With routine monitoring in 3rd and 4th quarter
ELLIOTT CREEK AT FM 991 IN BOWIE COUNTY	21699	0302	5	SU	TC	RT	4	4	4	4			
WRIGHT PATMAN LAKE 215 METERS WEST AND 370 METERS NORTH OF KNIGHTS BLUFF LANDING BOAT RAMP IN ATLANTA STATE PARK	16205	0302	5	SU	TC	RT	4				4		
WRIGHT PATMAN LAKE 450 METERS SOUTH AND 80 METERS WEST OF CORPS ROAD 12 BOAT RAMP IN NORTH SHORE PARK	15061	0302	5	SU	TC	RT	4				4		
WRIGHT PATMAN LAKE IN BIG CREEK ARM APPROX 2.4MI /3.9KM EAST OF FM991 BRIDGE	16860	0302	5	SU	TC	RT	4				4		
WRIGHT PATMAN LAKE NEAR DAM APPROX 2.1KM SW OF SPILLWAY AND 1.1KM NW OF RAW WATER INTAKE STRUCTURE	10213	0302	5	SU	TC	RT	4				4		
WRIGHT PATMAN LAKE USGS SITE AC 0.25 MILE WEST OF DAM AND 0.5 MILE NORTHWEST OF DAM GATED	14097	0302	5	SU	TC	RT	4				4		
WRIGHT PATMAN LAKE USGS SITE EC MID LAKE 0.8 MILES SOUTHWEST OF BERRY FARM PARK 1.3 MILES NORTH OF ATLANTA STATE PARK ROAD 42	14103	0302	5	SU	TC	RT	4				4		
BIG CREEK AT FM 2149 IN BOWIE COUNTY	21701	0302A	5	SU	TC	BS	2			2	2		With routine monitoring in 3rd and 4th quarter
BIG CREEK AT FM 2149 IN BOWIE COUNTY	21701	0302A	5	SU	TC	RT	4	4	4	4			
ANDERSON CREEK AT SH 98 410 METERS EAST AND 1.24 KILOMETERS NORTH OF THE INTERSECTION OF FM 561 AND SH 98 SOUTH OF NEW BOSTON IN BOWIE COUNTY	20765	0302C	5	SU	TC	RT	4	4	4	4	4		
CANEY CREEK AT BOWIE CR 1108	21700	0302D	5	SU	TC	BS	2			2	2		Two monitoring events, March-August

Site Description	Station ID	Waterbody ID	Region	SE	CE	MT	Field	Conv	Bacteria	Flow	24 hr DO	Metal Water	Comments
CANEY CREEK AT BOWIE CR 1108	21700	0302D	5	SU	TC	RT	4	4	4	4			
MUSTANG CREEK AT HIGHWAY 37 IN RED RIVER COUNTY	21695	0303	5	SU	TC	BS					2		With routine monitoring in 3rd and 4th quarter
MUSTANG CREEK AT HIGHWAY 37 IN RED RIVER COUNTY	21695	0303	5	SU	TC	RT	4	4	4	4			
CUTHAND CREEK AT FM 909 IN RED RIVER COUNTY	21696	0303J	5	SU	TC	BS	2			2	2		With routine monitoring in 3rd and 4th quarter
CUTHAND CREEK AT FM 909 IN RED RIVER COUNTY	21696	0303J	5	SU	TC	RT	4	4	4	4			
SCATTER CREEK AT FM 909 IN RED RIVER COUNTY	21702	0303J	5	SU	TC	BS					2		With routine monitoring in 3rd and 4th quarter
SCATTER CREEK AT FM 909 IN RED RIVER COUNTY	21702	0303J	5	SU	TC	RT	4	4	4	4			
KICKAPOO CREEK AT FM 412 SOUTH OF ANNONA	17342	0303L	5	SU	TC	BS	2			2	2		With routine monitoring in 3rd and 4th quarters
KICKAPOO CREEK AT FM 412 SOUTH OF ANNONA	17342	0303L	5	SU	TC	RT	4	4		4			
DAYS CREEK AT STATELINE ROAD SOUTH OF TEXARKANA	10226	0304	5	SU	TC	RT	4	4	4	4			
WAGNER CREEK AKA WAGGONER CREEK AT US 82 BETWEEN NASH AND TEXARKANA CITY OF TEXARKANA PERMIT 10374-007	14475	0304C	5	SU	TC	RT	4			4			FLOW UNDER LOW OR NO FLOW CONDITIONS,30 M UPSTREAM HWY 82
WAGNER CREEK AT US HWY 67 / W 7TH STREET IN TEXARKANA	21176	0304C	5	SU	TC	RT	4	4	4	4			
SOUTH SULPHUR RIVER AT STATE HWY 11 SOUTHEAST OF COMMERCE	10238	0306	4	SU	NM	RT	12	12	12	12		12	
COOPER LAKE MID LAKE APPROX 100 METERS NORTH OF NORTH TEXAS MUNICIPAL WATER SUPPLY DISTRICTS INTAKE STRUCTURE NORTH OF PEERLESS	15211	0307	5	SU	NM	RT	12	12				12	
JIM CHAPMAN LAKE / COOPER LAKE MAIN BODY APPROX 100 METERS NORTH AND 2.08 KILOMETERS WEST OF THE DAM GATE STRUCTURE	21714	0307	5	SU	NM	RT	12	12	12			12	
MIDDLE FORK SULPHUR AT SH 24 NORTH OF COMMERCE	10223	0307A	4	SU	NM	RT	12	12	12	12		12	

Appendix C: Station Location Maps

Station Location Maps

Maps of stations monitored by the SRBA are provided below. The maps were generated by the SRBA. This product is for informational purposes and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. It does not represent an on-the-ground survey and represents only the approximate relative location of property boundaries. For more information concerning this map, contact Nancy Rose at 903-223-7887.

