NEW MEXICO ENVIRONMENT DEPARTMENT

Surface Water Quality Bureau

2019-2020 Watershed Survey

FIELD SAMPLING PLAN

Upper Pecos River, San Francisco River, Gila River, Mimbres River, and Lower Rio Grande

3/11/2019

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TABLE OF CONTENTS

Surface Water Quality Bureau

Our mission is to preserve, protect, and improve New Mexico's surface water quality for present and future generations.

ACRONYMS

AU	Assessment Unit
BLM	Bureau of Land Management
CALM	Comprehensive Assessment and Listing Methodology
CWA	Clean Water Act
IR	State of New Mexico Clean Water Act §303(d)/305(b) Integrated Report
MASS	Monitoring, Assessment, and Standards Section
MPG	Miles per gallon
NMED	New Mexico Environment Department
NPDES	National Pollutant Discharge Elimination System
NPS	Non-point Source
PCB	Polychlorinated biphenyl
PSRS	Point Source Regulation Section
QAPP	Quality Assurance Project Plan
SLD	Scientific Laboratory Division
SOP	Standard Operating Procedure
SWQB	Surface Water Quality Bureau
TDS	Total Dissolved Solids
TMDL	Total Maximum Daily Load
TSS	Total Suspended Solids
UAA	Use Attainability Analysis
USEPA	United States Environmental Protection Agency
USFWS	United States Forest Service
WPS	Watershed Protection Section
WQ	Water Quality
WQCC	Water Quality Control Commission
WQS	Water Quality Standards
WTU	Work Time Unit
WWTP	Wastewater Treatment Plant

1.0 INTRODUCTION

The purpose of this Field Sampling Plan (Plan) is to provide a detailed description of the two-year Water Quality Survey to be conducted in the Upper Pecos River, San Francisco River, Gila River, Mimbres River, and Lower Rio Grande watersheds during 2019-2020 by the New Mexico Environment Department (NMED) Surface Water Quality Bureau (SWQB). It has been prepared in accordance with SWQB *Standard Operating Procedure 2.1: Field Sampling Plan Development and Execution* (NMED/SWQB 2019). The Plan describes project objectives and decision criteria, and it includes the sampling schedule with locations, constituents, and frequencies for physical, chemical, and biological data collection. It may be amended as the need arises. Amendments will be documented and justified in the subsequent survey report.

This is a companion document to the SWQB *Quality Assurance Project Plan for Water Quality Management Programs* (NMED/SWQB 2018a) (QAPP). Data will be collected according to the QAPP and the appropriate SWQB Standard Operating Procedures (SOPs). Both the QAPP and SOPs are posted on the SWQB website at https://www.env.nm.gov/surface-water-quality/qaqc/.

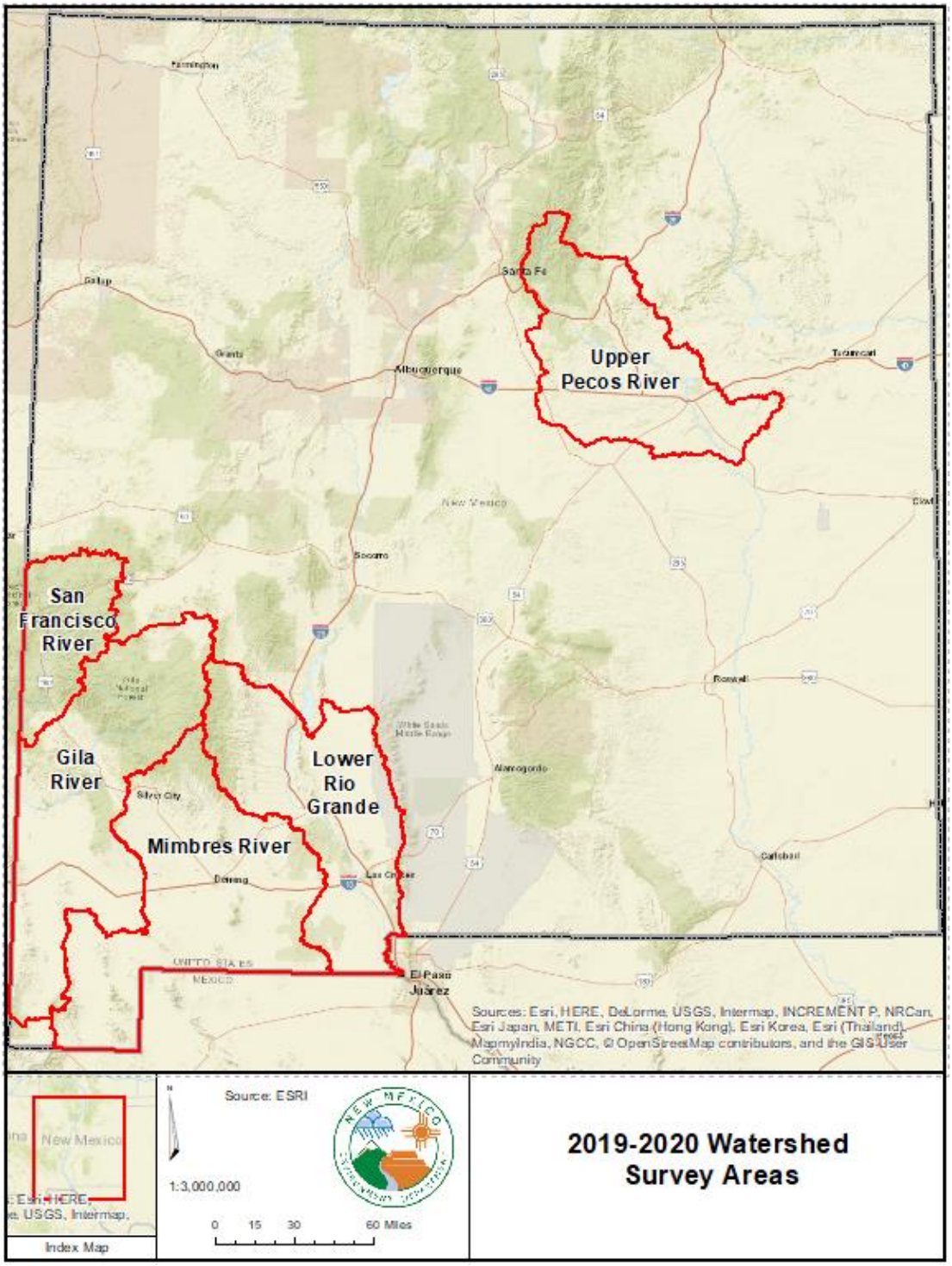
The project area includes five survey areas (Figure 1): the Gila River, Mimbres River, and San Francisco River watersheds, the Lower Rio Grande watershed, and the Upper Pecos River watershed. The survey includes many of the tributaries and lakes within these watersheds.

Historic and current land uses in the watersheds include agriculture (range, pasture, and croplands), mining, oil and gas, forest, grassland, residential, shrubland, water, and wetlands. Land ownership in the watershed includes the Bureau of Land Management (BLM), U.S. Forest Service, Bureau of Reclamation (USFS BOR), National Park Service, New Mexico State Parks, New Mexico Department of Game and Fish, and state and private parcels. The study areas incorporate parts of the Pecos River, Gila River, Mimbres River and Rio Grande basins and together encompass approximately 23,400 square miles (60,600 square kilometers) in New Mexico. The watersheds are located in Omernik Level III Ecoregions 21 (Southern Rockies), 23 (Arizona/New Mexico Mountains), 24 (Chihuahuan Desert), 26 (Southwestern Tablelands), and 79 (Madrean Archipegalo) (USEPA 2006).

The 2007, 2010, and 2011 SWQB water quality surveys of these areas identified waters that are attaining New Mexico Water Quality Standards (WQS) and waters that are impaired (i.e. not attaining their specific designated uses). Rivers are divided into assessment units (AUs) based on differing geological and hydrological properties, and each AU is assessed individually using data from one or more monitoring sites located within the AU. For this survey, selected monitoring locations will be sampled for water quality constituents from 4-8 times over two consecutive years. The total number of samples for each location is determined through a priority ranking of CWA §303(d)/ §305(b) Integrated Report (IR) classification, presence of point source discharge, and Total Maximum Daily Load (TMDL) status, among other considerations. The framework for monitoring prioritization is discussed in the SWQB 10-Year Monitoring and Assessment Strategy (available at https://www.env.nm.gov/surface-water-quality/protocols-and-planning/)

(NMED/SWQB 2016). The type of monitoring planned at each site is discussed and summarized in Section 6.0 Resource Requirements.

Figure 1. 2019-2020 Watershed Survey Areas



2.0 PROJECT PERSONNEL

2.1 Personnel Roles and Responsibilities

Table 1 details the responsibilities for this project. Each team member is responsible for implementing the assigned responsibilities. If individuals are unable to fulfill their duties, it is the individual's responsibility to find assistance and/or a replacement, in coordination with appropriate supervisors. Questions or comments on this Field Sampling Plan should be directed to the MASS project coordinators.

Table 1. Personnel Roles and Responsibilities

Team Member	Position/Role	Responsibilities
Kris Barrios Monitoring, Assessment, and Standards Section Program Manager Kristopher.Barrios@state.nm.us (505) 827-2621	Program Manager	Approves FSP, directs staff to publish the FSP according to program and/or grant requirements. Manages project personnel and resources throughout the project in coordination with Project Manager(s) Provides oversight and coordinates with QAO and Project Manager(s) on any data collection activities conducted not in accordance with the FSP, QAPP, or current SOPs. Conduct environmental data collection activities in accordance with the developed FSP, QAPP, and current SWQB SOPs.

Team Member	Position/Role	Responsibilities
Charles Dentino Monitoring Team Supervisor Charles.Dentino1@state.nm.us (505) 827-0101 Gary Schiffmiller Monitoring Team Advanced Scientist Gary.Schiffmiller@state.nm.us (505) 827-2470	Project Managers	Manages project personnel and resources throughout the project in coordination with Program Manager. Conduct environmental data collection activities in accordance with the developed FSP, QAPP, and current SWQB SOPs. Any data collection activities conducted not in accordance with the FSP, QAPP, or current SOPs will be documented and reported to the Program Manager and QAO. Conducts mid-project meeting with team to discuss any changes to the project plan. Coordinates and conducts post-project meeting with team to discuss differences between planned and actual sampling and what data gaps, if any, exist. Writes, coordinates, and assembles report and/or other grant deliverables required of the project.
Meredith Campbell Monitoring Team Scientist Meredith.Campbell@state.nm.us (505) 827-0198 Jonathan Celmer Monitoring Team Scientist Jonathan.Celmer@state.nm.us (505) 827-0573 Vacant (x2) Monitoring Team Scientist	Project Team	Conduct environmental data collection activities in accordance with the developed FSP, QAPP, and current SWQB SOPs. Any data collection activities conducted not in accordance with the FSP, QAPP, or current SOPs will be documented and reported to the Project Manager. Writes assigned sections of reports and/or other grant deliverables required throughout the project.
Miguel Montoya Miguel.Montoya@state.nm.us (505) 476-3794	QAO	Approves and ensures FSP is retained in accordance with 1.21.2 NMAC, Retention and Disposition of Public Records. Conducts audits as needed to ensure compliance with FSP, QAPP and SOPs.

Team Member	Position/Role	Responsibilities
Jennifer Fullam Jennifer.Fullam@state.nm.us (505) 827-2637	Standards, Planning and Reporting Team (SPRT) Liaison	Provide information and data needs pertaining to water quality standards development and refinement located within the study area.
Heidi Henderson Heidi.Henderson@state.nm.us (505) 827-2901	TMDL and Assessment Team (TAT) Liaison	Provide information and data needs pertaining to TMDL development and assessment to be conducted in the study area.
Sarah Holcomb Sarah.Holcomb@state.nm.us (505) 827-2798	Point Source Regulation Section (PSRS) Liaison	Provide information and data needs pertaining to point source discharges located within the study area.
Abe Franklin Abraham.Franklin@state.nm.us (505) 827-2793	Watershed Protection Section (WPS) Liaison	Provide information and data needs pertaining to nonpoint sources of pollution and BMPs located within the study area.

2.2 Organization

For the responsibilities defined in this project; the Project Manager(s), Project Team, Standards, Planning and Reporting Team Liaison and TMDL and Assessment Team Liaison report to the MASS Program Manager. The Point Source Regulation Section (PSRS) Liaison and the Watershed Protection Section (WPS) Liaison are the Program Managers for their Sections and report to the SWQB Chief. An organizational chart of the SWQB is available at https://www.env.nm.gov/surface-water-quality/contact-us-3/.

3.0 PROJECT DESCRIPTION

3.1 Background

Section 303(d) of the Federal Water Pollution Control Act, known as the Clean Water Act (CWA), requires that each state submit to the U.S. Environmental Protection Agency (EPA) a list of water quality limited segments that require load allocations, waste load allocations, and TMDLs. The current §303(d) Program in New Mexico consists of three major steps: monitoring of surface waters; assessing monitoring data against the WQS; and developing TMDLs for those waters not meeting water quality standards (i.e. impaired).

CWA §305(b) requires that each state also submit a biennial report to the U.S. Congress through the EPA. The two requirements are combined into *The State of New Mexico §303(d)/§305(b) Integrated List and Report* (NMED/SWQB 2018b) (IR). It also serves as a source of basic information on water quality and water pollution control programs in New Mexico.

In accordance with the above stated statutory requirements, the IR report contains the following information:

- An assessment of surface water quality;
- An analysis of the extent to which the CWA §101(a) goal of surface water quality to provide for protection and propagation of fish, shellfish, and wildlife, and recreation in and on the water is being achieved;
- An overview of progress in water pollution control and recommendations for further action; and
- A description of the nature of nonpoint source pollution and of programs for nonpoint source control.

The activities described in this Plan are focused toward meeting the goals of the most recent, EPA-approved IR (NMED/SWQB 2018b). The impairments for AUs in this survey area listed in **Tables 2.1** through **2.3** were identified during SWQB's most recent surveys of this watershed, conducted in 2007, 2010 and 2011, and include data from a variety of other investigations. The "IR Category" column provides the current AU's status in the IR (see Appendix A for definitions). "Water Quality Segment" provides the applicable WQS reference as assigned to each AU and described in Section 20.6.4 New Mexico Administrative Code (NMAC) as governed by the New Mexico Water Quality Control Commission (WQCC) (NMAC 2018). The purpose of 20.6.4 NMAC is to establish WQS that consist of the designated uses of surface waters of the state, the water quality criteria necessary to protect those uses, and an antidegradation policy. The "TMDL Completed" column lists the EPA-approved TMDLs for the Assessment Unit.

Assessment of surface waters against the WQS occurs after the monitoring data have been verified and validated, using the most recent assessment protocols. These protocols are updated every odd year (e.g. 2019) and are opened for the EPA and the public to review and comment as part of the update process. Waterbodies determined to be impaired are reported as such every even year (e.g. 2020) on the State's IR List and TMDLs or TMDL alternatives are developed for listed AUs.

Table 2.1 Gila, Mimbres, and San Francisco Watersheds: Impairment and TMDL Status of Survey Assessment Units

Assessment Unit Name	WQS Reference	IR Category	Impairments	TMDL Completed
Allie Canyon (Mimbres River to headwaters)	20.6.4.804	3/3A		
Apache Creek (Tularosa River to Hardcastle Canyon)	20.6.4.98	2		
Bear Canyon (Mimbres River to headwaters)	20.6.4.804	3/3A		
Bear Canyon Reservoir	20.6.4.806	5/5A	Mercury - Fish Consumption Advisory|Nutrients| Temperature	
Bear Creek (Gila River nr Cliff to headwaters)	20.6.4.502	2		

Assessment Unit Name	WQS Reference	IR Category	Impairments	TMDL Completed
Beaver Creek (Perennial prt Taylor Ck to Mule Canyon)	20.6.4.503	5/5B	Temperature	
Bill Evans Lake	20.6.4.505	5/5C	Mercury - Fish Consumption Advisory|PCBS - Fish Consumption Advisory	
Bitter Creek (AZ border to headwaters)	20.6.4.98	3/3A		
Black Canyon Creek (East Fork Gila River to headwaters)	20.6.4.503	4A	Temperature	Temperature
Blue Creek (Gila River to headwaters)	20.6.4.502	2		
Burro Cienaga (Lordsburg Playa to headwaters)	20.6.4.98	3/3A		
Cameron Creek (San Vicente Arroyo to headwaters)	20.6.4.98	3/3A		
Canyon Creek (Middle Fork Gila River to headwaters)	20.6.4.503	4A	Nutrients|Turbidity	Nutrients|Turbidity
Carlisle Creek (Gila River to headwaters)	20.6.4.98	2		
Centerfire Creek (San Francisco R to headwaters)	20.6.4.603	5/5A	E. coli|Nutrients|Sedimentation/Siltation|Specific Conductance|Temperature|Turbidity	Specific Conductance|Nutrients|E. coli|Turbidity
Cold Springs Creek (Hot Springs Creek to headwaters)	20.6.4.803	4A	Cadmium, Dissolved|Lead, Dissolved	
Diamond Ck (Perennial prt Bailey Ck to headwaters)	20.6.4.503	1		
Diamond Ck (Perennial prt East Fork Gila R to Bailey Ck)	20.6.4.503	3/3A		
Dry Blue Creek (AZ bnd to headwaters)	20.6.4.603	3/3A		
East Fork Gila River (Gila River to headwaters)	20.6.4.503	5/5C	Benthic Macroinvertebrates	Aluminum
Gallinas Creek (Mimbres River to headwaters)	20.6.4.803	5/5C	Nutrients	
Gila River (AZ border to Red Rock)	20.6.4.501	5/5A	Temperature	
Gila River (Mangas Creek to Mogollon Creek)	20.6.4.502	5/5B	Temperature	
Gila River (Mogollon Ck to East and West Forks of Gila R)	20.6.4.502	5/5B	Temperature	
Gila River (Red Rock to Mangas Creek)	20.6.4.502	5/5C	Nutrients|Temperature	
Gilita Creek (Middle Fork Gila R to Willow Creek)	20.6.4.503	5/5A	Temperature	
Gilita Creek (Perennial reaches abv Willow Creek)	20.6.4.503	3/3A		
Hanover Creek (Whitewater Creek to headwaters)	20.6.4.98	2		
Hot Springs Ck (Perennial prt of Mimbres R to headwaters)	20.6.4.803	3/3A		
Hoyt Creek (Wall Lake to headwaters)	20.6.4.98	3/3A		
Iron Creek (Middle Fork Gila R to headwaters)	20.6.4.503	5/5B	Temperature	
Lake Roberts	20.6.4.504	5/5A	Mercury - Fish Consumption Advisory|Nutrients	
Leyba Lake	20.6.4.98	2		

Assessment Unit Name	WQS Reference	IR Category	Impairments	TMDL Completed
Little Creek (West Fork Gila River to headwaters)	20.6.4.503	3/3A		
Mangas Creek (Gila River to Mangas Springs)	20.6.4.502	5/5A	Nutrients|Temperature	Nutrients
Mangas Creek (Mangas Springs to headwaters)	20.6.4.502	2		
McKnight Canyon (Mimbres River to headwaters)	20.6.4.804	1		
Middle Fork Gila River (Canyon Creek to headwaters)	20.6.4.503	5/5B	Temperature	
Middle Fork Gila River (West Fork Gila R to Canyon Creek)	20.6.4.503	5/5B	Temperature	
Mimbres R (Perennial reaches Allie Canyon to Cooney Cny)	20.6.4.804	1		
Mimbres R (Perennial reaches Cooney Cyn to headwaters)	20.6.4.807	1		
Mimbres R (Perennial reaches downstream of Allie Canyon)	20.6.4.803	4A	E. coli	
Mineral Creek (San Francisco R to headwaters)	20.6.4.98	2		
Mogollon Creek (Gila River to USGS Gage 09430600)	20.6.4.98	3/3A		
Mogollon Creek (Perennial prt USGS Gage 09430600 to hwtrs)	20.6.4.503	2		Aluminum
Mule Creek (San Francisco R to Mule Springs)	20.6.4.601	5/5C	Dissolved oxygen	
Negrito Creek (Tularosa River to confl of N and S forks)	20.6.4.603	5/5B	Temperature	
North Fork Negrito Creek (Negrito Creek to headwaters)	20.6.4.603	2		
North Lordsburg Playa	20.6.4.98	3/3A		
S A Creek (Perennial prt of Centerfire Creek to headwaters)	20.6.4.99	3/3A		
Sacaton (No Name) Playa	20.6.4.98	3/3A		
San Francisco River (AZ border to Box Canyon)	20.6.4.601	3/3A		
San Francisco River (Box Canyon to Whitewater Creek)	20.6.4.601	5/5C	Benthic Macroinvertebrates	
San Francisco River (Centerfire Creek to AZ border)	20.6.4.602	5/5C	Benthic Macroinvertebrates| Temperature	Temperature| Nutrients
San Francisco River (NM 12 at Reserve to Centerfire Creek)	20.6.4.602	5/5A	E. coli|Temperature| Turbidity	E. coli|Turbidity
San Francisco River (Pueblo Ck to Willow Springs Cyn)	20.6.4.601	3/3A		
San Francisco River (Whitewater Ck to Pueblo Ck)	20.6.4.601	5/5A	Sedimentation/Siltation	
San Francisco River (Willow Springs Cyn to NM 12 at Reserve)	20.6.4.601	4A	E. coli	E. coli
San Vicente Arroyo (Mimbres R to Maudes Cny)	20.6.4.97	3/3A		
San Vicente Creek (Perennial prt Maudes Cny to Silva Creek)	20.6.4.803	5/5C	Nutrients	
Sapillo Creek (Gila River to Lake Roberts)	20.6.4.503	1		Total Organic Carbon| Turbidity
Silver Creek (Mineral Creek to headwaters)	20.6.4.98	2		
Snow Canyon Ck (Perennial prt Gilita Ck to Snow Lake)	20.6.4.99	2		

Assessment Unit Name	WQS Reference	IR Category	Impairments	TMDL Completed
Snow Lake	20.6.4.504	5/5A	Nutrients|pH	
South Fork Negrito Creek (Negrito Creek to headwaters)	20.6.4.603	4A	E. coli|Temperature	E. coli|Temperature
South Lordsburg Playa	20.6.4.98	3/3A		
Stone Creek (San Francisco R to AZ border)	20.6.4.603	3/3A		
Taylor Creek (Perennial reaches Beaver Creek to headwaters)	20.6.4.503	5/5C	Nutrients|Temperature	Aluminum| Temperature
Trout Creek (Perennial prt San Francisco R to headwaters)	20.6.4.603	5/5B	Temperature	
Tularosa River (Apache Creek to headwaters)	20.6.4.603	3/3A		
Tularosa River (San Francisco R to Apache Creek)	20.6.4.603	5/5A	E. coli|Temperature| Turbidity	Specific Conductance| E. coli| Turbidity
Turkey Creek (Gila River to headwaters)	20.6.4.503	5/5B	Temperature	
West Fork Gila R (East Fork to Middle Fork)	20.6.4.503	5/5B	Temperature	
West Fork Gila R (Middle Fork to headwaters)	20.6.4.503	5/5B	Temperature	
White Creek (West Fork Gila River to headwaters)	20.6.4.503	3/3A		
Whitewater Creek (San Francisco R to Whitewater Campgrd)	20.6.4.603	2		Turbidity|Aluminum
Whitewater Creek (San Vicinte Arroyo to headwaters)	20.6.4.98	3/3A		
Whitewater Creek (Whitewater Campgrd to headwaters)	20.6.4.603	2		
Willow Creek (Gilita Creek to headwaters)	20.6.4.503	5/5A	Aluminum, Total Recoverable| Temperature	Aluminum

Table 2.2 Lower Rio Grande Watershed: Impairment and TMDL Status of Assessment Units

Assessment Unit Name	WQS Reference	IR Category	Impairments	TMDL Completed
Burn Lake (Dona Ana)	20.6.4.99	1		
Caballo Reservoir	20.6.4.104	5/5C	Mercury - Fish Consumption Advisory|Nutrients	
Cuchillo Negro Creek (Rio Grande to Willow Spring Draw)	20.6.4.98	3/3A		
Elephant Butte Reservoir	20.6.4.104	5/5C	Mercury - Fish Consumption Advisory|PCBS - Fish Consumption Advisory	
Las Animas Ck (perennial prt Animas Gulch to headwaters)	20.6.4.103	5/5C	Benthic Macroinvertebrates|Dissolved oxygen	
Las Animas Ck (perennial prt R Grande to Animas Gulch)	20.6.4.103	3/3A		
Palomas Creek (perennial portion R Grande to N and S Forks)	20.6.4.103	1		

Assessment Unit Name	WQS Reference	IR Category	Impairments	TMDL Completed
Percha Ck (Perennial prt Caballo Rsvr to Wicks Gulch)	20.6.4.103	3/3A		
Percha Ck (Perennial prt Wicks Gulch to Middle Percha Ck)	20.6.4.103	1		
Rio Grande (Anthony Bridge to NM192 bridge W of Mesquite)	20.6.4.101	4A	E. coli	E. coli
Rio Grande (Caballo Reservoir to Elephant Butte Reservoir)	20.6.4.103	5/5C	Dissolved oxygen	
Rio Grande (Elephant Butte Rsvr to San Marcial at USGS)	20.6.4.105	5/5A	Aluminum, Total Recoverable	
Rio Grande (International Mexico bnd to Anthony Bridge)	20.6.4.101	5/5A	Boron, Dissolved|E. coli	E. coli
Rio Grande (Leasburg Dam to one mile below Percha Dam)	20.6.4.101	4A	E. coli	E. coli
Rio Grande (NM192 bridge W of Mesquite to Picacho Bridge)	20.6.4.101	1		E. coli
Rio Grande (one mile below Percha Dam to Caballo Reservoir)	20.6.4.102	1		
Rio Grande (Picacho Bridge to Leasburg Dam)	20.6.4.101	1		E. coli
South Fork Las Cruces Arroyo (Las Cruces Arroyo to hdwtrs)	20.6.4.98	3/3A		
Tierra Blanca Creek (Rio Grande to headwaters)	20.6.4.98	2		

Table 2.3 Upper Pecos Watershed: Impairment and TMDL Status of Assessment Units

Assessment Unit Name	WQS Reference	IR Category	Impairments	TMDL Completed
Alamitos Canyon (Pecos River to headwaters)	20.6.4.98	3/3A		
Beaver Creek (El Porvenir Creek to headwaters)	20.6.4.215	2		
Blue Creek (Tecolote Creek to headwaters)	20.6.4.215	2		
Blue Hole	20.6.4.212	2		
Brown's Marsh	20.6.4.99	2		
Bull Creek (Cow Creek to headwaters)	20.6.4.217	2		Temperature
Burro Canyon (Gallinas River to headwaters)	20.6.4.215	2		
Cow Creek (Bull Creek to headwaters)	20.6.4.217	4A	Temperature	Temperature|Turbidity
Cow Creek (Pecos River to Bull Creek)	20.6.4.217	4A	Temperature	Temperature|Turbidity
Dalton Canyon Creek (Perennial prt Pecos R to headwaters)	20.6.4.217	4A	Specific Conductance	Specific Conductance
Doctor Creek (Holy Ghost Creek to headwaters)	20.6.4.217	2		
El Porvenir Creek (Gallinas River to SFNF bnd)	20.6.4.215	5/5C	Temperature	

Assessment Unit Name	WQS Reference	IR Category	Impairments	TMDL Completed
El Porvenir Creek (SFNF bnd to Hollinger Canyon)	20.6.4.215	2		
El Rito (Pecos River to headwaters)	20.6.4.212	5/5C	Ammonia, Total|E. coli	E. coli
Falls Creek (Tecolote Creek to headwaters)	20.6.4.215	4A	Specific Conductance	Specific Conductance
Gallinas River (Las Vegas Diversion to USFS bnd)	20.6.4.215	4A	Temperature	Temperature
Gallinas River (Pecos Arroyo to Las Vegas Diversion)	20.6.4.220	1		
Gallinas River (Pecos River to Aguilar Creek)	20.6.4.98	5/5C	Dissolved oxygen	
Gallinas River (Perennial prt Aguilar Creek to Pecos Arroyo)	20.6.4.220	5/5A	Nutrients|Temperature| Turbidity	
Gallinas River (USFS bnd to headwaters)	20.6.4.215	2		
Glorieta Ck (Perennial prt Glorieta CC WWTP to headwaters)	20.6.4.217	4C	Flow Regime Modification	
Glorieta Ck (Perennial prt Pecos R to Glorieta CC WWTP)	20.6.4.217	5/5B	Nutrients| Specific Conductance	
Hollinger Creek (El Porvenir Creek to headwaters)	20.6.4.215	2		
Holy Ghost Creek (Pecos River to headwaters)	20.6.4.217	2		
Indian Creek (Pecos River to headwaters)	20.6.4.217	2		
Jack's Creek (Pecos River to headwaters)	20.6.4.217	2		
Johnson Lake	20.6.4.222	3/3A		
Lake Bentley	20.6.4.99	2		
Lake Katherine	20.6.4.222	3/3A		
Lost Bear Lake	20.6.4.222	3/3A		
Macho Canyon Creek (Pecos River to headwaters)	20.6.4.217	4A	Specific Conductance	Specific Conductance
McAllister Lake	20.6.4.213	5/5C	Arsenic, Dissolved	
Monastery Lake	20.6.4.224	3/3A		
North Fork Blue Creek (Blue Creek to headwaters)	20.6.4.215	2		
Panchuela Creek (Pecos River to headwaters)	20.6.4.217	2		
Park Lake	20.6.4.99	3/3A		
Pecos Arroyo (Gallinas River to headwaters)	20.6.4.221	4A	E. coli	E. coli
Pecos Baldy Lake	20.6.4.222	3/3A		
Pecos River (Alamitos Canyon to Jack's Creek)	20.6.4.217	2		Turbidity
Pecos River (Canon de Manzanita to Alamitos Canyon)	20.6.4.217	4A	Temperature	Temperature|Turbidity
Pecos River (Cow Creek to Canon de Manzanita)	20.6.4.216	1		
Pecos River (Jack's Creek to headwaters)	20.6.4.217	2		
Pecos River (Santa Rosa Reservoir to Tecolote Creek)	20.6.4.211	4A	E. coli	E. coli
Pecos River (Sumner Reservoir to Santa Rosa Reservoir)	20.6.4.211	5/5A	Nutrients	

Assessment Unit Name	WQS Reference	IR Category	Impairments	TMDL Completed
Pecos River (Tecolote Creek to Villanueva State Park)	20.6.4.216	5/5A	Temperature	
Pecos River (Villanueva State Park to Cow Creek)	20.6.4.216	1		
Perch Lake	20.6.4.226	3/3A		
Power Dam Lake	20.6.4.212	3/3A		
Rio Mora (Pecos River to headwaters)	20.6.4.217	2		
Rito del Oso (Rio Mora to headwaters)	20.6.4.217	2		
Santa Rosa Reservoir	20.6.4.225	5/5C	Mercury - Fish Consumption Advisory	
Spirit Lake	20.6.4.222	3/3A		
Stewart Lake	20.6.4.222	3/3A		
Storrie Lake	20.6.4.214	5/5C	Mercury - Fish Consumption Advisory	
Sumner Reservoir	20.6.4.210	5/5C	Mercury - Fish Consumption Advisory	
Tecolote Creek (Blue Creek to headwaters)	20.6.4.215	2		
Tecolote Creek (I-25 to Blue Creek)	20.6.4.230	5/5A	Nutrients|Temperature	Temperature
Tecolote Creek (Pecos River to I-25)	20.6.4.98	3/3A		
Tres Lagunas (Northeast)	20.6.4.212	5/5B	pH	
Tres Lagunas (Southeast)	20.6.4.212	3/3A		
Tres Lagunas (West)	20.6.4.212	3/3A		
Truchas Lake (North)	20.6.4.222	3/3A		
Truchas Lake (South)	20.6.4.222	3/3A		
Wallace Lake	20.6.4.99	3/3A		
Willow Creek (Pecos River to headwaters)	20.6.4.217	4A	Specific Conductance	Specific Conductance
Winsor Creek (Pecos River to headwaters)	20.6.4.217	2		
Wright Canyon Creek (Tecolote Creek to headwaters)	20.6.4.215	2		

3.2 Objectives

Table 3 outlines the project objectives that have been identified to meet the various needs within the SWQB. Data needs have been determined based on impairments from previous studies, identified data gaps, and consultation with SWQB MASS, PSRS, and WPS staff as well as other state agencies, federal agencies, tribes, local watershed groups, and interested parties.

Table 3. Project Objectives

Purpose for Water Quality Data Collection	Question to be answered	Decision Criteria	Products/ Outcomes
Assess designated use attainment for the *Integrated Report* and provide information to the public on the condition of surface waters	Are sampled waterbodies meeting WQS criteria?	WQS criteria interpreted through the CALM	Integrated Report
Develop load and waste load allocations for TMDLs	What is the maximum pollutant load a waterbody can receive and meet the requirements of the WQS?	WQS criteria and critical flow volume	TMDL loading calculations and NPDES permit limits
Evaluate restoration and mitigation measures implemented to control NPS pollution	Have watershed restoration activities and mitigation measures improved water quality?	WQS criteria and historic data	Project Summary Reports, NPS Annual Report, *Integrated Report (De-Listing)*
Develop or refine the WQS	Are the existing uses appropriate for the waterbody?	Data sufficient to support a petition to the WQCC to revise WQS	Use Attainability Analyses (UAA); Site Specific Criteria; Amendments to WQS
Obtain data for ambient/baseline water quality upstream of NPDES outfall	What is the water quality above the NPDES outfall?	Survey chemical, physical and biological data	NPDES Permits / Certifications

3.3 Monitoring Strategy

SWQB monitoring of surface waters across the State currently occurs, on average, every eight years using an eight-year rotational watershed approach. Monitoring occurs during the non-winter months from March through November. Monitoring focuses on physical, chemical, and biological conditions in perennial waters; and includes sampling for most pollutants that have numeric and/or narrative criteria in the WQS.

In order to achieve the goals outlined in Section 3.2, this survey uses a targeted monitoring design to address data needs identified for assessment, TMDLs, potential standards revisions, and point source monitoring. Monitoring sites are selected based on the data needs for an assessment unit, accessibility, and representation of and within the assessment unit. Each assessment unit is represented by one or more monitoring stations, each of which receives 4–8 site visits during the survey. Through public outreach, inter-agency coordination, and a scoring system which considers a variety of factors, a two-tier monitoring system – primary and secondary – was developed to prioritize AUs. High ranking priority waters (primary AUs) will receive the greatest amount of monitoring, whereas low ranking waters (*i.e.*, secondary AUs) will receive the least. The two-year monitoring will allow more data to be collected from the highest priority waters to better capture inter-annual variability due to hydrologic conditions during sampling events, and year-2 monitoring may be adjusted dependent on year-1 analytical results.

The survey also incorporates a probabilistic monitoring component designed to provide an unbiased evaluation of the condition of the state's waters. For each year of the survey, thirty sites have been randomly selected from a sampling frame of the state's perennial, wadeable streams as defined in the SWQB Comprehensive Assessment and Listing Methodology, or CALM, for Sedimentation (NMED/SWQB 2017). The sampling frame was developed using the USGS National Hydrography Dataset (NHD) validated with SWQB Assessed Streams information. The sampling frame consists of over 25,000 500-meter stream increments. The random site generation was conducted by staff at the USEPA National Health and Environmental Effects Research Laboratory in Corvallis, OR. Three hundred sites from the sampling frame were randomly selected for each year of the survey with the first thirty sites serving as the sample population and the remaining 270 sites as alternates. Year 1 of the survey will focus on sites located within the Upper Pecos River study area. Year 2 will focus on the San Francisco River, Gila River, Mimbres River and Lower Rio Grande study areas. Sites may be excluded through office and field reconnaissance by the Project Team that are of the incorrect resource (e.g., non-perennial streams or reservoirs), inaccessible (unsafe or landowner access denied), or located greater than an hour from the closest vehicular access. Excluded sites will be replaced by alternate sites in successive order. Maps and tables detailing the locations of the probabilistic monitoring sites are included in Appendix C.

3.4 Project Schedule

As part of the survey planning process, public meetings are held to receive input on any areas of concern within the AUs surveyed and to inform interested parties about the SWQB water quality

survey process, the specific sampling plans in the watershed, and the assessment and TMDL processes.

The progress of this project will be documented and tracked from its inception through implementation to ensure all sampling and analytical activities are performed in accordance with all applicable requirements and in a cost-effective manner. **Table 4** provides the project timeline.

Water chemistry results typically take several months to return from the analytical laboratory, the New Mexico Scientific Laboratory Division (SLD). The lag time to receive results is calculated into the schedule. When sample results are received, they undergo verification and validation according to SWQB SOPs. The final step of the project is the publication of a survey report that summarizes the data collection effort and documents changes to the original and revised FSP.

Following project completion, the data will be assessed for incorporation into the 2022-2024 IR List. Once the assessments are complete, the TMDL development process will begin for any identified impairments.

Table 4. Project Schedule

Activity	Winter 2018-2019	Spring 2019	Summer 2019	Fall 2019	Winter 2019-2020	Spring 2020	Summer 2020	Fall 2020	Winter 2020-2021	Spring 2021	Fall 2021
Survey Planning, Site Reconnaissance, and Public Input Period	==========▶										
Data Collection & Submittal of WQ Samples to SLD		==========▶				==========▶					
Data Verification & Validation Procedures, Assessment of data		==========▶				==========▶					
Publication of Survey Report									==========▶		

3.5 Project Location

The project area includes three survey areas: the Gila River, Mimbres River, and San Francisco River watersheds, the Lower Rio Grande watershed, and the Upper Pecos River watershed. The Gila, Mimbres, San Francisco sampling area includes the Gila River and tributaries from the headwaters to the Arizona border, the Mimbres from the headwaters to below Dwyer, and the San Francisco and tributaries from the Arizona border to the Arizona border. The Lower Rio

Grande sampling area includes tributaries from the Rio Grande below Elephant Butte Reservoir to the lowest station near the New Mexico/Texas line at the Corchesne Bridge. The Pecos sampling area includes the tributaries from the Pecos headwaters to below Sumner Reservoir. **Tables 5.1**, **5.2**, and **5.3** show a complete list of stations illustrated in **Figures 2.1.1** through **2.3.2**.

Table 5.1. Gila, Mimbres, and San Francisco Watersheds: Water Quality Stations

Map #	Station Name	Station ID	Assessment Unit	Rationale/Comments
1	Bear Canyon abv Reservoir	45BearCn001.0	Bear Canyon (Mimbres River to headwaters)	Lake Inlet
2	Bear Cyn blw reservoir	45BearCn000.3	Bear Canyon (Mimbres River to headwaters)	Lake Outlet
3	Bear Canyon Reservoir	45BearCanyonD	Bear Canyon Reservoir	Impaired for Nutrients/Mercury in fish
4	Bear Creek on Double E Ranch - 78BearCr011.7	78BearCr011.7	Bear Creek (Gila River nr Cliff to headwaters)	Possible WQS change, Temperature only
5	Beaver Creek above Taylor Creek - 77Beaver000.1	77Beaver000.1	Beaver Creek (Perennial prt Taylor Ck to Mule Canyon)	Possible WQS change
6	Bill Evans Lake Deep near dam - 78BillEvansDP	78BillEvansDP	Bill Evans Lake	AU impaired for Hg/PCBs
7	Black Cyn Cr @ lower Black Cyn cmpgd - 77BlackC016.5	77BlackC016.5	Black Canyon Creek (East Fork Gila River to headwaters)	AU impaired for Temp, possible WQS change
8	Blue Creek 0.5 mile abv Gila River - 78BlueCr000.9	78BlueCr000.9	Blue Creek (Gila River to headwaters)	Possible WQS change, Temp only
9	Canyon Creek - 77Canyon007.5	77Canyon007.5	Canyon Creek (Middle Fork Gila River to headwaters)	Impaired for Temp/Nutrients/Turb; access may preclude chem monitoring
10	Centerfire Creek abv San Francisco River - 80Center002.1	80Center002.1	Centerfire Creek (San Francisco R to headwaters)	Impaired for Sed/Temp/Cond/E. coli
11	Cold Springs abv Mimbres - 45ColdSp009.3	45ColdSp009.3	Cold Springs Creek (Hot Springs Creek to headwaters)	Pb, Cd impairment
12	Dry Blue Creek abv Pace Creek - 80DryBlu008.0	80DryBlu008.0	Dry Blue Creek (AZ bnd to headwaters)	Temp only, possible WQS change
13	East Fork Gila above West Fork - 77EFkGil000.2	77EFkGil000.2	East Fork Gila River (Gila River to headwaters)	AU impaired for BMI, possible WQS change
14	Gallinas Creek at Lower Gallinas Camground near Hwy 152 - 45Gallin021.5	45Gallin021.5	Gallinas Creek (Mimbres River to headwaters)	AU impaired for Nutrients
15	Gila R @ NM 92 - 78GilaRi011.5	78GilaRi011.5	Gila River (AZ border to Red Rock)	AU impaired for Temp, possible WQS change
16	Gila River above Mangas Creek - 78GilaRi073.5	78GilaRi073.5	Gila River (Mangas Creek to Mogollon Creek)	AU impaired for Temp / possible WQS change
17	Gila River at the Gila Gage - 77GilaRi101.4	77GilaRi101.4	Gila River (Mogollon Ck to East and West Forks of Gila R)	AU impaired for Temp, possible WQS change

Map #	Station Name	Station ID	Assessment Unit	Rationale/Comments
18	Gila R @ Patton Rd bridge in Redrock - 78GilaRi041.8	78GilaRi041.8	Gila River (Red Rock to Mangas Creek)	AU impaired for Nutrients/Temp, possible WQS change
19	Gilita Creek above Snow Canyon Creek - 77Gilita000.2	77Gilita000.2	Gilita Creek (Middle Fork Gila R to Willow Creek)	AU impaired for Temp
20	Gilita Cr abv Willow Cr - 77Gilita010.3	77Gilita010.3	Gilita Creek (Perennial reaches abv Willow Creek)	Possible WQS change
21	Iron Cr @ Forest trail 151 - 77IronCr009.7	77IronCr009.7	Iron Creek (Middle Fork Gila R to headwaters)	AU impaired for Temp, Possible WQS change
22	Lake Roberts at dam - 77LRobertsDam	77LRobertsDam	Lake Roberts	AU impaired for Nutrients/Hg in fish
23	Little Cr abv W Fk Gila - 77Little000.1	77Little000.1	Little Creek (West Fork Gila River to headwaters)	Never assessed, possible WQS change
25	Mangas Creek above Gila River (Forest Road 809) - 78Mangas000.7	78Mangas000.7	Mangas Creek (Gila River to Mangas Springs)	AU impaired for Temp/Nutrients
26	Middle Fork Gila above Iron Creek - 77MFkGil049.0	77MFkGil049.0	Middle Fork Gila River (Canyon Creek to headwaters)	AU impaired for Temp, possible WQS change
27	Middle Fork Gila above West Fork - 77MFkGil000.1	77MFkGil000.1	Middle Fork Gila River (West Fork Gila R to Canyon Creek)	AU impaired for Temp, possible WQS change
28	Mimbres River at upper TNC - 45Mimbre112.2	45Mimbre112.2	Mimbres R (Perennial reaches Allie Canyon to Cooney Cny)	Major tributary
29	Mimbres below Dwyer at Ranch del Rio - 45Mimbre062.7	45Mimbre062.7	Mimbres R (Perennial reaches downstream of Allie Canyon)	AU impaired for E. coli
31	Mule Cr blw NM 78 - 80MuleCr014.5	80MuleCr014.5	Mule Creek (San Francisco R to Mule Springs)	AU impaired for DO, possible WQS change
32	Negrito Creek above Tularosa River - 80Negrit000.1	80Negrit000.1	Negrito Creek (Tularosa River to confl of N and S forks)	AU impaired for Temp, possible WQS change
33	North Fork Negrito Creek abv South Fork Negrito Creek - 80NNegri000.1	80NNegri000.1	North Fork Negrito Creek (Negrito Creek to headwaters)	Possible WQS change
34	San Francisco River below Glenwood at Hot Springs - 80SanFra028.6	80SanFra028.6	San Francisco River (Box Canyon to Whitewater Creek)	AU impaired for BMI, possible WQS change
35	San Francisco R blw Luna - 80SanFra144.9	80SanFra144.9	San Francisco River (Centerfire Creek to AZ border)	AU impaired for BMI/Temp, possible WQS change, two stations in this AU?
37	San Franicisco R @ Cienega Cyn - 80SanFra117.9	80SanFra117.9	San Francisco River (NM 12 at Reserve to Centerfire Creek)	AU impaired for E. coli/Temp/Turbidity, possible WQS change
38	San Francisco River abv Pueblo Creek - 80SanFra061.0	80SanFra061.0	San Francisco River (Pueblo Ck to Willow Springs Cyn)	Unassessed, possible WQS change
39	San Francisco River at Alma Bridge - 80SanFra048.8	80SanFra048.8	San Francisco River (Whitewater Ck to Pueblo Ck)	AU impaired for Sedimentation, possible WQS change

Map #	Station Name	Station ID	Assessment Unit	Rationale/Comments
40	Reserve WWTP - NM0024163	NM0024163	San Francisco River (Willow Springs Cyn to NM 12 at Reserve)	NPDES permit
41	San Francisco River below Reserve - 80SanFra105.7	80SanFra105.7	San Francisco River (Willow Springs Cyn to NM 12 at Reserve)	Below NPDES discharge/E. coli impairment
42	San Vicente Arroyo at Ancheta Mill - 45SanVic053.9	45SanVic053.9	San Vicente Creek (Perennial prt Maudes Cny to Silva Creek)	Nutrient impairment
43	Silver City WWTP - NM0020109	NM0020109	San Vicente Creek (Perennial prt Maudes Cny to Silva Creek)	NPDES permit
44	Sapillo Creek at Wilderness Boundary - 77Sapill012.0	77Sapill012.0	Sapillo Creek (Gila River to Lake Roberts)	Historic impairments, possible WQS change
45	Snow Canyon Creek above Gilita Creek - 77SnowCa000.2	77SnowCa000.2	Snow Canyon Ck (Perennial prt Gilita Ck to Snow Lake)	Possible WQS change
46	Snow Lake at Dam (Deep) - 77SnowLkDamDp	77SnowLkDamDp	Snow Lake	Impaired for Nutrients/pH
47	South Negrito Creek - 80SNegri000.1	80SNegri000.1	South Fork Negrito Creek (Negrito Creek to headwaters)	Au impaired for E. coli/Temp, possible WQS change
48	Stone Creek abv San Francisco R - 80StoneC000.1	80StoneC000.1	Stone Creek (San Francisco R to AZ border)	Unassessed, possible WQS change
49	Taylor Creek above Beaver Creek - 77Taylor000.1	77Taylor000.1	Taylor Creek (Perennial reaches Beaver Creek to headwaters)	AU impaired for Temp/Nutrients, possible WQS change
50	Trout Creek near FR 220 - 80Trout009.4	80TroutC009.4	Trout Creek (Perennial prt San Francisco R to headwaters)	AU impaired for Temp, possible WQS change
51	Tularosa River abv Aragon at USGS gage 9442692 - 80Tularo050.8	80Tularo050.8	Tularosa River (Apache Creek to headwaters)	Unassessed, possible WQS change
52	Tularosa River above San Francisco River - 80Tularo001.3	80Tularo001.3	Tularosa River (San Francisco R to Apache Creek)	AU Impaired for E. coli/Temp/Turbidity, possible WQS change
54	Turkey Creek (at Wilderness Boundary Forest Trail 155) - 77Turkey001.8	77Turkey001.8	Turkey Creek (Gila River to headwaters)	AU impaired for Temp, possible WQS change, AU may need split
55	W Fk Gila R abv East Fork - 77WFkGil000.1	77WFkGil000.1	West Fork Gila R (East Fork to Middle Fork)	AU impaired for Temp, possible WQS change
56	W Fk Gila R abv Middle Fk - 77WFkGil008.0	77WFkGil008.0	West Fork Gila R (Middle Fork to headwaters)	AU impaired for Temp, possible WQS change
57	Bayard, Village of/WWTP	NM0020231	Whitewater Creek (Mimbres River to headwaters)	NPDES permit; No discharge
58	NMG&FD/Glenwood Fish Hatchery-002	NM0030163 - 002	Whitewater Creek (San Francisco R to Whitewater Campgrd)	NPDES permit~~; Monitor to confirm lack of discharge~~
59	Whitewater Creek at Glenwood above San	80Whitew000.5	Whitewater Creek (San Francisco R to Whitewater Campgrd)	Historic Turbidity impairment

Map #	Station Name	Station ID	Assessment Unit	Rationale/Comments
	Francisco River - 80Whitew000.5			
60	NMG&FD/Glenwood Fish Hatchery-001	NM0030163 - 001	Whitewater Creek (San Francisco R to Whitewater Campgrd)	NPDES permit
61	Whitewater Creek abv campground - 80WhiteW008.8	80WhiteW008.8	Whitewater Creek (Whitewater Campgrd to headwaters)	Gila trout renovation
62	Willow Creek above Gilita Creek - 77Willow000.1	77Willow000.1	Willow Creek (Gilita Creek to headwaters)	AU impaired for Temp/Al, possible WQS change

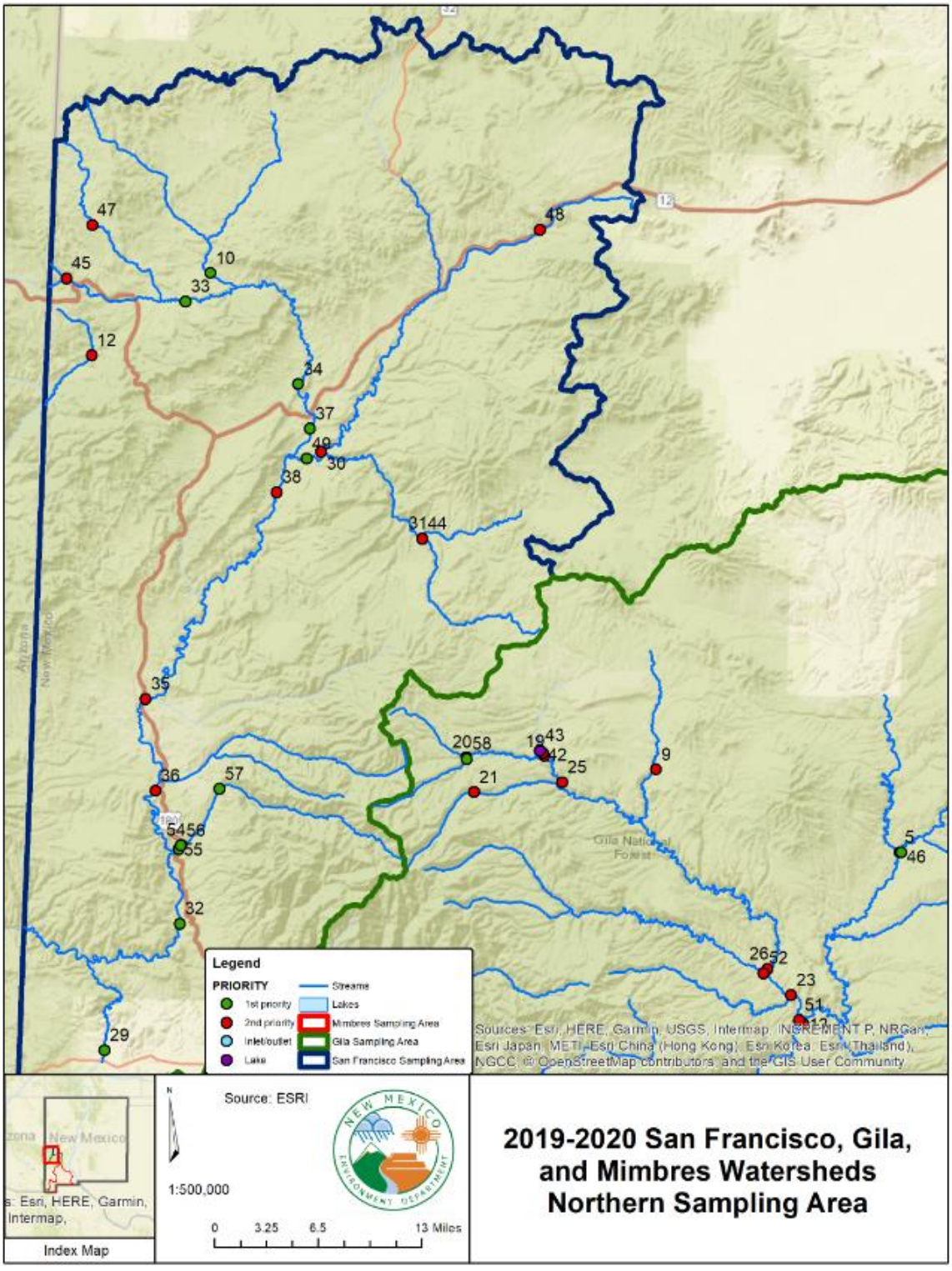


Figure 2.1.1. Gila River, Mimbres River, and San Francisco River: northern sampling area and monitoring locations

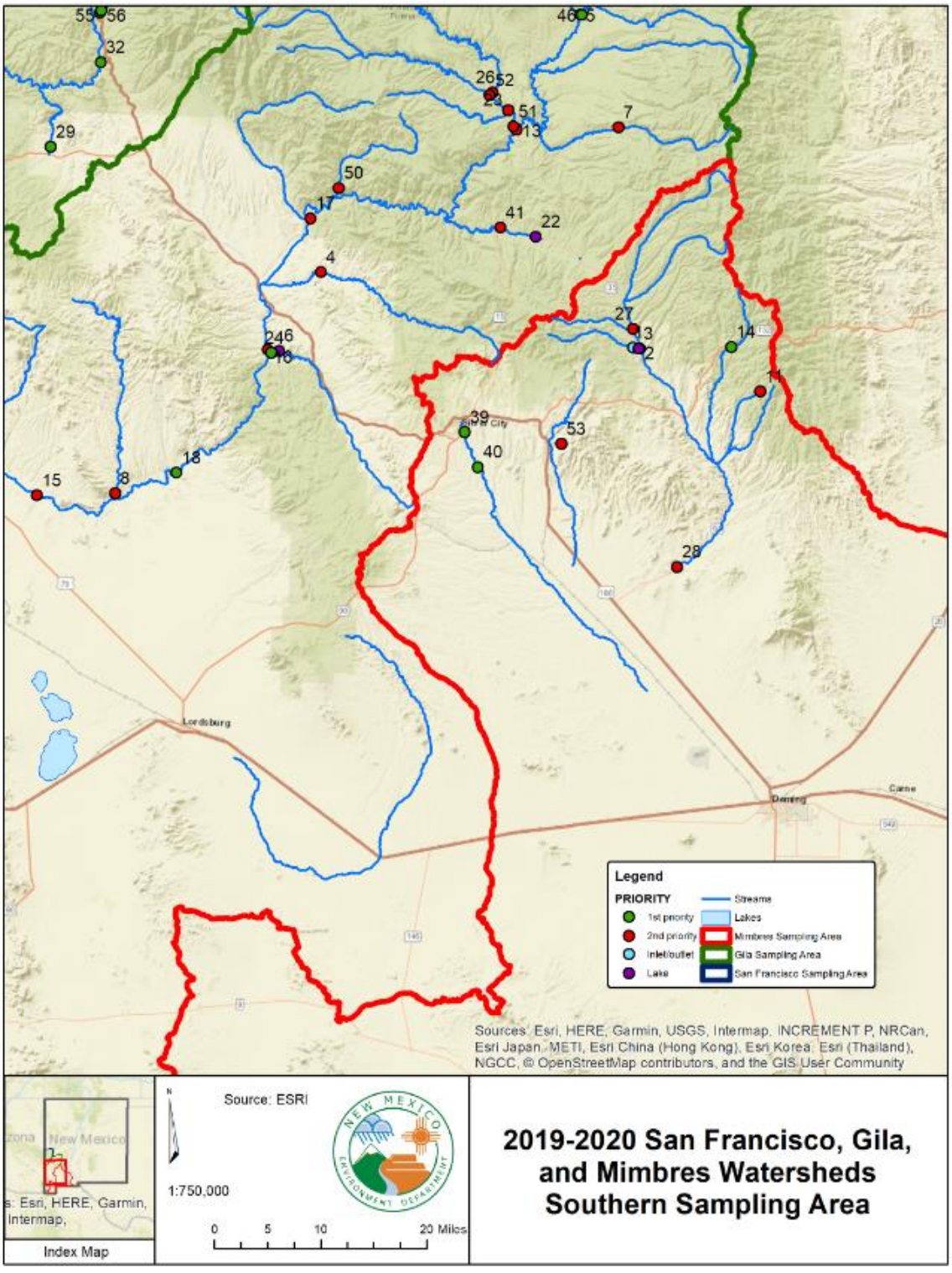
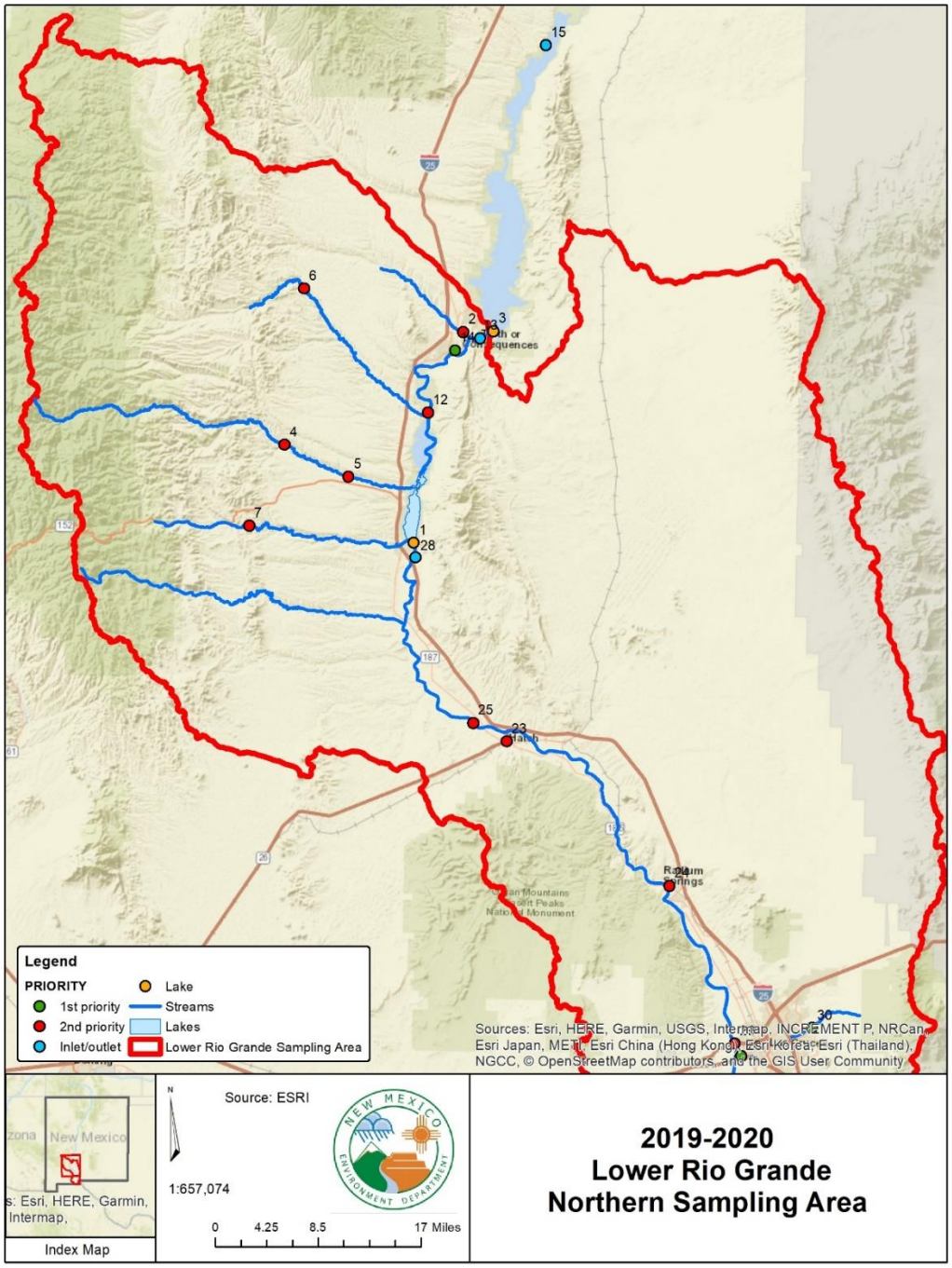


Figure 2.1.2. Gila River, Mimbres River, and San Francisco River: southern sampling area and monitoring locations

Table 5.2. Lower Rio Grande Watershed Survey: Water Quality Stations

Map #	Station Name	Station ID	Assessment Unit	Rationale/Comments
1	CABALLO LAKE AT DAM DEEP - 41CaballoLkDam	41CaballoLkDam	Caballo Reservoir	Nutrients
2	Sierra County Regional WWTP - NM0030864	NM0030864	Cuchillo Negro Creek (Rio Grande to Willow Spring Draw)	Unassessed; need new station. possible WQS change, batch discharge
3	E BUTTE AT DAM - 40EButteReDam	40EButteReDam	Elephant Butte Reservoir	Major reservoir
4	Las Animas Cr abv Animas Gulch	41LAnima020.0	Las Animas Ck (perennial prt Animas Gulch to headwaters)	AU impaired for BMI/DO, possible WQS change
5	Las Animas Cr at Animas Rd Ford - 41LAnima009.0	41LAnima009.0	Las Animas Ck (perennial prt R Grande to Animas Gulch)	Unassessed; need new station. possible WQS change
6	Palomas Cr abv Diversion	41Paloma027.9	Palomas Creek (perennial portion R Grande to headwaters)	Possible WQS change
7	Percha Creek at Percha Box - 41Percha025.3	41Percha025.3	Percha Ck (Perennial prt Wicks Gulch to Middle Percha Ck)	Significant tributary
8	ANTHONY WATER AND SANITATION - NM0029629	NM0029629	Rio Grande (Anthony Bridge to NM192 bridge W of Mesquite)	AU impaired for E. coli, NPDES permit, batch discharge
9	Gadsden Independent School District - NM0028487	NM0028487	Rio Grande (Anthony Bridge to NM192 bridge W of Mesquite)	AU impaired for E. coli, NPDES permit
10	RIO GRANDE AT NM-225 BRIDGE NR ANTHONY, NM - 42RGrand030.8	42RGrand030.8	Rio Grande (Anthony Bridge to NM192 bridge W of Mesquite)	AU impaired for E. coli
11	South Central Regional WWTP - NM0030490	NM0030490	Rio Grande (Anthony Bridge to NM192 bridge W of Mesquite)	AU impaired for E. coli; batch discharge
12	RIO GRANDE ABOVE CABALLO LAKE - 41RGrand196.6	41RGrand196.6	Rio Grande (Caballo Reservoir to Elephant Butte Reservoir)	inlet/river station AU impaired for DO
13	RIO GRANDE BELOW E. BUTTE DAM AT USGS GAGE - 41RGrand217.5	41RGrand217.5	Rio Grande (Caballo Reservoir to Elephant Butte Reservoir)	outlet/river station, AU impaired for DO
14	T OR C WASTEWATER TREATMENT PLANT DISCHARGE - NM0020681	NM0020681-C	Rio Grande (Caballo Reservoir to Elephant Butte Reservoir)	AU impaired for DO, NPDES permit
15	Rio Grande above E Butte - 40RGrand264.0	40RGrand264.0	Rio Grande (Elephant Butte Rsvr to San Marcial at USGS)	inlet; AU impaired for total recoverable Al
16	El Paso Electric Co. Outfall No. 2 - NM0000108-2	NM0000108-2	Rio Grande (International Mexico bnd to Anthony Bridge)	NPDES permit, AU impaired for boron, E. coli; ~~Monitor to confirm lack of discharge~~
17	El Paso Electric Co. Outfall No.1 - NM0000108-1	NM0000108-1	Rio Grande (International Mexico bnd to Anthony Bridge)	NPDES permit, AU impaired for Boron/E. coli
18	Montoya Drain at Racetrack Dr. – 42Montoy000.7	42Montoy000.7	Rio Grande (International Mexico bnd to Anthony Bridge)	Above NPDES discharge
19	RIO GRANDE AT CORCHESNE BRIDGE- 42RGrand002.7	42RGrand002.7	Rio Grande (International Mexico bnd to Anthony Bridge)	AU impaired for Boron/E. coli.
20	RIO GRANDE AT SUNLAND PARK BRIDGE - 42RGrand004.3	42RGrand004.3	Rio Grande (International Mexico bnd to Anthony Bridge)	Above NPDES discharge and Montoya Drain
21	Sunland Park WWTP effluent - NM0029483	NM0029483-C	Rio Grande (International Mexico bnd to Anthony Bridge)	NPDES permit, AU impaired for boron, E. coli
22	Sunland Park WWTP effluent - north	NM0031178	Rio Grande (International Mexico bnd to Anthony Bridge)	NPDES permit, second outfall
23	HATCH WASTEWATER PLANT - NM0020010	NM0020010	Rio Grande (Leasburg Dam to one mile below Percha Dam)	NPDES permit, AU impaired for E. coli

24	Rio Grande at Leasburg Dam, NM - 42RGrand099.8	42RGrand099.8	Rio Grande (Leasburg Dam to one mile below Percha Dam)	AU impaired for E. coli
25	Salem WWTP - NM0030457	NM0030457	Rio Grande (Leasburg Dam to one mile below Percha Dam)	AU impaired for E. coli; batch discharge
26	LAS CRUCES WASTEWATER PLANT - NM0023311	NM0023311	Rio Grande (NM192 bridge W of Mesquite to Picacho Bridge)	NPDES permit, TMDL for E. coli
27	Rio Grande @ NM 192 nr Mesquite	new station	Rio Grande (NM192 bridge W of Mesquite to Picacho Bridge)	NPDES permit, TMDL for E. coli
28	RIO GRANDE BLW CABALLO DAM,NM - 42RGrand171.9	42RGrand171.9	Rio Grande (one mile below Percha Dam to Caballo Reservoir)	Lake outlet
29	RIO GRANDE AT PICACHO AVE IN LAS CRUCES - 42RGrand073.5	42RGrand073.5	Rio Grande (Picacho Bridge to Leasburg Dam)	TMDL for E. coli
30	Las Cruces, City of/East Mesa Water Reclamation Facility	NM0030872	South Fork Las Cruces Arroyo (Las Cruces Arroyo to hdwtrs)	Monitor to confirm lack of discharge



Figure

2.2.1 Lower Rio Grande: northern sampling area and monitoring locations

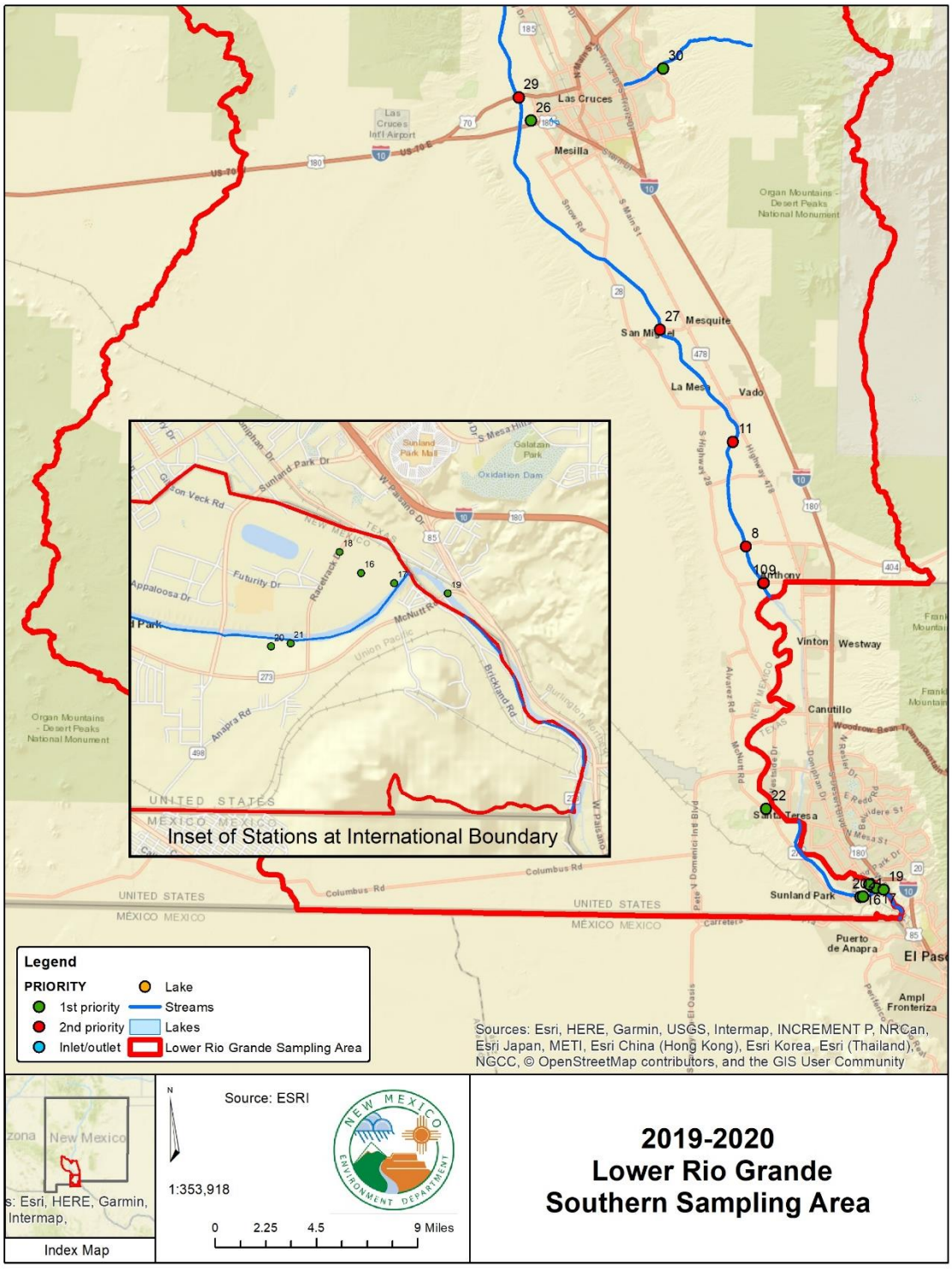


Figure 2.2.2 Lower Rio Grande: southern sampling area and monitoring locations

Table 5.3. Upper Pecos Watershed Survey: Water Quality Stations

Map #	Station Name	Station ID	Assessment Unit	Rationale/Comments
1	Bull Creek above confluence with Cow Creek - 50BullCr000.1	50BullCr000.1	Bull Creek (Cow Creek to headwaters)	TMDL for Temperature
2	Cow Creek above confluence with Bull Creek - 50CowCre023.8	50CowCre023.8	Cow Creek (Bull Creek to headwaters)	AU impaired for Temp, TMDL for Temp/Turbidity
3	Cow Creek at North San Ysidro - 50CowCre011.5	50CowCre011.5	Cow Creek (Pecos River to Bull Creek)	AU impaired for Temp, TMDL for Temp/Turbidity, possible WQS change
4	DALTON CANYON CREEK 20 M WEST OF HWY 63 BRDG - 50Dalton000.1	50Dalton000.1	Dalton Canyon Creek (Perennial prt Pecos R to headwaters)	AI impaired for Specific Conductance, possible WQS change
5	El Porvenir Creek at HWY 65 above the Gallinas - 50ElPorv000.1	50ElPorv000.1	El Porvenir Creek (Gallinas River to SFNF bnd)	AU impaired for Temp
6	El Porvenir Creek at Christian Camp, USGS 08380075 - 50ElPorv004.8	50ElPorv004.8	El Porvenir Creek (SFNF bnd to Hollinger Canyon)	Historic dissolved AL exceedences
7	EL RITO CREEK DOWNSTREAM OF THE SANTA ROSA WWTF - 50ElRito000.2	50ElRito000.2	El Rito (Pecos River to headwaters)	AU impaired for Ammonia/*E. coli*
8	SANTA ROSA WASTEWATER PLANT - NM0024988	NM0024988	El Rito (Pecos River to headwaters)	NPDES permit
9	Falls Cr. at CR A 19A - 50FallsC000.1	50FallsC000.1	Falls Creek (Tecolote Creek to headwaters)	AU impaired for Specific Conductance, possible WQS change
10	Gallinas River at Montezuma, USGS Gage 08380500 - 50Gallin119.7	50Gallin119.7	Gallinas River (Las Vegas Diversion to USFS bnd)	AU impaired for Temp
11	Gallinas River at Grand Avenue - 50Gallin104.8	50Gallin104.8	Gallinas River (Pecos Arroyo to Las Vegas Diversion)	Significant tributary
12	Gallinas River 0.25 mile below Las Vegas WWTF - 50Gallin101.8	50Gallin101.8	Gallinas River (Perennial prt Aguilar Creek to Pecos Arroyo)	AU impaired for Nutrients/Temperature/Turbidity
13	Gallinas River at La Liendre - 50Gallin057.8	50Gallin057.8	Gallinas River (Perennial prt Aguilar Creek to Pecos Arroyo)	AU impaired for Nutrients/Temperature/Turbidity
14	LAS VEGAS, NM WWTP OUTFALL PIPE (MAS) - NM0028827-A	NM0028827-A	Gallinas River (Perennial prt Aguilar Creek to Pecos Arroyo)	NPDES permit
15	Glorieta Creek above Glorieta Conference Center WWTP - 50Glorie014.0	50Glorie014.0	Glorieta Ck (Perennial prt Glorieta CC WWTP to headwaters)	AU impaired for Flow Regime Modification, possible WQS change
16	Glorieta Conference Center/WWTP - NM0028088	NM0028088	Glorieta Ck (Perennial prt Pecos R to Glorieta CC WWTP)	NPDES permit
17	Glorieta Creek above confluence with Pecos River - 50Glorie001.8	50Glorie001.8	Glorieta Ck (Perennial prt Pecos R to Glorieta CC WWTP)	AU impaired for Nutrient/Specific Conductance, possible WQS change
18	HOLY GHOST CR 300M UPSTRM HWY63 BR OVER PECOS R - 50HolyGh000.1	50HolyGh000.1	Holy Ghost Creek (Pecos River to headwaters)	Historic station, significant tributary.
19	Monastery Lake Deep, 40 meters from south end of lake near spillway. Acces - 50MonasteLake	50MonasteLake	Monastery Lake	Unassessed recreational site

Map #	Station Name	Station ID	Assessment Unit	Rationale/Comments
20	PECOS ARROYO ABOVE THE GALLINAS RIVER - 50PecosA000.3	50PecosA000.3	Pecos Arroyo (Gallinas River to headwaters)	AU impaired for *E. coli*
21	Lisboa Springs fish hatchery effluent discharge - NM0030121	NM0030121	Pecos River (Alamitos Canyon to Jack's Creek)	NPDES permit
22	Pecos River at Adelo Property behind Catholic Church in Pecos - 50PecosR772.0	50PecosR772.0	Pecos River (Alamitos Canyon to Jack's Creek)	TMDL for Turbidity
23	Pecos R blw Glorieta Cr	50PecosR763.6	Pecos River (Canon de Manzanita to Alamitos Canyon)	AU impaired for Temp, TMDL for Temp/Turbidity
24	Pecos, Village of/WWTP - NM0029041	NM0029041	Pecos River (Canon de Manzanita to Alamitos Canyon)	NPDES permit
25	Pecos River at South San Ysidro - 50PecosR740.0	50PecosR740.0	Pecos River (Cow Creek to Canon de Manzanita)	Major river, possible WQS change
26	Pecos River at wilderness boundary - 50PecosR806.0	50PecosR806.0	Pecos River (Jack's Creek to headwaters)	Major river, Rio Grande Cut Throat restoration
27	Pecos R @ NM 119 bridge nr Anton Chico - 50PecosR657.3	50PecosR657.3	Pecos River (Santa Rosa Reservoir to Tecolote Creek)	AU impaired for E. coli, possible WQS change
28	Pecos River at gage near Colonias - 50PecosR601.2	50PecosR601.2	Pecos River (Santa Rosa Reservoir to Tecolote Creek)	AU impaired for *E. coli*
29	NMG&FD/Rock Lake Fish Hatchery	NM0030155	Pecos River (Sumner Reservoir to Santa Rosa Reservoir)	NPDES permit
30	PECOS RIVER BELOW SANTA ROSA DAM - 50PecosR575.0	50PecosR575.0	Pecos River (Sumner Reservoir to Santa Rosa Reservoir)	AU impaired for Nutrients, possible WQS change
31	Pecos R at Puerto de Luna - 50Pecos540.8	50Pecos540.8	Pecos River (Sumner Reservoir to Santa Rosa Reservoir)	Lake outlet, AU impaired for Nutrients
32	PECOS RIVER ABOVE CONFLUENCE WITH TECOLOTE CREEK - 50PecosR666.6	50PecosR666.6	Pecos River (Tecolote Creek to Villanueva State Park)	AU impaired for Temp
33	PECOS RIVER BELOW SUMNER DAM AT USGS GAGE - 52PecosR485.0	52PecosR485.0	Pecos River (Truchas Creek to Sumner Reservoir)	Lake outlet only, AU not in survey
34	Pecos abv Villanueva State Park - 50PecosR697.0	50PecosR697.0	Pecos River (Villanueva State Park to Cow Creek)	Major river, bottom of AU
35	Perch Lake (sink hole) - 50PerchLakeDp	50PerchLakeDp	Perch Lake	Unassessed, recreational use
36	RIO MORA AT USGS GAGE 08377900 abv Pecos campground - 50RioMor000.3	50RioMor000.3	Rio Mora (Pecos River to headwaters)	Significant tributary
37	SANTA ROSA L. DP. STA. MIDCHANNEL BUOY AT DAM - 50SantaRLkMid	50SantaRLkMid	Santa Rosa Reservoir	Impaired for Mercury
38	Storrie Inlet	50StorrieIn	Storrie Lake	Lake inlet
39	STORRIE LAKE DEEP 30 YDS W OF DAM, N END - 50StorrieDeep	50StorrieDeep	Storrie Lake	Impaired for Mercury
40	Storrie Outlet	50StorrieOut	Storrie Lake	Lake outlet
41	SUMNER LAKE DAM AT SPILLWAY CANYON OPENING - 50SumnerLkDam	50SumnerLkDam	Sumner Reservoir	Impaired for Mercury
42	TECOLOTE CREEK AT I-25 NEAR TECOLOTE - 50Tecolo041.2	50Tecolo041.2	Tecolote Creek (I-25 to Blue Creek)	AU impaired for Nutrients/Temperature
43	WILLOW CR BLW WHITE DRAIN - 50Willow000.1	50Willow000.1	Willow Creek (Pecos River to headwaters)	AU impaired for Specific Conductance, mine reclamation area

Map #	Station Name	Station ID	Assessment Unit	Rationale/Comments
44	Willow Creek abv Fish Barrier - 50Willow000.6	50Willow000.6	Willow Creek (Pecos River to headwaters)	Historic sedimentation/siltation impairment
45	MCALLISTER LAKE DEEP, 1/3 DISTANCE FROM N SHORE - 50McAllisDeep	50McAllisDeep	McAllister Lake	Impaired for Arsenic

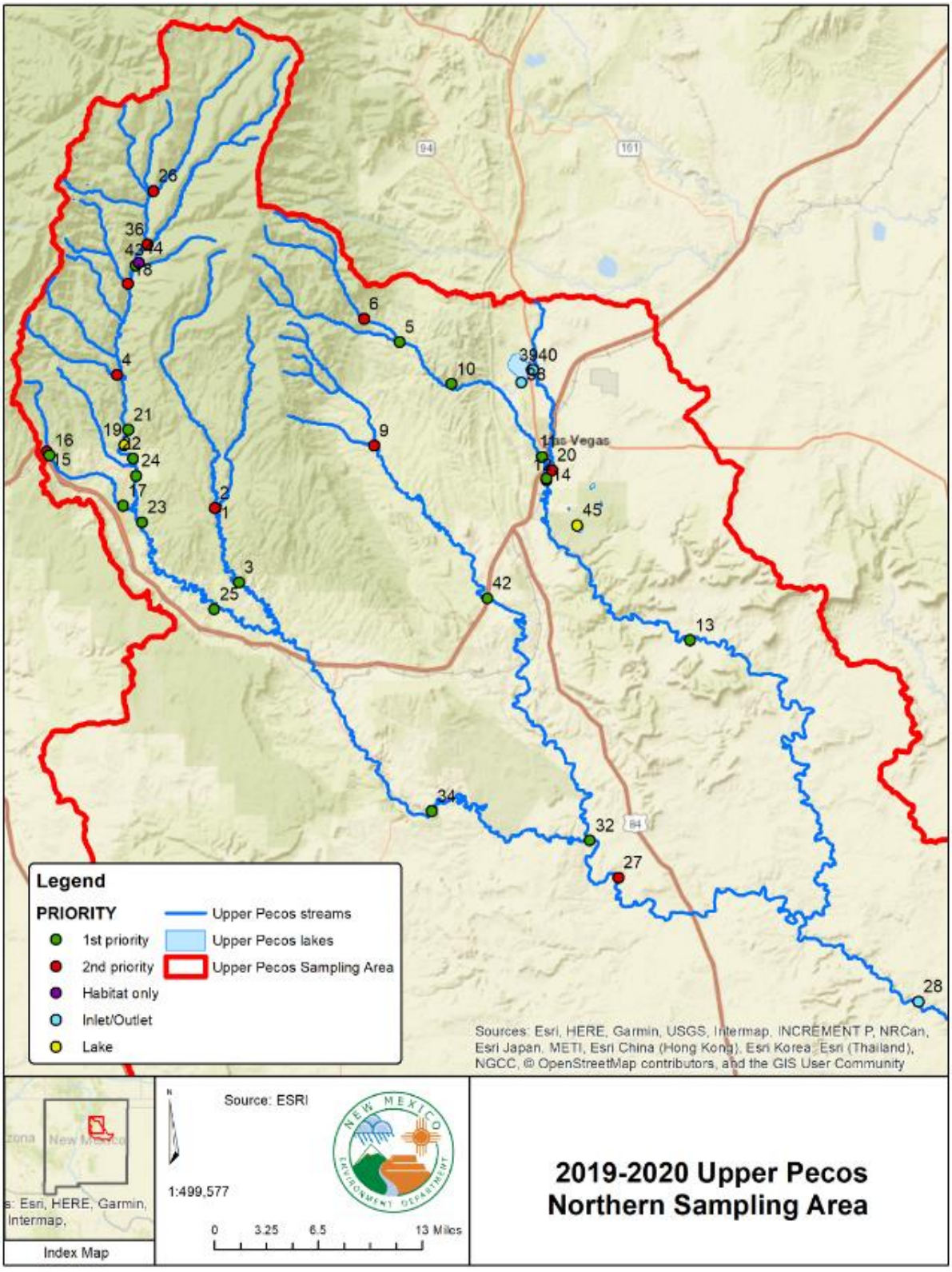


Figure 2.3.1. Upper Pecos River: northern sampling area and monitoring locations

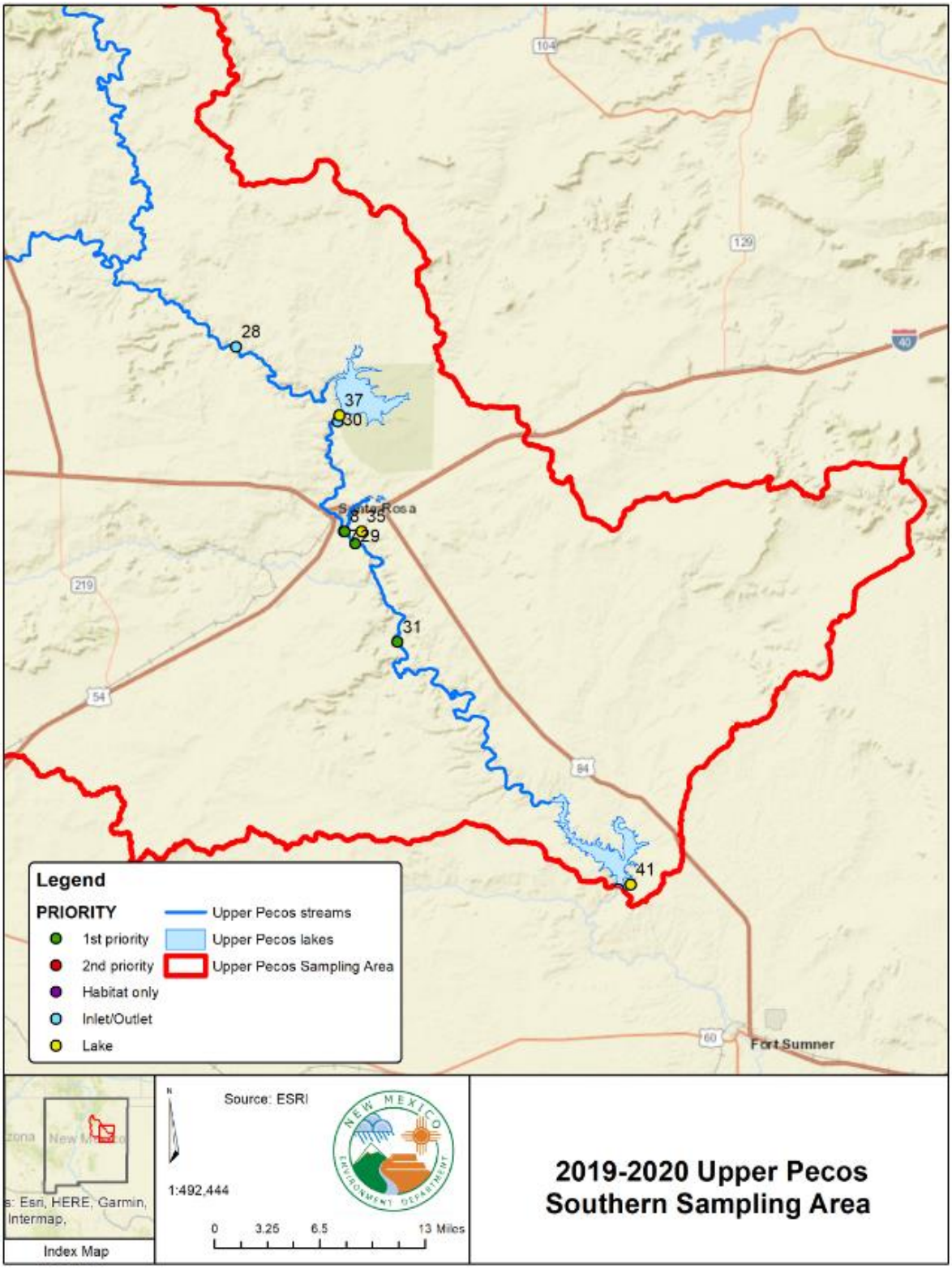


Figure 2.3.2. Upper Pecos River: southern sampling area and monitoring locations

4.0 DOCUMENTATION

Project documents will include this field sampling plan, probable source sheets, calibration records, field sheets (including chemistry, biohabitat, and data logger deployment/retrieval sheets), electronic data logger downloads, data validation and verification records, sample collection data, lab submittal forms, and records of analytical data in hard copy or in electronic form.

Documents will be maintained in accordance with the requirements of the SWQB QAPP for Water Quality Management Programs (NMED/SWQB 2018a).

The survey will be organized into five projects in the SWQB database:

1. Upper Pecos River Survey
2. San Francisco River, Gila River, and Mimbres River Survey
3. Lower Rio Grande Survey
4. 2019 Probabilistic Survey
5. 2020 Probabilistic Survey

Project activities will be documented in SWQB Monitoring Field Sheets. Information from field sheets will be entered into the SWQB database and maintained in the Project Manager's survey files. Analytical results will be electronically transferred into the SWQB database and uploaded to US EPA'S Water Quality Exchange database. The project is to be completed once the Survey Report is finalized.

Narrative descriptions of progress, any plan deviations, issues or corrective actions, throughout the project will be documented in the mid-survey revised FSP and the Survey Report. Any deviations from SOPs and other field, laboratory, and data analysis practices will be presented to the Project Manager and the Quality Assurance Officer for consideration and approval.

5.0 SAMPLING PLAN

5.1 Chemistry Sampling

Water quality samples will be analyzed by the SLD or the SWQB laboratory in accordance with procedures outlined in the SWQB SOPs. Total Persulfate Nitrogen (Method 4500 N-C) will be analyzed by the State of Montana Laboratory Services Bureau. Total Persulfate Nitrogen is an alternative analysis for Total Nitrogen with a lower reporting limit than that available from the total of the TKN and Nitrate+Nitrite analyses performed by SLD. Nutrient samples where high phosphorus are levels are expected, such as WWTPs, will be analyzed using a method with a higher reporting limit.

Tables 6.1 through **6.3** outline the two-year survey targeted monitoring water quality analytes to be measured and their sampling frequency. **Table 6.4** lists the water quality analytes included for probabilistic monitoring.

Chemistry sample analytical suites for each station are planned based on the data needs identified for each assessment unit and to address the most common sources of impairment in lakes and streams. Due to limited resources, not all the water quality criteria listed in 20.6.4.900 NMAC will be sampled at all stations. Radionuclides and volatile/semi-volatile organic compounds will be sampled in major tributaries and lakes. PCBs generally will not be sampled in the water column since these compounds have not been detected at levels of concern in previous water samples for these areas. Assessment units with current or historic metals impairments have received higher numbers of metals samples. Since fish are not a source of E. coli, NPDES discharge samples from fish hatcheries will not include E. coli analysis.

In addition to the analytes listed, field parameters (temperature, specific conductance, salinity, dissolved oxygen concentration, dissolved oxygen saturation, pH, and turbidity) will be measured at each site using a YSI®, In-Situ® or Hydrolab® multi-parameter sonde.

Table 6.1. Gila River, Mimbres River, and San Francisco River Watershed Survey: Water Chemistry Sampling Frequency

Map #	Station Name	Station ID	Assessment Unit	PRIORITY[1]	TDS/TSS	Nutrients[2]	Nutrient (low P)	Total Persulfate N	Total Metals[3]	Dissolved Metals[4]	E.Coli	Volatile Organics[5]	Semi-Volatile	Radionuclides[6]
1	Bear Canyon abv Reservoir	45BearCn001.0	Bear Canyon (Mimbres River to headwaters)	IO	4		4	2	4	4	4			
2	Bear Canyon below Reservoir	45BearCn000.3	Bear Canyon (Mimbres River to headwaters)	IO	4		4	2	4	4	4			
3	Bear Canyon Reservoir	45BearCanyonD	Bear Canyon Reservoir	L	4		4	2	4	4	4	2	2	2
4	Bear Creek on Double E Ranch - 78BearCr011.7	78BearCr011.7	Bear Creek (Gila River nr Cliff to headwaters)	2	4		4	2	4	4	4			
5	Beaver Creek above Taylor Creek - 77Beaver000.1	77Beaver000.1	Beaver Creek (Perennial prt Taylor Ck to Mule Canyon)	2	4		4	2	4	4	4			
6	BILL EVANS LAKE DEEP NEAR DAM - 78BillEvansDP	78BillEvansDP	Bill Evans Lake	L	4		4	2	4	4	4	2	2	2
7	BLACK CNY CREEK AT LOWER BLACK CNY CAMPGROUND - 77BlackC016.5	77BlackC016.5	Black Canyon Creek (East Fork Gila River to headwaters)	*										

Map #	Station Name	Station ID	Assessment Unit	PRIORITY[1]	TDS/TSS	Nutrients[2]	Nutrient (low P)	Total Persulfate N	Total Metals[3]	Dissolved Metals[4]	E.Coli	Volatile Organics[5]	Semi-Volatile	Radionuclides[6]
8	Blue Creek 0.5 mile abv Gila River - 78BlueCr000.9	78BlueCr000.9	Blue Creek (Gila River to headwaters)	2										
9	Canyon Creek - 77Canyon007.5	77Canyon007.5	Canyon Creek (Middle Fork Gila River to headwaters)	2	4		4	2	4	4	4			
10	Centerfire Creek abv San Francisco River - 80Center002.1	80Center002.1	Centerfire Creek (San Francisco R to headwaters)	1	8		8	6	6	6	8			
11	Cold Springs abv Mimbres - 45ColdSp009.3	45ColdSp009.3	Cold Springs Creek (Hot Springs Creek to headwaters)	2	4		4	2	4	4	4			
12	Dry Blue Creek abv Pace Creek - 80DryBlu008.0	80DryBlu008.0	Dry Blue Creek (AZ bnd to headwaters)	2	4		4	2	4	4	4			
13	East Fork Gila above West Fork - 77EFkGil000.2	77EFkGil000.2	East Fork Gila River (Gila River to headwaters)	2	4		4	2	4	4	4			
14	Gallinas Creek at Lower Gallinas Camground near Hwy 152 - 45Gallin021.5	45Gallin021.5	Gallinas Creek (Mimbres River to headwaters)	1	8		8	6	6	6	8			
15	GILA RIVER AT NM 92 BRIDGE - 78GilaRi011.5	78GilaRi011.5	Gila River (AZ border to Red Rock)	2	4		4	2	4	4	4	2	2	2
16	Gila River above Mangas Creek - 78GilaRi073.5	78GilaRi073.5	Gila River (Mangas Creek to Mogollon Creek)	2	4		4	2	4	4	4			
17	Gila River above Mogollon Cr- 77GilaRi101.4	77GilaRi101.4	Gila River (Mogollon Ck to East and West Forks of Gila R)	2	4		4	2	4	4	4			
18	Gila R @ Patton Rd bridge in Redrock - 78GilaRi041.8	78GilaRi041.8	Gila River (Red Rock to Mangas Creek)	1	8		8	6	6	6	8			
19	Gilita Creek above Snow Canyon Creek - 77Gilita000.2	77Gilita000.2	Gilita Creek (Middle Fork Gila R to Willow Creek)	2	4		4	2	4	4	4			
20	Gilita Cr abv Willow Cr - 77Gilita010.3	77Gilita010.3	Gilita Creek (Perennial reaches abv Willow Creek)	2	4		4	2	4	4	4			

Map #	Station Name	Station ID	Assessment Unit	PRIORITY[1]	TDS/TSS	Nutrients[2]	Nutrient (low P)	Total Persulfate N	Total Metals[3]	Dissolved Metals[4]	E.Coli	Volatile Organics[5]	Semi-Volatile	Radionuclides[6]
21	IRON CREEK AT FOREST TRAIL 151 - 77IronCr009.7	77IronCr009.7	Iron Creek (Middle Fork Gila R to headwaters)	*										
22	LAKE ROBERTS at dam - 77LRobertsDam	77LRobertsDam	Lake Roberts	L	4		4	2	4	4	4	2	2	2
23	Little Cr abv W Fk Gila - 77Little000.1	77Little000.1	Little Creek (West Fork Gila River to headwaters)	2	4		4	2	4	4	4			
24	Mangas Creek above Gila River (Forest Road 809) - 78Mangas000.7	78Mangas000.7	Mangas Creek (Gila River to Mangas Springs)	1	8		8	6	6	6	8			
25	Middle Fork Gila above Iron Creek - 77MFkGil049.0	77MFkGil049.0	Middle Fork Gila River (Canyon Creek to headwaters)	*	4		4	2	4	4	4			
26	Middle Fork Gila above West Fork - 77MFkGil000.1	77MFkGil000.1	Middle Fork Gila River (West Fork Gila R to Canyon Creek)	2	4		4	2	4	4	4			
27	Mimbres River at upper TNC - 45Mimbre112.2	45Mimbre112.2	Mimbres R (Perennial reaches Allie Canyon to Cooney Cny)	2	4		4	2	4	4	4			
28	Mimbres below Dwyer at Rancho del Rio - 45Mimbre062.7	45Mimbre062.7	Mimbres R (Perennial reaches downstream of Allie Canyon)	2	4		4	2	4	4	4			
29	Mule Cr blw NM 78 - 80MuleCr014.5	80MuleCr014.5	Mule Creek (San Francisco R to Mule Springs)	1	8		8	6	6	6	8			
30	Negrito Creek above Tularosa River - 80Negrit000.1	80Negrit000.1	Negrito Creek (Tularosa River to confl of N and S forks)	*										
31	North Fork Negrito Creek abv South Fork Negrito Creek - 80NNegri000.1	80NNegri000.1	North Fork Negrito Creek (Negrito Creek to headwaters)	2	4		4	2	4	4	4			
32	San Francisco River below Glenwood at Hot Springs - 80SanFra028.6	80SanFra028.6	San Francisco River (Box Canyon to Whitewater Creek)	1	8		8	6	6	6	8	2	2	2

Map #	Station Name	Station ID	Assessment Unit	PRIORITY[1]	TDS/TSS	Nutrients[2]	Nutrient (low P)	Total Persulfate N	Total Metals[3]	Dissolved Metals[4]	E.Coli	Volatile Organics[5]	Semi-Volatile	Radionuclides[6]
33	San Francisco R blw Luna - 80SanFra144.9	80SanFra144.9	San Francisco River (Centerfire Creek to AZ border)	1	8		8	6	6	6	8			
34	San Franicisco R @ Cienega Cyn - 80SanFra117.9	80SanFra117.9	San Francisco River (NM 12 at Reserve to Centerfire Creek)	1	8		8	6	6	6	8			
35	San Francisco River abv Pueblo Creek - 80SanFra061.0	80SanFra061.0	San Francisco River (Pueblo Ck to Willow Springs Cyn)	2	4		4	2	4	4	4			
36	San Francisco River at Alma Bridge - 80SanFra048.8	80SanFra048.8	San Francisco River (Whitewater Ck to Pueblo Ck)	2	4		4	2	4	4	4			
37	Reserve WWTP - NM0024163	NM0024163	San Francisco River (Willow Springs Cyn to NM 12 at Reserve)	1	8	8					8			
38	San Francisco River below Reserve - 80SanFra105.7	80SanFra105.7	San Francisco River (Willow Springs Cyn to NM 12 at Reserve)	2	4		4	2	4	4	4			
39	San Vicente Arroyo at Ancheta Mill - 45SanVic053.9	45SanVic053.9	San Vicente Creek (Perennial prt Maudes Cny to Silva Creek)	1	8		8	6	6	6	8			
40	SILVER CITY WASTEWATER PLANT - NM0020109	NM0020109	San Vicente Creek (Perennial prt Maudes Cny to Silva Creek)	1	8	8					8			
41	Sapillo Creek at Wilderness Boundary - 77Sapill012.0	77Sapill012.0	Sapillo Creek (Gila River to Lake Roberts)	2	4		4	2	4	4	4			
42	Snow Canyon Creek above Gilita Creek - 77SnowCa000.2	77SnowCa000.2	Snow Canyon Ck (Perennial prt Gilita Ck to Snow Lake)	2	4		4	2	4	4	4			
43	Snow Lake at Dam (Deep) - 77SnowLkDamDp	77SnowLkDamDp	Snow Lake	L	4		4	2	4	4	4	2	2	2
44	South Negrito Creek - 80SNegri000.1	80SNegri000.1	South Fork Negrito Creek (Negrito Creek to headwaters)	2	4		4	2	4	4	4			

Map #	Station Name	Station ID	Assessment Unit	PRIORITY[1]	TDS/TSS	Nutrients[2]	Nutrient (low P)	Total Persulfate N	Total Metals[3]	Dissolved Metals[4]	E.Coli	Volatile Organics[5]	Semi-Volatile	Radionuclides[6]
45	Stone Creek abv San Francisco R - 80StoneC000.1	80StoneC000.1	Stone Creek (San Francisco R to AZ border)	2	4		4	2	4	4	4			
46	Taylor Creek above Beaver Creek - 77Taylor000.1	77Taylor000.1	Taylor Creek (Perennial reaches Beaver Creek to headwaters)	1	8		8	6	6	6	8			
47	Trout Creek near FR 220 - 80Trout009.4	80TroutC009.4	Trout Creek (Perennial prt San Francisco R to headwaters)	*										
48	Tularosa River abv Aragon at USGS gage 9442692 - 80Tularo050.8	80Tularo050.8	Tularosa River (Apache Creek to headwaters)	2	4		4	2	4	4	4			
49	Tularosa River above San Francisco River - 80Tularo001.3	80Tularo001.3	Tularosa River (San Francisco R to Apache Creek)	1	8		8	6	6	6	8			
50	Turkey Creek (at Wilderness Boundary Forest Trail 155) - 77Turkey001.8	77Turkey001.8	Turkey Creek (Gila River to headwaters)	*										
51	West Fork Gila above East Fork - 77WFkGil000.1	77WFkGil000.1	West Fork Gila R (East Fork to Middle Fork)	2	4		4	2	4	4	4			
52	WEST FORK GILA RIVER ABOVE MIDDLE FORK GILA - 77WFkGil008.0	77WFkGil008.0	West Fork Gila R (Middle Fork to headwaters)	2	4		4	2	4	4	4			
53	Bayard, Village of/WWTP	NM0020231	Whitewater Creek (Mimbres River to headwaters)	*										
54	NMG&FD/Glenwood Fish Hatchery-002	NM0030163 - 002	Whitewater Creek (San Francisco R to Whitewater Campgrd)	*										
55	Whitewater Creek at Glenwood above San Francisco River - 80Whitew000.5	80Whitew000.5	Whitewater Creek (San Francisco R to Whitewater Campgrd)	1	8		8	6	6	6	8			
56	NMG&FD/Glenwood Fish Hatchery-001	NM0030163 - 001	Whitewater Creek (San Francisco R to Whitewater Campgrd)	1	8	8								

Map #	Station Name	Station ID	Assessment Unit	PRIORITY[1]	TDS/TSS	Nutrients[2]	Nutrient (low P)	Total Persulfate N	Total Metals[3]	Dissolved Metals[4]	E.Coli	Volatile Organics[5]	Semi-Volatile	Radionuclides[6]
57	Whitewater Creek abv campground - 80WhiteW008.8	80WhiteW008.8	Whitewater Creek (Whitewater Campgrd to headwaters)	1	8		8	6	6	6	8			
58	Willow Creek above Gilita Creek - 77Willow000.1	77Willow000.1	Willow Creek (Gilita Creek to headwaters)	1	8		8	6	6	6	8			
	Quality Control		Blanks Collected per QAPP		28	3	28	16		23	27	4		
	Total				292	27	268	164	212	235	283	16	12	12

[1]Priority rankings: 1 are highest priorities, and 2 the lowest. "L" are lake stations; "IO" are lake inlets or outlets.
[2]Suite includes total Kjeldahl nitrogen, nitrate+nitrite, ammonia and total phosphorus. QC blanks are collected with the "Nutrients (low P)" suite.
[3] Suite includes aluminum, mercury, selenium
[4]Suite includes aluminum, antimony, arsenic, barium, boron, beryllium, calcium, cadmium, chromium, cobalt, copper, lead, manganese, molybdenum, mercury, magnesium, nickel, selenium, silicon, silver, thallium, tin, uranium, vanadium and zinc.
[5]See Appendix B for a complete list of analytes.
[6]A radionuclide sample will include gross alpha and gross beta. If alpha and/or beta particles are detected, Uranium mass and Radium 226 + 228 will also be analyzed.
* No chemistry sampling is planned at the station.

Table 6.2. Lower Rio Grande Watershed Survey: Water Chemistry Sampling Frequency

Map #	Station Name	Station ID	Assessment Unit	PRIORITY[1]	TDS/TSS/SO^{4-}/Cl^{-}	Nutrients[2]	Nutrient (low P)	Total Persulfate N	Total Metals[3]	Dissolved Metals[4]	*E. coli*	Volatile Organics[5]	Semi-Volatile Organics[5]	Radionuclides[6]
1	CABALLO LAKE AT DAM DEEP - 41CaballoLkDam	41CaballoLkDam	Caballo Reservoir	L	4		4	2	4	4	4	2	2	2
2	Sierra County Regional WWTP - NM0030864	NM0030864	Cuchillo Negro Creek (Rio Grande to Willow Spring Draw)	2	4	4					4			
3	E BUTTE AT DAM - 40EButteReDam	40EButteReDam	Elephant Butte Reservoir	L	4		4	2	4	4	4	2	2	2
4	Las Animas Cr abv Animas Gulch	41LAnima020.0	Las Animas Ck (perennial prt Animas Gulch to headwaters)	2	4		4	2			4			
5	Las Animas Cr at Animas Rd Ford - 41LAnima009.0	41LAnima009.0	Las Animas Ck (perennial prt R Grande to Animas Gulch)	2	4		4	2			4			
6	Palomas Cr abv Diversion	41Paloma027.9	Palomas Creek (perennial portion R Grande to headwaters)	2	4		4	2			4			

Map #	Station Name	Station ID	Assessment Unit	PRIORITY[1]	TDS/TSS/SO^{4-}/Cl^{-}	Nutrients[2]	Nutrient (low P)	Total Persulfate N	Total Metals[3]	Dissolved Metals[4]	*E. coli*	Volatile Organics[5]	Semi-Volatile Organics[5]	Radionuclides[6]
7	Percha Creek at Percha Box - 41Percha025.3	41Percha025.3	Percha Ck (Perennial prt Wicks Gulch to Middle Percha Ck)	2	4		4	2			4			
8	ANTHONY WATER AND SANITATION - NM0029629	NM0029629	Rio Grande (Anthony Bridge to NM192 bridge W of Mesquite)	2	4	4					4			
9	Gadsden Independent School District - NM0028487	NM0028487	Rio Grande (Anthony Bridge to NM192 bridge W of Mesquite)	2	4	4					4			
10	RIO GRANDE AT NM-225 BRIDGE NR ANTHONY, NM - 42RGrand030.8	42RGrand030.8	Rio Grande (Anthony Bridge to NM192 bridge W of Mesquite)	2	4		4	2			4			
11	South Central Regional WWTP - NM0030490	NM0030490	Rio Grande (Anthony Bridge to NM192 bridge W of Mesquite)	1	8	8			8	8	8	2	2	
12	RIO GRANDE ABOVE CABALLO LAKE - 41RGrand196.6	41RGrand196.6	Rio Grande (Caballo Reservoir to Elephant Butte Reservoir)	1	8		8	6			8			
13	RIO GRANDE BELOW E. BUTTE DAM AT USGS GAGE - 41RGrand217.5	41RGrand217.5	Rio Grande (Caballo Reservoir to Elephant Butte Reservoir)	IO	4		4	2	4	4	4			
14	T OR C WASTEWATER TREATMENT PLANT DISCHARGE - NM0020681	NM0020681-C	Rio Grande (Caballo Reservoir to Elephant Butte Reservoir)	1	8	8			8	8	8			
15	Rio Grande above E Butte - 40RGrand264.0	40RGrand264.0	Rio Grande (Elephant Butte Rsvr to San Marcial at USGS)	L	4		4	2	4	4	4			
16	El Paso Electric Co. Outfall No. 2 - NM0000108-2	NM0000108-2	Rio Grande (International Mexico bnd to Anthony Bridge)	1	8				8	8				
17	El Paso Electric Co. Outfall No.1 - NM0000108-1	NM0000108-1	Rio Grande (International Mexico bnd to Anthony Bridge)	*										
18	Montoya Drain at Racetrack Dr. - 42Montoy000.7	42Montoy000.7	Rio Grande (International Mexico bnd to Anthony Bridge)	1	8		8		8	8	8	4	4	4
19	RIO GRANDE AT CORCHESNE BRIDGE-42RGrand002.7[7]	42RGrand002.7	Rio Grande (International Mexico bnd to Anthony Bridge)	1	8		8	6	8	8	8	4	4	4
20	RIO GRANDE AT SUNLAND PARK BRIDGE - 42RGrand004.3	42RGrand004.3	Rio Grande (International Mexico bnd to Anthony Bridge)	1	8	8			8	8	8	2	2	2
21	Sunland Park WWTP effluent - NM0029483	NM0029483-C	Rio Grande (International Mexico bnd to Anthony Bridge)	1	8	8			8	8	8			

Map #	Station Name	Station ID	Assessment Unit	PRIORITY[1]	TDS/TSS/SO^{4-}/Cl^{-}	Nutrients[2]	Nutrient (low P)	Total Persulfate N	Total Metals[3]	Dissolved Metals[4]	*E. coli*	Volatile Organics[5]	Semi-Volatile Organics[5]	Radionuclides[6]
22	Sunland Park North WWTP effluent	NM0031178	Rio Grande (International Mexico bnd to Anthony Bridge)	1	8	8			8	8	8	2	2	
23	HATCH WASTEWATER PLANT - NM0020010	NM0020010	Rio Grande (Leasburg Dam to one mile below Percha Dam)	2	4	4					4			
24	Rio Grande at Leasburg Dam, NM - 42RGrand099.8	42RGrand099.8	Rio Grande (Leasburg Dam to one mile below Percha Dam)	2	4		4	2			4			
25	Salem WWTP - NM0030457	NM0030457	Rio Grande (Leasburg Dam to one mile below Percha Dam)	2	4	4					4			
26	LAS CRUCES WASTEWATER PLANT - NM0023311	NM0023311	Rio Grande (NM192 bridge W of Mesquite to Picacho Bridge)	1	8	8			8	8	8	2	2	
27	Rio Grande @ NM 192 nr Mesquite	42RGrand052.2	Rio Grande (NM192 bridge W of Mesquite to Picacho Bridge)	2	4		4	2			4			
28	RIO GRANDE BLW CABALLO DAM,NM - 42RGrand171.9	42RGrand171.9	Rio Grande (one mile below Percha Dam to Caballo Reservoir)	L	4		4	2	4	4	4			
29	RIO GRANDE AT PICACHO AVE IN LAS CRUCES - 42RGrand073.5	42RGrand073.5	Rio Grande (Picacho Bridge to Leasburg Dam)	2	4		4	2			4			
30	Las Cruces, City of/East Mesa Water Reclamation Facility	NM0030872	South Fork Las Cruces Arroyo (Las Cruces Arroyo to hdwtrs)	1	8	8			8	8	8	2	2	
	Quality control		Blanks Collected per QAPP		17	8	8	4		11	16	4		
Totals					177	84	84	42	100	111	168	26	22	14

[1]Priority rankings: 1 are highest priorities, and 2 the lowest. "L" are lake stations; "IO" are lake inlets or outlets.
[2]Suite includes total Kjeldahl nitrogen, nitrate+nitrite, ammonia and total phosphorus. QC blanks are collected with the "Nutrients (low P)" suite.
[3] Suite includes aluminum, mercury, selenium
[4]Suite includes aluminum, antimony, arsenic, barium, boron, beryllium, calcium, cadmium, chromium, cobalt, copper, lead, manganese, molybdenum, mercury, magnesium, nickel, selenium, silicon, silver, thallium, tin, uranium, vanadium and zinc.
[5]See Appendix B for a complete list of analytes.
[6]A radionuclide sample will include gross alpha and gross beta. If alpha and/or beta particles are detected, Uranium mass and Radium 226 + 228 will also be analyzed.
[7]One PCB sample will be collected at this site.
* No chemistry sampling is planned at the station.

Table 6.3. Upper Pecos Watershed Survey: Water Chemistry Sampling Frequency

Map #	Station Name	Station ID	Assessment Unit	PRIORITY[1]	TDS/TSS/SO^{4-}/Cl^{-}	Nutrients[2]	Nutrient (low P)	Total Persulfate N	Total Metals[3]	Dissolved Metals[4]	*E. coli*	Volatile Organics[5]	Semi-Volatile Organics[5]	Radionuclides[6]
1	Bull Creek above confluence with Cow Creek - 50BullCr000.1	50BullCr000.1	Bull Creek (Cow Creek to headwaters)	2	4		4	2	4	4	4			
2	Cow Creek above confluence with Bull Creek - 50CowCre023.8	50CowCre023.8	Cow Creek (Bull Creek to headwaters)	2	4		4	2	4	4	4			
3	Cow Creek at North San Ysidro - 50CowCre011.5	50CowCre011.5	Cow Creek (Pecos River to Bull Creek)	1	8		8	6	6	6	8			
4	DALTON CANYON CREEK 20 M WEST OF HWY 63 BRDG - 50Dalton000.1	50Dalton000.1	Dalton Canyon Creek (Perennial prt Pecos R to headwaters)	2	4		4	2	4	4	4			
5	El Porvenir Creek at HWY 65 above the Gallinas - 50ElPorv000.1	50ElPorv000.1	El Porvenir Creek (Gallinas River to SFNF bnd)	1	8		8	6	6	6	8			
6	El Porvenir Creek at Christian Camp, USGS 08380075 - 50ElPorv004.8	50ElPorv004.8	El Porvenir Creek (SFNF bnd to Hollinger Canyon)	2	4		4	2	4	4	4			
7	EL RITO CREEK DOWNSTREAM OF THE SANTA ROSA WWTF - 50ElRito000.2	50ElRito000.2	El Rito (Pecos River to headwaters)	1	8		8	6	6	6	8			
8	SANTA ROSA WASTEWATER PLANT - NM0024988	NM0024988	El Rito (Pecos River to headwaters)	1	8	8					8			
9	Falls Cr. at CR A 19A - 50FallsC000.1	50FallsC000.1	Falls Creek (Tecolote Creek to headwaters)	2	4		4	2	4	4	4			
10	Gallinas River at Montezuma, USGS Gage 08380500 - 50Gallin119.7	50Gallin119.7	Gallinas River (Las Vegas Diversion to USFS bnd)	1	8		8	6	6	6	8			
11	Gallinas River at Grand Avenue - 50Gallin104.8	50Gallin104.8	Gallinas River (Pecos Arroyo to Las Vegas Diversion)	1	8		8	6	6	6	8			
12	Gallinas River 0.25 mile below Las Vegas WWTF - 50Gallin101.8	50Gallin101.8	Gallinas River (Perennial prt Aguilar Creek to Pecos Arroyo)	1	8		8	6	6	6	8			
13	Gallinas River at La Liendre - 50Gallin057.8	50Gallin057.8	Gallinas River (Perennial prt Aguilar Creek to Pecos Arroyo)	1	8		8	6	6	6	8	2	2	2
14	LAS VEGAS, NM WWTP OUTFALL PIPE (MAS) - NM0028827-A	NM0028827-A	Gallinas River (Perennial prt Aguilar Creek to Pecos Arroyo)	1	8	8			6	6	8			
15	Glorieta Creek above Glorieta Conference Center WWTP - 50Glorie014.0	50Glorie014.0	Glorieta Ck (Perennial prt Glorieta CC WWTP to headwaters)	2	4		4	2	4	4	4			
16	Glorieta Conference Center/WWTP - NM0028088	NM0028088	Glorieta Ck (Perennial prt Pecos R to Glorieta CC WWTP)	1	8	8					8			

Map #	Station Name	Station ID	Assessment Unit	PRIORITY[1]	TDS/TSS/SO^{4-}/Cl^{-}	Nutrients[2]	Nutrient (low P)	Total Persulfate N	Total Metals[3]	Dissolved Metals[4]	*E. coli*	Volatile Organics[5]	Semi-Volatile Organics[5]	Radionuclides[6]
17	Glorieta Creek above confluence with Pecos River - 50Glorie001.8	50Glorie001.8	Glorieta Ck (Perennial prt Pecos R to Glorieta CC WWTP)	1	8		8	6	6	6	8			
18	HOLY GHOST CR 300M UPSTRM HWY63 BR OVER PECOS R - 50HolyGh000.1	50HolyGh000.1	Holy Ghost Creek (Pecos River to headwaters)	2	4		4	2	4	4	4			
19	Monastery Lake Deep, 40 meters from south end of lake - 50MonasteLake	50MonasteLake	Monastery Lake	L	4		4	2	4	4	4	2	2	2
20	PECOS ARROYO ABOVE THE GALLINAS RIVER - 50PecosA000.3	50PecosA000.3	Pecos Arroyo (Gallinas River to headwaters)	2	4		4	2	4	4	4			
21	Lisboa Springs fish hatchery effluent discharge - NM0030121	NM0030121	Pecos River (Alamitos Canyon to Jack's Creek)	1	8	8								
22	Pecos River at Adelo Property behind Catholic Church in Pecos - 50PecosR772.0	50PecosR772.0	Pecos River (Alamitos Canyon to Jack's Creek)	1	8		8	6	6	6	8			
23	Pecos R blw Glorieta Cr	50PecosR763.6	Pecos River (Canon de Manzanita to Alamitos Canyon)	1	8		8	6	6	6	8			
24	Pecos, Village of/WWTP - NM0029041	NM0029041	Pecos River (Canon de Manzanita to Alamitos Canyon)	1	8	8					8			
25	Pecos River at South San Ysidro - 50PecosR740.0	50PecosR740.0	Pecos River (Cow Creek to Canon de Manzanita)	1	8		8	6	6	6	8			
26	Pecos River at wilderness boundary - 50PecosR806.0	50PecosR806.0	Pecos River (Jack's Creek to headwaters)	2	4		4	2	4	4	4			
27	Pecos R @ NM 119 bridge nr Anton Chico - 50PecosR657.3	50PecosR657.3	Pecos River (Santa Rosa Reservoir to Tecolote Creek)	2	4		4	2	4	4	4			
28	Pecos River at gage near Colonias - 50PecosR601.2	50PecosR601.2	Pecos River (Santa Rosa Reservoir to Tecolote Creek)	IO	4		4	2	4	4	4	2	2	2
29	NMG&FD/Rock Lake Fish Hatchery	NM0030155	Pecos River (Sumner Reservoir to Santa Rosa Reservoir)	1	8	8			6	6				
30	PECOS RIVER BELOW SANTA ROSA DAM - 50PecosR575.0	50PecosR575.0	Pecos River (Sumner Reservoir to Santa Rosa Reservoir)	IO	4		4	2	4	4	4			
31	Pecos R at Puerto de Luna - 50Pecos540.8	50Pecos540.8	Pecos River (Sumner Reservoir to Santa Rosa Reservoir)	1	8		8	6	6	6	8			
32	PECOS RIVER ABOVE CONFLUENCE WITH TECOLOTE CREEK - 50PecosR666.6	50PecosR666.6	Pecos River (Tecolote Creek to Villanueva State Park)	1	8		8	6	6	6	8			

Map #	Station Name	Station ID	Assessment Unit	PRIORITY[1]	TDS/TSS/SO^{4-}/Cl^{-}	Nutrients[2]	Nutrient (low P)	Total Persulfate N	Total Metals[3]	Dissolved Metals[4]	*E. coli*	Volatile Organics[5]	Semi-Volatile Organics[5]	Radionuclides[6]
33	PECOS RIVER BELOW SUMNER DAM AT USGS GAGE - 52PecosR485.0	52PecosR485.0	Pecos River (Truchas Creek to Sumner Reservoir)	IO	4		4	2	4	4	4			
34	Pecos abv Villanueva State Park - 50PecosR697.0	50PecosR697.0	Pecos River (Villanueva State Park to Cow Creek)	1	8		8	6	6	6	8			
35	Perch Lake (sink hole) - 50PerchLakeDp	50PerchLakeDp	Perch Lake	L	4		4	2	4	4	4	2	2	2
36	RIO MORA AT USGS GAGE 08377900 abv Pecos campground - 50RioMor000.3	50RioMor000.3	Rio Mora (Pecos River to headwaters)	2	4		4	2	4	4	4			
37	SANTA ROSA L. DP. STA. MIDCHANNEL BUOY AT DAM - 50SantaRLkMid	50SantaRLkMid	Santa Rosa Reservoir	L	4		4	2	4	4	4	2	2	2
38	Storrie Inlet	50StorrieIn	Storrie Lake	IO	4		4	2	4	4	4			
39	STORRIE LAKE DEEP 30 YDS W OF DAM, N END - 50StorrieDeep	50StorrieDeep	Storrie Lake	L	4		4	2	4	4	4	2	2	2
40	Storrie Outlet	50StorrieOut	Storrie Lake	IO	4		4	2	4	4	4			
41	SUMNER LAKE DAM AT SPILLWAY CANYON OPENING - 50SumnerLkDam	50SumnerLkDam	Sumner Reservoir	L	4		4	2	4	4	4	2	2	2
42	TECOLOTE CREEK AT I-25 NEAR TECOLOTE - 50Tecolo041.2	50Tecolo041.2	Tecolote Creek (I-25 to Blue Creek)	1	8		8	6	6	6	8			
43	WILLOW CR BLW WHITE DRAIN - 50Willow000.1	50Willow000.1	Willow Creek (Pecos River to headwaters)	1	8		8	6	6	6	8			
44	Willow Creek abv Fish Barrier - 50Willow000.6	50Willow000.6	Willow Creek (Pecos River to headwaters)	H										
45	MCALLISTER LAKE DEEP, 1/3 DISTANCE FROM N SHORE - 50McAllisDeep	50McAllisDeep	McAllister Lake	L*										
	Quality control		Blanks Collected per QAPP		26		22	14		20	25	4		
Totals					286	48	234	152	192	212	269	18	14	14

[1]Priority rankings: 1 are highest priorities, and 2 the lowest. "L" are lake stations; "IO" are lake inlets or outlets.

[2]Suite includes total Kjeldahl nitrogen, nitrate+nitrite, ammonia and total phosphorus. QC blanks are collected with the "Nutrients (low P)" suite.

[3] Suite includes aluminum, mercury, selenium

[4]Suite includes aluminum, antimony, arsenic, barium, boron, beryllium, calcium, cadmium, chromium, cobalt, copper, lead, manganese, molybdenum, mercury, magnesium, nickel, selenium, silicon, silver, thallium, tin, uranium, vanadium and zinc.

[5]See Appendix B for a complete list of analytes.

[6]A radionuclide sample will include gross alpha and gross beta. If alpha and/or beta particles are detected, Uranium mass and Radium 226 + 228 will also be analyzed.

* No chemistry sampling is planned at the station.

Table 6.4. Probabilistic Monitoring: Water Chemistry Sampling Summary

Probabilistic Monitoring Watershed(s)	TDS/TSS SO^{4-}/Cl^{-}	Nutrients (low P)	Total Persulfate N	Total Metals[1]	Dissolved Metals[2]	*E. Coli*
Upper Pecos 2019	30	30	30	30	30	30
Gila, Mimbres, San Francisco, & Lower Rio Grande 2020	30	30	30	30	30	30
Quality Control Blanks per QAPP	6	6	6	0	6	6
Totals	66	66	66	60	66	66

[1] Suite includes aluminum, mercury, selenium

[2] Suite includes aluminum, antimony, arsenic, barium, boron, beryllium, calcium, cadmium, chromium, cobalt, copper, lead, manganese, molybdenum, mercury, magnesium, nickel, selenium, silicon, silver, thallium, tin, uranium, vanadium and zinc.

5.2 Physical Habitat, Biological Sampling, and Datalogger Deployment

Measuring biological response indicators concurrent to physical habitat and chemistry gives an overall interpretation of the biological integrity of the reach represented. These measurements also provide further information such as; characteristics of sediment and nutrients currently cycling through the stream and potential sources of water quality stress.

SWQB currently collects fish, periphyton, macroinvertebrates and physical habitat data at select sites to assess waterbodies for potential impairment from increased temperatures, sediment deposition, nutrient enrichment, and toxic pollutants.

Sampling methods will be conducted in accordance with the SWQB SOPs. Biological sampling is conducted within a biological index period for appropriate comparability of samples and life history requirements.

Sondes and data loggers will be deployed at select sites in the stream for a minimum of 7 days to record specific conductance, dissolved oxygen, turbidity, or pH fluctuations. Thermographs (data logging thermometers) are deployed from May through September in targeted AUs throughout the survey to measure temperature fluctuations.

Resources, site access, and other issues do not allow for the deployment of datalogging instruments or collection of biological and habitat data at every AU. Stations are selected for biological and physical habitat monitoring based on 1) current IR status, 2) results from nutrient, sediment, and temperature data, 3) observations of the surrounding land use including upland and riparian habitat conditions, and results of the Probable Source Field Sheet. Additional sites

determined to be in "reference" or "best available condition" will also be selected for biological and physical monitoring for inclusion in development and refinement of biological and habitat criteria. Flow, physical habitat, and macroinvertebrate sampling will be conducted at all probabilistic monitoring locations. **Tables 7.1** through **7.4** summarize the biological and habitat sampling that is planned for this survey.

Sampling of Chlorophyll *a*, periphyton-diatoms, and sonde/DO/conductivity logger deployments described in **Tables 7.1** through **7.4** are planned in accordance with the current 2017 CALM (NMED/SWQB 2017). Revision of the CALM in 2019 may lead to changes in sampling methods or the sampling schedule. Any resulting changes to the FSP will be documented in the 2020 revision of this FSP or in the survey report.

Table 7.1. Gila, Mimbres, and San Francisco Watersheds: Biological and Habitat Sampling

Map #	Station Name	Station ID	Assessment Unit	Priority	Sonde/DO/Cond [2,8]	Thermograph	Flow[8]	Physical Habitat[5,6]	Chlorophyll a	Phytonplakton	Periphyton-diatoms	Macro-invertrebrates	Fish
1	Bear Canyon abv Reservoir	45BearCn001.0	Bear Canyon (Mimbres River to headwaters)	IO		1	4						
2	Bear Canyon below Reservoir	45BearCn000.3	Bear Canyon (Mimbres River to headwaters)	IO			4						
3	Bear Canyon Reservoir	45BearCanyonD	Bear Canyon Reservoir	L					4	4			
4	Bear Creek on Double E Ranch - 78BearCr011.7	78BearCr011.7	Bear Creek (Gila River nr Cliff to headwaters)	2		1	4	1					
5	Beaver Creek above Taylor Creek - 77Beaver000.1	77Beaver000.1	Beaver Creek (Perennial prt Taylor Ck to Mule Canyon)	2		1	4						
6	BILL EVANS LAKE DEEP NEAR DAM - 78BillEvansDP	78BillEvansDP	Bill Evans Lake	L					4	4			
7	BLACK CNY CREEK AT LOWER BLACK CNY CAMPGROUND - 77BlackC016.5	77BlackC016.5	Black Canyon Creek (East Fork Gila River to headwaters)	2	1	1	4						
8	Blue Creek 0.5 mile abv Gila River - 78BlueCr000.9	78BlueCr000.9	Blue Creek (Gila River to headwaters)	2		1	4						
9	Canyon Creek - 77Canyon007.5	77Canyon007.5	Canyon Creek (Middle Fork Gila River to headwaters)	2		1	4	1					
10	Centerfire Creek abv San Francisco River - 80Center002.1	80Center002.1	Centerfire Creek (San Francisco R to headwaters)	1	1	1	8	1					

Map #	Station Name	Station ID	Assessment Unit	Priority	Sonde/DO/Cond [2,8]	Thermograph	Flow[8]	Physical Habitat[5,6]	Chlorophyll a	Phytonplakton	Periphyton-diatoms	Macro-invertrebrates	Fish
11	Cold Springs abv Mimbres - 45ColdSp009.3	45ColdSp009.3	Cold Springs Creek (Hot Springs Creek to headwaters)	2			4						
12	Dry Blue Creek abv Pace Creek - 80DryBlu008.0	80DryBlu008.0	Dry Blue Creek (AZ bnd to headwaters)	2		1	4						
13	East Fork Gila above West Fork - 77EFkGil000.2	77EFkGil000.2	East Fork Gila River (Gila River to headwaters)	2		1	4	1				1	
14	Gallinas Creek at Lower Gallinas Camground near Hwy 152 - 45Gallin021.5	45Gallin021.5	Gallinas Creek (Mimbres River to headwaters)	1	1		8						
15	GILA RIVER AT NM 92 BRIDGE - 78GilaRi011.5	78GilaRi011.5	Gila River (AZ border to Red Rock)	2		1	4						
16	Gila River above Mangas Creek - 78GilaRi073.5	78GilaRi073.5	Gila River (Mangas Creek to Mogollon Creek)	2	1	1	4						
17	Gila River at the Gila Gage - 77GilaRi101.4	77GilaRi101.4	Gila River (Mogollon Ck to East and West Forks of Gila R)	2		1	4						
18	Gila R @ Patton Rd bridge in Redrock - 78GilaRi041.8	78GilaRi041.8	Gila River (Red Rock to Mangas Creek)	1	1	1	8						
19	Gilita Creek above Snow Canyon Creek - 77Gilita000.2	77Gilita000.2	Gilita Creek (Middle Fork Gila R to Willow Creek)	2		1	4						
20	Gilita Cr abv Willow Cr - 77Gilita010.3	77Gilita010.3	Gilita Creek (Perennial reaches abv Willow Creek)	2		1	4						
21	IRON CREEK AT FOREST TRAIL 151 - 77IronCr009.7	77IronCr009.7	Iron Creek (Middle Fork Gila R to headwaters)	2		1	4						
22	LAKE ROBERTS at dam - 77LRobertsDam	77LRobertsDam	Lake Roberts	L					4	4			
23	Little Cr abv W Fk Gila - 77Little000.1	77Little000.1	Little Creek (West Fork Gila River to headwaters)	2		1	4						
24	Mangas Creek above Gila River (Forest Road 809) - 78Mangas000.7	78Mangas000.7	Mangas Creek (Gila River to Mangas Springs)	1		1	8						
25	Middle Fork Gila above Iron Creek - 77MFkGil049.0	77MFkGil049.0	Middle Fork Gila River (Canyon Creek to headwaters)	2		1	4						
26	Middle Fork Gila above West Fork - 77MFkGil000.1	77MFkGil000.1	Middle Fork Gila River (West Fork Gila R to Canyon Creek)	2		1	4						
27	Mimbres River at upper TNC - 45Mimbre112.2	45Mimbre112.2	Mimbres R (Perennial reaches Allie Canyon to Cooney Cny)	2		1	4						

Map #	Station Name	Station ID	Assessment Unit	Priority	Sonde/DO/Cond [2,8]	Thermograph	Flow[8]	Physical Habitat[5,6]	Chlorophyll a	Phytonplakton	Periphyton-diatoms	Macro-invertrebrates	Fish
28	Mimbres below Dwyer at Rancho del Rio - 45Mimbre062.7	45Mimbre062.7	Mimbres R (Perennial reaches downstream of Allie Canyon)	2		1	4						
29	Mule Cr blw NM 78 - 80MuleCr014.5	80MuleCr014.5	Mule Creek (San Francisco R to Mule Springs)	1	1		8						
30	Negrito Creek above Tularosa River - 80Negrit000.1	80Negrit000.1	Negrito Creek (Tularosa River to confl of N and S forks)	2		1	4						
31	North Fork Negrito Creek abv South Fork Negrito Creek - 80NNegri000.1	80NNegri000.1	North Fork Negrito Creek (Negrito Creek to headwaters)	2		1	4						
32	San Francisco River below Glenwood at Hot Springs - 80SanFra028.6	80SanFra028.6	San Francisco River (Box Canyon to Whitewater Creek)	1		1	8	1				1	
33	San Francisco R blw Luna - 80SanFra144.9	80SanFra144.9	San Francisco River (Centerfire Creek to AZ border)	1		1	8	1				1	
34	San Franicisco R @ Cienega Cyn - 80SanFra117.9	80SanFra117.9	San Francisco River (NM 12 at Reserve to Centerfire Creek)	1		1	8	1					
35	San Francisco River abv Pueblo Creek - 80SanFra061.0	80SanFra061.0	San Francisco River (Pueblo Ck to Willow Springs Cyn)	2		1	4						
36	San Francisco River at Alma Bridge - 80SanFra048.8	80SanFra048.8	San Francisco River (Whitewater Ck to Pueblo Ck)	2		1	4	1					
37	Reserve WWTP - NM0024163	NM0024163	San Francisco River (Willow Springs Cyn to NM 12 at Reserve)	1									
38	San Francisco River below Reserve - 80SanFra105.7	80SanFra105.7	San Francisco River (Willow Springs Cyn to NM 12 at Reserve)	2	1	1	4						
39	San Vicente Arroyo at Ancheta Mill - 45SanVic053.9	45SanVic053.9	San Vicente Creek (Perennial prt Maudes Cny to Silva Creek)	1	1		8						
40	SILVER CITY WASTEWATER PLANT - NM0020109	NM0020109	San Vicente Creek (Perennial prt Maudes Cny to Silva Creek)	1									
41	Sapillo Creek at Wilderness Boundary - 77Sapill012.0	77Sapill012.0	Sapillo Creek (Gila River to Lake Roberts)	2		1	4						
42	Snow Canyon Creek above Gilita Creek - 77SnowCa000.2	77SnowCa000.2	Snow Canyon Ck (Perennial prt Gilita Ck to Snow Lake)	2		1	4						
43	Snow Lake at Dam (Deep) - 77SnowLkDamDp	77SnowLkDamDp	Snow Lake	L					4	4			

Map #	Station Name	Station ID	Assessment Unit	Priority	Sonde/DO/Cond [2,8]	Thermograph	Flow[8]	Physical Habitat[5,6]	Chlorophyll a	Phytonplakton	Periphyton-diatoms	Macro-invertrebrates	Fish
44	South Negrito Creek - 80SNegri000.1	80SNegri000.1	South Fork Negrito Creek (Negrito Creek to headwaters)	2		1	4						
45	Stone Creek abv San Francisco R - 80StoneC000.1	80StoneC000.1	Stone Creek (San Francisco R to AZ border)	2		1	4	1					
46	Taylor Creek above Beaver Creek - 77Taylor000.1	77Taylor000.1	Taylor Creek (Perennial reaches Beaver Creek to headwaters)	1	1	1	8						
47	Trout Creek near FR 220 - 80Trout009.4	80TroutC009.4	Trout Creek (Perennial prt San Francisco R to headwaters)	2		1	4						
48	Tularosa River abv Aragon at USGS gage 9442692 - 80Tularo050.8	80Tularo050.8	Tularosa River (Apache Creek to headwaters)	2		1	4						
49	Tularosa River above San Francisco River - 80Tularo001.3	80Tularo001.3	Tularosa River (San Francisco R to Apache Creek)	1	1	1	8	1					
50	Turkey Creek (at Wilderness Boundary Forest Trail 155) - 77Turkey001.8	77Turkey001.8	Turkey Creek (Gila River to headwaters)	2		1	4						
51	West Fork Gila above East Fork - 77WFkGil000.1	77WFkGil000.1	West Fork Gila R (East Fork to Middle Fork)	2		1	4						
52	WEST FORK GILA RIVER ABOVE MIDDLE FORK GILA - 77WFkGil008.0	77WFkGil008.0	West Fork Gila R (Middle Fork to headwaters)	2		1	4						
53	Bayard, Village of/WWTP	NM0020231	Whitewater Creek (Mimbres River to headwaters)	2									
54	NMG&FD/Glenwood Fish Hatchery-002	NM0030163 - 002	Whitewater Creek (San Francisco R to Whitewater Campgrd)	1			8						
55	Whitewater Creek at Glenwood above San Francisco River - 80Whitew000.5	80Whitew000.5	Whitewater Creek (San Francisco R to Whitewater Campgrd)	1		1	8						
56	NMG&FD/Glenwood Fish Hatchery-001	NM0030163 - 001	Whitewater Creek (San Francisco R to Whitewater Campgrd)	1									
57	Whitewater Creek abv campground - 80WhiteW008.8	80WhiteW008.8	Whitewater Creek (Whitewater Campgrd to headwaters)	1	1	1	8						
58	Willow Creek above Gilita Creek - 77Willow000.1	77Willow000.1	Willow Creek (Gilita Creek to headwaters)	1		1	8						

Map #	Station Name	Station ID	Assessment Unit	Priority	Sonde/DO/Cond [2,8]	Thermograph	Flow[8]	Physical Habitat[5,6]	Chlorophyll a	Phytonplakton	Periphyton-diatoms	Macro-invertrebrates	Fish
Totals					11	43	224	9	12	16	0	3	0

[1]Priority rankings: 1 are the highest priorities, and 3 the lowest. "L" are lake stations; "IO" are lake inlets or outlets.
[2]Sondes are deployed at sites that indicate elevated turbidity or nutrient enrichment or have been previously listed for turbidity or nutrients.
[3]Chlorophyll-a samples are collected at sites that indicate nutrient enrichment or have been previously listed for nutrients. Additional stations may be added as indicated by the preliminary nutrient assessments.
[4]Periphyton community composition samples are only collected at "non-wadeable" river sites that indicate nutrient enrichment or have been previously listed for nutrients. The exact number of periphyton samples to be collected will be unknown until after 3 to 5 sampling runs.
[5]If sedimentation data (pebble counts) exceed the threshold value for percent sand and fines at a site, more extensive habitat data are collected.
[6]If preliminary analysis of thermograph data indicates potential for impairment then cross-section, flow, canopy cover, and slope data required to use SSTEMP temperature modeling software will be collected.
[7]Fish sampling will be determined by interagency cooperation and the availability of shocking equipment.
[8]Flow, sonde and temperature data will be used from USGS gages where possible.

Table 7.2. Lower Rio Grande Watershed: Biological and Habitat Sampling

Map #	Station Name	Station ID	Assessment Unit	Priority[1]	Sonde/DO/Cond [2,8]	Thermograph[8]	Flow[8]	Physical Habitat[5,6]	Chlorophyll *a*[3]	Phytoplankton	Periphyton-diatoms[4]	Macro-invertebrates	Fish[7]
1	CABALLO LAKE AT DAM DEEP - 41CaballoLkDam	41CaballoLkDam	Caballo Reservoir	L					4	4			
2	Sierra County Regional WWTP - NM0030864	NM0030864	Cuchillo Negro Creek (Rio Grande to Willow Spring Draw)	2									
3	E BUTTE AT DAM - 40EButteReDam	40EButteReDam	Elephant Butte Reservoir	L					4	4			
4	Las Animas Cr abv Animas Gulch	41LAnima020.0	Las Animas Ck (perennial prt Animas Gulch to headwaters)	2		1	4	1					
5	Las Animas Cr at Animas Rd Ford - 41LAnima009.0	41LAnima009.0	Las Animas Ck (perennial prt R Grande to Animas Gulch)	2	1	1	4						
6	Palomas Cr abv Diversion	41Paloma027.9	Palomas Creek (perennial portion R Grande to headwaters)	2	1	1	4						
7	Percha Creek at Percha Box - 41Percha025.3	41Percha025.3	Percha Ck (Perennial prt Wicks Gulch to Middle Percha Ck)	2		1	4						

Map #	Station Name	Station ID	Assessment Unit	Priority[1]	Sonde/DO/Cond [2,8]	Thermograph[8]	Flow[8]	Physical Habitat[5,6]	Chlorophyll *a*[3]	Phytoplankton	Periphyton-diatoms[4]	Macro-invertebrates	Fish[7]
8	ANTHONY WATER AND SANITATION - NM0029629	NM0029629	Rio Grande (Anthony Bridge to NM192 bridge W of Mesquite)	2									
9	Gadsden Independent School District - NM0028487	NM0028487	Rio Grande (Anthony Bridge to NM192 bridge W of Mesquite)	2									
10	RIO GRANDE AT NM-225 BRIDGE NR ANTHONY, NM - 42RGrand030.8	42RGrand030.8	Rio Grande (Anthony Bridge to NM192 bridge W of Mesquite)	2			4						
11	South Central Regional WWTP - NM0030490	NM0030490	Rio Grande (Anthony Bridge to NM192 bridge W of Mesquite)	1									
12	RIO GRANDE ABOVE CABALLO LAKE - 41RGrand196.6	41RGrand196.6	Rio Grande (Caballo Reservoir to Elephant Butte Reservoir)	1	1		8						
13	RIO GRANDE BELOW E. BUTTE DAM AT USGS GAGE - 41RGrand217.5	41RGrand217.5	Rio Grande (Caballo Reservoir to Elephant Butte Reservoir)	IO	1		8						
14	T OR C WASTEWATER TREATMENT PLANT DISCHARGE - NM0020681	NM0020681-C	Rio Grande (Caballo Reservoir to Elephant Butte Reservoir)	1									
15	Rio Grande above E Butte - 40RGrand264.0	40RGrand264.0	Rio Grande (Elephant Butte Rsvr to San Marcial at USGS)	IO			4						
16	El Paso Electric Co. Outfall No. 2 - NM0000108-2	NM0000108-2	Rio Grande (International Mexico bnd to Anthony Bridge)	1									
17	El Paso Electric Co. Outfall No.1 - NM0000108-1	NM0000108-1	Rio Grande (International Mexico bnd to Anthony Bridge)	1									
18	Montoya Drain at Racetrack Dr. - 42Montoy000.7	42Montoy000.7	Rio Grande (International Mexico bnd to Anthony Bridge)										
19	RIO GRANDE AT CORCHESNE BRIDGE- 42RGrand002.7	42RGrand002.7	Rio Grande (International Mexico bnd to Anthony Bridge)	1			8						
20	RIO GRANDE AT SUNLAND PARK BRIDGE - 42RGrand004.3	42RGrand004.3	Rio Grande (International Mexico bnd to Anthony Bridge)	1			8						
21	Sunland Park WWTP effluent - NM0029483	NM0029483-C	Rio Grande (International Mexico bnd to Anthony Bridge)	1									

Map #	Station Name	Station ID	Assessment Unit	Priority[1]	Sonde/DO/Cond [2,8]	Thermograph[8]	Flow[8]	Physical Habitat[5,6]	Chlorophyll *a*[3]	Phytoplankton	Periphyton-diatoms[4]	Macro-invertebrates	Fish[7]
22	Sunland Park WWTP effluent - north	NM0029483-C	Rio Grande (International Mexico bnd to Anthony Bridge)	1									
23	HATCH WASTEWATER PLANT - NM0020010	NM0020010	Rio Grande (Leasburg Dam to one mile below Percha Dam)	2									
24	Rio Grande at Leasburg Dam, NM - 42RGrand099.8	42RGrand099.8	Rio Grande (Leasburg Dam to one mile below Percha Dam)	2			4						
25	Salem WWTP - NM0030457	NM0030457	Rio Grande (Leasburg Dam to one mile below Percha Dam)	2									
26	LAS CRUCES WASTEWATER PLANT - NM0023311	NM0023311	Rio Grande (NM192 bridge W of Mesquite to Picacho Bridge)	1									
27	Rio Grande @ NM 192 nr Mesquite	42RGrand052.2	Rio Grande (NM192 bridge W of Mesquite to Picacho Bridge)	2			4						
28	RIO GRANDE BLW CABALLO DAM,NM - 42RGrand171.9	42RGrand171.9	Rio Grande (one mile below Percha Dam to Caballo Reservoir)	IO			4						
29	RIO GRANDE AT PICACHO AVE IN LAS CRUCES - 42RGrand073.5	42RGrand073.5	Rio Grande (Picacho Bridge to Leasburg Dam)	2			4						
30	Las Cruces, City of/East Mesa Water Reclamation Facility	NM0030872	South Fork Las Cruces Arroyo (Las Cruces Arroyo to hdwtrs)	1									
	Totals				4	4	72	1	8	8	0	0	0

[1]Priority rankings: 1 are the highest priorities, and 3 the lowest. "L" are lake stations; "IO" are lake inlets or outlets.
[2]Sondes are deployed at sites that indicate elevated turbidity or nutrient enrichment or have been previously listed for turbidity or nutrients.
[3]Chlorophyll-a samples are collected at sites that indicate nutrient enrichment or have been previously listed for nutrients. Additional stations may be added as indicated by the preliminary nutrient assessments.
[4]Periphyton community composition samples are only collected at “non-wadeable” river sites that indicate nutrient enrichment or have been previously listed for nutrients. The exact number of periphyton samples to be collected will be unknown until after 3 to 5 sampling runs.
[5]If sedimentation data (pebble counts) exceed the threshold value for percent sand and fines at a site, more extensive habitat data are collected.
[6]If preliminary analysis of thermograph data indicates potential for impairment then cross-section, flow, canopy cover, and slope data required to use SSTEMP temperature modeling software will be collected.
[7]Fish sampling will be determined by interagency cooperation and the availability of shocking equipment.
[8]Flow, sonde and temperature data will be used from USGS gages where possible.

Table 7.3. Upper Pecos Watershed: Biological and Habitat Sampling

Map #	Station Name	Station ID	Assessment Unit	Priority[1]	Sonde/DO/Cond [2,8]	Thermograph[8]	Flow[8]	Physical Habitat[5,6]	Chlorophyll *a*[3]	Phytoplankton	Periphyton-diatoms[4]	Macro-invertebrates	Fish[7]
1	Bull Creek above confluence with Cow Creek - 50BullCr000.1	50BullCr000.1	Bull Creek (Cow Creek to headwaters)	2			4						
2	Cow Creek above confluence with Bull Creek - 50CowCre023.8	50CowCre023.8	Cow Creek (Bull Creek to headwaters)	2	1	1	4						
3	Cow Creek at North San Ysidro - 50CowCre011.5	50CowCre011.5	Cow Creek (Pecos River to Bull Creek)	1	1	1	8						
4	DALTON CANYON CREEK 20 M WEST OF HWY 63 BRDG - 50Dalton000.1	50Dalton000.1	Dalton Canyon Creek (Perennial prt Pecos R to headwaters)	2	1		4						
5	El Porvenir Creek at HWY 65 above the Gallinas - 50ElPorv000.1	50ElPorv000.1	El Porvenir Creek (Gallinas River to SFNF bnd)	1		1	8						
6	El Porvenir Creek at Christian Camp, USGS 08380075 - 50ElPorv004.8	50ElPorv004.8	El Porvenir Creek (SFNF bnd to Hollinger Canyon)	2		1	4						
7	EL RITO CREEK DOWNSTREAM OF THE SANTA ROSA WWTF - 50ElRito000.2	50ElRito000.2	El Rito (Pecos River to headwaters)	1	1		8						
8	SANTA ROSA WASTEWATER PLANT - NM0024988	NM0024988	El Rito (Pecos River to headwaters)	1			8						
9	Falls Cr. at CR A 19A - 50FallsC000.1	50FallsC000.1	Falls Creek (Tecolote Creek to headwaters)	2	1		4						
10	Gallinas River at Montezuma, USGS Gage 08380500 - 50Gallin119.7	50Gallin119.7	Gallinas River (Las Vegas Diversion to USFS bnd)	1		1	8						
11	Gallinas River at Grand Avenue - 50Gallin104.8	50Gallin104.8	Gallinas River (Pecos Arroyo to Las Vegas Diversion)	1		1	8						
12	Gallinas River 0.25 mile below Las Vegas WWTF - 50Gallin101.8	50Gallin101.8	Gallinas River (Perennial prt Aguilar Creek to Pecos Arroyo)	1	1		8						
13	Gallinas River at La Liendre - 50Gallin057.8	50Gallin057.8	Gallinas River (Perennial prt Aguilar Creek to Pecos Arroyo)	1	1	1	8	1					
14	LAS VEGAS, NM WWTP OUTFALL PIPE (MAS) - NM0028827-A	NM0028827-A	Gallinas River (Perennial prt Aguilar Creek to Pecos Arroyo)	1			8						
15	Glorieta Creek above Glorieta Conference Center WWTP - 50Glorie014.0	50Glorie014.0	Glorieta Ck (Perennial prt Glorieta CC WWTP to headwaters)	2			4						
16	Glorieta Conference Center/WWTP - NM0028088	NM0028088	Glorieta Ck (Perennial prt Pecos R to Glorieta CC WWTP)	1			8						

Map #	Station Name	Station ID	Assessment Unit	Priority[1]	Sonde/DO/Cond[2,8]	Thermograph[8]	Flow[8]	Physical Habitat[5,6]	Chlorophyll *a*[3]	Phytoplankton	Periphyton-diatoms[4]	Macro-invertebrates	Fish[7]
17	Glorieta Creek above confluence with Pecos River - 50Glorie001.8	50Glorie001.8	Glorieta Ck (Perennial prt Pecos R to Glorieta CC WWTP)	1	1		8						
18	HOLY GHOST CR 300M UPSTRM HWY63 BR OVER PECOS R - 50HolyGh000.1	50HolyGh000.1	Holy Ghost Creek (Pecos River to headwaters)	2			4						
19	Monastery Lake Deep, 40 meters from south end of lake near spillway. Acces - 50MonasteLake	50MonasteLake	Monastery Lake	L					4	4			
20	PECOS ARROYO ABOVE THE GALLINAS RIVER - 50PecosA000.3	50PecosA000.3	Pecos Arroyo (Gallinas River to headwaters)	2			4						
21	Lisboa Springs fish hatchery effluent discharge - NM0030121	NM0030121	Pecos River (Alamitos Canyon to Jack's Creek)	1			8						
22	Pecos River at Adelo Property behind Catholic Church in Pecos - 50PecosR772.0	50PecosR772.0	Pecos River (Alamitos Canyon to Jack's Creek)	1	1		8						
23	Pecos R blw Glorieta Cr	50PecosR763.6	Pecos River (Canon de Manzanita to Alamitos Canyon)	1	1	1	8						
24	Pecos, Village of/WWTP - NM0029041	NM0029041	Pecos River (Canon de Manzanita to Alamitos Canyon)	1			8						
25	Pecos River at South San Ysidro - 50PecosR740.0	50PecosR740.0	Pecos River (Cow Creek to Canon de Manzanita)	1			8						
26	Pecos River at wilderness boundary - 50PecosR806.0	50PecosR806.0	Pecos River (Jack's Creek to headwaters)	2			4						
27	Pecos R @ NM 119 bridge nr Anton Chico - 50PecosR657.3	50PecosR657.3	Pecos River (Santa Rosa Reservoir to Tecolote Creek)	2	1		4						
28	Pecos River at gage near Colonias - 50PecosR601.2	50PecosR601.2	Pecos River (Santa Rosa Reservoir to Tecolote Creek)	IO			4						
29	NMG&FD/Rock Lake Fish Hatchery	NM0030155	Pecos River (Sumner Reservoir to Santa Rosa Reservoir)	1			8						
30	PECOS RIVER BELOW SANTA ROSA DAM - 50PecosR575.0	50PecosR575.0	Pecos River (Sumner Reservoir to Santa Rosa Reservoir)	IO			4						
31	Pecos R at Puerto de Luna - 50Pecos540.8	50Pecos540.8	Pecos River (Sumner Reservoir to Santa Rosa Reservoir)	1	1		8						
32	PECOS RIVER ABOVE CONFLUENCE WITH TECOLOTE CREEK - 50PecosR666.6	50PecosR666.6	Pecos River (Tecolote Creek to Villanueva State Park)	1	1	1	8						

Map #	Station Name	Station ID	Assessment Unit	Priority[1]	Sonde/DO/Cond[2,8]	Thermograph[8]	Flow[8]	Physical Habitat[5,6]	Chlorophyll *a*[3]	Phytoplankton	Periphyton-diatoms[4]	Macro-invertebrates	Fish[7]
33	PECOS RIVER BELOW SUMNER DAM AT USGS GAGE - 52PecosR485.0	52PecosR485.0	Pecos River (Truchas Creek to Sumner Reservoir)	IO			4						
34	Pecos abv Villanueva State Park - 50PecosR697.0	50PecosR697.0	Pecos River (Villanueva State Park to Cow Creek)	1	1		8						
35	Perch Lake (sink hole) - 50PerchLakeDp	50PerchLakeDp	Perch Lake	L					4	4			
36	RIO MORA AT USGS GAGE 08377900 abv Pecos campground - 50RioMor000.3	50RioMor000.3	Rio Mora (Pecos River to headwaters)	2			4						
37	SANTA ROSA L. DP. STA. MIDCHANNEL BUOY AT DAM - 50SantaRLkMid	50SantaRLkMid	Santa Rosa Reservoir	L					4	4			
38	Storrie Inlet	50StorrieIn	Storrie Lake	IO			4						
39	STORRIE LAKE DEEP 30 YDS W OF DAM, N END - 50StorrieDeep	50StorrieDeep	Storrie Lake	L					4	4			
40	Storrie Outlet	50StorrieOut	Storrie Lake	IO			4						
41	SUMNER LAKE DAM AT SPILLWAY CANYON OPENING - 50SumnerLkDam	50SumnerLkDam	Sumner Reservoir	L					4	4			
42	TECOLOTE CREEK AT I-25 NEAR TECOLOTE - 50Tecolo041.2	50Tecolo041.2	Tecolote Creek (I-25 to Blue Creek)	1	1	1	8						
43	WILLOW CR BLW WHITE DRAIN - 50Willow000.1	50Willow000.1	Willow Creek (Pecos River to headwaters)	1	1		8						
44	Willow Creek abv Fish Barrier - 50Willow000.6	50Willow000.6	Willow Creek (Pecos River to headwaters)	H			1	1					
45	MCALLISTER LAKE DEEP, 1/3 DISTANCE FROM N SHORE - 50McAllisDeep	50McAllisDeep	McAllister Lake	L					4	4			
	Totals				16	10	241	2	24	24	0	0	0

[1]Priority rankings: 1 are the highest priorities, and 3 the lowest. "L" are lake stations; "IO" are lake inlets or outlets.
[2]Sondes are deployed at sites that indicate elevated turbidity or nutrient enrichment or have been previously listed for turbidity or nutrients.
[3]Chlorophyll-a samples are collected at sites that indicate nutrient enrichment or have been previously listed for nutrients. Additional stations may be added as indicated by the preliminary nutrient assessments.
[4]Periphyton community composition samples are only collected at “non-wadeable” river sites that indicate nutrient enrichment or have been previously listed for nutrients. The exact number of periphyton samples to be collected will be unknown until after 3 to 5 sampling runs.
[5]If sedimentation data (pebble counts) exceed the threshold value for percent sand and fines at a site, more extensive habitat data are collected.
[6]If preliminary analysis of thermograph data indicates potential for impairment then cross-section, flow, canopy cover, and slope data required to use SSTEMP temperature modeling software will be collected.
[7]Fish sampling will be determined by interagency cooperation and the availability of shocking equipment.
[8]Flow, sonde and temperature data will be used from USGS gages where possible.

Table 7.4. Probabilistic Monitoring: Biological and Habitat Sampling

Probabilistic Monitoring Watershed(s)	Sonde/DO/Cond[1]	Thermograph[1]	Flow[1]	Physical Habitat[2,3]	Chlorophyll a	Phytonplakton	Periphyton-diatoms	Macro-invertrebrates	Fish
Upper Pecos 2019			30	30				30	
Gila, Mimbres, San Francisco, & Lower Rio Grande 2020			30	30				30	
Totals	0	0	60	60	0	0	0	60	0

[1]Flow, sonde and temperature data will be used from USGS gages where possible.
[2]If sedimentation data (pebble counts) exceed the threshold value for percent sand and fines at a site, more extensive habitat data are collected.
[3]If preliminary analysis of thermograph data indicates potential for impairment then cross-section, flow, canopy cover, and slope data required to use SSTEMP temperature modeling software will be collected.

6.0 RESOURCE REQUIREMENTS

Sample analysis costs include: SLD work-time units (WTUs) for chemical analysis performed at SLD and provided to SWQB through a Joint Powers Agreement between the State agencies; analysis costs for chemical and biological samples sent to contract laboratories; and equipment costs for *E. coli* analysis performed by qualified SWQB staff. Sample analysis expenses are summarized in **Tables 8.1** through **8.4**.

Approximated monthly fuel expenses are summarized in **Tables 9.1** through **9.4**. Vehicles will require standard preventative maintenance and unforeseen costs may arise at any time.

Water quality sampling trips will require two staff. Biological survey crew maximum requirements are four staff surveying one to three sites per day. Staff per diem costs are summarized in **Tables 10.1** through **10.4**). Staff receive $85 per night per diem for travel costs. Costs not included below may involve general sampling supplies such as water quality sample containers and preservatives, sonde calibration solutions, and periphyton, macroinvertebrate, fish, and habitat sampling/monitoring equipment.

Table 8.1. Biological and Chemical Cost Summary for the Gila, Mimbres, and San Francisco Watershed Survey

Analyte	Total # of Samples	Cost per Sample (WTU unless indicated in $)	Total Expenditure (WTU unless indicated in $)
TDS/TSS	296	45	13320
Nutrients	27	100	2700
Nutrients (low P)	272	95	25840
Total Persulfate N	166	$33	$5,478

Total Metals	216	85	18360
Dissolved Metals	239	140	33460
E. Coli	287	$5.08	$1,457.96
Volatile Organics	16	150	2400
Semi-Volatile Organics	12	235	2820
Radionuclides	12	520	6240
Chlorophyll a	16	$30	$480
Phytoplankton	16	$122	$1,952
Periphyton - Diatoms	0	$425	0
Macroinvertebrates	0	$225	0
Totals		**WTU**	**105,140**
		Dollar	**$9,367.96**

Table 8.2. Biological and Chemical Cost Summary for the Lower Rio Grande Watershed Survey

Analyte	Total # of Samples	Cost per Sample (WTU unless indicated in $)	Total Expenditure (WTU unless indicated in $)
TDS/TSS//SO^{4-}/Cl^{-}	177	105	18585
Nutrients	84	100	8400
Nutrients (low P)	84	95	7980
Total Persulfate N	42	$33	$1,386
Total Metals	100	85	8500
Dissolved Metals	111	140	15540
E. Coli	168	$5.08	$853.44
Volatile Organics	26	150	3900
Semi-Volatile Organics	22	235	5170
Radionuclides	14	520	7280
Chlorophyll a	8	$30	$240
Phytoplankton	8	$122	$976
Periphyton - Diatoms	0	$425	0
Macroinvertebrates	0	$225	0
PCB	1	$680	$680
Totals		**WTU**	**75355**
		Dollar	**$4,135.44**

Table 8.3. Biological and Chemical Cost Summary for the Upper Pecos Watershed Survey

Analyte	Total # of Samples	Cost per Sample (WTU unless indicated in $)	Total Expenditure (WTU unless indicated in $)
TDS/TSS//SO^{4-}/Cl^{-}	286	105	30030

Nutrients	48	100	4800
Nutrients (low P)	234	95	22230
Total Persulfate N	152	$33.00	$5,016.00
Total Metals	192	85	16320
Dissolved Metals	212	140	29680
E. Coli	269	$5.08	$1,366.52
Volatile Organics	16	150	2700
Semi-Volatile Organics	14	235	3290
Radionuclides	14	520	7280
Chlorophyll a	24	$30.00	$720.00
Phytoplankton	24	$122.00	$2,928.00
Periphyton - Diatoms	0	$425.00	$0.00
Macroinvertebrates	0	$225.00	$0.00
Totals		**WTU**	116,330
		Dollar	$10,030.52

Table 8.4. Biological and Chemical Cost Summary for Probabilistic Monitoring Sites

Analyte	Total # of Samples	Cost per Sample (WTU unless indicated in $)	Total Expenditure (WTU unless indicated in $)
TDS/TSS//SO^{4-}/Cl^{-}	66	105	6,930
Nutrients	0	100	0
Nutrients (low P)	66	95	6,270
Total Persulfate N	66	$33.00	$2,178.00
Total Metals	60	85	5,100
Dissolved Metals	66	140	9,240
E. Coli	66	$5.08	$335.28
Volatile Organics	0	150	0
Semi-Volatile Organics	0	235	0
Radionuclides	0	520	0
Dissolved Organic Carbon	66	$25	$1,650
Chlorophyll a	0	$30.00	$0.00
Phytoplankton	0	$122.00	$0.00
Periphyton - Diatoms	0	$425.00	$0.00
Macroinvertebrates	60	$225.00	$13,500.00
Totals		**WTU**	27,540
		Dollar	$17,663.28

Table 9.1. Vehicle Costs for the Gila River, Mimbres River, and San Francisco River Watershed Survey

Month	Approximate Miles	Estimated MPG	Estimated Cost of Gasoline per Gallon	Total Fuel Costs/yr	Total Fuel Costs
March	1500	17	$2.50	$220.59	$441.18
April	1500	17	$2.50	$220.59	$441.18
May	1500	17	$2.50	$220.59	$441.18
June	1500	17	$2.50	$220.59	$441.18
July	1500	17	$2.50	$220.59	$441.18
August	1500	17	$2.50	$220.59	$441.18
September	1500	17	$2.50	$220.59	$441.18
October	1500	17	$2.50	$220.59	$441.18
TOTAL				**$1,764.71**	**$3,529.41**

Table 9.2. Vehicle Costs for the Lower Rio Grande Watershed Survey

Month	Approximate Miles	Estimated MPG	Estimated Cost of Gasoline per Gallon	Total Fuel Costs/yr	Total Fuel Costs
March	800	17	$2.50	$117.65	$235.29
April	800	17	$2.50	$117.65	$235.29
May	800	17	$2.50	$117.65	$235.29
June		17	$2.50		
July	800	17	$2.50	$117.65	$235.29
August	800	17	$2.50	$117.65	$235.29
September	800	17	$2.50	$117.65	$235.29
October	800	17	$2.50	$117.65	$235.29
TOTAL				**$823.53**	**$1,647.06**

Table 9.3. Vehicle Costs for the Upper Pecos Watershed Survey

Month	Approximate Miles	Estimated MPG	Estimated Cost of Gasoline per Gallon	Total Fuel Costs/yr	Total Fuel Costs
March	455	17	$2.50	$66.91	$133.82
April	455	17	$2.50	$66.91	$133.82
May	455	17	$2.50	$66.91	$133.82
June	455	17	$2.50	$66.91	$133.82

July	455	17	$2.50	$66.91	$133.82
August	455	17	$2.50	$66.91	$133.82
September	455	17	$2.50	$66.91	$133.82
October	455	17	$2.50	$66.91	$133.82
TOTAL				**$535.29**	**$1,070.56**

Table 9.4. Vehicle Costs for Probabilistic Monitoring

Month	Approximate Miles Year 1	Approximate Miles Year 2	Estimated Cost of Gasoline per Gallon	Total Fuel Costs Year 1	Total Fuel Costs Year 2
March			$2.50		
April			$2.50		
May			$2.50		
June			$2.50		
July			$2.50		
August	455	1500	$2.50	$66.91	$441.18
September	455	1500	$2.50	$66.91	$441.18
October	455	1500	$2.50	$66.91	$441.18
TOTAL				**$200.73**	**$1,323.54**

Table 10.1. Stream/Lake Survey Per Diem Costs for the Gila, Mimbres, and San Francisco Watershed Survey

Expense	Water Chemistry Surveys	Biological and Habitat Surveys	Data Logger Deployments	Per diem rate	Total/yr	Total
Per Diem (number of days)	64	6	16	$85	$7,310	$14,620

*A field run typically consists of two staff for two to four days

Table 10.2. Stream/Lake Survey Per Diem Costs for the Lower Rio Grande Watershed Survey

Expense	Water Chemistry Surveys	Biological and Habitat Surveys	Data Logger Deployments	Per diem rate	Total/yr	Total
Per Diem (number	44	0	8	$85	$4,420	$8,840

of nights out)						

*A field run typically consists of two staff for two to four days

Table 10.3. Stream/Lake Survey Per Diem Costs for the Upper Pecos Watershed Survey

Expense	Water Chemistry Surveys	Biological and Habitat Surveys	Data Logger Deployments	Per diem rate	Total/yr	Total
Per Diem (number of nights out)	6	8	8	$85	$1,870	$3,740

*A field run typically consists of two staff for two to four days

Table 10.4. Per Diem Costs for Probabilistic Monitoring

Expense	Year 1	Year 2	Per diem rate	Year 1 Total	Year 2 Total	Total
Per Diem (number of nights out)	6	36	$85	$510	$3,060	$3,570

*A field run typically consists of two staff for two to four days

Table 11.1. Total Cost Estimates for the Gila, Mimbres, and San Francisco Watershed Survey

WTUs	Contract Labs $	Supplies $	Fuel $	Per Diem $	Staff Field Days
103,680	$9,836.64	$5,574	$3,529	$14,620	86

Table 11.2. Total Cost Estimates for the Lower Rio Grande Watershed Survey

WTUs	Contract Labs $	Supplies $	Fuel $	Per Diem $	Staff Field Days
75,355	$4,135.44	$2,890	$1,647	$8,840	52

Table 11.3. Total Cost Estimates for the Upper Pecos Watershed Survey

WTUs	Contract Labs $	Supplies $	Fuel $	Per Diem $	Staff Field Days
116,330	$10,030.52	$4,992	$1,071	$1,190	52

Table 11.4. Total Cost Estimates for Probabilistic Monitoring

WTUs	Contract Labs $	Supplies $	Fuel $	Per Diem $	Staff Field Days
27,540	$17,663.28	$1,681	$1,324	$3,570	42

7.0 REPORTING

Following completion of the survey and verification and validation of all data collected during the project, a final survey report will be produced that summarizes the data collected during the survey and describes any deviations from the original or amended Field Sampling Plan. Progress during the survey will be documented in biannual progress reports to EPA for the CWA 106 grant. Other reports and documents that may use information collected during this survey include TMDL reports, proposals for water quality standards revision, and/or NPDES permits.

8.0 REFERENCES

New Mexico Administrative Code (NMAC). 2018. *State of New Mexico Standards for Interstate and Intrastate Surface Waters; 20.6.4.* New Mexico Water Quality Control Commission. Santa Fe, NM. Available at: https://www.env.nm.gov/swqb/Standards/

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NMED/SWQB. 2019. *Standard Operating Procedure 2.1: Field Sampling Plan Development and Execution.* Santa Fe, NM. Available at: https://www.env.nm.gov/swqb/SOP/.

U.S. Environmental Protection Agency, 2006, Level III ecoregions of the continental United States (revision of Omernik, 1987): Corvallis, Oregon, USEPA – National Health and Environmental Effects Research Laboratory, Map M-1, various scales.

APPENDIX A

IR (Integrated Report) Category: Overall water quality standards attainment category for each assessment unit as determined by combining individual designated use support decisions. The unique assessment categories for New Mexico are described as follows:

IR Category 1 Attaining the water quality standards for all designated and existing uses. AUs are listed in this category if there are data and information that meet all requirements of the assessment and listing methodology and support a determination that the water quality criteria are attained.

IR Category 2 Attaining some of the designated or existing uses based on numeric and narrative parameters that were tested, and no reliable monitored data is available to determine if the remaining uses are attained or threatened. AUs are listed in this category if there are data and information that meet requirements of the assessment and listing methodology to support a determination that some, but not all, uses are attained based on numeric and narrative water quality criteria that were tested. Attainment status of the remaining uses is unknown because there is no reliable monitored data with which to make a determination.

IR Category 3 Insufficient or no reliable data and/or information to determine if any designated or existing use is attained. AUs are listed in this category where sufficient data to support an attainment determination for any use are not available, consistent with requirements of the assessment and listing methodology. In order to relay additional information to stakeholders including SWQB staff, Category 3 is further broken down in New Mexico into the following categories:

3A. Limited data (n = 0 to 1) available, no exceedences. AUs are listed in this subcategory when there are no exceedences in the limited data set. These are considered low priority for follow up monitoring.

3B. Limited data (n = 1) available, exceedence. AUs are listed in this subcategory when there is an exceedence in the limited data set. These are considered high priority for follow up monitoring.

IR Category 4A Impaired for one or more designated uses, but does not require development of a TMDL because TMDL has been completed. AUs are listed in this subcategory once all TMDL(s) have been developed and approved by USEPA that, when implemented, are expected to result in full attainment of the standard. Where more than one pollutant is associated with the impairment of an AU, the AU

remains in Category 5A (see below) until all TMDLs for each pollutant have been completed and approved by USEPA.

IR Category 4B Impaired for one or more designated uses, but does not require development of a TMDL because other pollution control requirements are reasonably expected to result in attainment of the water quality standard in the near future. Consistent with the regulation under 40 CFR 130.7(b)(i),(ii), and (iii), AUs are listed in this subcategory where other pollution control requirements required by local, state, or federal authority are stringent enough to implement any water quality standard (WQS) applicable to such waters.

IR Category 4C Impaired for one or more designated uses, but does not require development of a TMDL because impairment is not caused by a pollutant. AUs are listed in this subcategory if a pollutant does not cause the impairment. For example, USEPA considers flow alteration to be "pollution" vs. a "pollutant."

IR Category 5A Impaired for one or more designated or existing uses and a TMDL is underway or scheduled. AUs are listed in this category if the AU is impaired for one or more designated uses by a pollutant. Where more than one pollutant is associated with the impairment of a single AU, the AU remains in Category 5A until TMDLs for all pollutants have been completed and approved by USEPA.

IR Category 5B Impaired for one or more designated or existing uses and a review of the water quality standard will be conducted. AUs are listed in this category when it is possible that water quality standards are not being met because one or more current designated use is inappropriate. After a review of the water quality standard is conducted, a Use Attainability Analysis (UAA) will be developed and submitted to USEPA for consideration, or the AU will be moved to Category 5A and a TMDL will be scheduled.

IR Category 5C Impaired for one or more designated or existing uses and Additional data will be collected before a TMDL is scheduled. AUs are listed in this category if there is not enough data to determine the pollutant of concern or there is not adequate data to develop a TMDL. For example, AUs with biological impairment will be listed in this category until further research can determine the particular pollutant(s) of concern. When the pollutant(s) are determined, the AU will be moved to Category 5A and a TMDL will be scheduled. If it is determined that the current designated uses are inappropriate, it will be moved to Category 5B and a UAA will be developed. If it is determined that "pollution" is causing the impairment (vs. a "pollutant"), the AU will be moved to Category 4C.

APPENDIX B

Organics (semi-volatiles)	Organics (volatiles)
1,2,4-Trichlorobenzene	1,1,1,2-Tetrachloroethane
1,2-Dichlorobenzene	1,1,1-Trichloroethane
1,2-Dinitrobenzene	1,1,2,2-Tetrachloroethane
1,3-Dichlorobenzene	1,1,2-Trichloroethane
1,3-Dinitrobenzene	1,1-Dichloroethane
1,4-Dichlorobenzene	1,1-Dichloroethene
1,4-Dinitrobenzene	1,1-Dichloropropene
1-Methylnaphthalene	1,2,3-Trichlorobenzene
2,3,4,6-Tetrachlorophenol	1,2,3-Trichloropropane
2,3,5,6-Tetrachlorophenol	1,2,4-Trichlorobenzene
2,4,5-Trichlorophenol	1,2,4-Trimethylbenzene
2,4,6-Trichlorophenol	1,2-Dibromo-3-chloropropane (DBCP)
2,4-Dichlorophenol	1,2-Dibromoethane (EDB)
2,4-Dimethylphenol	1,2-Dichlorobenzene
2,4-Dinitrophenol	1,2-Dichloroethane
2,4-Dinitrotoluene	1,2-Dichloropropane
2,6-Dinitrotoluene	1,3,5-Trimethylbenzene
2-Chloronaphthalene	1,3-Dichlorobenzene
2-Chlorophenol	1,3-Dichloropropane
2-Methylnaphthalene	1,4-Dichlorobenzene
2-Methylphenol	1,4-Dioxane
2-Nitroaniline	2,2-Dichloropropane
2-Nitrophenol	2-Butanone (MEK)
3,3'-Dichlorobenzidine	2-Chloroethyl vinyl ether
3-Methylphenol & 4-Methylphenol	2-Chlorotoluene
3-Nitroaniline	2-Hexanone
4,4'-DDD	4-Chlorotoluene
4,4'-DDE	4-Isopropyltoluene
4,4'-DDT	4-Methyl-2-pentanone
4,6-Dinitro-2-methylphenol	Acetone
4-Bromophenyl Phenyl Ether	Acetonitrile
4-Chloro-3-methylphenol	Acrolein
4-Chloroaniline	Acrylonitrile
4-Chlorophenyl Phenyl Ether	Allyl chloride
4-Nitroaniline	Benzene
4-Nitrophenol	Bromobenzene
Acenaphthene	Bromochloromethane
Acenaphthylene	Bromodichloromethane
Alachlor	Bromoform
Aldrin	Bromomethane
alpha-BHC	Carbon disulfide
Aniline	Carbon tetrachloride

Organics (semi-volatiles)	Organics (volatiles)
Anthracene	Chlorobenzene
Atrazine	Chloroethane
Azobenzene	Chloroform
Benzidine	Chloromethane
Benzo(a)anthracene	Chloroprene
Benzo(a)pyrene	cis-1,2-Dichloroethene
Benzo(b)fluoranthene	cis-1,3-Dichloropropene
Benzo(g,h,i)perylene	cis-1,4-Dichloro-2-butene
Benzo(k)fluoranthene	Dibromochloromethane
Benzyl alcohol	Dibromomethane
beta-BHC	Dichlorodifluoromethane
bis(2-Chloroethoxy)methane	Ethyl methacrylate
bis(2-Chloroethyl)ether	Ethylbenzene
bis(2-Chloroisopropyl)ether	Hexachlorobutadiene
bis(2-Ethylhexyl)adipate	Iodomethane
bis(2-Ethylhexyl)phthalate	Isobutyl alcohol
Butyl Benzyl Phthalate	Isopropylbenzene
Carbazole	m- & p-Xylenes
Chrysene	Methyl methacrylate
cis-Chlordane	Methylacrylonitrile
Cyanazine	Methylene chloride (Dichloromethane)
delta-BHC	Naphthalene
Dibenz(a,h)anthracene	n-Butylbenzene
Dibenzofuran	Nitrobenzene
Dieldrin	o-Xylene
Diethylphthalate	Pentachloroethane
Dimethylphthalate	Propionitrile
Di-n-butyl Phthalate	Propylbenzene
Di-n-octyl phthalate	sec-Butylbenzene
Endosulfan I	Styrene
Endosulfan II	tert-Butyl methyl ether (MTBE)
Endosulfan sulfate	tert-Butylbenzene
Endrin	Tetrachloroethene
Endrin aldehyde	Tetrahydrofuran (THF)
Endrin ketone	Toluene
Fluoranthene	Total trihalomethanes
Fluorene	Total xylenes
gamma-BHC (lindane)	trans-1,2-Dichloroethene
Heptachlor	trans-1,3-Dichloropropene
Heptachlor epoxide	trans-1,4-Dichloro-2-butene
Hexachlorobenzene	Trichloroethene
Hexachlorobutadiene	Trichlorofluoromethane
Hexachlorocyclopentadiene	Vinyl acetate
Hexachloroethane	Vinyl chloride

Organics (semi-volatiles)	Organics (volatiles)
Indeno(1,2,3-cd)pyrene	
Isophorone	
Methoxychlor	
Metolachlor	
Metribuzin	
Naphthalene	
Nitrobenzene	
N-nitrosodimethylamine	
N-nitroso-di-n-propylamine	
N-nitrosodiphenylamine	
Pentachlorophenol	
Phenanthrene	
Phenol	
Prometryne	
Pyrene	
Pyridine	
Simazine	
trans-Chlordane	

APPENDIX C
Probabilistic Monitoring Locations

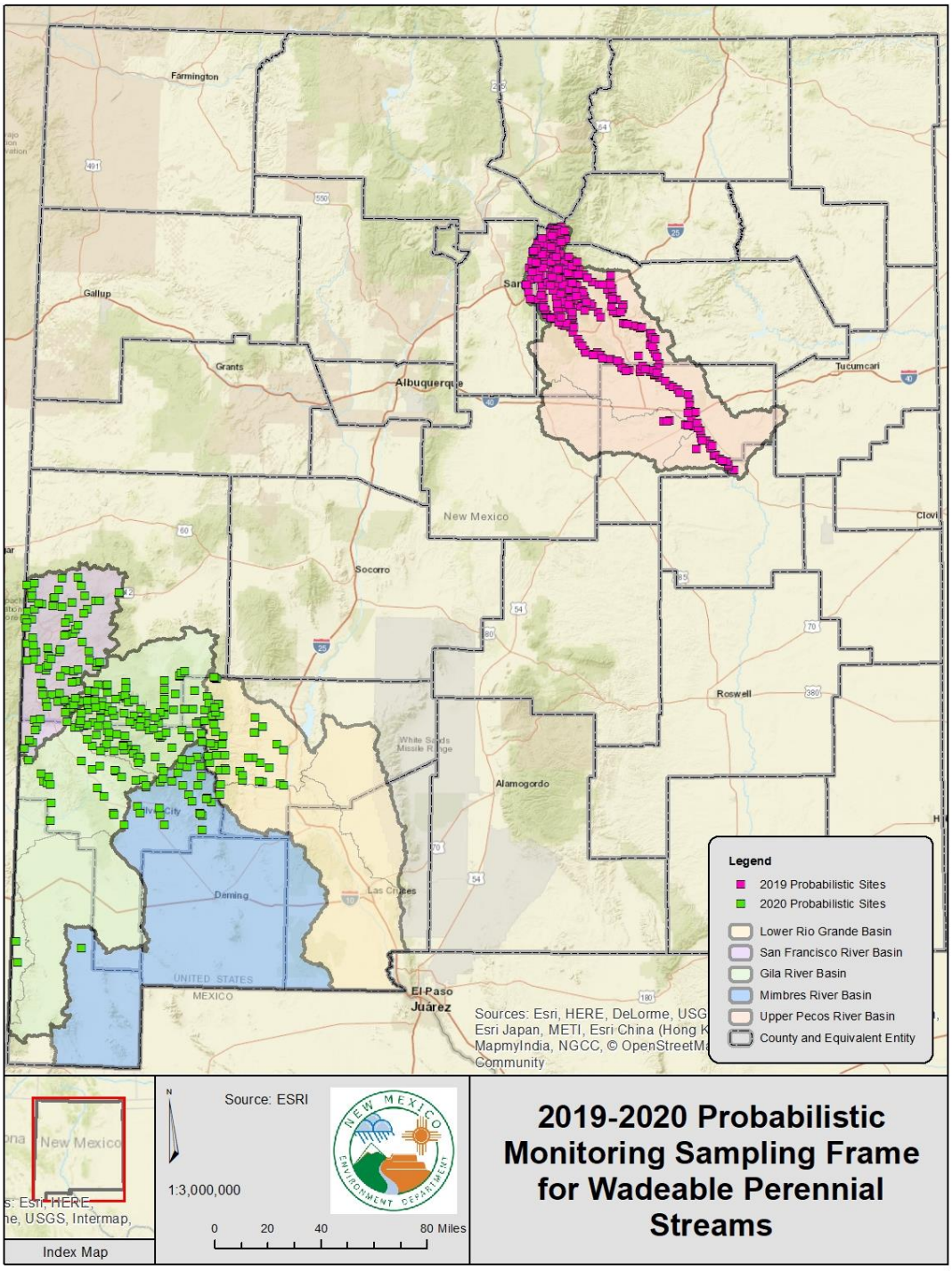

Figure C.1. Map of potential monitoring sites.

2019 PROBABILISTIC MONITORING SAMPLING FRAME

Site ID	Stream Name[1]	AU ID[2]	Longitude	Latitude
NM19-10001	Rito de los Chimayosos		-105.61613	35.95647
NM19-10002	South Fork Bear Creek		-105.56409	35.80007
NM19-10003	Macho Canyon Creek	NM-2214.A_071	-105.76759	35.73942
NM19-10004	San Pablo Creek		-105.41712	35.53527
NM19-10005			-105.53160	35.60474
NM19-10006	Rito de los Chimayosos		-105.60631	35.94658
NM19-10007	Gallinas River	NM-2213_20	-104.89593	35.22142
NM19-10008	Gallinas River	NM-2213_21	-105.13665	35.43997
NM19-10009	Gallinas River	NM-2212_02	-105.49501	35.72150
NM19-10010	Holy Ghost Creek	NM-2214.A_020	-105.70926	35.79625
NM19-10011	Rio Agua Negra		-104.67063	34.87682
NM19-10012	Pecos River	NM-2211.A_10	-105.09771	35.18472
NM19-10013			-105.53752	35.68538
NM19-10014	Glorieta Ck	NM-2214.A_082	-105.77458	35.64626
NM19-10015	Pecos River	NM-2213_02	-105.52849	35.42794
NM19-10016	Gallinas River	NM-2213_21	-105.04354	35.42182
NM19-10017	Gallinas River	NM-2212_00	-105.34634	35.66629
NM19-10018	Rito los Esteros		-105.57754	35.85069
NM19-10019	Pecos River	NM-2213_02	-105.64725	35.48493
NM19-10020	Tecolote Creek	NM-2212_10	-105.30430	35.50231
NM19-10021	Bull Creek	NM-2214.A_091	-105.54615	35.62999
NM19-10022	Rio Mora	NM-2214.A_040	-105.56644	35.87106
NM19-10023	Pecos River	NM-2211.A_10	-104.89446	35.14226
NM19-10024	Pecos River	NM-2213_00	-105.28461	35.26722
NM19-10025	Blue Creek	NM-2212_15	-105.45604	35.64578
NM19-10026	Pecos River	NM-2214.A_002	-105.66018	35.78051
NM19-10027	Pintada Arroyo		-104.72335	34.88727
NM19-10028	Gallinas River	NM-2213_21	-104.95470	35.38777
NM19-10029	Rito de la Osha		-105.59296	35.68979
NM19-10030	Indian Creek	NM-2214.A_072	-105.71198	35.73972
NM19-10031			-105.53728	35.53741
NM19-10032	Pecos River	NM-2211.A_00	-104.58304	34.80095
NM19-10033	Gallinas River	NM-2213_23	-105.22583	35.59771
NM19-10034	Pecos River	NM-2214.A_000	-105.55388	35.94003
NM19-10035	Pecos River	NM-2213_02	-105.59322	35.46413
NM19-10036	Arroyo Vegoso		-105.14142	35.51821
NM19-10037	Gallinas River	NM-2212_02	-105.42946	35.70212
NM19-10038	Panchuela Creek	NM-2214.A_060	-105.67835	35.85472
NM19-10039	Pintada Arroyo		-104.82737	34.91045
NM19-10040	Pecos River	NM-2211.A_10	-105.15998	35.22593
NM19-10041	Santillanes Creek		-105.44632	35.58930
NM19-10042	Panchuela Creek	NM-2214.A_060	-105.66868	35.83703
NM19-10043	Pecos River	NM-2213_01	-105.47134	35.39189
NM19-10044	Gallinas River	NM-2213_21	-104.95217	35.36728
NM19-10045	Hollinger Creek	NM-2212_03	-105.47953	35.77587
NM19-10046	Pecos River	NM-2214.A_002	-105.68170	35.65694
NM19-10047			-105.52840	35.52148
NM19-10048	Pecos River		-104.40167	34.63950
NM19-10049			-105.56131	35.58133
NM19-10050	Jack's Creek	NM-2214.A_045	-105.63329	35.88748
NM19-10051	Pecos River	NM-2211.A_10	-105.02419	35.17491
NM19-10052	Pecos Arroyo	NM-2213_22	-105.20759	35.58961
NM19-10053	North Fork Blue Creek	NM-2212_17	-105.48474	35.67627
NM19-10054	Rito Perro		-105.66614	35.87973
NM19-10055	El Rito	NM-9000.A_050	-104.67025	34.94900
NM19-10056	Pecos River	NM-2213_01	-105.43974	35.35183

Site ID	Stream Name[1]	AU ID[2]	Longitude	Latitude
NM19-10057	Soldier Creek		-105.61276	35.72985
NM19-10058			-105.72055	35.83368
NM19-10059	El Rito		-105.47331	35.44259
NM19-10060	Gallinas River	NM-2213_20	-104.91012	35.25967
NM19-10061	Rio Mora	NM-2214.A_040	-105.52232	35.89943
NM19-10062	Pecos River	NM-2214.A_002	-105.68122	35.63967
NM19-10063	Cow Creek	NM-2214.A_090	-105.57822	35.53020
NM19-10064	Ojo Negro Creek		-104.53531	34.71867
NM19-10065	Rito del Padre		-105.59442	35.95702
NM19-10066	Hollinger Creek	NM-2212_03	-105.52632	35.79429
NM19-10067	Dalton Canyon Creek	NM-2214.A_070	-105.75388	35.67613
NM19-10068	Tecolote Creek	NM-2212_10	-105.39332	35.57746
NM19-10069	Sebadilla Creek		-105.49044	35.57923
NM19-10070	Rito Sebadilloses		-105.60052	35.91555
NM19-10071	Pecos River	NM-2211.A_10	-104.93112	35.15786
NM19-10072	Gallinas River	NM-2213_21	-105.18076	35.49605
NM19-10073	El Porvenir Creek	NM-2212_05	-105.43686	35.73372
NM19-10074	Doctor Creek	NM-2214.A_021	-105.70282	35.76832
NM19-10075	Pecos River	NM-2211.A_00	-104.69721	35.02338
NM19-10076	Pecos River	NM-2211.A_10	-105.13110	35.19248
NM19-10077	Bull Creek	NM-2214.A_091	-105.54303	35.68062
NM19-10078	Glorieta Ck	NM-2214.A_082	-105.76891	35.60983
NM19-10079	Pecos River	NM-2213_02	-105.54549	35.43006
NM19-10080	Pecos River	NM-2211.A_00	-104.62403	34.83369
NM19-10081	Gallinas River	NM-2213_23	-105.29808	35.65149
NM19-10082	Rio Mora	NM-2214.A_040	-105.61714	35.82941
NM19-10083	Pecos River	NM-2213_02	-105.62287	35.47180
NM19-10084	Tecolote Creek	NM-2212_10	-105.34580	35.53106
NM19-10085	Blue Creek	NM-2212_15	-105.49595	35.66022
NM19-10086	Rio Valdez		-105.57582	35.89547
NM19-10087	Pecos River	NM-2211.A_10	-104.82955	35.10107
NM19-10088	Pecos River	NM-2213_00	-105.22193	35.24331
NM19-10089	Blue Creek	NM-2212_15	-105.46218	35.64966
NM19-10090	Rio Mora	NM-2214.A_040	-105.63554	35.79543
NM19-10091	Pecos River	NM-2211.A_00	-104.69646	34.99010
NM19-10092	Gallinas River	NM-2213_21	-104.94955	35.38614
NM19-10093	Burro Canyon	NM-2212_06	-105.51705	35.75712
NM19-10094	Cow Creek	NM-2214.A_102	-105.62732	35.70027
NM19-10095	Sebadilla Creek		-105.49180	35.53192
NM19-10096	Pecos River	NM-2211.A_00	-104.61633	34.81152
NM19-10097	Gallinas River	NM-2213_23	-105.24531	35.62306
NM19-10098			-105.53162	35.92215
NM19-10099	Pecos River	NM-2213_02	-105.61517	35.46635
NM19-10100	Arroyo Vegoso		-105.13599	35.54324
NM19-10101	El Porvenir Creek	NM-2212_01	-105.40208	35.70684
NM19-10102	Horsethief Creek		-105.68137	35.86569
NM19-10103	Pecos River	NM-2211.A_10	-104.80909	35.09226
NM19-10104	Pecos River	NM-2213_01	-105.39212	35.29238
NM19-10105	Tecolote Creek	NM-2212_10	-105.40017	35.58804
NM19-10106	Pecos River	NM-2214.A_002	-105.65571	35.82335
NM19-10107	Pecos River	NM-2213_01	-105.49095	35.41590
NM19-10108	Gallinas River	NM-2213_20	-104.93401	35.29741
NM19-10109	Hollinger Creek	NM-2212_03	-105.46902	35.77348
NM19-10110	Pecos River	NM-2214.A_002	-105.69199	35.68717
NM19-10111	Commissary Creek		-105.47897	35.52377
NM19-10112	Pecos River	NM-2211.A_00	-104.46133	34.68219
NM19-10113	Cow Creek	NM-2214.A_102	-105.58270	35.59314

Site ID	Stream Name[1]	AU ID[2]	Longitude	Latitude
NM19-10114	Pecos River	NM-2214.A_000	-105.60658	35.87850
NM19-10115	Pecos River	NM-2211.A_10	-105.02352	35.19077
NM19-10116	Agua Olympia		-105.18247	35.56903
NM19-10117	Tecolote Creek	NM-2212_09	-105.48124	35.68930
NM19-10118	Cave Creek		-105.70105	35.85343
NM19-10119	Pecos River	NM-2211.A_00	-104.68339	34.92514
NM19-10120	Pecos River	NM-2213_00	-105.33137	35.27264
NM19-10121	Elk Creek		-105.57192	35.73827
NM19-10122	Holy Ghost Creek	NM-2214.A_020	-105.71039	35.80877
NM19-10123	Sebadilla Creek		-105.48451	35.46330
NM19-10124	Gallinas River	NM-2213_20	-104.92435	35.27442
NM19-10125	Bear Creek		-105.60389	35.79711
NM19-10126	Glorieta Ck	NM-2214.A_081	-105.72227	35.56764
NM19-10127			-105.54451	35.54610
NM19-10128	Pecos River	NM-2211.A_00	-104.52169	34.72205
NM19-10129	Pecos River	NM-2214.A_000	-105.55133	35.96868
NM19-10130	Burro Canyon	NM-2212_06	-105.53735	35.76748
NM19-10131	Glorieta Ck	NM-2214.A_082	-105.78704	35.65134
NM19-10132	San Pablo Creek		-105.41993	35.53001
NM19-10133	Rito Manzanares		-105.58903	35.65172
NM19-10134	Jack's Creek	NM-2214.A_045	-105.63385	35.90380
NM19-10135	Pecos River	NM-2211.A_10	-104.92673	35.16077
NM19-10136	Pecos River	NM-2213_00	-105.30777	35.27973
NM19-10137	Blue Creek	NM-2212_15	-105.46690	35.65260
NM19-10138	Indian Creek	NM-2214.A_072	-105.74147	35.76464
NM19-10139	Pecos River	NM-2211.A_00	-104.69151	34.96161
NM19-10140	Pecos River	NM-2211.A_10	-105.14861	35.20031
NM19-10141	Rito Quemazon		-105.58264	35.66829
NM19-10142	Macho Canyon Creek	NM-2214.A_071	-105.72833	35.69922
NM19-10143	Cow Creek	NM-2214.A_090	-105.57094	35.50270
NM19-10144	Pecos River	NM-2211.A_00	-104.62409	34.85246
NM19-10145	El Porvenir Creek	NM-2212_01	-105.37613	35.68875
NM19-10146	Rito Las Trampas		-105.60091	35.83668
NM19-10147	Glorieta Ck	NM-2214.A_081	-105.67339	35.53648
NM19-10148	Gallinas River	NM-2213_21	-105.20071	35.50662
NM19-10149	Rito de las Quemazones		-105.53772	35.64893
NM19-10150			-105.52792	35.89867
NM19-10151	Pecos River	NM-2211.A_10	-104.85888	35.12631
NM19-10152	Pecos River	NM-2213_00	-105.23849	35.24496
NM19-10153	Falls Creek	NM-2212_12	-105.47546	35.61707
NM19-10154	Carpenter Creek		-105.66750	35.79266
NM19-10155	Pecos River	NM-2211.A_10	-104.70616	35.05101
NM19-10156	Gallinas River	NM-2213_21	-104.93827	35.36461
NM19-10157	Elk Creek		-105.56212	35.74227
NM19-10158	Cow Creek	NM-2214.A_102	-105.63891	35.66608
NM19-10159			-105.53745	35.56023
NM19-10160	Carrizo Creek		-104.65085	34.75407
NM19-10161	Pecos Arroyo	NM-2213_22	-105.20648	35.62760
NM19-10162	Rio Valdez		-105.56326	35.91182
NM19-10163	Spring Creek		-105.00865	35.20783
NM19-10164	Arroyo Vegoso		-105.14085	35.52938
NM19-10165	Wright Canyon Creek	NM-2212_18	-105.49486	35.70603
NM19-10166	Jack's Creek	NM-2214.A_045	-105.65382	35.86931
NM19-10167	Pecos River	NM-2211.A_10	-104.77096	35.07984
NM19-10168	Pecos River	NM-2213_01	-105.42506	35.33102
NM19-10169	Cabo Lucero Creek		-105.41519	35.61886
NM19-10170	Rito Oscuro		-105.71058	35.84339

Site ID	Stream Name[1]	AU ID[2]	Longitude	Latitude
NM19-10171	Cow Creek	NM-2214.A_090	-105.51508	35.43420
NM19-10172	Aguilar Creek		-104.95640	35.32256
NM19-10173	Beaver Creek	NM-2212_04	-105.50354	35.80075
NM19-10174	Pecos River	NM-2214.A_002	-105.68709	35.70199
NM19-10175	Sebadilla Creek		-105.49107	35.51229
NM19-10176	Pecos River		-104.44328	34.65789
NM19-10177	Cow Creek	NM-2214.A_102	-105.58416	35.58022
NM19-10178	Rito los Esteros		-105.58685	35.85594
NM19-10179	Gallinas River	NM-2213_20	-104.90775	35.19758
NM19-10180	Arroyo Vegoso		-105.15505	35.50244
NM19-10181			-105.46194	35.74562
NM19-10182	Horsethief Creek		-105.70921	35.87750
NM19-10183	Pecos River	NM-2211.A_00	-104.64139	34.86981
NM19-10184	Pecos River	NM-2213_01	-105.38611	35.27875
NM19-10185	Elk Creek		-105.58496	35.72394
NM19-10186	Winsor Creek	NM-2214.A_061	-105.74170	35.82756
NM19-10187	Commissary Creek		-105.47644	35.47445
NM19-10188	Spring Creek		-105.03684	35.26160
NM19-10189	Willow Creek	NM-2214.A_030	-105.58447	35.78142
NM19-10190	Pecos River	NM-2214.A_002	-105.66976	35.57653
NM19-10191	Cow Creek	NM-2214.A_102	-105.57966	35.54405
NM19-10192	Pecos River	NM-2211.A_00	-104.49723	34.69834
NM19-10193	Rito Maestas		-105.58157	35.95250
NM19-10194	Bear Creek		-105.56296	35.81799
NM19-10195	Pecos River	NM-2213_02	-105.65492	35.51026
NM19-10196	Commissary Creek		-105.46852	35.56202
NM19-10197	Rito Manzanares		-105.59431	35.63953
NM19-10198	South Fork Rito Azul		-105.62761	35.93213
NM19-10199	Pecos River	NM-2211.A_10	-104.95431	35.17471
NM19-10200	Pecos River	NM-2213_00	-105.29934	35.26762
NM19-10201	Blue Creek	NM-2212_15	-105.44313	35.64690
NM19-10202	Willow Creek	NM-2214.A_030	-105.66063	35.75856
NM19-10203	Pintada Arroyo		-104.70830	34.88029
NM19-10204	Gallinas River	NM-2213_21	-105.02290	35.41578
NM19-10205	Rito Quemazon		-105.57651	35.68411
NM19-10206	Indian Creek	NM-2214.A_072	-105.70304	35.72305
NM19-10207	Cow Creek	NM-2214.A_090	-105.56080	35.47938
NM19-10208	Pecos River	NM-2211.A_00	-104.56485	34.77967
NM19-10209	Pecos Arroyo	NM-2213_22	-105.21921	35.70338
NM19-10210	Rito Las Trampas		-105.58979	35.83812
NM19-10211	Pecos River	NM-2214.A_003	-105.65669	35.51424
NM19-10212	Gallinas River	NM-2213_21	-105.21225	35.53204
NM19-10213	Falls Creek	NM-2212_12	-105.49764	35.62195
NM19-10214	Rio Mora	NM-2214.A_040	-105.55161	35.88385
NM19-10215	Pintada Arroyo		-104.86936	34.90632
NM19-10216	Pecos River	NM-2213_00	-105.27388	35.24788
NM19-10217	Falls Creek	NM-2212_12	-105.44905	35.61401
NM19-10218	Panchuela Creek	NM-2214.A_060	-105.65955	35.82671
NM19-10219	Pecos River	NM-2213_02	-105.52384	35.42539
NM19-10220	Gallinas River	NM-2213_21	-104.92224	35.35212
NM19-10221	Gallinas River	NM-2212_02	-105.52072	35.73381
NM19-10222	Macho Canyon Creek	NM-2214.A_071	-105.71008	35.68300
NM19-10223	Sebadilla Creek		-105.48965	35.56950
NM19-10224	Pecos River	NM-2211.A_00	-104.55810	34.75880
NM19-10225	Pecos Arroyo	NM-2213_22	-105.22475	35.65970
NM19-10226	Pecos River	NM-2214.A_000	-105.56221	35.93387
NM19-10227	Pecos River	NM-2211.A_10	-104.98666	35.19019

Site ID	Stream Name[1]	AU ID[2]	Longitude	Latitude
NM19-10228	Gallinas River	NM-2213_21	-105.20988	35.56751
NM19-10229	Gallinas River	NM-2212_02	-105.44106	35.70660
NM19-10230	Horsethief Creek		-105.70143	35.87238
NM19-10231	Pecos River	NM-2211.A_10	-104.76004	35.05920
NM19-10232	Pecos River	NM-2213_01	-105.41019	35.31667
NM19-10233	Tecolote Creek	NM-2212_10	-105.40612	35.61149
NM19-10234			-105.72004	35.82924
NM19-10235	Cow Creek	NM-2214.A_090	-105.51673	35.44031
NM19-10236	Gallinas River	NM-2213_20	-104.91173	35.25570
NM19-10237	Rio Valdez		-105.53020	35.94346
NM19-10238	Pecos River	NM-2214.A_002	-105.67857	35.61036
NM19-10239	Commissary Creek		-105.48012	35.48298
NM19-10240	Pecos River		-104.44250	34.66427
NM19-10241	Bull Creek	NM-2214.A_091	-105.55629	35.60085
NM19-10242	Rito Azul		-105.60647	35.93062
NM19-10243	Pecos River	NM-2211.A_10	-104.94661	35.18552
NM19-10244	Gallinas River	NM-2213_21	-105.11684	35.43858
NM19-10245	Beaver Creek	NM-2212_04	-105.44854	35.76973
NM19-10246	Doctor Creek	NM-2214.A_021	-105.74733	35.77933
NM19-10247	Pecos River	NM-2211.A_00	-104.64447	34.89508
NM19-10248			-105.11654	35.17858
NM19-10249			-105.50812	35.71421
NM19-10250	Glorieta Ck	NM-2214.A_081	-105.75647	35.57318
NM19-10251	Pecos River	NM-2213_02	-105.56905	35.44548
NM19-10252	Gallinas River	NM-2213_21	-105.06610	35.42547
NM19-10253	Willow Creek	NM-2214.A_030	-105.62009	35.77465
NM19-10254	Pecos River	NM-2214.A_002	-105.68821	35.59058
NM19-10255	Tres Hermanos Creek		-105.39255	35.51032
NM19-10256	Pecos River	NM-2211.A_00	-104.54777	34.77216
NM19-10257	Rito de la Osha		-105.61191	35.69043
NM19-10258	Pecos River	NM-2214.A_002	-105.67665	35.74262
NM19-10259	Sebadilla Creek		-105.50127	35.54181
NM19-10260	Pecos River	NM-2211.A_00	-104.61180	34.80133
NM19-10261	Santillanes Creek		-105.44975	35.58706
NM19-10262	Winsor Creek	NM-2214.A_061	-105.68029	35.81603
NM19-10263	El Rito		-105.46846	35.41901
NM19-10264	Gallinas River	NM-2213_20	-104.93854	35.31279
NM19-10265	Cow Creek	NM-2214.A_102	-105.60470	35.61796
NM19-10266	Rito Sebadilloses		-105.61653	35.91579
NM19-10267	Gallinas River	NM-2213_20	-104.90969	35.17123
NM19-10268	Tecolote Creek	NM-2212_10	-105.28941	35.47069
NM19-10269	Gallinas River	NM-2213_23	-105.27913	35.65237
NM19-10270	Pecos River	NM-2214.A_000	-105.62243	35.84909
NM19-10271	Pecos River	NM-2214.A_003	-105.66726	35.52691
NM19-10272	Tecolote Creek	NM-2212_10	-105.35487	35.54684
NM19-10273			-105.48098	35.75376
NM19-10274	Rito Oscuro		-105.72238	35.84712
NM19-10275	El Rito	NM-9000.A_050	-104.65767	34.95520
NM19-10276	Pecos River	NM-2213_00	-105.33415	35.26729
NM19-10277	Blue Creek	NM-2212_15	-105.47634	35.65971
NM19-10278	Doctor Creek	NM-2214.A_021	-105.71987	35.77097
NM19-10279	Pecos River	NM-2211.A_00	-104.70630	34.95067
NM19-10280	Gallinas River	NM-2213_21	-105.01183	35.41641
NM19-10281	Beaver Creek	NM-2212_04	-105.44793	35.77503
NM19-10282	Cow Creek	NM-2214.A_102	-105.62358	35.64621
NM19-10283	Commissary Creek		-105.47495	35.50084
NM19-10284	Pecos River		-104.45289	34.68635

Site ID	Stream Name[1]	AU ID[2]	Longitude	Latitude
NM19-10285	Elk Creek		-105.57482	35.73357
NM19-10286			-105.74056	35.83466
NM19-10287	Cow Creek	NM-2214.A_090	-105.55250	35.47017
NM19-10288	Gallinas River	NM-2213_21	-105.10593	35.43733
NM19-10289	Gallinas River	NM-2212_00	-105.37941	35.69000
NM19-10290	Panchuela Creek	NM-2214.A_060	-105.68477	35.90192
NM19-10291	Pintada Arroyo		-104.84773	34.90359
NM19-10292	Pecos River	NM-2213_00	-105.17368	35.23702
NM19-10293	Pecos Arroyo	NM-2213_22	-105.21838	35.65165
NM19-10294	Pecos River	NM-2214.A_000	-105.61826	35.85491
NM19-10295	Pecos River	NM-2211.A_10	-104.99173	35.18833
NM19-10296	Pecos Arroyo	NM-2213_22	-105.20667	35.57286
NM19-10297	Bear Creek		-105.58764	35.80013
NM19-10298	Macho Canyon Creek	NM-2214.A_071	-105.75051	35.71738
NM19-10299	San Pablo Creek		-105.38270	35.55450
NM19-10300	Pecos River	NM-2211.A_00	-104.47947	34.68792

[1] Unnamed streams are blank
[2] Site is not located in an established AU

2020 PROBABILISTIC MONITORING SAMPLING FRAME

Site ID	Stream Name[1]	AU ID[2]	Longitude	Latitude
NM19-10301			-108.60186	31.97774
NM19-10302	Gila River	NM-2502.A_30	-108.20862	33.17926
NM19-10303	Bear Creek	NM-2503_01	-108.28919	32.90066
NM19-10304	Whitewater Creek	NM-2603.A_10	-108.85199	33.35104
NM19-10305	West Fork Gila R	NM-2503_30	-108.26956	33.23072
NM19-10306	Sids Prong		-107.81212	33.00655
NM19-10307	Beaver Creek	NM-2503_25	-108.12016	33.34952
NM19-10308	Pueblo Creek		-108.96430	33.58266
NM19-10309	San Simon River		-109.02399	31.99974
NM19-10310	Mogollon Creek	NM-2503_05	-108.57433	33.08202
NM19-10311	Middle Fork Gila River	NM-2503_40	-108.37061	33.34686
NM19-10312	Centerfire Creek	NM-2603.A_50	-108.86530	33.83695
NM19-10313	Mimbres R	NM-2804_00	-108.00117	32.99140
NM19-10314	Bear Creek	NM-2503_01	-108.41989	32.94762
NM19-10315	South Fork Negrito Creek		-108.56546	33.51541
NM19-10316	Tularosa River	NM-2603.A_41	-108.56005	33.87446
NM19-10317	Percha Ck	NM-2103.A_21	-107.35575	32.90230
NM19-10318	South Diamond Creek		-107.89265	33.23131
NM19-10319	Mangas Creek	NM-2502.A_21	-108.53344	32.85514
NM19-10320			-108.75276	33.31741
NM19-10321	Dry Blue Creek	NM-2603.A_70	-109.00193	33.75986
NM19-10322			-107.87341	32.98976
NM19-10323	East Fork Gila River	NM-2503_20	-108.11483	33.31012
NM19-10324			-108.88196	33.55943
NM19-10325	Mimbres R	NM-2803_00	-107.94131	32.83331
NM19-10326			-108.47234	33.13242
NM19-10327	Whitewater Creek	NM-2603.A_12	-108.65499	33.32108
NM19-10328	Centerfire Creek	NM-2603.A_50	-108.86348	33.87815
NM19-10329	Black Canyon Creek	NM-2503_21	-108.00082	33.18454
NM19-10330	Gila River	NM-2502.A_30	-108.29097	33.06913
NM19-10331	Gilita Creek	NM-2503_45	-108.55201	33.41470
NM19-10332	Tularosa River	NM-2603.A_40	-108.63852	33.82343

Site ID	Stream Name[1]	AU ID[2]	Longitude	Latitude
NM19-10333	Palomas Creek	NM-2103.A_60	-107.52316	33.18197
NM19-10334	South Fork Palomas Creek		-107.73006	33.15852
NM19-10335	Poverty Creek		-107.78254	33.46664
NM19-10336	Tularosa River	NM-2603.A_40	-108.72637	33.68902
NM19-10337	Sacaton Creek		-108.69736	33.18001
NM19-10338			-107.73987	32.83781
NM19-10339	Middle Fork Gila River	NM-2503_41	-108.39011	33.35646
NM19-10340	San Francisco River	NM-2602_10	-108.76141	33.77302
NM19-10341	Mimbres R	NM-2803_00	-107.91752	32.79685
NM19-10342	Gila River	NM-2502.A_30	-108.50069	33.07227
NM19-10343	West Fork Mogollon Creek		-108.61146	33.27879
NM19-10344	Dry Blue Creek	NM-2603.A_70	-109.02803	33.79791
NM19-10345	Apache Creek		-108.13765	33.13947
NM19-10346	Rain Creek		-108.66516	33.17730
NM19-10347	San Francisco River	NM-2601_00	-108.95631	33.21286
NM19-10348			-108.35121	33.08934
NM19-10349	Bear Creek	NM-2503_01	-108.42508	32.95426
NM19-10350	Mimbres R	NM-2804_40	-107.86337	33.12382
NM19-10351	Taylor Creek	NM-2503_23	-107.84310	33.37066
NM19-10352	Negrito Creek	NM-2603.A_42	-108.66629	33.64567
NM19-10353	Cherry Creek		-108.88079	32.88082
NM19-10354	North Percha Creek		-107.71583	32.98077
NM19-10355	Canyon Creek	NM-2503_43	-108.37277	33.43660
NM19-10356	West Fork Pueblo Creek		-109.02487	33.62527
NM19-10357	Bear Creek	NM-2503_01	-108.22270	32.86394
NM19-10358	Little Creek	NM-2503_31	-108.30318	33.20539
NM19-10359	West Fork Gila R	NM-2503_30	-108.51955	33.32690
NM19-10360	Trout Creek	NM-2603.A_60	-109.00910	33.92852
NM19-10361	Little Creek	NM-2503_31	-108.25991	33.19473
NM19-10362	Blue Creek	NM-2501_10	-108.82867	32.66574
NM19-10363	Devils Creek		-108.76610	33.48743
NM19-10364	White Creek	NM-2503_32	-108.47970	33.26682
NM19-10365	San Simon River		-109.00734	31.88828
NM19-10366	Morgan Creek		-107.77825	33.18047
NM19-10367	Bear Creek	NM-2503_01	-108.37934	32.91752
NM19-10368	Big Dry Creek		-108.74181	33.27255
NM19-10369	Spider Creek		-108.72991	33.29500
NM19-10370	North Seco Creek		-107.76522	33.10961
NM19-10371	Beaver Creek	NM-2503_25	-108.11922	33.40125
NM19-10372	Pueblo Creek		-108.97824	33.57666
NM19-10373			-109.01534	33.05514
NM19-10374			-108.57610	33.20712
NM19-10375	Canyon Creek	NM-2503_43	-108.37748	33.36153
NM19-10376	Trout Creek	NM-2603.A_60	-108.93910	33.84254
NM19-10377	Diamond Ck	NM-2503_22	-108.11653	33.26428
NM19-10378	Gila River	NM-2502.A_30	-108.35234	33.06808
NM19-10379			-108.61343	33.38288
NM19-10380	Tularosa River	NM-2603.A_41	-108.43801	33.92211
NM19-10381	Percha Ck	NM-2103.A_21	-107.46772	32.91173
NM19-10382	South Diamond Creek		-107.90928	33.22404
NM19-10383	Mimbres R	NM-2803_00	-107.85013	32.64267
NM19-10384	Spider Creek		-108.71598	33.31410
NM19-10385	San Francisco River	NM-2601_21	-108.81306	33.58558
NM19-10386			-107.86484	32.93403
NM19-10387	Beaver Creek	NM-2503_25	-108.12259	33.45238
NM19-10388			-108.88647	33.60807
NM19-10389	Mimbres R	NM-2803_00	-107.98418	32.88098

Site ID	Stream Name[1]	AU ID[2]	Longitude	Latitude
NM19-10390			-108.55441	33.14224
NM19-10391	Iron Creek	NM-2503_44	-108.60958	33.33243
NM19-10392	Centerfire Creek	NM-2603.A_50	-108.81224	33.98931
NM19-10393			-108.12954	32.97410
NM19-10394	Pine Cienega Creek		-108.98421	32.99259
NM19-10395	San Francisco River	NM-2601_20	-108.91269	33.36740
NM19-10396			-108.74111	33.85754
NM19-10397	Palomas Creek	NM-2103.A_60	-107.47447	33.21265
NM19-10398	North Fork Palomas Creek		-107.75531	33.26539
NM19-10399	Diamond Ck	NM-2503_24	-107.93108	33.29905
NM19-10400	Tularosa River	NM-2603.A_40	-108.71208	33.71226
NM19-10401	Canyon Creek	NM-2503_43	-108.37311	33.40180
NM19-10402	Hot Springs Ck	NM-2803_10	-107.79358	32.79190
NM19-10403			-108.48867	33.37779
NM19-10404			-108.77888	33.74781
NM19-10405	Bear Canyon	NM-2804_10	-108.12990	32.89677
NM19-10406	Bear Creek	NM-2503_01	-108.56934	32.95403
NM19-10407	West Fork Gila R	NM-2503_30	-108.58436	33.30834
NM19-10408	San Francisco River	NM-2602_20	-108.98586	33.81447
NM19-10409	Squaw Creek		-108.12612	33.14605
NM19-10410	Duck Creek		-108.64215	32.99593
NM19-10411	Mule Creek	NM-2601_01	-108.94203	33.17681
NM19-10412	Rain Creek		-108.65820	33.21261
NM19-10413	Mogollon Creek	NM-2503_02	-108.63794	33.18869
NM19-10414	McKnight Canyon	NM-2804_30	-107.89463	33.03757
NM19-10415	East Fork Gila River	NM-2503_20	-108.14263	33.27432
NM19-10416	South Fork Negrito Creek	NM-2603.A_43	-108.61399	33.54641
NM19-10417	North Seco Creek		-107.78739	33.10040
NM19-10418	North Percha Creek		-107.61538	32.96597
NM19-10419	McKenna Creek		-108.44329	33.25151
NM19-10420	Pueblo Creek		-108.99135	33.65708
NM19-10421	Cherry Creek		-108.23580	32.90673
NM19-10422	Turkey Creek	NM-2503_03	-108.42425	33.14769
NM19-10423			-108.52677	33.23285
NM19-10424			-109.04303	33.94362
NM19-10425	Middle Fork Gila River	NM-2503_40	-108.23311	33.24948
NM19-10426	Blue Creek	NM-2501_10	-108.83099	32.76324
NM19-10427	Deep Creek		-108.71185	33.48592
NM19-10428	Pace Creek		-109.04173	33.76061
NM19-10429	Las Animas Ck	NM-2103.A_51	-107.42842	32.99148
NM19-10430	Circle Seven Creek		-107.79108	33.22213
NM19-10431	Mangas Creek	NM-2502.A_22	-108.42709	32.71654
NM19-10432	Little Dry Creek		-108.74783	33.20860
NM19-10433	Chloride Creek		-107.76480	33.33219
NM19-10434			-107.88469	32.88244
NM19-10435	Diamond Ck	NM-2503_24	-107.98721	33.29789
NM19-10436	Pueblo Creek		-108.93869	33.48910
NM19-10437	Bear Canyon	NM-2804_10	-108.05314	32.90333
NM19-10438	Mogollon Creek	NM-2503_02	-108.61545	33.19369
NM19-10439	Middle Fork Gila River	NM-2503_40	-108.35026	33.32490
NM19-10440	San Francisco River	NM-2602_10	-108.80321	33.83345
NM19-10441	Black Canyon Creek	NM-2503_21	-108.10208	33.16744
NM19-10442	Sapillo Creek	NM-2503_04	-108.30718	33.04876
NM19-10443	Copper Creek		-108.69223	33.42839
NM19-10444			-107.95213	33.15194
NM19-10445	Palomas Creek	NM-2103.A_60	-107.38257	33.12048
NM19-10446	North Fork Palomas Creek		-107.80932	33.26327

Site ID	Stream Name[1]	AU ID[2]	Longitude	Latitude
NM19-10447	Chloride Creek		-107.76911	33.32940
NM19-10448	Big Dry Creek		-108.72846	33.28427
NM19-10449	Cherry Creek		-108.86354	32.87286
NM19-10450	Mineral Creek		-107.74800	32.96994
NM19-10451			-108.02602	33.47770
NM19-10452	San Francisco River	NM-2601_21	-108.80514	33.60157
NM19-10453	Whitewater Creek	NM-2803_30	-108.12125	32.71591
NM19-10454	Turkey Creek	NM-2503_03	-108.48444	33.09405
NM19-10455	West Fork Gila R	NM-2503_30	-108.61420	33.30588
NM19-10456	Percha Ck	NM-2103.A_21	-107.48884	32.91517
NM19-10457	Trout Creek		-108.25864	33.01643
NM19-10458	Blue Creek	NM-2501_10	-108.85400	32.90184
NM19-10459	San Francisco River	NM-2601_21	-108.89500	33.48108
NM19-10460			-108.68586	33.95058
NM19-10461	Cuchillo Negro Creek		-107.52691	33.26050
NM19-10462	North Seco Creek		-107.73251	33.11331
NM19-10463	Diamond Ck	NM-2503_24	-107.85473	33.29646
NM19-10464	Tularosa River	NM-2603.A_40	-108.66162	33.80288
NM19-10465	Gilita Creek	NM-2503_45	-108.49629	33.41272
NM19-10466	Cold Springs Creek	NM-2803_11	-107.82163	32.81723
NM19-10467	Snow Canyon Ck	NM-2503_46	-108.49482	33.41663
NM19-10468	San Francisco River	NM-2601_22	-108.76864	33.68535
NM19-10469	Allie Canyon	NM-2804_20	-108.11170	32.91546
NM19-10470	Turkey Creek	NM-2503_03	-108.36930	33.14009
NM19-10471	West Fork Gila R	NM-2503_30	-108.56967	33.31706
NM19-10472	Dillman Creek		-109.00693	33.87148
NM19-10473	Black Canyon Creek	NM-2503_21	-108.14685	33.15251
NM19-10474	Mule Creek	NM-2601_01	-108.95134	33.15538
NM19-10475	San Francisco River	NM-2601_00	-108.91948	33.21914
NM19-10476			-108.48277	33.16509
NM19-10477	San Francisco River	NM-2601_21	-108.89224	33.49968
NM19-10478	Las Animas Ck	NM-2103.A_50	-107.82591	33.04579
NM19-10479	Middle Fork Gila River	NM-2503_40	-108.23366	33.26790
NM19-10480	South Fork Negrito Creek	NM-2603.A_43	-108.56432	33.53536
NM19-10481	Indian Creek		-108.31588	33.33858
NM19-10482	Percha Ck	NM-2103.A_20	-107.59623	32.91504
NM19-10483	West Fork Gila R	NM-2503_30	-108.48995	33.29740
NM19-10484	Dry Blue Creek	NM-2603.A_70	-109.02865	33.74073
NM19-10485	Mimbres R	NM-2804_00	-107.99276	33.02439
NM19-10486			-108.37688	33.09117
NM19-10487	White Creek	NM-2503_32	-108.53143	33.27903
NM19-10488	S A Creek	NM-99.A_002	-108.98984	33.95737
NM19-10489	East Fork Gila River	NM-2503_20	-108.15408	33.21406
NM19-10490	Blue Creek	NM-2501_10	-108.83846	32.86286
NM19-10491	Deep Creek		-108.80091	33.45487
NM19-10492	Bear Creek		-108.22042	32.87507
NM19-10493	Las Animas Ck	NM-2103.A_50	-107.48569	33.01656
NM19-10494	South Diamond Creek		-107.85535	33.23625
NM19-10495	Mangas Creek	NM-2502.A_22	-108.49141	32.80798
NM19-10496	Little Whitewater Creek		-108.80889	33.31443
NM19-10497			-108.02265	33.47974
NM19-10498	South Percha Creek		-107.73590	32.89097
NM19-10499	Diamond Ck	NM-2503_22	-108.05855	33.28959
NM19-10500	Pueblo Creek		-108.97641	33.54145
NM19-10501	McKnight Canyon	NM-2804_30	-107.96076	32.98042
NM19-10502	South Fork Mogollow Creek		-108.54301	33.19319
NM19-10503	West Fork Gila R	NM-2503_30	-108.30964	33.25439

Site ID	Stream Name[1]	AU ID[2]	Longitude	Latitude
NM19-10504	Centerfire Creek	NM-2603.A_50	-108.82912	33.92305
NM19-10505			-107.94813	33.14518
NM19-10506	Cow Creek		-108.28360	33.02520
NM19-10507	Iron Creek	NM-2503_44	-108.57214	33.37768
NM19-10508			-108.71036	33.99507
NM19-10509	Las Animas Ck	NM-2103.A_50	-107.53376	33.04261
NM19-10510	Byers Run		-107.78138	33.28333
NM19-10511	Poverty Creek		-107.79383	33.47233
NM19-10512	Big Dry Creek		-108.76083	33.25829
NM19-10513	Iron Creek	NM-2503_44	-108.61727	33.32533
NM19-10514	Mimbres R	NM-2803_00	-107.85516	32.72081
NM19-10515			-108.01436	33.49359
NM19-10516	San Francisco River	NM-2601_21	-108.88159	33.51093
NM19-10517	Whitewater Creek	NM-2803_30	-108.13178	32.75510
NM19-10518	Bear Creek	NM-2503_01	-108.52097	32.97274
NM19-10519	Rain Creek		-108.65359	33.25553
NM19-10520	Mangas Creek	NM-2502.A_22	-108.42357	32.70763
NM19-10521	Trout Creek		-108.26451	33.03079
NM19-10522	Blue Creek	NM-2501_10	-108.90148	32.92209
NM19-10523	San Francisco River	NM-2601_20	-108.92413	33.41195
NM19-10524			-108.66035	33.89876
NM19-10525	Palomas Creek	NM-2103.A_60	-107.33740	33.08639
NM19-10526	Las Animas Ck	NM-2103.A_50	-107.56391	33.03980
NM19-10527			-107.82714	33.33495
NM19-10528	Tularosa River	NM-2603.A_40	-108.69630	33.73739
NM19-10529	Cold Springs Creek	NM-2803_11	-107.82914	32.81009
NM19-10530	Mineral Creek		-107.70916	32.96903
NM19-10531	Canyon Creek	NM-2503_43	-108.37014	33.40363
NM19-10532	San Francisco River	NM-2601_22	-108.78013	33.67813
NM19-10533			-108.11220	32.95404
NM19-10534			-108.46973	33.15647
NM19-10535	Cub Creek		-108.52345	33.30205
NM19-10536	Trout Creek	NM-2603.A_60	-109.00619	33.88752
NM19-10537	West Fork Gila R	NM-2503_10	-108.23163	33.21216
NM19-10538			-108.96394	33.08731
NM19-10539	San Francisco River	NM-2601_10	-108.88737	33.31367
NM19-10540	Palomas Creek	NM-2103.A_60	-107.53176	33.18074
NM19-10541	Gila River	NM-2502.A_30	-108.37173	33.06330
NM19-10542	Las Animas Ck	NM-2103.A_50	-107.77046	33.05055
NM19-10543	Middle Fork Gila River	NM-2503_40	-108.26883	33.29169
NM19-10544	Pueblo Creek		-108.97987	33.61968
NM19-10545	South Fork Cuchillo Negro Creek		-107.78737	33.31347
NM19-10546	Mogollon Creek	NM-2503_05	-108.61095	33.11767
NM19-10547	Clear Creek		-108.43428	33.33929
NM19-10548	Rain Creek		-108.66253	33.20085
NM19-10549			-108.05779	33.08332
NM19-10550			-108.43541	33.05842
NM19-10551	Deep Creek		-108.68552	33.49308
NM19-10552	Little Creek	NM-2503_31	-108.33706	33.22069
NM19-10553	East Fork Gila River	NM-2503_20	-108.17455	33.24568
NM19-10554	San Vicente Creek	NM-9000.A_025	-108.26868	32.75810
NM19-10555	Copper Creek		-108.71922	33.42425
NM19-10556	South Fork Whitewater Creek		-108.76860	33.32792
NM19-10557	Sapillo Creek	NM-2503_04	-108.16549	33.03061
NM19-10558	Cow Creek		-108.27181	32.99801
NM19-10559	San Francisco River	NM-2601_20	-108.91085	33.35012

Site ID	Stream Name[1]	AU ID[2]	Longitude	Latitude
NM19-10560	Tularosa River	NM-2603.A_41	-108.58625	33.87217
NM19-10561	Mimbres R	NM-2803_00	-107.86794	32.73151
NM19-10562	Gila River	NM-2502.A_30	-108.51991	33.05500
NM19-10563	Rain Creek		-108.65744	33.21693
NM19-10564	Trout Creek	NM-2603.A_60	-108.95811	33.84848
NM19-10565			-108.57250	33.32852
NM19-10566	North Seco Creek		-107.81171	33.11630
NM19-10567	Taylor Creek	NM-2503_23	-108.05083	33.38041
NM19-10568			-109.02120	33.53289
NM19-10569	Percha Ck	NM-2103.A_21	-107.33006	32.89660
NM19-10570	Black Canyon Creek	NM-2503_21	-107.87460	33.16782
NM19-10571	Whitewater Creek	NM-2803_30	-108.09279	32.66404
NM19-10572	Spruce Creek		-108.70466	33.29982
NM19-10573	Tularosa River	NM-2603.A_41	-108.56392	33.87097
NM19-10574	North Percha Creek		-107.60049	32.94297
NM19-10575	West Fork Gila R	NM-2503_30	-108.45609	33.27504
NM19-10576			-109.03330	33.71421
NM19-10577	Mimbres R	NM-2804_00	-108.01865	32.94696
NM19-10578	Mogollon Creek	NM-2503_02	-108.48121	33.19600
NM19-10579	West Fork Gila R	NM-2503_30	-108.37756	33.26664
NM19-10580			-108.85676	33.88338
NM19-10581	West Fork Gila R	NM-2503_30	-108.26418	33.22895
NM19-10582	Mule Creek		-108.98363	33.09967
NM19-10583	San Francisco River	NM-2601_10	-108.88152	33.28483
NM19-10584	Mangas Creek	NM-2502.A_22	-108.35492	32.65826
NM19-10585	McKnight Canyon	NM-2804_30	-107.93745	33.02155
NM19-10586			-108.37568	33.08606
NM19-10587	Cub Creek		-108.56468	33.28997
NM19-10588	Little Creek	NM-2503_31	-108.26920	33.19549
NM19-10589			-108.69476	33.33794
NM19-10590	Mimbres R	NM-2803_00	-107.86201	32.72985
NM19-10591	South Fork Negrito Creek	NM-2603.A_43	-108.54515	33.53985
NM19-10592	San Francisco River	NM-2601_21	-108.86444	33.54768
NM19-10593	Poverty Creek		-107.79942	33.47414
NM19-10594	Las Animas Ck	NM-2103.A_50	-107.71560	33.05180
NM19-10595	Taylor Creek	NM-2503_23	-107.92514	33.40123
NM19-10596	South Fork Negrito Creek	NM-2603.A_43	-108.62076	33.59767
NM19-10597	East Fork Gila River	NM-2503_20	-108.18154	33.18982
NM19-10598	San Vicente Creek	NM-9000.A_025	-108.25147	32.72156
NM19-10599	Whitewater Creek	NM-2603.A_12	-108.80054	33.36332
NM19-10600			-107.99054	33.50160

[1] Unnamed streams are blank

[2] If blank, site is not located in an established AU