NPDES PERMIT NO. NMR04A000

FY 2023
MS4 ANNUAL REPORT

FOR

ALBUQUERQUE METROPOLITAN ARROYO FLOOD CONTROL AUTHORITY

DECEMBER 1, 2023






2600 PROSPECT AVENUE NE

ALBUQUERQUE, NM 87107

(505) 884-2215

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AMAFCA FY 2023 Annual Report
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MS4 Program Summaries Continued:

Annual Report Format

National Pollutant Discharge Elimination System Stormwater Program
MS4 Annual Report Form

Check box if you are submitting an individual Annual Report with cooperative program elements ☒

Check box if you are submitting an individual Annual Report with individual program elements ☐

Check box if this is a new name, address, etc. ☐

1. MS4(s) Information

Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA)
Name of MS4

Kevin | Troutman | Interim Executive Director
Name of Contact Person (First) (Last) (Title)

505-884-2215 | KTroutman@amafca.org
Telephone (including area code) E-mail

2600 Prospect Ave. NE
Mailing Address

Albuquerque | NM | 87107
City State ZIP code

What size population does your MS4(s) serve? 562,599 NPDES number NMR04A016

What is the reporting period for this report? (mm/dd/yyyy) From 07/01/2022 to 06/30/2023

2. Water Quality Priorities

A. Does your MS4(s) discharge to waters listed as impaired on a state 303(d) list? ☒ Yes ☐ No

B. If yes, identify each impaired water, the impairment, whether a TMDL has been approved by EPA for each, and whether the TMDL assigns a wasteload allocation to your MS4(s). Use a new line for each impairment, and attach additional pages as necessary.

Impaired Water	Impairment	Approved TMDL		TMDL assigns WLA to MS4	
Rio Grande (Isleta -Tijeras)	E. coli	☒ Yes	☐ No	☒ Yes	☐ No
Rio Grande (Isleta -Tijeras)	DO, PCBs & Hg-Fish Consumpti	☐ Yes	☒ No	☐ Yes	☐ No
Rio Grande (Tijeras - Alameda)	DO & Temperature	☐ Yes	☒ No	☐ Yes	☐ No
Rio Grande (Tijeras - Alameda)	PCBs & Hg-Fish Consumption A	☐ Yes	☒ No	☐ Yes	☐ No

2. B. Continued

Impaired Water	Impairment	Approved TMDL		TMDL assigns WLA to MS4	
Rio Grande (Tijeras - Alameda)	E. coli	☒ Yes	☐ No	☒ Yes	☐ No
Rio Grande (Alameda - US550)	PCBs & Hg-Fish Consumption A	☐ Yes	☒ No	☐ Yes	☐ No
Rio Grande (Alameda - US550)	Gross Alpha, adjusted & PCBs	☐ Yes	☒ No	☐ Yes	☐ No
Rio Grande (Alameda - US550)	E. coli	☒ Yes	☐ No	☒ Yes	☐ No

C. What specific sources contributing to the impairment(s) are you targeting in your stormwater program?

Pet waste (E. coli) within the watershed & potential low DO related to the NDC outfall.

D. Do you discharge to any high-quality waters (e.g., Tier 2, Tier 3, outstanding natural resource waters, or other state or federal designation)? ☐ Yes ☒ No

E. Are you implementing additional specific provisions to ensure their continued integrity? ☐ Yes ☒ No

3. Public Education and Public Participation

A. Is your public education program targeting specific pollutants and sources of those pollutants? ☒ Yes ☐ No

B. If yes, what are the specific sources and/or pollutants addressed by your public education program?

AMAFCA's programs target specific sources & pollutants, as required in MS4 Permit.

C. Note specific successful outcome(s) (e.g., quantified reduction in fertilizer use; NOT tasks, events, publications) fully or partially attributable to your public education program during this reporting period.

Please refer to the attached CMC program summary for lab results related to a successful sampling outcome.

D. Do you have an advisory committee or other body comprised of the public and other stakeholders that provides regular input on your stormwater program? ☒ Yes ☐ No

4. Construction

A. Do you have an ordinance or other regulatory mechanism stipulating:

Erosion and sediment control requirements? ☒ Yes ☐ No

Other construction waste control requirements? ☒ Yes ☐ No

Requirement to submit construction plans for review? ☒ Yes ☐ No

MS4 enforcement authority? ☒ Yes ☐ No

B. Do you have written procedures for:

Reviewing construction plans? ☒ Yes ☐ No

Performing inspections? ☒ Yes ☐ No

Responding to violations? ☒ Yes ☐ No

C. Identify the number of active construction sites ≥ 1 acre in operation in your jurisdiction at any time during the reporting period. 5

D. How many of the sites identified in 4.C did you inspect during this reporting period? 5

E. Describe, on average, the frequency with which your program conducts construction site inspections.

Inspections complied with CGP requirements for inspection frequency.

F. Do you prioritize certain construction sites for more frequent inspections? ☐ Yes ☒ No

If Yes, based on what criteria?

G. Identify which of the following types of enforcement actions you used during the reporting period for construction activities, indicate the number of actions, or note those for which you do not have authority:

☐ Yes	Notice of violation		No Authority	☒
☐ Yes	Administrative fines		No Authority	☒
☐ Yes	Stop Work Orders	0	No Authority	☐
☐ Yes	Civil penalties		No Authority	☒
☐ Yes	Criminal actions		No Authority	☒
☐ Yes	Administrative orders		No Authority	☒
☒ Yes	Other	SWPPP Inspections		

H. Do you use an electronic tool (e.g., GIS, data base, spreadsheet) to track the locations, inspection results, and enforcement actions of active construction sites in your jurisdiction? ☒ Yes ☐ No

I. What are the 3 most common types of violations documented during this reporting period?

Ineffective track out pads, routine maintenance of silt fencing, and turbidity testing for dewatering activites.

J. How often do municipal employees receive training on the construction program? As required w/CGP updates

5. Illicit Discharge Elimination

A. Have you completed a map of all outfalls and receiving waters of your storm sewer system? ☒ Yes ☐ No

B. Have you completed a map of all storm drain pipes and other conveyances in the storm sewer system? ☒ Yes ☐ No

C. Identify the number of outfalls in your storm sewer system. 5

D. Do you have documented procedures, including frequency, for screening outfalls? ☒ Yes ☐ No

E. Of the outfalls identified in 5.C, how many were screened for dry weather discharges during this reporting period?

5 - All outfalls

F. Of the outfalls identified in 5.C, how many have been screened for dry weather discharges at any time since you obtained MS4 permit coverage? 5 - All outfalls

G. What is your frequency for screening outfalls for illicit discharges? Describe any variation based on size/type.

Typically, outfalls are visually screened monthly.

H. Do you have an ordinance or other regulatory mechanism that effectively prohibits illicit discharges? ☒ Yes ☐ No

I. Do you have an ordinance or other regulatory mechanism that provides authority for you to take enforcement action and/or recover costs for addressing illicit discharges? ☐ Yes ☒ No

J. During this reporting period, how many illicit discharges/illegal connections have you discovered? 5

K. Of those illicit discharges/illegal connections that have been discovered or reported, how many have been eliminated? All

L. How often do municipal employees receive training on the illicit discharge program? As required

6. Stormwater Management for Municipal Operations

A. Have stormwater pollution prevention plans (or an equivalent plan) been developed for:

All public parks, ball fields, other recreational facilities and other open spaces	☐ Yes	☒ No
All municipal construction activities, including those disturbing less than 1 acre	☒ Yes	☐ No
All municipal turf grass/landscape management activities	☐ Yes	☒ No
All municipal vehicle fueling, operation and maintenance activities	☒ Yes	☐ No
All municipal maintenance yards	☒ Yes	☐ No
All municipal waste handling and disposal areas	☒ Yes	☐ No

Other

B. Are stormwater inspections conducted at these facilities? ☒ Yes ☐ No

C. If Yes, at what frequency are inspections conducted? As required

D. List activities for which operating procedures or management practices specific to stormwater management have been developed (e.g., road repairs, catch basin cleaning).

Procedures have been developed for AMAFCA Operation, Maintenance, and Inspection activities.

E. Do you prioritize certain municipal activities and/or facilities for more frequent inspection? ☐ Yes ☒ No

F. If Yes, which activities and/or facilities receive most frequent inspections?

G. Do all municipal employees and contractors overseeing planning and implementation of stormwater-related activities receive comprehensive training on stormwater management? ☒ Yes ☐ No

H. If yes, do you also provide regular updates and refreshers? ☒ Yes ☐ No

I. If so, how frequently and/or under what circumstances? Typically on an annual basis.

7. Long-term (Post-Construction) Stormwater Measures

A. Do you have an ordinance or other regulatory mechanism to require:

Site plan reviews for stormwater/water quality of all new and re-development projects?	☒ Yes	☐ No
Long-term operation and maintenance of stormwater management controls?	☒ Yes	☐ No
Retrofitting to incorporate long-term stormwater management controls?	☒ Yes	☐ No

B. If you have retrofit requirements, what are the circumstances/criteria?

As required by the MS4 permit for post-construction stormwater quality volume.

C What are your criteria for determining which new/re-development stormwater plans you will review (e.g., all projects, projects disturbing greater than one acre, etc.)?

Review all private development with a connection, that may impact, and/or are located adjacent to AMAFCA facilities.

D. Do you require water quality or quantity design standards or performance standards, either directly or by reference to a state or other standard, be met for new development and re-development? ☒ Yes ☐ No

E. Do these performance or design standards require that pre-development hydrology be met for:

Flow volumes	☐ Yes	☒ No
Peak discharge rates	☒ Yes	☐ No
Discharge frequency	☒ Yes	☐ No
Flow duration	☐ Yes	☒ No

F. Please provide the URL/reference where all post-construction stormwater management standards can be found.

https://www.amafca.org

G. How many development and redevelopment project plans were reviewed during the reporting period to assess impacts to water quality and receiving stream protection? 198

H. How many of the plans identified in 7.G were approved? N/A

I. How many privately owned permanent stormwater management practices/facilities were inspected during the reporting period? N/A

J. How many of the practices/facilities identified in I were found to have inadequate maintenance? N/A

K. How long do you give operators to remedy any operation and maintenance deficiencies identified during inspections? N/A

L. Do you have authority to take enforcement action for failure to properly operate and maintain stormwater practices/facilities? ☐ Yes ☒ No

M. How many formal enforcement actions (i.e., more than a verbal or written warning) were taken for failure to adequately operate and/or maintain stormwater management practices? N/A

N. Do you use an electronic tool (e.g., GIS, database, spreadsheet) to track post-construction BMPs, inspections and maintenance? ☒ Yes ☐ No

O. Do all municipal departments and/or staff (as relevant) have access to this tracking system? ☒ Yes ☐ No

P. How often do municipal employees receive training on the post-construction program? As required

8. Program Resources

A. What was the annual expenditure to implement MS4 permit requirements this reporting period? 241,434

B. What is next year's budget for implementing the requirements of your MS4 NPDES permit? 184,019

C. This year what is/are your source(s) of funding for the stormwater program, and annual revenue (amount or percentage) derived from each?

Source:	Mill Levy Property Taxes	Amount $		OR %	100
Source:		Amount $		OR %	
Source:		Amount $		OR %	

D. How many FTEs does your municipality devote to the stormwater program (specifically for implementing the stormwater program; not municipal employees with other primary responsibilities)? 1

E. Do you share program implementation responsibilities with any other entities? ☒ Yes ☐ No

Entity	Activity/Task/Responsibility	Your Oversight/Accountability Mechanism
Various	Storm Water Quality Team (SWQT)	Signed Joint Agreement
Various	Technical Advisory Group (TAG)	Signed Joint Agreement
Various	Compliance Monitoring Coop. (CMC)	Signed Joint Agreement

9. Evaluating/Measuring Progress

A. What indicators do you use to evaluate the overall effectiveness of your stormwater management program, how long have you been tracking them, and at what frequency? These are not measurable goals for individual management practices or tasks, but large-scale or long-term metrics for the overall program, such as macroinvertebrate community indices, measures of effective impervious cover in the watershed, indicators of in-stream hydrologic stability, etc.

Indicator	Began Tracking (year)	Frequency	Number of Locations
Example: E. coli	2003	Weekly April–September	20
Various (EPA approved analyte list)	2016	Qualifying events (up to 7)	3
Various/EPA approved analyte list	2014	Wet weather, annually	8
Various/EPA approved analyte list	2021	Wet weather, annually	11
Please contact AMAFCA			
for additional information			

B. What environmental quality trends have you documented over the duration of your stormwater program? Reports or summaries can be attached electronically, or provide the URL to where they may be found on the Web.

Trends and data collected by CMC & AMAFCA has been provided to NMED for additional analysis.

10. Additional Information

Please attach any additional information on the performance of your MS4 program, including information required in Parts I.C and III.B. If providing clarification to any of the questions on this form, please provide the question number (e.g., 2C) in your response.

Certification Statement and Signature

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

☒ Yes ☐ No

Federal regulations require this application to be signed as follows: **For a municipal, State, Federal, or other public facility**: by either a principal executive or ranking elected official.

Signature 

Kevin Trautman Interim Exec Dir | 12/1/2023

Name of Certifying Official, Title | Date (mm/dd/yyyy)

NOI Section	ID	Permit Activity Description	Plan SWMP Rev. 6 - July 1, 2021	Measurable Goal SWMP Rev. 6 - July 1, 2021	Status of Implementation and Performance Assessment Permit Year July 2022 to June 2023 (FY 2023)
	3	**Part I.C - Special Conditions**			
	4	**Compliance with Water Quality Standards – General Requirements - Part I.C.1.a - c**			
Not Included in NOI	5	Part I.C.1 - Compliance with Water Quality Standards - Pursuant to Clean Water Act §402(p)(3)(B)(iii) and 40 CFR § 122.44(d)(1), this permit includes provisions to ensure that discharges from the permittee's MS4 do not cause or contribute to exceedances of applicable surface water quality standards, in addition to requirements to control discharges to the maximum extent practicable (MEP) set forth in Part I.D. Permittees shall address storm water management through development of the SWMP that shall include the following elements and specific requirements included in Part VI (sections below).	Part I.C.1 - AMAFCA's proposed plan for compliance with related Permit activities are described in the applicable sections of the AMAFCA SWMP.	• AMAFCA's measurable goals for compliance with related Permit activities are described in the applicable sections of the AMAFCA SWMP.	**See specific Permit section and activity.**
Not Included in NOI	6	Part I.C.1.a - Permittee's discharges shall not cause or contribute to an exceedance of surface water quality standards (including numeric and narrative water quality criteria) applicable to the receiving waters. In determining whether the SWMP is effective in meeting this requirement or if enhancements to the plan are needed, the permittee shall consider available monitoring data, visual assessment, and site inspection reports.	Part I.C.1.a - Compare AMAFCA monitoring data results to applicable surface water quality standards that occur in the following programs: Compliance with Water Quality Standards - Dissolved Oxygen Program, Compliance with Water Quality Standards - PCB Program, Compliance with Water Quality Standards - Temperature Program, Compliance with Water Quality Standards - Discharges to Impaired Waters with Approved TMDL Program, and the Wet Weather Monitoring Program. Refer to these sections for additional information.	• Compare AMAFCA monitoring data results to applicable surface water quality standards that occur in the following programs: Compliance with Water Quality Standards - Dissolved Oxygen Program, Compliance with Water Quality Standards - PCB Program, Compliance with Water Quality Standards - Temperature Program, Compliance with Water Quality Standards - Discharges to Impaired Waters with Approved TMDL Program, and the Wet Weather Monitoring Program. • AMAFCA's measurable goals for compliance with related Permit activities are described in the applicable sections of the AMAFCA SWMP.	**See specific Permit section and activity.**
Not Included in NOI	7	Part I.C.1.b - Applicable surface water quality standards for discharges from the permittees' MS4 are those that are approved by EPA and any other subsequent modifications approved by EPA upon the effective date of this permit found at New Mexico Administrative Code §20.6.4. Discharges from various portions of the MS4 also flow downstream into waters with Pueblo of Isleta and Pueblo of Sandia Water Quality Standards.	Part I.C.1.b - Compare AMAFCA monitoring data results to the applicable New Mexico Administrative Code §20.6.4, Pueblo of Isleta Water Quality Standards (amended on 3/18/2002, effective 7/22/2005 per EPA website), and Pueblo of Sandia Water Quality Standards (effective 3/9/2010). Compare AMAFCA monitoring data results to applicable surface water quality standards that occur in the following programs: Compliance with Water Quality Standards - Dissolved Oxygen Program, Compliance with Water Quality Standards - PCB Program, Compliance with Water Quality Standards - Temperature Program, Compliance with Water Quality Standards - Discharges to Impaired Waters with Approved TMDL Program, and the Wet Weather Monitoring Program. Refer to these sections for additional information.	• Compare AMAFCA monitoring data results to applicable surface water quality standards that occur in the following programs: Compliance with Water Quality Standards - Dissolved Oxygen Program, Compliance with Water Quality Standards - PCB Program, Compliance with Water Quality Standards - Temperature Program, Compliance with Water Quality Standards - Discharges to Impaired Waters with Approved TMDL Program, and the Wet Weather Monitoring Program. • AMAFCA's measurable goals for compliance with related Permit activities are described in the applicable sections of the AMAFCA SWMP.	**See specific Permit section and activity.**

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Not Included in NOI	8	Part I.C.1.c - The permittee shall notify EPA and the Pueblo of Isleta in writing as soon as practical but not later than 30 calendar days following each Pueblo of Isleta water quality standard exceedance at an in-stream sampling location. In the event that EPA determines that a discharge from the MS4 causes or contributes to an exceedance of applicable surface water quality standards and notifies the permittee of such an exceedance, the permittee shall, within sixty (60) days of notification, submit to EPA, NMED, Pueblo of Isleta (upon request) and Pueblo of Sandia (upon request), a report that describes controls that are currently being implemented and additional controls that will be implemented to prevent pollutants sufficient to ensure that the discharge will no longer cause or contribute to an exceedance of applicable surface water quality standards. The permittee shall implement such additional controls upon notification by EPA and shall incorporate such measures into their SWMP as described in Part I.D of this permit. NMED or the affected Tribe may provide information documenting exceedances of applicable water quality standards caused or contributed to by the discharges authorized by this permit to EPA Region 6 and request EPA take action under this paragraph.	Part I.C.1.c - AMAFCA will notify EPA and the Pueblo of Isleta of any Pueblo of Isleta of water quality standard exceedances at an in-stream sampling location (within the Rio Grande). Notification will be in writing as soon as practicable. Lab reports are typically received within 45 days of a sampling event. Preliminary review of the results typically requires 5 days. AMAFCA will include requirements to their contractors to review and report in-stream exceedances in a timely manner so that AMAFCA can better meet this requirement. AMAFCA will notify EPA and the Pueblo of Isleta within 30 days of the data review to determine a Pueblo of Isleta water quality standard exceedance at an in-stream (within the Rio Grande) sampling location. The Permit is unclear if this notification is required just for MS4 Permit compliance sampling, or if this includes results from other monitoring, such as citizen science projects. AMAFCA will provide this notification for in-stream samples that AMAFCA is involved with sampling, that result in a Pueblo of Isleta water quality standard exceedance. In addition, AMAFCA will continue to use sondes in the Rio Grande to monitor DO and temperature (refer to the Compliance with Water Quality Standards - Dissolved Oxygen (DO) Program). AMAFCA will continue to provide Isleta Pueblo with access to the real-time DO and temperature sonde data.	• AMAFCA will notify EPA and the Pueblo of Isleta of any Pueblo of Isleta water quality standard exceedances at an in-stream sampling location (within the Rio Grande). Notification will be in writing as soon as practicable. • AMAFCA will add the in-stream notification of Pueblo of Isleta water quality standard exceedance to monitoring reporting tasks with sub-consultants to ensure that results are reviewed and reported in a timely manner. • AMAFCA will continue to use sondes in the Rio Grande to monitor DO and temperature (refer to the Compliance with Water Quality Standards - Dissolved Oxygen Program). AMAFCA will continue to provide Isleta Pueblo with access to the real-time DO and temperature sonde data.	**Met FY 2023 Goals.** • AMAFCA notified EPA and the Pueblo of Isleta of any Pueblo of Isleta water quality standard exceedances at any in-stream sampling location (within the Rio Grande). Notification was in writing as soon as practical. AMAFCA notified the Pueblo of Isleta and EPA of exceedances related to CMC monitoring, AMAFCA water quality monitoring, and citizen science monitoring (BEMP).

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	9	**Compliance with Water Quality Standards – Dissolved Oxygen & Part I.C.1.d and Endangered Species Act (ESA) Requirements - Dissolved Oxygen Strategy - Part I.C.3.a**			
Not Included in NOI	10	According to the requirements in Part I.C.1.d and Part I.C.3.a.(ii), the permittees shall revise the May 1, 2012 Strategy to continue taking measures to address concerns regarding discharges to the Rio Grande by implementing controls to eliminate conditions that cause or contribute to exceedances of applicable dissolved oxygen water quality standards in waters of the United States. The permittee shall, as part of this revised strategy, complete the following activities [activities are listed in sections below]. Activities listed are a combination of permit activities in Part I.C.1.d - Special Conditions, Compliance with Water Quality Standards, Phase I Dissolved Oxygen Program and Part I.C.3.a - Dissolved Oxygen Strategy in Receiving Waters of the Rio Grande.	Part I.C.1.d and Part I.C.3.a.(ii) - The potential for low DO discharges to the Rio Grande at the NDC Embayment has been a concern which AMAFCA has been addressing, with the USFWS and EPA, since 2004. Several strategies, including various NDC Embayment modifications, have been implemented from 2011-2014. In 2015-2016, AMAFCA completed construction, after coordination with USFWS, of the NDC Outfall Grade Control Structures Modification Project and NDC Embayment Regrading Project. The NDC Embayment was filled in and regraded in 2015-2016, thereby removing the constant hydraulic connection between the Rio Grande and the NDC Bathtub/Outfall. In normal river flow conditions, water from the Rio Grande will not be able to stagnate in the Embayment and create low DO conditions. These improvement projects provide control measures to eliminate conditions that cause or contribute to exceedances of applicable DO water quality standards. These NDC projects and this Dissolved Oxygen Program Strategy were coordinated with the USFWS. AMAFCA received a Final BO from the USFWS and Special Conditions from USACE allowing the NDC Embayment to be filled in and revegetated.	• AMAFCA has completed the NDC Outfall Grade Control Structures Modification Project to fill in and revegetate the NDC Embayment and will continue following the terms of the Final BO from the USFWS and Final Special Conditions from USACE. This project is the revised strategy for the MS4 Permit elements related to DO. • A new vegetation assessment study and removal training will be conducted to determine the types of vegetation and optimal time for seeding. A revised monitoring plan, developed in consultation with the USACE, will be in place moving forward.	**Met FY 2023 Goals.** • In FY 2023, USACE provided a letter releasing AMAFCA from any further revegetation monitoring requirements at the NDC outfall related to the special conditions of the USACE Regional General Permit. USACE determined that the site has met the revegetation performance goals. AMAFCA received notification from USACE in FY 2023 documenting that the Special Conditions of the Regional General Permit relative to vegetation monitoring had been fully satisfied and monitoring was no longer required at the NDC Outfall.
Not Included in NOI	11	Part I.C.1.d.(i) and Part I.C.3.a.(i) - Identify (or continue identifying) structural elements, natural or man-made topographical and geographical formations, MS4 operations activities, or oxygen demanding pollutants contributing to reduced dissolved oxygen in the receiving waters of the Rio Grande. Both dry and wet weather discharges shall be addressed. Assessment may be made using available data or collecting additional data;	Part I.C.1.d.(i) and Part I.C.3.a.(i)- The NDC Outfall/Embayment is the primary structural element identified by AMAFCA, City of Albuquerque, EPA, and USFWS as potentially contributing to low dissolved oxygen (DO) in the receiving waters of the Rio Grande. This Dissolved Oxygen Strategy is primarily focused on addressing this element. No other specific structural elements in the watershed have been identified as contributing to reduced DO in the receiving waters of the Rio Grande. Other stormwater outfalls, including the South Diversion Channel/Tijeras Arroyo, Calabacillas Arroyo, San Antonio Arroyo, will continue to be monitored. AMAFCA will continue to operate sondes in the Rio Grande deployed for monitoring DO and temperature. The sonde locations throughout the length of the Rio Grande through the UA will assist AMAFCA with bracketing segments of the Rio Grande to better understand elements that may be contributing to reduced DO in the receiving waters of the Rio Grande. DO results from AMAFCA monitoring efforts will assist AMAFCA in determining if there are other elements that may be contributing to reduced DO in the receiving waters of the Rio Grande. AMAFCA will update its SWMP if any other specific structural elements in the watershed are identified as contributing to reduced DO in the receiving waters of the Rio Grande.	• AMAFCA will follow the monitoring measurable goals in Part I.C.1.d.(iii) below. • Related to identifying structural elements in the watershed that may be contributing to reduced DO, AMAFCA will continue to use sondes in the Rio Grande to monitor DO and temperature; the sonde data will provide valuable data related to potential DO - stormwater related connections.	**Met FY 2023 Goals.** • In FY 2023, related to identifying structural elements in the watershed that may be contributing to reduced DO, AMAFCA operated four sondes, given safe flow conditions, in the Rio Grande (US 550 at Bernalillo, Sandia Pueblo Boundary, Central Ave., and Isleta Pueblo Boundary). Additional details on the sonde monitoring are available below and in the Dissolved Oxygen Program Summary for the Annual Report. • Related to identifying structural elements in the watershed that may be contributing to reduced DO, AMAFCA collected and analyzed DO data from stormwater samples collected for the MS4 program (cooperative monitoring, AMAFCA monitoring, and Citizen Science monitoring). Details on this monitoring are provided in the Dissolved Oxygen Program Summary for the Annual Report.

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Not Included in NOI	12	Part I.C.1.d.(ii) - Continue implementing controls, and updating/revising as necessary, to eliminate structural elements or the discharge of pollutants at levels that cause or contribute to exceedances of applicable water quality standards for dissolved oxygen in waters of the United States;	Part I.C.1.d.(ii) - The primary controls for this DO Program are the NDC Outfall Grade Control Structures Modification Project and Embayment Grading Project. The water quality improvement goal for the NDC Outfall Grade Control Structures Modification Project is to improve maintenance operations, thereby improving efficiency of sediment, trash and debris removal due to better access and improved geometry. The NDC Embayment Regrading Project, as discussed above, removes the constant hydraulic connection between the Rio Grande and the NDC Bathtub/Outfall. These improvement projects provide control measures to mitigate conditions that cause or contribute to exceedances of applicable DO WQSs. In addition to the NDC Outfall and Embayment Projects, AMAFCA will continue to install stormwater quality structures within the watershed. AMAFCA plans, designs, and builds regional stormwater BMPs throughout the watershed to help eliminate the discharge of pollutants that cause or contribute to exceedances of applicable water quality standards for DO in waters of the Rio Grande. Pollutant source reduction strategies, such as public education and encouragement of GI/LID, are also part of the ongoing controls for this Program. AMAFCA actively participates in the MRGSQT, which organizes and leads public education, outreach, involvement, and participation activities which relate to this Program.	• AMAFCA will continue to plan, design, and build structural BMPs (regional water quality structures) throughout the MRG watershed. • AMAFCA will continue to contribute and participate in the MRGSQT which provides public education, outreach, and participation opportunities related to stormwater impacts to water quality.	**Met FY 2023 Goals.** • AMAFCA continued to use floating booms in the NDC Outfall to assist with trash and debris collection. Removal of trash and debris will assist with mitigating low DO issues in this area. • AMAFCA continued to plan, design, and build structural BMPs (regional water quality structures) throughout the MRG watershed. Refer to the Construction Control Measure and the Post Construction Control Measure for additional information. • AMAFCA continued to contribute and participate in the MRGSQT - refer to the Public Education and Outreach Control Measure and the Public Involvement and Participation Control Measure for additional information.
Not Included in NOI	13	Part I.C.1.d.(iii) Continue sampling for DO and temperature in the North Diversion Channel (NDC) Embayment until the data indicate the discharge does not exceed applicable DO water quality standards in waters of the United States. This coincides with the requirements in Part I.C.3.a.(ii).(a), the revised strategy shall include: A. A Monitoring Plan describing all procedures necessary to continue conducting continuous monitoring of DO and temperature in the NDC Embayment and at 1 location in the Rio Grande downstream of the mouth of the NDC within the action area (e.g., Central Bridge). B. A Quality Assurance and Quality Control (QA/QC) Plan describing all standard operating procedures, quality assurance and quality control plans, maintenance and implementation schedules that will assure timely and accurate collection and reporting of water temperature, DO, oxygen saturation, and flow. The QA/QC plan should include all procedures for estimating oxygen data when any oxygen monitoring equipment fail.	Part I.C.1.d.(iii) - With the NDC Embayment filled in since 2016, AMAFCA cannot physically measure the DO in the Embayment. AMAFCA will provide continuous monitoring of DO and temperature (using sondes) in the Rio Grande at the most appropriate locations for the purpose of complying with the MS4 Permit requirements in Part I.C.1.d.(iii) and Part I.C.3.a.(ii).(a). The sonde locations throughout the stretch of the Rio Grande through the Urbanized Area (UA) will assist AMAFCA with bracketing segments of the Rio Grande to better understand locations of elements that may be contributing to reduced DO in the receiving waters of the Rio Grande. For compliance with this Permit Activity, AMAFCA will deploy sondes to provide continuous DO, oxygen saturation, and temperature monitoring; sondes are currently located at the following locations: - Rio Grande at US 550 Bridge in Bernalillo - Rio Grande at Sandia Pueblo Boundary (just above the confluence with the NDC outfall) - Rio Grande at Central Ave. Bridge - Rio Grande at the Isleta Dam Note - sonde locations may change based on the results and program needs as well as river stage. Part I.C.3.a.(ii).(a).A and B - For the sonde monitoring, AMAFCA has standard operating procedures, quality assurance plans, maintenance, and implementation schedules in place.	• For compliance with this Permit Activity, AMAFCA will deploy sondes in the most appropriate locations to provide continuous DO and temperature monitoring. • AMAFCA will continue following the standard operating procedures, quality assurance plans, maintenance, and implementation schedules that are in place for the sonde monitoring. AMAFCA will continue to pursue, as applicable, data collection and reporting improvements to this program. • AMAFCA will continue to provide Isleta Pueblo with access to the real-time DO and temperature sonde data.	**Met FY 2023 Goals.** • Related to the NDC Embayment monitoring, AMAFCA deployed four sondes to provide continuous DO, pH, water depth, turbidity, and temperature monitoring at the following locations: US 550 Bridge in Bernalillo, Sandia Pueblo Boundary, Central Ave., and Isleta Dam. Additional details on the sonde program and results are provided in the In-Stream Water Quality Memos, which are available upon request. Use of sondes in the Rio Grande have physical challenges that make the measurement, monitoring, and maintenance difficult as well as time/staff intensive. There are times when the sonde data is not available due to maintenance and other issues with the equipment. • In FY 2023, AMAFCA continued to operate real-time telemetry capabilities to these four sondes allowing AMAFCA to be aware of sonde issues in real time, resulting in less data gaps. The sonde data was made available to the Pueblo of Isleta to improve data sharing and coordination with watershed stakeholders. • AMAFCA and monitoring consultants followed the standard operating procedures, quality assurance plan, maintenance, and implementation schedules that are in place for the sonde monitoring.

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Not Included in NOI	14	Part I.C.1.d.(iv) Submit a revised strategy to FWS for consultation and EPA for approval within a year of the effective date of the permit and progress reports with the subsequent annual reports. Progress reports to include: (a) Summary of data. (b) Activities undertaken to identify MS4 discharge contribution to exceedances of applicable dissolved oxygen water quality standards in waters of the United States. Including summary of findings of the assessment required in Part I.C.1.d.(i). (c) Conclusions drawn, including support for any determinations. (d) Activities undertaken to eliminate MS4 discharge contribution to exceedances of applicable dissolved oxygen water quality standards in waters of the United States. (e) Account of stakeholder involvement. Part I.C.3.a.(i) - The permittees shall submit a summary of findings and a summary of activities undertaken with each Annual Report. The SWMP submitted with the first and fourth annual reports must include a detailed description of controls implemented (or/and proposed control to be implemented) along with corresponding measurable goals. (Applicable to all permittees).	Part I.C.1.d.(iv) - AMAFCA completed the NDC project in 2016 to fill in and revegetate the NDC Embayment following the terms of the Final BO from the USFWS and Final Special Conditions from USACE. USFWS was consulted during this project and made aware of the revised strategy. The AMAFCA MS4 Annual Report and supporting documentation will be considered as the Progress Report. A separate progress report will not be submitted to EPA and USFWS. The MS4 Annual Report will include the Annual Incidental Take Report as an Attachment to the Annual Report. Part I.C.3.a.(i) - The Annual Report will include a summary of example activities undertaken to identify elements contributing to reduced dissolved oxygen in the receiving waters of the Rio Grande and changes or improvements to the Strategy for implementation of controls to eliminate exceedances of applicable water quality standards for dissolved oxygen in waters of the United States.	• AMAFCA completed the NDC Outfall Grade Control Structures Modification Project to fill in and revegetate the NDC Embayment following the terms of the Final BO from the USFWS and Final Special Conditions from USACE. • Vegetation assessments in this area will continue to be conducted following the current monitoring plan, developed in consultation with the USACE. • AMAFCA will complete the Incidental Take Report and follow the Incidental Take Reporting requirements and data submittal requirements. • AMAFCA will include a summary of example activities in each Annual Report. AMAFCA will incorporate documentation by reference into the Annual Report and plans to document progress on the AMAFCA website.	**Met FY 2023 Goals.** • Refer to ID #10 above for information related to the USACE Regional General Permit. AMAFCA received notification from USACE in FY 2023 documenting that the special conditions of the Regional General Permit relative to vegetation monitoring had been fully satisfied and monitoring was no longer required at the NDC Outfall. • AMAFCA completed the Annual Incidental Take analysis and this is included in the Dissolved Oxygen Program Summary for the Annual Report. AMAFCA followed a procedure for completing this Annual Incidental Take Report to ensure the current MS4 Permit requirements were met and that this report is consistently completed each year. This procedure is available upon request. • AMAFCA has completed this section of the Annual Report to serve as a progress report for this Permit element.
Not Included in NOI	15	According to the requirements in Part I.C.3.a.(ii), the permittees shall ensure that actions to reduce pollutants or remedial activities selected for the NDC Embayment and its watershed are implemented such that there is a reduction in frequency and magnitude of all low oxygen stormwater discharge events that occur in the Embayment or downstream in the MRG as indicated in Table 1.c. Actions to meet the year 3 measurable goals must be taken within 2 years from the effective date of the permit. Actions to meet the year 5 measurable goals must be taken within 4 years from the effective date of the permit.	Part I.C.3.a.(ii) - The result of removing the NDC Embayment and hydraulically disconnecting the NDC stormwater flows from the Rio Grande will minimize low DO conditions at this location. The Embayment has had historical issues with stagnate ponded water creating low DO conditions. The monitoring activities described above will be used to assess that the Embayment project functions as planned and that low DO conditions are reduced in both frequency and magnitude.	• AMAFCA will compare the DO monitoring results for "qualifying events" as defined by USFWS with the MS4 Permit measurable goals as listed in Table 1.c , using the table in Appendix G in the MS4 Permit. • AMAFCA will utilize Levelogger data to better define volumetric runoff events that discharge to the Rio Grande.	**Met FY 2023 Goals.** • AMAFCA continued to use the MS4 Permit measurable goal analysis and reporting in the Annual Incidental Take Report, and this is included in the Dissolved Oxygen Program Summary for the Annual Report. In addition, AMAFCA followed the procedure for completing this analysis to ensure the current MS4 Permit requirements were met and that this report is consistently completed each year. • AMAFCA continued analyzing the Levelogger data in the NDC watershed and at the equipment crossing in comparison to the "qualifying events" as defined by USFWS. • From the AMAFCA FY 2023 In-Stream Water Quality Monitoring Memos, which report on the AMAFCA sonde data, the DO fell slightly below 5 mg/L related to storm events within the watershed; refer to the Dissolved Oxygen Program Summary for additional information. • In FY 2023, none of the 14 NDC qualifying events were found to be hypoxic or anoxic. The oxygen percent saturation for all data collected for the NDC qualifying events was greater than 54.3 percent.

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Not Included in NOI	16	According to the requirements in Part I.C.3.a.(ii).(b), the permittees (COA and AMAFCA) shall provide: A. An Annual Incidental Take Report to EPA and the Service that includes the following information: beginning and end date of any qualifying stormwater events, DO values and water temperature in the NDC Embayment, DO values and water temperature at a downstream monitoring station in the MRG, flow rate in the NDC, mean daily flow rate in the MRG, evaluation of oxygen and temperature data as either anoxic or hypoxic using Table 2 of the BO, and estimate the number of silvery minnows taken based on Appendix A of the BO. Electronic copy of The Annual Incidental Take Report should be provided with the annual report required under Part III.B no later than December 1 for the proceeding calendar year.	Part I.C.3.a.(ii).(b).A - AMAFCA will complete the Incidental Take Report, which estimates the potential Rio Grande Silvery Minnow (RGSM) take using the method defined by USFWS for the BO (MRG Watershed Permit BO dated August 21, 2014 - Cons. #22420-2011-F-0024-R001). Using the BO procedure, AMAFCA will determine or measure, as technically feasible, the necessary data elements required for calculation of the predicted incidental takes during qualifying storm events. The definition of a qualifying storm event (for this Permit Activity) may be reassessed as the Levelogger data is analyzed for NDC Outfall and Embayment area. This activity may require additional follow-up with the EPA and the USFWS. The Annual Incidental Take Report will be provided with each Annual Report.	• AMAFCA will determine and/or measure, as technically feasible, the necessary data elements required for calculation of the predicted incidental takes during qualifying storm events. • AMAFCA will complete the Annual Incidental Take Report. • AMAFCA will provide EPA and USFWS with a copy of the Annual Incidental Take Report with each Annual Report submitted no later than December 1st for the preceding calendar year, as required under Part III.B.	**Met FY 2023 Goals.** • The Annual Incidental Take Report was completed to meet the Dec. 1, 2023 deadline for the Annual Report and is provided in the Dissolved Oxygen Program Summary.
Not Included in NOI	17	According to the requirements in Part I.C.3.a.(ii).(b), the permittees (COA and AMAFCA) shall provide: B. A summary of data and findings with each annual report to EPA and the FWS. All data collected (including provisional oxygen and water temperature data, and associated metadata), transferred, stored, summarized, and evaluated shall be included in the annual report. If additional data is requested by EPA or the FWS, COA and AMAFCA shall provide such information within two weeks upon request. The revised strategy required under Part I.C.3.a.(ii),the Annual Incidental Take Reports required under Part I.C.3.a.(ii).(b).A, and annual reports required under Part III.B can be submitted to FWS via e-mail nmesfo@fws.gov and Joel lusk@fws.gov, or by mail to the New Mexico Ecological Services field office, 2105 Osuna Road NE, Albuquerque, New Mexico 87113. [Note - as of July 2022, Debra Hill is the new contact at USFWS. add email]	Part I.C.3.a.(ii).(b).B - AMAFCA will provide EPA and USFWS with the necessary data elements required for calculation of the predicted incidental takes during qualifying storm events and the Annual Incidental Take Report, required under Part I.C.3.a.(ii).(b).A. If additional data is requested by EPA or the USFWS, AMAFCA will provide requested information within two (2) weeks upon request. AMAFCA will assess the DO on the same time frame as the MS4 Permit requires for the Annual Report – July 1 to June 30. Each Annual Report will be submitted no later than December 1 for the preceding calendar year, as required under Part III.B.	• AMAFCA will provide EPA and USFWS the required data and information with each Annual Report submittal, required under Part III.B, no later than December 1 for the proceeding calendar year.	**Met FY 2023 Goal.** • AMAFCA submitted AMAFCA's FY 2023 MS4 Annual Report with the Dissolved Oxygen Program Summary, the Incidental Take results, and applicable In-Stream Water Quality Monitoring (sonde) memos, as required under Part III.B.

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	18	**Compliance with Water Quality Standards – PCBs - Part I.C.1.e**			
Not Included in NOI	19	According to the requirements in Part I.C.1.e, the permittee shall address concerns regarding PCBs in channel drainage areas specified in Part I.C.1.e.(vi) by developing or continue updating/revising and implementing a strategy to identify and eliminate controllable sources of PCBs that cause or contribute to exceedances of applicable water quality standards in waters of the United States. COA and AMAFCA shall submit a progress report with the first and with the subsequent annual reports.	Part I.C.1.e - The results from the 2012-2014 monitoring of the NDC watershed indicated the presence of PCBs at the Grantline and N. Camino Inlets. Based on the data, MS4 partners concluded that there are no "hot spots" in the municipal area that are continuing to produce PCBs with the possible exception of the Grantline and N. Camino watersheds. In 2014-2017, AMAFCA continued activities to identify and eliminate controllable sources of PCBs specific to these two channels. A water quality consultant was tasked with reviewing and assessing all past PCB data for the NDC, identifying commercial and industrial properties that may have contributed PCBs to the North Camino and the Grantline Channel, researching past PCB releases from PNM in these areas, and providing additional PCB monitoring activity recommendations. In addition, a Field Sampling Plan (FSP), Sampling Analysis Plan (SAP), and a Quality Assurance Project Plan (QAPP) for soil and sediment sampling were developed. Sediment sampling and analysis for PCBs in the North Camino and the Grantline Channel were provided to NMED for consultation and direction. Based on the data collection and analysis results from the first five (5) years of the MS4 Permit term (2014-2019), AMAFCA has met its goals and objectives related to the PCB investigation and no further PCB sampling by AMAFCA is anticipated. If future PCB sampling is needed, AMAFCA will utilize the developed FSP, SAP, and QAPP and coordinate with EPA, NMED, and other MS4s, as applicable.	• Based on the data collection and analysis results from the first five (5) years of the MS4 Permit term (2014-2019), AMAFCA has met its goals and objectives related to the PCB investigation and no further PCB sampling by AMAFCA is anticipated. If future PCB sampling is needed, AMAFCA will utilize the developed FSP, SAP, and QAPP and coordinate with EPA, NMED, and other MS4s, as applicable.	**Met FY 2023 Goals.** • As reported to EPA in 2018, after considering the analyses completed over the 5 year period (2014-2019), AMAFCA has met its goals and objectives related to the PCB investigation and no additional PCB sampling and analysis by AMAFCA, in the Grantline or North Camino Watersheds, was completed in FY 2019. If future PCB sampling is needed, AMAFCA will utilize the developed FSP, SAP, and QAPP and coordinate with EPA, NMED, and other MS4s, as applicable.
Not Included in NOI	20	Part I.C.1.e - The progress reports shall include: (i) Summary of data. (ii) Findings regarding controllable sources of PCBs in the channel drainages area specified in Part I.C.1.e.(vi) that cause or contribute to exceedances of applicable water quality standards in waters of the US via the discharge of municipal stormwater. (iii) Conclusions drawn, including supporting information for any determinations. (iv) Activities undertaken to eliminate controllable sources of PCBs in the drainage areas specified in Part I.C.1.e. (vi) that cause or contribute to exceedances of applicable water quality standards in waters of the US via the discharge of municipal stormwater including proposed activities that extend beyond the 5 year permit term. (v) Account of stakeholder involvement in the process. (vi) Channel Drainage Areas: The PCB strategy required in Part I.C.1.e is only applicable to: COA and AMAFCA Areas: San Jose Drain and North Diversion Channel. Bernalillo County Areas: Adobe Acres Drain, Alameda Outfall Channel, Paseo del Norte Outfall Channel, and Sanchez Farm Drainage Area.	Part I.C.1.e - Based on ownership responsibilities, COA will continue to take the lead regarding follow-up PCB permit activities on the SJD, and AMAFCA will continue to take the lead on follow-up PCB permit activities on the NDC. Bernalillo County will take the lead on Adobe Acres Drain, Alameda Outfall Channel, Paseo del Norte Outfall Channel, and Sanchez Farm Drainage Area, as assigned in the MS4 Permit. Based on the data collection and analysis results from the first five (5) years of the MS4 Permit term (2014-2019), AMAFCA has met its goals and objectives related to the PCB investigation and no further PCB sampling by AMAFCA is anticipated. Results from any continued study will be provided to NMED for consultation and direction. If future PCB sampling is needed, AMAFCA will utilize the developed FSP, SAP, and QAPP and coordinate with EPA, NMED, and other MS4s, as applicable. AMAFCA will continue internal watershed stormwater quality monitoring, which typically collects samples that are screened for PCBs at eight (8) locations. Collection of these samples are weather and equipment dependent. No additional Compliance Monitoring Cooperative (CMC) monitoring is required until a new MS4 Permit is issued. However, the CMC members will evaluate and may choose to continue sampling to support their MS4 program needs during administrative continuance. CMC monitoring would include collecting samples, and screening for PCBs, at two (2) locations within the Rio Grande - one upstream of the MS4 and one downstream of the MS4. This program uses Method 1668 for testing PCBs. Monitoring results obtained from AMAFCA's internal stormwater quality assessment monitoring program and any continued CMC stormwater quality monitoring are available upon request.	• Based on the data collection and analysis results from the first five (5) years of the MS4 Permit term (2014-2019), AMAFCA has met its goals and objectives related to the PCB investigation and no further PCB sampling by AMAFCA is anticipated. If future PCB sampling is needed, AMAFCA will utilize the developed FSP, SAP, and QAPP and coordinate with EPA, NMED, and other MS4s, as applicable. • Results from any continued study will be provided to NMED. The Annual Report will serve as the progress report for additional PCB findings, if applicable. AMAFCA will incorporate documentation by reference into the Annual Report and plans to document progress on the AMAFCA website. • AMAFCA will continue its internal stormwater quality assessment monitoring program, which includes collecting samples, and screening for PCBs, at eight (8) locations. The monitoring program typically includes collecting one stormwater sample per season (wet and dry), weather and equipment permitting, and screening for PCBs. This program uses screening Method 608 and follow-up sampling with Method 1668 if PCBs are detected.	**Met FY 2023 Goals.** • For AMAFCA's internal stormwater quality monitoring program, during the FY 2023 wet season (July 2022 - October 2022), stormwater samples from ten (10) of the AMAFCA monitoring locations were screened for PCBs; all the PCB screening results were reported as not detected. AMAFCA's internal stormwater monitoring program also collected three (3) stormwater samples in the FY 2023 dry season (November 2022 to June 2023) that were screened for PCBs, and all sample results were reported as Not Detected (ND). The watershed screening utilized Method 608 with the understanding that if results are detected with the screening method, AMAFCA would then sample and test with Method 1668. The monitoring reports are available upon request.

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Not Included in NOI	21	Part I.C.1.e.(vi) - A cooperative strategy to address PCBs in the COA, AMAFCA and Bernalillo County's drainage areas may be developed between Bernalillo County, AMAFCA, and COA. If a cooperative strategy is developed, the cooperative strategy shall be submitted to EPA within three (3) years from the effective date of the permit and submit a progress report with the fourth and with subsequent annual reports, Note: COA and AMAFCA must continue implementing the existing PCB strategy until a new Cooperative PCB Strategy is submitted to EPA.	Part I.C.1.e.(vi) - An updated cooperative strategy, if warranted, will be discussed with COA, AMAFCA, and Bernalillo County through the cooperative MS4 Technical Advisory Group (MS4 TAG). If a cooperative strategy is agreed to, work will begin to develop an agreement and develop a cooperative strategy to submit to EPA.	• AMAFCA will discuss the updated cooperative strategy option, if warranted, with COA and Bernalillo County through the cooperative MS4 TAG.	**Met FY 2023 Goal.** • Given that AMAFCA has already met the required goals and objectives for compliance under the Permit, AMAFCA continued discussing the cooperative strategy option with COA and Bernalillo County through the cooperative MS4 TAG. PCB study plans and results within the watershed were discussed and shared between AMAFCA, COA, and Bernalillo County.

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	22	**Compliance with Water Quality Standards – Temperature - Part I.C.1.f**			
Not Included in NOI	23	According to the requirements in Part I.C.1.f, the permittees must continue assessing the potential effect of stormwater discharges in the Rio Grande by collecting and evaluating additional data. If the data indicates there is a potential of stormwater discharges contributing to exceedances of applicable temperature water quality standards in waters of the United States, within 30 days such as findings, the permittees must develop and implement a strategy to eliminate conditions that cause or contribute to these exceedances. If the data indicates there is a potential of stormwater discharges contributing to exceedances of applicable temperature water quality standards in waters of Rio Grande, within 30 days such as findings, the permittees must develop and implement a strategy to eliminate conditions that cause or contribute to these exceedances.	Part I.C.1.f - AMAFCA and the original MS4 co-permittees (COA, NMDOT, and UNM) under MS4 Permit No. NMS000101 do not believe that stormwater discharges adversely affect temperature in the Rio Grande. In order to prove this assertion, temperature data from 1982 to 2012 was assembled and analyzed. This data analysis proved the assertion that the receiving waters of the Rio Grande are not adversely affected by the temperature of stormwater from the Albuquerque MS4. This data was presented in an initial report that was submitted to EPA on May 1, 2012. However, to meet the MS4 Permit requirements, AMAFCA continued assessing the potential effect of stormwater discharges in the Rio Grande by collecting and evaluating additional temperature data. From 2012 to 2017, temperature monitoring never showed a temperature exceedance at any of the monitoring locations in the watershed or in the river.	• AMAFCA's measurable goals for compliance with the Permit activities are described in the sections below.	**See specific Permit activity below.**
Not Included in NOI	24	The strategy must include: Part I.C.1.f.(i) - Identify structural controls, post construction design standards, or pollutants contributing to raised temperatures in the receiving waters of the Rio Grande. Both dry and wet weather discharges shall be addressed. Assessment may be made using available data or collecting additional data; Part I.C.1.f.(ii) - Develop and implement controls to eliminate structural controls, post construction design standards, or the discharge of pollutants at levels that cause or contribute to exceedances of applicable water quality standards for temperature in waters of the United States; and	Part I.C.1.f.(i) - AMAFCA has data supporting the fact that stormwater discharges do not adversely affect temperature in the Rio Grande. Assessment continues using temperature data collected in the Rio Grande using sondes (sondes are part of the Dissolved Oxygen - Compliance with Water Quality Standards and Endangered Species Act MS4 Permit program requirements). The four (4) sondes in the Rio Grande have real-time telemetry capabilities. The sonde locations throughout the length of the Rio Grande through the UA will assist AMAFCA with bracketing segments of the Rio Grande to better understand elements that may be contributing to high temperatures in the receiving waters of the Rio Grande. Part I.C.1.f.(ii) - If the temperature data trends begins to indicate that stormwater discharges are adversely affecting temperature in the Rio Grande, AMAFCA will develop a strategy to understand the causes and contributions. If this occurs, AMAFCA will work with COA in developing this strategy as it relates to the watershed. It is anticipated that development of controls will be a part of the strategy. The 30 day timeline in the MS4 Permit is not long enough to develop and implement a watershed wide strategy; AMAFCA and COA will work with EPA, as needed, to develop a reasonable time frame.	• Temperature data will continue to be collected in the Rio Grande using sondes. The sonde data will be available upon request.	**Met FY 2023 Goals.** • In FY 2023, temperature data was collected in the Rio Grande using the four sondes that are described in the Dissolved Oxygen MS4 Permit program section of the Annual Report. In addition, temperature data was collected during Compliance Monitoring Cooperative (CMC) sampling, Wet Weather monitoring during AMAFCA's internal stormwater quality monitoring, and during the Citizen Science sampling. • In FY 2023, the sondes recorded sixteen (16) temperature exceedances of the 32.2 degrees C water quality standard in the Rio Grande related to precipitation within the watershed in July 2022 (FY 2023). In-stream monitoring memos discuss this data further and are available upon request. The temperature graphs from the sondes are provided in the Temperature Program Summary for this Annual Report.
Not Included in NOI	25	Part I.C.1.f.(iii) - Provide a progress report with the first and with subsequent Annual Reports. The progress reports shall include: (a) Summary of data. (b) Activities undertaken to identify MS4 discharge contribution to exceedances of applicable temperature water quality standards in waters of the United States. (c) Conclusions drawn, including supporting information for any determinations. (d) Activities undertaken to reduce MS4 discharge contribution to exceedances of applicable temperature water quality standards in waters of the United States. (e) Accounting of stakeholder involvement.	Part I.C.1.f.(iii) - AMAFCA will include progress regarding temperature impacts from stormwater to the Rio Grande that include adherence to schedule, activities undertaken, monitoring results, and conclusions drawn with Annual Reports, as applicable. AMAFCA will incorporate documentation by reference into the Annual Report and plans to document progress on the AMAFCA website. AMAFCA has provided data from 1982 to 2017 showing that the Rio Grande is not adversely affected by the temperature of stormwater from the Albuquerque MS4. The temperature monitoring results do not show a temperature exceedance at any of the monitoring locations in the watershed or in the river.	• Any update of data, activities, and conclusions regarding temperature impacts from stormwater to the Rio Grande will be provided with each Annual Report, if applicable. AMAFCA will incorporate documentation by reference into the Annual Report and plans to document progress on the AMAFCA website.	**Met FY 2023 Goals.** • This Annual Report serves as a progress report to EPA. Temperature data collected in the Rio Grande during FY 2023 continues to show that temperature exceedances in the Rio Grande due to stormwater from the contributing Albuquerque watershed are not occurring. AMAFCA, through its Annual Reports and associated communication with EPA, has provided data from 1982 to 2023 showing that the Rio Grande is not adversely affected by the temperature of stormwater from the Albuquerque MS4. • In FY 2023, AMAFCA continued to operate real-time telemetry capabilities to these four sondes, allowing AMAFCA to be aware of sonde issues in real time resulting in less data gaps. Login information was shared with the Pueblo of Isleta so they could view the data in an effort to improve data sharing and coordination with watershed stakeholders.

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	26	**Discharges to Impaired Waters With Approved TMDLs - Part I.C.2.b.(i) and TABLE 1.a - TMDL Bacteria Program- Part I.C.2.b.(iii)**			
Not Included in NOI	27	According to the requirements in Part I.C.2.b.(i), if the permittee discharges to an impaired water body with an approved TMDL (see MS4 Permit, Appendix B), where stormwater has the potential to cause or contribute to the impairment, the permittee shall include in the SWMP controls targeting the pollutant(s) of concern along with any additional or modified controls required in the TMDL and this section. As stated in the Permit, Appendix B, a bacteria TMDL for the Middle Rio Grande was approved by the New Mexico Water Quality Control Commission on April 13, 2010, and by EPA on June 30, 2010. The new TMDL modifies: 1) the indicator parameter for bacteria from fecal coliform to E. coli, and 2) the way the WLAs are assigned The SWMP and required Annual Reports must include information on implementing any focused controls required to reduce the pollutant(s) of concern as described below:	Part I.C.2.b.(i) - A bacteria TMDL for the Middle Rio Grande was approved by the New Mexico Water Quality Control Commission on April 13, 2010, and by EPA on June 30, 2010. AMAFCA's proposed plans for compliance with the Permit activities are described in the sections below.	AMAFCA's measurable goals for compliance with the Permit activities are described in the sections below.	**See specific Permit activity below.**
Not Included in NOI	28	Part I.C.2.b.(i).(a), Targeted Controls: The SWMP submitted with the first Annual Report must include a detailed description of all targeted controls to be implemented, such as identifying areas of focused effort or implementing additional BMPs that will be implemented to reduce the pollutant(s) of concern in the impaired waters. and Part I.C.2.b.(i).(b), Measurable Goals: For each targeted control, the SWMP must include a measurable goal and an implementation schedule describing BMPs to be implemented during each year of the permit term. Where the impairment is for bacteria, the permittee must, at minimum comply with the activities and schedules described in Table 1.a of Part I.C.2.b.(iii). As required in Part I.C.2.b.(i).(e),the permittee shall include focused BMPs addressing the five areas below: A. Sanitary Sewer Systems - improve sanitary sewers; fix lift stations; identify and implement O&M procedures; improve violation reporting; and prevent overflows; B. On-site Sewage Facilities - address failing systems and inadequate maintenance of On-Site Sewage Facilities;	Part I.C.2.b.(i).(a), (b), & (e) -AMAFCA's proposed plan for targeted controls and measurable goals (see column to right) for bacteria include: A. Sanitary Sewer Systems - Targeted Controls: There are no sanitary sewer systems owned or operated by AMAFCA within AMAFCA owned property. Related to the Illicit Discharges and Improper Disposal Control Measure, AMAFCA will receive monthly DMRs of sanitary sewer overflows (SSO) from ABCWUA. These will be evaluated to ensure that the SSOs did not impact AMAFCA facilities. B. On-site Sewage Facilities - Targeted Controls: There are no on-site sewage facilities owned or operated by AMAFCA within AMAFCA-owned property.	A. Sanitary Sewer Systems - Measurable Goals: •There are no sanitary sewer systems owned or operated by AMAFCA within AMAFCA-owned property. • Through the IDDE Program, AMAFCA will continue coordination with ABCWUA, who will inform AMAFCA of any SSOs that potentially impact AMAFCA facilities. AMAFCA will receive monthly DMRs of SSOs from ABCWUA. These will be evaluated to ensure that the SSOs did not impact AMAFCA facilities. AMAFCA will continue to add these to GIS to improve tracking of the SSOs. B. On-site Sewage Facilities - Measurable Goals: • Not applicable to AMAFCA	**Met FY 2023 Goals.** A. Sanitary Sewer Systems: • There are no sanitary sewer systems owned or operated by AMAFCA within AMAFCA owned property. • AMAFCA received and reviewed the monthly DMR forms from ABCWUA. AMAFCA also has entered these into GIS to improve tracking of the SSOs. • AMAFCA can and has accepted sanitary sewer flows, given emergency overflow conditions in the watershed, to help protect the Rio Grande water quality. • AMAFCA investigated applicable illicit discharge complaints received through the 311 call in program, as well as other complaints received directly by AMAFCA through e-mail or phone. B. On-site Sewage Facilities: • Not applicable to AMAFCA

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Not Included in NOI	29	Continuation of five areas in Part I.C.2.b.(i).(e) - C. Illicit Discharges and Dumping - effort to reduce waste sources of bacteria; for ex., septic systems, grease traps, and grit traps; D. Animal Sources - management programs to identify and target sources such as zoos, pet waste, and horse stables; E. Residential Education - bacteria from residential sites; fats, oils, and grease (FOG) clogging sanitary sewer lines and resulting overflows; decorative ponds; and pet waste.	Part I.C.2.b.(i).(a), (b), & (e) - Continuation - AMAFCA's proposed plan for targeted controls and measurable goals (see column to right) for bacteria include: C. Illicit Discharges and Dumping - Targeted Controls: AMAFCA has a robust IDDE Program. In the IDDE program, AMAFCA has focused on homeless camp cleanup and other efforts that target sources of bacteria. In addition, AMAFCA has manual and mechanical trash contracts to address IDDE cleanup. Refer to the Illicit Discharges and Improper Disposal Control Measure for additional information. D. Animal Sources - Targeted Controls: AMAFCA will continue its focus on reducing pet waste through its Mutt Mitt Stations Program and its involvement with the MRGSQT educational outreach "Scoop the Poop" and/or "There is No Poop Fairy" campaigns. E. Residential Education - Targeted Controls: AMAFCA will address this area through Public Education and Outreach and Public Involvement and Participation Control Measures through its involvement with the MRGSQT.	C. Illicit Discharges and Dumping - Measurable Goals: • AMAFCA will address the Illicit Discharge and Dumping through its IDDE Program; refer to the Illicit Discharges and Improper Disposal Control Measure for additional information. This IDDE program includes illicit discharge monitoring by AMAFCA staff and crew that often involves weekly discussion at staff meetings. Reports of discharge are cooperatively investigated by staff including, if appropriate, tracking and documentation procedures. An annual budget line item exists for contracts to address IDDE cleanup. D. Animal Sources - Measurable Goals: • AMAFCA will continue to provide Mutt Mitt Stations and bags in an effort to reduce pet waste reaching stormwater. • AMAFCA will continue to contribute and participate in the MRGSQT. Through the MRGSQT, pet waste will be targeted through the "Scoop the Poop" and/or "There is No Poop Fairy" campaigns and other programs. • As funding becomes available, AMAFCA will participate and/or conduct microbial source tracking (MST) studies in the Middle Rio Grande. E. Residential Education - Measurable Goals: • The MRGSQT Outcomes Report will summarize the activities and is available upon request and AMAFCA plans to share this document on its website.	**Met FY 2023 Goals.** C. Illicit Discharges and Dumping: • Refer to the Illicit Discharges and Improper Disposal Control section of the Annual Report for FY 2023 performance and implementation status. D. Animal Sources: • AMAFCA has continued the Mutt Mitt Station program. Tracking procedures continued in FY 2023 for this program. • The MRGSQT Outcomes Report summarizes the educational and outreach programs for FY 2023. This report is provided as a Program Summary. Pet waste education is a large component of the cooperative MRGSQT outreach efforts. E. Residential Education: • The MRGSQT Outcomes Report summarizes the educational and outreach programs for FY 2023. This report is contained in the Program Summaries section of the Annual Report.
	30	Part I.C.2.b.(i).(c).B - Identification of Measurable Goal: The SWMP must identify a measurable goal for the pollutant(s) of concern. The value of the measurable goal must be based on one of the following options in the Permit - AMAFCA is using Option B: B. Alternatively, if multiple permittees are discharging into the same impaired water body with an approved TMDL (which has an aggregate WLA for all permitted stormwater MS4s), the MS4s may combine or share efforts, in consultation with/and the approval of NMED, to determine an alternative sub-measurable goal derived from the WLA for the pollutant(s) of concern (e.g., bacteria) for their respective MS4. The SWMP must clearly define this alternative approach and must describe how the sub-measurable goals would cumulatively support the aggregate WLA. Where an aggregate WLA measurable goal has been broken into sub-measurable goals for individual MS4s, each permittee is only responsible for progress in meeting its WLA sub-measurable goal.	Part I.C.2.b.(i).(c).B - AMAFCA identified in its NOI that it was seeking, as part of a group of MS4s, an alternative sub-measurable goal for TMDL control under this part of the Permit. NMED and EPA were informed of this decision and NMED has worked with the CMC to help establish the cooperative waste load allocation (WLA) values and methodology for calculating E. coli loading. AMAFCA will continue following the established methodology for applying this to the CMC monitoring results.	• AMAFCA, as part of the CMC, will use the analytical results obtained in the Rio Grande during the CMC sampling and calculate an E. coli loading to compare with the waste load allocation allotted for the cooperative portion for the two defined stream assessment units of the Rio Grande (Isleta to Alameda and Alameda to Angostura). These calculations will be provided in each Annual Report, if applicable, as part of the CMC monitoring memos. AMAFCA will incorporate documentation by reference into the Annual Report and plans to provide documentation on the AMAFCA website.	**Met FY 2023 Goal.** • The required CMC sampling for the MS4 Permit term in the Rio Grande (2016 to 2019) was completed in FY 2019. The MRG Watershed Based MS4 Permit entered into administrative continuance in Dec. 2019 when EPA Region 6 did not issue a new MS4 Permit before the current MS4 Permit expiration date. The MS4 TAG sent EPA an Administrative Continuance letter dated October 15, 2019. Until a new MS4 Permit is issued, there are no compliance monitoring requirements in the Rio Grande. There was one (1) qualifying storm event monitored by the CMC in FY 2023. E. coli loading calculations were completed in FY 2023. The CMC memo summarizing the FY 2023 CMC wet weather monitoring activity, results, and E. coli loading calculations is attached to this Annual Report.

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Not Included in NOI	31	According to the requirements in Part I.C.2.b.(i).(f), the permittee shall monitor or assess progress in achieving measurable goals and determining the effectiveness of BMPs, and shall include documentation of this monitoring or assessment in the SWMP and Annual Reports. In addition, the SWMP must include methods to be used. This program element may be coordinated with the monitoring required in Part III.A. The permittee may use the following methods either individually or in conjunction to evaluate progress towards the measurable goal and improvements in water quality as follows: A. Evaluating Program Implementation Measures or B. Assessing Improvements in Water Quality Progress towards achieving the measurable goal shall be reported in the Annual Report. Annual reports shall report the measurable goal and the year(s) during the permit term that the MS4 conducted additional sampling or other assessment activities.	Part I.C.2.b.(i).(f) - AMAFCA will assess and evaluate the program and progress in achieving the targeted controls and measurable goals listed above by tracking the number of educational outreach opportunities conducted and tracking the number of people reached through the educational outreach program. AMAFCA will incorporate documentation by reference into the Annual Report and plans to document progress on the AMAFCA website. AMAFCA is part of the Compliance Monitoring Cooperative (CMC) group, established in 2016, with 12 watershed partners cooperating for the Wet Weather Monitoring Program requirements. In addition, AMAFCA will monitor and test for E. coli at its facilities within the watershed. This internal monitoring program sampling will be done in accordance with Part III.A of the MS4 Permit and will assist with a water quality assessment of the overall watershed related to E. coli.	• The MRGSQT Outcomes Report will track the number of educational outreach opportunities conducted and list the number of people reached through the educational outreach program. This report is available upon request and AMAFCA plans to share this document on its website. • AMAFCA will conduct stormwater monitoring in accordance with the Wet Weather Monitoring Program, Part III.A.1 as part of the CMC. The goals and plan for this program are described in the Wet Weather Monitoring Program portion of this SWMP.	**Met FY 2023 Goals.** • The MRGSQT Outcomes Report summarizes the educational and outreach programs for FY 2023. This report is contained in the attached Program Summary document. • AMAFCA has continued involvement with the Compliance Monitoring Cooperative (CMC) group, established in 2016, with 12 watershed partners cooperating for the Wet Weather Monitoring Program requirements. At the end of FY 2019, the CMC members had met all Wet Weather sample collection requirements in the MS4 Permit. The MRG Watershed Based MS4 Permit entered into administrative continuance in Dec. 2019 when EPA Region 6 did not issue a new MS4 Permit before the current MS4 Permit expiration date. The MS4 TAG sent EPA an Administrative Continuance letter dated October 15, 2019. Until a new MS4 Permit is issued, there are no compliance monitoring requirements in the Rio Grande. There was one (1) qualifying storm event monitored by the CMC in FY 2023. If the CMC does continue wet weather compliance monitoring during administrative continuance of this MS4 Permit, AMAFCA will summarize, as applicable, any wet weather monitoring activity, results, and E. coli loading calculations in future Program Summaries.
Not Included in NOI	32	Part I.C.2.b.(i).(g) - If, by the end of the 3rd year from the effective date of the permit, the permittee observes no progress toward the measurable goal either from program implementation or water quality assessments, the permittee shall identify alternative focused BMPs that address new or increased efforts towards the measurable goal. As appropriate, the MS4 may develop a new approach to identify the most significant sources of the pollutant(s) of concern and shall develop alternative focused BMPs (this may also include information that identifies issues beyond the MS4's control). These revised BMPs must be included in the SWMP and subsequent Annual Reports. Where the permittee originally used a measurable goal based on an aggregated WLA, the permittee may combine or share efforts with other MS4s discharging to the same impaired stream segment to determine an alternative sub-measurable goal for the pollutant(s) of concern for their respective MS4s, as described in Part I.C.2.b.(i).(c).B above. Permittees must document the proposed schedule for the development and subsequent adoption of alternative measurable goals for the pollutant(s) of concern for their respective MS4s and associated assessment of progress in meeting those individual goals.	Part I.C.2.b.(i).(g) - AMAFCA, in cooperation with the TAG, MRGSQT, and CMC has observed progress towards E. coli controls and measurable goals. However, the impairment for E. coli has been re-listed in NMED's 2020-2022 State of New Mexico Clean Water Act Section 303(d)/Section 305(b) Integrated Report for 3 of the 4 assessment segments along the river within the Middle Rio Grande corridor; all 4 assessment segments in the Middle Rio Grande, from Isleta Pueblo Boundary to Angostura, currently has an E. coli impairment. The CMC will continue to collect data during administrative continence of the Permit to determine if the E. coli trend that previously de-listed the impairment or data that re-listed the impairment is the baseline. AMAFCA will annually assess and evaluate the program and progress in achieving the measurable goals listed in the sections above. In addition to the measurable goals listed above, Microbial Source Tracking (MST) studies may be a tool used for the assessment and evaluation of the program. AMAFCA will also continue to participate in regional water quality studies and plans, as opportunities become available, to continue to look for collaborative opportunities to improve this program.	• AMAFCA will continue to annually assess and evaluate the program and progress in achieving the measurable goals listed above. In addition to the measurable goals listed above, Microbial Source Tracking (MST) studies may be a tool used for the assessment and evaluation of the program. • AMAFCA will continue to participate in regional water quality studies and plans, as opportunities become available.	**Met FY 2023 Goals.** • The required CMC sampling for the MS4 Permit term in the Rio Grande (2016 to 2019) was completed in FY 2019. The MRG Watershed Based MS4 Permit entered into administrative continuance in Dec. 2019 when EPA Region 6 did not issue a new MS4 Permit before the current MS4 Permit expiration date. Additional details are provided above. The MRGSQT has funded dry weather E. coli data collection by students in the Bosque Ecosystem Monitoring Program (BEMP) program to better understand the baseline concentration of E. coli before storm events.

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Not Included in NOI	33	Part I.C.2.b.(iii) - Table 1.a, Identify potential significant sources of the pollutant of concern entering your MS4.	Part I.C.2.b.(iii) - Table 1.a - In 2014-2015, AMAFCA contracted with a consultant to restudy the bacteria within the Middle Rio Grande, specifically to evaluate the bacteria data over the recent history to report the trend analysis and the impact to the Rio Grande. The report for this study, Middle Rio Grande Rio Grande E. coli Analysis and Research report for AMAFCA by water quality on-call engineer (CDM Smith), is available from AMAFCA upon request. An updated bacterial source tracking study is being assessed with COA and will be considered during this Permit term. AMAFCA, through the MRGSQT, has contracted with BEMP to study E. coli at various locations along the Rio Grande during dry weather in an effort to identify potential sources of E. coli. For determining the source (area) of E. coli, AMAFCA will continue its internal watershed stormwater quality monitoring. Collection of these samples are weather and equipment dependent.	• AMAFCA, with its co-permittees from the 2012 MS4 Phase I Permit, have completed several studies related to identifying potential significant sources of the pollutant of concern entering the MRG Watershed MS4 area. The results of these studies will be used to guide the overall program plan and goals. An updated bacterial source tracking study is being assessed with COA and will be considered during this Permit term. • AMAFCA, with the MRGSQT, has contracted with BEMP to study E. coli at various locations along the Rio Grande during dry weather in an effort to identify potential sources of E. coli. • For determining the source (area) of E. coli, AMAFCA will continue its internal watershed stormwater quality monitoring. AMAFCA monitoring memos for the internal watershed stormwater quality monitoring are available upon request.	**Met FY 2023 Goals.** • Plots of the AMAFCA collected E. coli data are included in AMAFCA's internal watershed stormwater quality monitoring reports, which are available upon request. • AMAFCA, through the MRGSQT, has contracted with BEMP in calendar year 2023 to study E. coli at various locations along the Rio Grande during dry weather and after qualifying storm events in an effort to identify potential sources of E. coli. Results from this study are available upon request. • The monitoring reports for FY 2023 for AMAFCA's internal watershed stormwater quality monitoring are available upon request.

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Not Included in NOI	34	From Part I.C.2.b.(iii) - Table 1.a, Develop (or modify an existing program- for prior permittees under NMS000101) and implement a public education program to reduce the discharge of bacteria in municipal stormwater contributed by (if applicable) by pets, recreational and exhibition livestock, and zoos.	Part I.C.2.b.(iii) - Table 1.a - As stated above, AMAFCA will continue its focus on reducing pet waste through providing Mutt Mitt Stations and through continued involvement with the MRGSQT educational outreach "Scoop the Poop" campaign.	• AMAFCA will continue to provide Mutt Mitt Stations and bags. • AMAFCA will contribute and participate in the MRGSQT. • The MRGSQT Outcomes Report will summarize the activities related to targeting pet waste sources and residential education targeting bacteria sources. This report is available upon request and AMAFCA plans to share this documentation on its website.	**Met FY 2023 Goals.** • AMAFCA continued its focus on reducing pet waste through providing Mutt Mitt Stations. Mutt Mitt Station supporting data for FY 2023 is available upon request. • In FY 2023, AMAFCA continued to contribute to and participated in the MRGSQT, which included educational outreach for the "Scoop the Poop" and "There is no Poop Fairy" campaigns. • The MRGSQT Outcomes Report summarizes the educational and outreach programs for FY 2023. This report is included as a Program Summary.
Not Included in NOI	35	From Part I.C.2.b.(iii) - Table 1.a, Develop (or modify an existing program- for prior permittees under NMS000101) and implement a program to reduce the discharge of bacteria in municipal stormwater contributed by areas within your MS4 served by on-site wastewater treatment systems.	Part I.C.2.b.(iii) - Table 1.a - As stated above, this is not applicable to AMAFCA. Through the IDDE Program, AMAFCA will continue coordination with ABCWUA, who will inform AMAFCA of any sanitary sewer overflows that impact AMAFCA facilities.	• As stated above, this is not applicable to AMAFCA. Through the IDDE Program, AMAFCA will continue coordination with ABCWUA, who will inform AMAFCA of any sanitary sewer overflows that impact AMAFCA facilities.	**Met FY 2023 Goal.** • AMAFCA received and reviewed the monthly DMR forms from ABCWUA. These reports are available upon request. These have also been entered into GIS to improve tracking and identify potential trends of the SSOs.
Not Included in NOI	36	From Part I.C.2.b.(iii) - Table 1.a, Review results to date from the Illicit Discharge Detection and Elimination program (see Part I.D.5.e) and modify as necessary to prioritize the detection and elimination of discharges contributing bacteria to the MS4.	Part I.C.2.b.(iii) - Table 1.a - AMAFCA will incorporate this Permit requirement into the IDDE program, refer to the SWMP - Table 6: Illicit Discharges and Improper Disposal - for additional information.	• AMAFCA will address this Permit activity in the IDDE Program, refer to the SWMP - Table 6: Illicit Discharges and Improper Disposal - for additional information.	**Met FY 2023 Goal.** • AMAFCA addresses this Permit activity in the Illicit Discharges and Improper Disposal Control Measure.
Not Included in NOI	37	Part I.C.2.b.(iii) - Table 1.a - Develop (or modify an existing program- for prior permittees under NMS000101) and implement a program to reduce the discharge of bacteria in municipal stormwater contributed by other significant source identified in the Illicit Discharge Detection and Elimination program (see Part I.D.5.e).	Part I.C.2.b.(iii) - Table 1.a - This requirement will be addressed in conjunction with AMAFCA's IDDE Program, refer to the SWMP Table 6: Illicit Discharges and Improper Disposal, for additional information. AMAFCA will review its IDDE Program results annually and identify illicit discharges (specific as well as general types of discharges and/or locations of discharges) that contributed bacteria to the MS4. Strategies will be developed to address these specific or general IDDEs. Development and implementation of strategies will depend on the IDDE program results.	• AMAFCA will review its IDDE Program results annually.	**Met FY 2023 Goals.** • AMAFCA addresses this Permit activity in the Illicit Discharges and Improper Disposal Control Measure.
Not Included in NOI	38	Include in the Annual Reports progress on program implementation and reducing the bacteria and updates their measurable goals as necessary. As required in Part I.C.2.b.(i).(d), the Annual Report must include an analysis of how the selected BMPs have been effective in contributing to achieving the measurable goal and shall include graphic representation of pollutant trends, along with computations of annual percent reductions achieved from the baseline loads and comparisons with the target loads.	Part I.C.2.b.(i).(d) - The MRGSQT Outcomes Report will track the number of educational outreach opportunities conducted, list the number of people reached through the educational outreach program, and summarize the activities related to targeting pet waste sources as well as residential education targeting bacteria sources. This report is available upon request and AMAFCA plans to share this document on its website. In addition, if strategies are developed to address IDDEs found to contribute bacteria to the MS4, these will be reported in subsequent Annual Reports. AMAFCA will report annually on compliance monitoring to monitor and test for E. coli. This reporting will be done in accordance with Part III.A (Wet Weather Monitoring Program) of the MS4 Permit and will help with a water quality assessment of the overall watershed related to E. coli. Graphical representation of E. coli trends will also be completed annually.	• The MRGSQT Outcomes Report is available upon request and AMAFCA plans to share this document on its website. • Strategies developed to address IDDEs found to contribute bacteria to the MS4 will be reported in subsequent Annual Reports. AMAFCA will incorporate documentation by reference into the Annual Report and plans to document progress on the AMAFCA website. • AMAFCA will report annually on compliance monitoring to monitor and test for E. coli. This reporting will be done in accordance with Part III.A (Wet Weather Monitoring Program) of the MS4 Permit. • Graphical representation of E. coli trends will also be completed annually.	**Met FY 2023 Goals.** • The MRGSQT Outcomes Report summarizes the educational and outreach programs for FY 2023. This report is included as a Program Summary. • Plots of the AMAFCA collected E. coli data are included in AMAFCA's internal watershed stormwater quality monitoring reports, which are available upon request and also provided in the Program Summary.

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	39	**Discharges to Impaired Waters Without Approved TMDLs - Part I.C.2.b.(ii)**			
Not Included in NOI	40	According to the requirements in Part I.C.2.b.(ii), if the permittee discharges directly into an impaired water body without an approved TMDL, the permittee shall perform the following activities (described in sections below).	Part I.C.2.b.(ii) - The Rio Grande impairments are listed on the EPA Annual Report Summary Form, pages 1-2. The Tijeras Arroyo upstream of the Four Hills Bridge is impaired for nutrient/eutrophication. The Tijeras Arroyo upstream of the Four Hills Bridge is all privately owned land. AMAFCA's operation and maintenance authority and access to the Tijeras Arroyo terminate at the Four Hills Bridge. Therefore, there are no requirements in this SWMP to comply with the activities and schedules related to Impairment for Nutrients in Table 1.b in Part I.C.2.b.(iii). AMAFCA does monitor for nutrients through its Wet Weather Monitoring Program, see Table 10 of the SWMP.	• Impairment for Dissolved Oxygen is addressed in the Endangered Species Act (ESA) section - Part I.C.3. The SWMP section for Part I.C.3 describes the proposed plan and measurable goals. • Impairment for PCBs is addressed in Compliance with Water Quality Standards - PCBs - Part I.C.1.e. The SWMP section for Part I.C.1.e describes the proposed plan and measurable goals. • Impairment for Temperature is addressed in Compliance with Water Quality Standards - Temperature - Part I.C.1.f. The SWMP section for Part I.C.1.f describes the proposed plan and measurable goals. • Compliance monitoring (Part III.A) includes Gross Alpha testing. Future assessment related to the impairment will be based on results of those samples.	**Met FY 2023 Goals.** • AMAFCA addresses this Permit activity in other Permit sections - please refer to these sections of the Annual Report for the FY 2023 status of implementation and performance assessment. -Dissolved Oxygen is addressed in the Endangered Species Act (ESA) section - Part I.C.3.a. - PCBs are addressed in Compliance with Water Quality Standards - PCBs - Part I.C.1.e. - Temperature is addressed in Compliance with Water Quality Standards - Temperature - Part I.C.1.f. - Gross Alpha is part of the Wet Weather Monitoring - Part III.A.
Not Included in NOI	41	Part I.C.2.b.(ii).(a) - The permittee shall: A. Determine whether the MS4 may be a source of the pollutant(s) of concern by referring to the CWA §303(d) list and then determining if discharges from the MS4 would be likely to contain the pollutant(s) of concern at levels of concern. The evaluation of CWA §303(d) list parameters should be carried out based on an analysis of existing data (e.g., IDDE Program) conducted within the permittee's jurisdiction. B. Ensure that the SWMP includes focused BMPs, and corresponding measurable goals, that the permittee will implement, to reduce, the discharge of pollutant(s) of concern that contribute to the impairment of the water body. Only applicable if the permittee determines that the MS4 may discharge the pollutant(s) of concern to an impaired water body without a TMDL. The SWMP submitted with the first Annual Report must include a detailed description of proposed controls to be implemented along with measurable goals. C. Amend the SWMP to include any BMPs to address the pollutant(s) of concern.	Part I.C.2.b.(ii).(a) - Most of the impaired pollutants of concern are specifically addressed in other sections of the MS4 Program and therefore in other sections of the SWMP. Please refer to: Dissolved Oxygen and Endangered Species Act (ESA) section - Part I.C.3; PCBs are addressed in Compliance with Water Quality Standards - PCBs - Part I.C.1.e; and Temperature is addressed in Compliance with Water Quality Standards - Temperature - Part I.C.1.f. Compliance monitoring (Part III.A) includes Gross Alpha testing. The testing will allow AMAFCA to determine background level relative to stormwater discharges. Future assessment related to this impairment will be based on results of those samples.	• Refer to other SWMP sections for: - Dissolved Oxygen is addressed in the Endangered Species Act (ESA) section - Part I.C.3. - PCBs are addressed in Compliance with Water Quality Standards - PCBs - Part I.C.1.e. - Temperature is addressed in Compliance with Water Quality Standards - Temperature - Part I.C.1.f. • Compliance monitoring (Part III.A) includes Gross Alpha testing. Future assessment and strategies related to this impairment will be based on results of the stormwater samples.	**Met FY 2023 Goals.** • AMAFCA addresses this Permit activity in other Permit sections. Please refer to these sections of the Annual Report for the FY 2023 status of implementation and performance assessment. -Dissolved Oxygen is addressed in the Endangered Species Act (ESA) section - Part I.C.3.a. - PCBs are addressed in Compliance with Water Quality Standards - PCBs - Part I.C.1.e. - Temperature is addressed in Compliance with Water Quality Standards - Temperature - Part I.C.1.f. - Gross Alpha is addressed in the Wet Weather Monitoring - Part III.A.

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	42	**Endangered Species Act (ESA) Requirements - Sediment Pollutant Load Reduction Strategy - Part I.C.3.b**			
Not Included in NOI	43	According to the requirements in Part I.C.3.b, the permittee must develop, implement, and evaluate a sediment pollutant load reduction strategy to assess and reduce pollutant loads associated with sediment (e.g., metals, etc. adsorbed to or traveling with sediment, as opposed to clean sediment) into the receiving waters of the Rio Grande. The strategy must include the following elements (see sections below):	Part I.C.3.b - AMAFCA's proposed plan for compliance with the Permit activities are described in the sections below.	AMAFCA's measurable goals for compliance with the Permit activities are described in the sections below.	**See specific Permit activity below.**
Not Included in NOI	44	Part I.C.3.b.(i) - Sediment Assessment: The permittee must identify and investigate areas within its jurisdiction that may be contributing excessive levels (e.g., levels that may contribute to exceedance of applicable Water Quality Standards) of pollutants in sediments to the receiving waters of the Rio Grande as a result of stormwater discharges. The permittee must identify structural elements, natural or man-made topo-graphical and geographical formations, MS4 operations activities, and areas indicated as potential sources of sediments and pollutants in the receiving waters of the Rio Grande. At the time of assessment, the permittee shall record any observed erosion of soil or sediment along ephemeral channels, arroyos, or stream banks, noting the scouring or sedimentation in streams. The assessment should be made using available data from federal, state, or local studies supplemented as necessary with collection of additional data. The permittee must describe, in the first Annual Report, all standard operating procedures, quality assurance plans to assure that accurate data are collected, summarized, evaluated and reported.	Part I.C.3.b.(i) - All AMAFCA projects are regional flood control or water quality projects. Stormwater runoff from other MS4s enter AMAFCA facilities, which function as regional flood control facilities and also function as BMPs to capture sediment from stormwater before the stormwater continues to the Rio Grande. In the MRG MS4, AMAFCA is not adversely contributing to the sediment pollutant load, but rather functioning to capture the sediment pollutant load generated throughout the watershed by MS4s contributing runoff to AMAFCA facilities. A large portion of AMAFCA's routine activities include sediment removal from its facilities. AMAFCA has implemented a crew tracking system to measure the sediment removal quantities at all of its facilities. The data collected will be used by AMAFCA for the required MS4 Sediment Assessment. As part of AMAFCA's regular O&M activities, AMAFCA will continue the sediment assessment phase by tracking and estimating the volume of sediment removed from their stormwater facilities annually. The tracking of this data will continue and will be valuable to AMAFCA as it applies to this program and to future planning activities. In addition, AMAFCA will continue a rainfall and runoff monitoring program to quantitatively relate sediment removal to rainfall quantity, location, and runoff volume. AMAFCA has standard operating procedures (SOPs) related to operation and maintenance and a scheduling spreadsheet for inspections. These SOPs and procedures ensure that AMAFCA has accurate data related to sediment removal activities.	• AMAFCA's facilities function as BMPs for sediment removal. AMAFCA's O&M activities, which include sediment removal, will be scheduled, tracked, and evaluated for the Sediment Assessment requirement for this Permit activity. • AMAFCA will continue using a crew tracking system to measure the sediment removal quantities at all of its facilities and use this information for the Sediment Assessment. AMAFCA will continue to utilize GIS to view this information to better understand the watershed. • AMAFCA will continue with a rainfall and runoff monitoring program to continue to quantitatively relate sediment removal to rainfall quantity, location, and runoff volume.	**Met FY 2023 Goals.** • In FY 2023, AMAFCA adhered to its current established procedures in the "AMAFCA O&M Manual for Dams" and the "AMAFCA O&M Repair Replacement and Rehabilitation Manual" for sediment removal activities. Refer to the Pollution Retention/Good Housekeeping Control Measure for additional information. • AMAFCA's crew tracking system and database lists each of its stormwater quality facilities by drainage basin. These facilities are also shown on the AMAFCA Maintenance Map, available online: http://www.amafca.org/maps-2/. • In FY 2023, AMAFCA continued to operate and analyze data from 14 Leveloggers located at the channelized inlets to the NDC on AMAFCA ROW. This project is the initial runoff monitoring phase and AMAFCA started utilizing this data to quantitatively relate sediment removal to rainfall quantity, location, and runoff volume. Additional information is available upon request.

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Not Included in NOI	45	Part I.C.3.b.(ii) - Estimate Baseline Loading: Based on the results of the sediment pollutants assessment required in Part I.C.3.b.(i) above, the permittee must provide estimates of baseline total sediment loading and relative potential for contamination of those sediments by urban activities for drainage areas, sub-watersheds, Impervious Areas (IAs), and/or Directly Connected Impervious Area (DCIAs) draining directly to a surface waterbody or other feature used to convey waters of the United States. Sediment loads may be provided for targeted areas in the entire Middle Rio Grande Watershed using an individual or cooperative approach. Any data available and/or preliminary numeric modeling results may be used in estimating loads.	Part I.C.3.b.(ii) - In 2016, the COA, with cooperation from AMAFCA and area MS4s, completed an initial sediment assessment, "City of Albuquerque 2016 Sediment Assessment". This initial study assisted in establishing the baseline for the sediment assessment. In FY 2019, AMAFCA cooperated with Bernalillo County, who led the effort for the watershed to complete the estimated baseline sediment loading evaluation. Sediment loads are provided for targeted areas in the entire Middle Rio Grande Watershed using a cooperative approach. The "Progress Evaluation Report for the Sediment Pollutant Load Reduction Strategy" report, June 25, 2019 summarizes the sediment loading evaluation at five main outfalls into the Rio Grande. The data AMAFCA collected in the Sediment Assessment was used for estimating baseline sediment loading to its facilities. AMAFCA will review the "Progress Evaluation Report for the Sediment Pollutant Load Reduction Strategy" report and discuss the findings with the watershed MS4s. The results of this study may be used to guide the overall program plans and goals. Rainfall events and generated runoff are related to loading (sediment transport). AMAFCA has developed and began implementation of a rainfall and runoff monitoring program to begin to quantitatively tie sediment quantities reaching AMAFCA facilities (sediment removal volumes) to rainfall quantity, location, and runoff volumes.	• AMAFCA will review the "Progress Evaluation Report for the Sediment Pollutant Load Reduction Strategy" report and discuss the findings with the watershed MS4s. The results of this study may be used to guide the overall program plans and goals. Updates to the Sediment Pollutant Load Reduction Strategy will be implemented, as applicable. • AMAFCA will continue with the development and implementation of a rainfall and runoff monitoring program to begin to quantitatively tie sediment removal to rainfall quantity, location, and runoff volume.	**Met FY 2023 Goals.** • AMAFCA has reviewed the "Progress Evaluation Report for the Sediment Pollutant Load Reduction Strategy" report, June 25, 2019 which summarizes the sediment loading evaluation at five main outfalls into the Rio Grande. In FY 2023, there were no updates to report. • In FY 2023, AMAFCA continued to operate and analyze data from 14 Leveloggers located at the channelized inlets to the NDC on AMAFCA ROW. Additional information is available upon request.
Not Included in NOI	46	Part I.C.3.b.(iii) - Targeted Controls: Include a detailed description of all proposed targeted controls and BMPs that will be implemented to reduce sediment pollutant loads, calculated in Part I.C.3.b.(ii) above, during the next ten (10) years of permit issuance. For each targeted control, the permittee must include interim measurable goals (e.g., interim sediment pollutant load reductions) and an implementation and maintenance schedule, including interim milestones, for each control measure, and as appropriate, the months and years in which the MS4 will undertake the required actions. Any data available and/or preliminary numeric modeling results may be used in establishing the targeted controls, BMPs, and interim measurable goals. The permittee must prioritize pollutant load reduction efforts and target areas (e. g. drainage areas, sub watersheds, IAs, DCIAs) that generate the highest annual average pollutant loads.	Part I.C.3.b.(iii) - AMAFCA facilities function as regional flood control facilities as well as BMPs to remove sediment from stormwater before the stormwater reaches the Rio Grande. In the MRG MS4, AMAFCA is not adversely contributing to the sediment pollutant load, but rather functioning to capture the sediment pollutant load generated throughout the watershed by MS4s contributing runoff to AMAFCA facilities. As such, AMAFCA does not want to reduce the sediment loads but rather implement targeted controls to increase the capture of sediment in its facilities. The completed analysis of the Sediment Assessment and Estimated Baseline Loading will be used by AMAFCA to improve their program to target and prioritize sediment removal throughout the watershed. AMAFCA will continue to estimate the annual volume of sediment removed from each control facility. The AMAFCA operations and maintenance crew and subcontractors track the volume of floatables, sediment, trash, and debris removed from AMAFCA facilities on a daily basis. This tracking procedure includes the location of removal by facility and watershed. AMAFCA will continue to utilize the 2017 updated, cooperative waste characterization study, updating the “AMAFCA/Albuquerque MS4 Floatable and Gross Pollutant Study” conducted in 2005, to assist with determining needed controls and BMPs that may be implemented to reduce sediment pollutant loads. AMAFCA will continue analyzing, planning, and constructing needed sediment control BMPs. The AMAFCA Project Schedule process may be utilized in part for identifying, ranking, and planning area BMPs. AMAFCA's Mutt Mitt stations program will continue as a targeted BMP to reduce pollutants (specifically E. coli) present in sediment within the MS4.	• AMAFCA will review the "Progress Evaluation Report for the Sediment Pollutant Load Reduction Strategy" report and discuss the findings with the watershed MS4s. The results of this study may be used to guide the overall program plans and goals. Updates to the Sediment Pollutant Load Reduction Strategy will be implemented, as applicable. • AMAFCA will continue to estimate the annual volume of sediment removed from each control facility. The AMAFCA operations and maintenance crew and subcontractors track the volume of floatables, sediment, trash, and debris removed from AMAFCA facilities on a daily basis. This tracking procedure includes the location of removal by facility and watershed. • AMAFCA will continue utilizing the updated, cooperative waste characterization study in the watershed to assist with determining needed controls and BMPs that may be implemented to reduce sediment pollutant loads. • AMAFCA will continue analyzing, planning, and constructing needed sediment control BMPs. The AMAFCA Project Schedule process may be utilized in part for identifying, ranking, and planning area BMPs. • AMAFCA will continue its Mutt Mitt program focusing on reducing pollutants (specifically E. coli) present in sediment within the MS4.	**No Goals Required for FY 2023.** • The "Progress Evaluation Report for the Sediment Pollutant Load Reduction Strategy" report was completed at the end of FY 2019. An important element of the Strategy is the use of targeted controls and BMPs to reduce sediment transport by stormwater into the receiving water of the Rio Grande. In FY 2023, AMAFCA continued to maintain, design, and construct BMPs throughout its jurisdiction to reduce sediment transport by stormwater into the receiving water of the Rio Grande. • In FY 2023, AMAFCA continued use of the crew tracking system and database to estimate the volume of trash, homeless debris, sediment, and vegetation removed from its water quality facilities. Summary information is provided in the Program Summary and additional details are available upon request. • In FY 2023, AMAFCA continued its Mutt Mitt Station Program. Summary information for the Mutt Mitt Stations and bags is provided in the Program Summary and additional details are available upon request.

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Not Included in NOI	47	Part I.C.3.b.(iv) - Monitoring and Interim Reporting: The permittee shall monitor or assess progress in achieving interim measurable goals and determining the effectiveness of BMPs, and shall include documentation of this monitoring or assessment in the SWMP and Annual Reports. In addition, the SWMP must include methods to be used. This program element may be coordinated with the monitoring required in Part III.A.	Part I.C.3.b.(iv) - AMAFCA will annually assess progress for this program. AMAFCA will monitor the volume of sediment captured by each of its facilities by measuring the volume of sediment removed from each facility. Documentation of this monitoring will be done using the tracking spreadsheet and procedure. AMAFCA will incorporate documentation by reference into the Annual Report and plans to document progress on the AMAFCA website. In addition, as mentioned above, AMAFCA will use the "Progress Evaluation Report for the Sediment Pollutant Load Reduction Strategy" report to guide the overall program plans and goals. Related monitoring also occurs through the Levelogger program, monitoring rainfall events and generated runoff. Monitoring and assessment will be considered during the development of future program plans and goals.	• AMAFCA will incorporate documentation by reference into the Annual Report. • Documentation of volume of sediment removed will continue to be done using the crew tracking spreadsheet and procedure. • AMAFCA Levelogger information are available upon request and AMAFCA plans to share related documents on its website.	**Met FY 2023 Goals.** • In FY 2023, AMAFCA continued utilizing the crew tracking system and database for sediment assessment and estimating baseline loading. Additional information is available upon request. • In FY 2023, AMAFCA continued to operate and analyze data from 14 Leveloggers located at the channelized inlets to the NDC on AMAFCA ROW. Additional information is available upon request.
Not Included in NOI	48	Part I.C.3.b.(v) - Progress Evaluation and Reporting: The permittee must assess the overall success of the Sediment Pollutant Load Reduction Strategy and document both direct and indirect measurements of program effectiveness in a Progress Report to be submitted with the fifth Annual Report. Data must be analyzed, interpreted, and reported so that results can be applied to such purposes as documenting effectiveness of the BMPs and compliance with the ESA requirements specified in Part I.C.3.b. The Progress Report must include: (a) A list of species likely to be within the action area: (b) Type and number of structural BMPs installed; (c) Evaluation of pollutant source reduction effects; (d) Any recommendation based on program evaluation; (e) Description of how the interim sediment load reduction goals established in Part I.C.3.b.(iii) were achieved; and (f) Future planning activities needed to achieve increase of sediment load reduction required in Part I.C.3.d.(iii).	Part I.C.3.b.(v) - AMAFCA facilities function as regional flood control facilities as well as BMPs to remove sediment from stormwater before the stormwater reaches the Rio Grande. In the MRG MS4, AMAFCA is not adversely contributing to the sediment pollutant load, but rather functioning to capture the sediment pollutant load generated throughout the watershed by MS4s contributing runoff to AMAFCA facilities. AMAFCA's goal is to implement targeted controls to increase the capture of sediment in its facilities rather than reducing sediment loads. AMAFCA worked cooperatively with Bernalillo County, City of Albuquerque, and SSCAFCA to complete this MS4 Permit requirement. The Progress Report on the Sediment Pollutant Load Reduction Strategy. This Progress report meets the MS4 Permit requirements, including: (a) A list of species likely to be within the action area: (b) Type and number of structural BMPs installed; (c) Evaluation of pollutant source reduction effects; (d) Any recommendation based on program evaluation; (e) Description of how the interim sediment load reduction goals established in Part I.C.3.b.(iii) were achieved; and (f) Future planning activities needed to achieve increase of sediment load reduction required in Part I.C.3.d.(iii). Related to the elements required by this Progress report, AMAFCA will continue to 1) maintain a cumulative list of AMAFCA's retrofit BMPs and 2) may utilize the AMAFCA Project Schedule process in part for identifying, ranking, and planning area BMPs to meet recommendations from this program evaluation.	• AMAFCA has completed this report and provided this to EPA with the FY 2019 Annual Report, December 1, 2019, a Progress Report on the Sediment Pollutant Load Reduction Strategy. AMAFCA cooperated with Bernalillo County, who led the effort for the watershed to complete the estimated baseline sediment loading. The City of Albuquerque and SSCAFCA also cooperated on this watershed wide strategy. • Related to requirement (c), AMAFCA will continue to maintain a cumulative list of AMAFCA's retrofit BMPs. AMAFCA will incorporate documentation by reference into the Annual Report and plans to document progress on the AMAFCA website. • Related to requirement (d) AMAFCA's Project Schedule process may be utilized in part for identifying, ranking, and planning area BMPs to meet recommendations from this program evaluation.	**Met FY 2023 Goals.** • The submission of the "Progress Evaluation Report for the Sediment Pollutant Load Reduction Strategy" report, June 25, 2019, with the FY 2019 Annual Report completes and meets the MS4 Permit requirements. Moving forward, future activities (planned, as well as implemented) determined to be needed to achieve improved sediment load reduction will be summarized in the Annual Reports. In FY 2023, there were no updates to report. • A cumulative list of AMAFCA's retrofit BMPs is available in upon request. • Related to requirement (c), the program elements above describe AMAFCA's methods for evaluation of pollutant source reduction effects. • Related to requirement (d), AMAFCA utilized the 2022 AMAFCA Project Schedule to focus on project priority BMPs for the community.
Not Included in NOI	49	Part I.C.3.b.(vi) - Critical Habitat: Verify that the installation of stormwater BMPs will not occur in or adversely affect currently listed endangered or threatened species critical habitat by reviewing the activities and locations of stormwater BMP installation within the location of critical habitat of currently listed endangered or threatened species at the FWS website http://criticalhabitat.fws.gov/crithab/.	Part I.C.3.b.(vi) - AMAFCA considers critical habitat for all of its projects, working closely with the USFWS and USACE, as required, and will continue this practice related to any BMPs installed related to sediment capture and removal.	• AMAFCA will continue its practice of coordination with the USFWS and USACE, as required, related to AMAFCA's facility construction projects.	**Met FY 2023 Goal.** • In FY 2023, USACE provided a letter releasing AMAFCA from any further revegetation monitoring requirements at the NDC outfall related to the special conditions of the USACE Regional General Permit. USACE determined that the site has met the revegetation performance goals. AMAFCA received notification from USACE in FY 2023 documenting that the Special Conditions of the Regional General Permit relative to vegetation monitoring had been fully satisfied and monitoring was no longer required at the NDC Outfall.

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	50	**Part I.D.5 - Stormwater Management Plan (SWMP) Control Measures**			
	51	**TABLE 2: Construction Site Stormwater Runoff Control - Part I.D.5.a**			
See NOI Sections Below	52	Part I.D.5.a.(i) The permittee shall develop, revise, implement, and enforce a program to reduce pollutants in any stormwater runoff to the MS4 from construction activities that result in a land disturbance of greater than or equal to one acre. Reduction of stormwater discharges from construction activity disturbing less than one acre must be included in the program if that construction activity is part of a larger common plan of development or sale that would disturb one acre or more. Permittees previously covered under permit NMS000101 or NMR040000 must continue existing programs, updating as necessary, to comply with the requirements of this permit. (Note: Highway Departments and Flood Control Authorities may only apply the construction site stormwater management program to the permittee's own construction projects).	Part I.D.5.a.(i) - AMAFCA does not have jurisdiction over COA or Bernalillo County departments responsible for planning, review, permitting, or approval of public and private construction activities. However, AMAFCA does have jurisdiction over AMAFCA construction projects. Therefore, AMAFCA's Construction Site Stormwater Runoff Control Program addresses stormwater management during construction of AMAFCA projects that result in a land disturbance of greater than or equal to one acre, specifically when the construction contract is under AMAFCA. Coordination will continue to occur between AMAFCA's Stormwater Quality Engineer, Project Manager, Development Review Engineer, Drainage Engineer, Field Engineer, and Executive Engineer to ensure that the Program controls erosion and maintains sediment on site.	• Coordinate the Construction Site Stormwater Runoff Control Program requirements (as detailed in the Program and in sections below) with AMAFCA's Stormwater Quality Engineer, Project Manager, Development Review Engineer, Drainage Engineer, Field Engineer, and Executive Engineer to ensure that the Program controls erosion and maintains sediment on site for qualifying AMAFCA construction projects, as required under the Construction General Permit (CGP).	**Met FY 2023 Goal.** • AMAFCA construction projects and activities were discussed at staff meetings and at monthly AMAFCA Board meetings, allowing coordination among AMAFCA staff to ensure that the MS4 program controls are followed for active and upcoming qualifying AMAFCA construction projects. • AMAFCA continued to follow its Construction Site Stormwater Runoff Control Program.
1.1	53	Development of an ordinance or other regulatory mechanism as required in Part I.D.5.a.(ii)(a).	Part I.D.5.a.(ii).(a) - To the extent permitted by law, AMAFCA will comply with the requirements of this section. As applicable, AMAFCA will begin inserting MS4 Permit elements into construction contracts to provide AMAFCA with an enforceable contract mechanism. AMAFCA will also continue to work with the cooperative MS4 Technical Advisory Group (TAG) and other agencies to discuss and help develop regulatory mechanisms. Except for special circumstances, AMAFCA's regular maintenance activities do not disturb more than 5 acres at a time.	• AMAFCA will begin inserting MS4 Permit elements into construction contracts to provide AMAFCA with an improved enforceable contract mechanism. • AMAFCA will continue to work with the MS4 TAG and other agencies to discuss and help develop regulatory mechanisms. • Except for special circumstances, AMAFCA's regular maintenance activities will not disturb more than 5 acres at a time.	**Met FY 2023 Goals.** • AMAFCA contractually requires NPDES compliance with the CGP for qualifying projects, which are construction sites greater than one (1) acre in size located on AMAFCA property for which AMAFCA holds the construction contract. • AMAFCA continued to be involved in the MS4 TAG, facilitating cooperation and coordination with other MS4s in the Middle Rio Grande. • In FY 2023, AMAFCA staff did not report any regular maintenance activities that disturbed more than five (5) acres at a time.

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1.2	54	Develop requirements and procedures as required in Part I.D.5.a.(ii)(b) through Part I.D.5.a.(ii)(h). These Permit sections include requirements for AMAFCA to implement and enforce requirements for construction site operators to: Part I.D.5.a(ii).(b) - implement appropriate erosion and sediment control BMPs; Part I.D.5.a(ii).(c) - control waste at the construction site that may cause adverse impacts to water quality; Part I.D.5.a.(ii).(d) - Procedures for site plan review which incorporate consideration of potential water quality impacts; Part I.D.5.a.(ii).(e) - Procedures for receipt and consideration of information submitted by the public; Part I.D.5.a.(ii).(f) - Procedures for site inspection (during construction) and enforcement of control measures, including provisions to ensure proper construction, operation, maintenance, and repair.	Part I.D.5.a.(ii).(b) - As part of AMAFCA's Program, AMAFCA engineers will continue to review all site plans and the SWPPPs to ensure implementation of appropriate BMPs and consistency with federal, state, and local sediment and erosion control requirements for AMAFCA projects. Pre-construction meetings will be held prior to beginning construction and SWPPP BMPs will be reviewed and discussed. Part I.D.5.a.(ii).(c) - AMAFCA ensures control of waste at construction sites during the SWPPP review, in accordance with the MS4 and CGP requirements. Part I.D.5.a(ii).(d) - In a cooperative effort with COA and Bernalillo County, the AMAFCA Development Review Engineer reviews private development that has a connection to AMAFCA facilities for projects disturbing at least one (1) acre. This review includes stormwater conveyance, water quality, and erosion control. In addition, AMAFCA staff performs and will continue to perform incremental reviews of all AMAFCA projects during design to assure quality control and design efficiency. Part I.D.5.a.(ii).(e) - AMAFCA will post a contact phone number at all required construction sites to ensure the public can contact AMAFCA with information. Part I.D.5.a.(ii).(f) - AMAFCA has procedures for construction site inspections of control measures to ensure compliance with the Construction General Permit (CGP). AMAFCA also has procedures in place to ensure site stabilization after NOT is filed.	• Review site plans and the SWPPPs (using the EPA SWPPP checklist) for AMAFCA projects disturbing at least one (1) acre in order to consider potential water quality impacts and ensure consistency with federal, state, and local sediment and erosion control requirements. • Conduct pre-construction meetings on AMAFCA construction projects disturbing at least one (1) acre prior to beginning earth-disturbing activities in order to discuss the SWPPP and BMPs. • SWPPP review will include ensuring the plans addresses control of waste at construction sites for AMAFCA projects. • In a cooperative effort with COA and Bernalillo County, the AMAFCA Development Review Engineer will review submitted private development that has a connection to AMAFCA facilities for projects disturbing at least one (1) acre. Review may include stormwater conveyance, water quality, and erosion control. • AMAFCA will post a contact phone number at all required construction sites. • AMAFCA will continue to utilize construction inspection procedures for control measures to ensure compliance with the Construction General Permit (CGP).	**Met FY 2023 Goals.** • AMAFCA continued to follow its Construction Site Stormwater Runoff Control Program. • AMAFCA reviewed 100% of the AMAFCA project SWPPPs using the most recent EPA CGP SWPPP checklist/template to guide the reviews. NOIs were submitted for 100% of the FY 2023 CGP qualifying AMAFCA projects. • AMAFCA conducted pre-construction meetings for all qualifying AMAFCA construction projects prior to beginning earth-disturbing activities. • AMAFCA's SWPPP reviews included ensuring the plan addresses control of waste at construction sites. • AMAFCA reviewed private development that had a connection to AMAFCA facilities for projects disturbing at least one (1) acre. Review included stormwater conveyance, water quality, and erosion control. • AMAFCA verified that the Contractors posted an AMAFCA contact phone number, as required, at AMAFCA construction sites. • AMAFCA continued to utilize construction inspection procedures for control measures to ensure compliance with the CGP.
	55	Continued…Develop requirements and procedures as required in Part I.D.5.a.(ii)(b) through Part I.D.5.a.(ii)(h). Part I.D.5.a.(ii).(g) - to educate and train permittee personnel and developers, construction site operators, contractors and supporting personnel; and Part I.D.5.a.(ii).(h) - for keeping records of and tracking all regulated construction activities within the MS4 - site reviews, inspections, inspection reports, warning letters and other enforcement documents. A summary of the number and frequency of site reviews, inspections (including inspector's checklist for oversight of sediment and erosion controls and proper disposal of construction wastes) and enforcement activities that are conducted annually and cumulatively during the permit term shall be included in each Annual Report.	Part I.D.5.a.(ii).(g) - AMAFCA will provide MS4 construction site inspection training for its staff and invite other agencies to attend trainings, when possible. In addition, construction site SWPPPs will continue to be discussed regularly by AMAFCA personnel. Part I.D.5.a.(ii).(h) - AMAFCA will maintain records of all AMAFCA-led projects disturbing at least one (1) acre within its rights-of-way. This will include AMAFCA's Construction Site Stormwater Runoff Control Program records, including NOIs, NOI tracking, inspection reports, non-conformance documents, and training documents. AMAFCA will maintain its MS4 Strategies and Procedures Notebook. AMAFCA's license agreements relative to CGP compliance for non-AMAFCA projects that occur within its rights-of-way are the responsibility of the licensee.	• AMAFCA will continue to provide MS4 construction site inspection training for its staff and invite other agencies responsible for construction projects. In addition, construction site SWPPPs will continue to be discussed at weekly staff meetings, included in daily reports by field personnel, and discussed at AMAFCA Board meetings. • AMAFCA will maintain records of all construction projects disturbing at least one (1) acre within its rights-of-way that do not qualify for a Low Erosivity Waiver (LEW). • AMAFCA will maintain a tracking spreadsheet for the Construction Site Stormwater Runoff Control Program elements for AMAFCA-led projects.	**Met FY 2023 Goals.** • AMAFCA continued to maintain all construction project records disturbing at least one (1) acre within its rights-of-way.

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1.3	56	Part I.D.5.a.(iii). Annually conduct site inspections of 100 percent of all construction projects cumulatively disturbing one (1) or more acres as required in Part I.D.5.a.(iii).	Part I.D.5.a.(iii) - As part of AMAFCA's Program, AMAFCA staff will continue to perform field inspections of AMAFCA construction projects which disturb at least one (1) acre. At a minimum, each project will be inspected once after filing the NOI (including follow-up inspections for any nonconformances) and at the NOT. An inspection form has been developed and will be used for all inspections. Should the contractor fail to operate, maintain and repair the BMPs and control measures, AMAFCA staff have the contractual authority to temporarily suspend work, withhold/stop payment, or terminate the contract should such issues go uncorrected. AMAFCA's license agreements for non-AMAFCA projects that occur within its rights-of-way are not inspected by AMAFCA and are the responsibility of the licensee. As AMAFCA partners with other MS4s, such as COA, UNM, or ExpoNM on construction projects, AMAFCA will continue to coordinate with those cooperating MS4s in order to assign responsibility of conducting site inspections.	• AMAFCA will complete the inspections per the Construction Site Stormwater Runoff Control Program Plan for 100% of the active construction sites under contract by AMAFCA which disturb at least one (1) acre. AMAFCA will provide each contractor with a rain gage for each construction site to facilitate construction inspections. • AMAFCA's Stormwater Quality Engineer will track all MS4 inspections using the NOI Construction Inspection Tracking spreadsheet. • AMAFCA will maintain copies of the completed MS4 construction inspection forms. • AMAFCA will continue membership and involvement in the cooperative MS4 TAG, which will facilitate cooperation and coordination with other MS4s in the Middle Rio Grande.	**Met FY 2023 Goals.** • For qualifying projects - construction sites greater than one (1) acre in size for which AMAFCA holds the construction contract - AMAFCA conducted site inspections for 100% of the projects in accordance with this MS4 Permit in FY 2023. In FY 2023, there was no need to suspend work. • AMAFCA continued to track all AMAFCA projects disturbing at least one (1) acre, including the NOI and NOT filing and MS4 inspections. • AMAFCA maintains copies of all MS4 construction inspections forms. • AMAFCA continued to be involved in the MS4 TAG, facilitating cooperation and coordination with other MS4s in the Middle Rio Grande.
1.4	57	Part I.D.5.a.(iv). Coordinate with all departments and boards with jurisdiction over the planning, review, permitting, or approval of public and private construction projects/activities within the permit area as required in Part I.D.5.a.(iv). Planning documents include, but are not limited to: comprehensive or master plans, subdivision ordinances, general land use plan, zoning code, transportation master plan, specific area plans, such as sector plan, site area plans, corridor plans, or unified development ordinances.	Part I.D.5.a.(iv) - AMAFCA does not have jurisdiction over the planning, review, permitting, or approval of non-AMAFCA public and private construction activities. Therefore, AMAFCA's program is limited to AMAFCA-owned properties. Regular coordination among AMAFCA staff, as well as with Board members, occurs and will continue. In a cooperative effort with COA and Bernalillo County, the AMAFCA Development Review Engineer will continue to coordinate with and to review public and private development that has a connection to AMAFCA facilities for projects disturbing at least one (1) acre.	• AMAFCA will continue regular coordination amongst AMAFCA engineering staff and Board members to verify that BMPs are in place to control erosion during construction on AMAFCA-owned properties. • AMAFCA will continue to meet monthly with the Board and will continue to seek Board approval for jointly funded water quality projects. • In a cooperative effort with COA and Bernalillo County, the AMAFCA Development Review Engineer reviews submitted public and private development that has a connection to AMAFCA facilities for projects disturbing at least one (1) acre. These reviews may include stormwater conveyance, water quality, and erosion control.	**Met FY 2023 Goals.** • AMAFCA construction projects and activities were discussed weekly in the AMAFCA staff meeting. • AMAFCA Board meetings typically occurred monthly during this reporting period. Board agendas and meeting minutes are available online: https://amafca.org/amafca-board-of-directors/ • In addition, AMAFCA reviewed all public and private development that has a connection to AMAFCA facilities. These reviews included stormwater conveyance, water quality, and erosion control considerations.
1.5	58	Evaluation of GI/LID/Sustainable practices in site plan reviews as required in Part I.D.5.a.(v). The site plan review must include an evaluation of opportunities for use of GI/LID/ Sustainable practices and when the opportunity exists, encourage project proponents to incorporate such practices into the site design to mimic the pre-development hydrology of the previously undeveloped site. For purposes of this permit, pre-development hydrology shall be met according to Part I.D.5.b of this Permit (consistent with any limitations on that capture). Include a reporting requirement of the number of plans that had opportunities to implement these practices and how many incorporated these practices.	Part I.D.5.a.(v) - AMAFCA does not have jurisdiction over site plan reviews of public and private construction activities, and AMAFCA does not program any private development type projects. AMAFCA ultimately has no authority to accept or reject public and private development projects. AMAFCA will continue to encourage use of sustainable practices during the review phase of projects within AMAFCA's rights-of-way and turn-key projects that AMAFCA will take over for operation and maintenance after construction. AMAFCA will encourage an evaluation of sustainable GI/LID practice opportunities within the watershed. The reporting requirement for the number of plans that AMAFCA reviews, typically because of a connection to an AMAFCA facility, that had opportunities to implement these practices will be reported annually. Because of lack of jurisdictional authority, AMAFCA is typically not told how many improvements were implemented. Therefore the number of improvements implemented will not be reported in the AMAFCA MS4 Annual Report.	• AMAFCA will continue to encourage use of sustainable practices during the review phase of projects. • AMAFCA will annually report the number of plans that were reviewed within AMAFCA's rights-of-way and turn-key projects that AMAFCA will take over for operation and maintenance after construction that had opportunities to implement GI/LID/Sustainable practices.	**Met FY 2023 Goals.** • AMAFCA continued to encourage use of sustainable practices during the review phase of projects. • AMAFCA's Development Review Engineer reviewed private development that has a connection to AMAFCA facilities. In FY 2023, 198 plans were reviewed by the AMAFCA Development Review Engineer; opportunities to potentially implement GI/LID/ Sustainable practices were considered, as appropriate, during these reviews. A copy of the Development Review Engineer's tracking list is available upon request. • AMAFCA continued to collaborate with Ciudad Soil and Water Conservation District to assist with water quality focused subdivision plan reviews, which are required for developments greater than five (5) acres.

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Not Included in NOI	59	Update the SWMP document and annual report as required in Part I.D.5.a.(vi) and in Part I.D.5.a.(vii). Part I.D.5.a.(vi) The permittee must include in the SWMP a description of the mechanism(s) that will be utilized to comply with each of the elements required in Part I.D.5.a.(i) throughout Part I.D.5.a.(v), including description of each individual BMP (both structural or non-structural) or source control measures and its corresponding measurable goal.	Part I.D.5.a.(vi) - The above sections of the SWMP describe the mechanism(s) AMAFCA utilizes to comply with each of the elements required in Part I.D.5.a.(i) throughout Part I.D.5.a.(v) and the corresponding measurable goal(s). AMAFCA will annually evaluate and revise the Construction Site Stormwater Runoff Control Program elements, as necessary, to ensure that AMAFCA's Program meets the MS4 Permit requirements.	• Evaluate and revise the Construction Site Stormwater Runoff Control Program, as necessary, to ensure that AMAFCA's Program meets the MS4 Permit requirements. Update the SWMP, as necessary.	**Met FY 2023 Goal.** • AMAFCA's Program was reviewed by the Storm Water Quality Engineer for this reporting period. The program was reviewed as part of this Annual Report.
Not Included in NOI	60	Update the SWMP document and annual report as required in Part I.D.5.a.(vi) and in Part I.D.5.a.(vii). Part I.D.5.a.(vii) - The permittee shall assess the overall success of the program, and document the program effectiveness in the Annual Report. The permittee must include in each Annual Report: Part I.D.5.a.(vii).(a) - A summary of the frequency of site reviews, inspections and enforcement activities that are conducted annually and cumulatively during the permit term. Part I.D.5.a.(vii).(b) - The number of plans that had the opportunity to implement GI/LID/Sustainable practices and how many incorporated the practices.	Part I.D.5.a.(vii) - AMAFCA will assess the overall success of the program, and document the program effectiveness in the Annual Report. Part I.D.5.a.(vii).(a) - AMAFCA will include in each Annual Report a summary of the number and frequency of site reviews and inspections activities that are conducted annually and cumulatively during the permit term. Part I.D.5.a.(vii).(b) - AMAFCA will include the number of plans that had the opportunity to implement GI/LID/Sustainable practices from the plans that were reviewed within AMAFCA's rights-of-way and turn-key projects that AMAFCA will take over for operation and maintenance after construction. AMAFCA ultimately lacks jurisdictional authority to accept public and private development projects.	• Included in each Annual Report will be a summary of the number and frequency of construction site reviews and inspection activities that are conducted annually and cumulatively during the Permit term. • Included in each Annual Report will be a summary of the plans that had the opportunity to implement GI/LID/Sustainable practices from the plans that were reviewed within AMAFCA's rights-of-way and turn-key projects that AMAFCA will take over for operation and maintenance after construction. This documentation is included above.	**Met FY 2023 Goals.** • This Annual Report documents the program effectiveness and program success in the status of implementation and performance assessment for each MS4 Permit requirements. • There were 5 active AMAFCA construction projects in FY 2023. • The number of plans reviewed by the AMAFCA Development Review Engineer is reported above; opportunities to potentially implement GI/LID/ Sustainable practices were considered, as appropriate, during these reviews.
1.6	61	Enhance the program to include the elements in Part I.D.5.a.(viii) through Part I.D.5.a.(x). These include: Part I.D.5.a.(viii) -Use of stormwater educational materials; Part I.D.5.a.(ix) - Develop or update existing construction handbooks; and Part I.D.5.a.(x) - construction inspections may be carried out in conjunction with other inspections and use a screening prioritization process.	Part I.D.5.a.(viii) - AMAFCA will continue to use stormwater educational materials, either developed locally or provided by EPA, NMED, environmental groups, public interest groups, trade organizations, and/or other MS4s. AMAFCA will continue to host training cooperative sessions with the watershed MS4s. Part I.D.5.a.(ix) - AMAFCA, along with other MS4s, provided external review to NMDOT on their 2020 update of the National Pollutant Discharge Elimination System Manual, Stormwater Management Guidelines for Construction, MS4 and Industrial Activities. Part I.D.5.a.(x) - AMAFCA will continue to incorporate a screening prioritization process for construction inspections.	• The MRGSQT Outcomes Report will summarize the activities where educational materials were dispersed and shared with the public. This report is available upon request and AMAFCA plans to share this document on its website. • AMAFCA will explore opportunities for training cooperative sessions held with the watershed MS4s during the reporting period. • AMAFCA will follow procedures, as applicable, outlined in the 2020 update of the National Pollutant Discharge Elimination System Manual, Stormwater Management Guidelines for Construction, MS4 and Industrial Activities. • AMAFCA will continue to incorporate a screening prioritization process for construction inspections.	**Met FY 2023 Goals.** • AMAFCA's educational efforts are summarized and included in the MRGSQT Outcomes Report. This is attached to this Annual Report. • AMAFCA continued to utilize the most recent EPA CGP SWPPP checklist/template to guide the reviews of SWPPP documents. • AMAFCA conducted site inspections for 100% of the AMAFCA construction projects in accordance with this MS4 Permit in FY 2023.
1.7	62	Item from MS4 Permit NOI. Describe other proposed activities to address the Construction Stormwater Management in New Development and Redevelopment Measure.	AMAFCA will continue to utilize the Annual Report and SWMP revision process as a means to perform a self-audit with the goal to improve its MS4 Programs. AMAFCA will maintain and update, as necessary, its MS4 Strategies and Procedures Notebook for this MS4 Program.	• AMAFCA will document progress made, if any, related to the Annual Report and SWMP revision process as a means to perform a self-audit on the MS4 Program elements. • AMAFCA will maintain and update, as necessary, its MS4 Strategies and Procedures Notebook.	**Met FY 2023 Goals.** • AMAFCA continued to utilize the Annual Report process as a means to perform a self-audit on the MS4 Program elements.

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	63	**TABLE 3: Post-Construction Stormwater Management in New Development and Redevelopment- Part I.D.5.b**			
See NOI Sections Below	64	Part I.D.5.b.(i) The permittee must develop, revise, implement, and enforce a program to address stormwater runoff from new development and redevelopment projects that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale, that discharge into the MS4. The program must ensure that controls are in place that would prevent or minimize water quality impacts. Permittees previously covered under NMS000101 or NMR040000 must continue existing programs, updating as necessary, to comply with the requirements of this permit. (Note: Highway Departments and Flood Control Authorities may only apply the post-construction stormwater management program to the permittee's own construction projects).	Part I.D.5.b.(i) - All AMAFCA projects are regional flood control or water quality projects. AMAFCA does not have jurisdiction over private or public (non-AMAFCA) development or redevelopment projects - this responsibility lies with COA, NMDOT, or Bernalillo County. AMAFCA facilities receive stormwater after it flows through new development and redevelopment. As a result, some permit activities in this section do not apply to AMAFCA. AMAFCA's routine operation & maintenance (O&M) activities address post-construction stormwater management at all AMAFCA facilities.	• Coordinate O&M activities with AMAFCA's Stormwater Quality Engineer, Project Manager, Development Review Engineer, Drainage Engineer, GIS Manager, Field Engineer, and Executive Engineer.	**Met FY 2023 Goal.** •AMAFCA O&M activities continued to be discussed and coordinated weekly in the AMAFCA staff meeting.
2.1	65	Development of strategies as required in Part I.D.5.b.(ii).(a). Strategies which include a combination of structural and/or non-structural BMPs to control pollutants in stormwater runoff.	Part I.D.5.b.(ii).(a) - All AMAFCA projects are regional flood control or stormwater quality projects - functioning as BMPs. AMAFCA will continue to include both structural and non-structural BMPs to control pollutants in stormwater runoff from AMAFCA owned facilities. AMAFCA may continue to coordinate with watershed MS4s and other entities within its jurisdiction to discuss areas requiring drainage and water quality improvements, project priorities, and multi-agency funding opportunities. As part of the development of the AMAFCA Project Schedule, a system review will be completed. AMAFCA will publish projects, including schedule and cost sharing, in the biennial AMAFCA Project Schedule. AMAFCA will continue development of this program element in its MS4 Strategies and Procedures Notebook for this Program.	• AMAFCA will continue to include both structural and non-structural BMPs to control pollutants in stormwater runoff from AMAFCA owned facilities. • AMAFCA may coordinate with watershed MS4s as well as other entities within its jurisdiction during project review, complete a system review, and publish projects, including schedule and cost sharing, in the biennial AMAFCA Project Schedule. • AMAFCA will continue development of this program element in its MS4 Strategies and Procedures Notebook.	**Met FY 2023 Goals.** • AMAFCA continued to include both structural and non-structural BMPs to control pollutants in stormwater runoff from AMAFCA owned facilities. In addition, several structural BMPs have been constructed under the Agency and Area-Wide (A&AW) contract and Miscellaneous contract maintenance activities during the Permit term. A complete list of A&AW by FY can be provided upon request. • AMAFCA continued to work with the watershed MS4s, cooperative MS4 TAG, and other agencies to discuss and help develop strategies, where feasible, to contractually require and/or suggest BMPs on projects that AMAFCA may take over for operation and maintenance after construction. • In FY 2023, AMAFCA worked on the 2024 Project Schedule which covers a six-year planning horizon (2024-2029). The 2024 Project schedule will be finalized in 2024. Coordination meetings with watershed MS4s, TAG members, and other entities occurred during the development of this Project Schedule and included the ranking of stormwater quality projects. • In FY 2023, the MRGSQT members continued discussions and agency implementation related to the Post-Construction Stormwater Quality Design Standards in the Middle Rio Grande Watershed study.
2.2	66	Development of an ordinance or other regulatory mechanism as required in Part I.D.5.b.(ii).(b).	Part I.D.5.b.(ii).(b) - It is not within AMAFCA's jurisdiction to enact ordinances or other legal authority mechanisms. AMAFCA is unable to develop, implement, or enforce any ordinances or regulatory mechanisms required in this section.	• AMAFCA will continue to work with the cooperative MS4 TAG and other agencies to discuss and help develop regulatory mechanisms.	**Met FY 2023 Goal.** • AMAFCA continued to be involved in the MS4 TAG, facilitating cooperation and coordination with other MS4s in the Middle Rio Grande.

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2.3	67	Implementation and enforcement, via the ordinance or other regulatory mechanism of site design standards as required in Part I.D.5.b.(ii).(b).	Part I.D.5.b.(ii).(b) - It is not within AMAFCA's jurisdiction to enact ordinances or other legal authority mechanisms. AMAFCA is unable to develop, implement, or enforce any ordinances or regulatory mechanisms required in this section.	• AMAFCA will continue to work with the cooperative MS4 TAG and other agencies to discuss and help develop regulatory mechanisms.	**Met FY 2023 Goal.** • AMAFCA continued to work with the MS4 TAG and other agencies to discuss and help develop strategies, where feasible, to contractually require post-construction BMPs on projects that AMAFCA will take over for operation and maintenance after construction.
2.4	68	Ensure appropriate implementation of post-construction structural controls as required in Part I.D.5.b.(ii).(c) and Part I.D.5.b.(ii).(d).	Part I.D.5.b.(ii).(c) - AMAFCA will continue to ensure the appropriate implementation of structural BMPs on AMAFCA owned projects through pre-construction design review (see Construction Site Stormwater Runoff Control Measure). For watershed cooperative elements, AMAFCA occasionally partners with other MS4s, such as the COA, UNM, and ExpoNM, on construction of structural BMPs. AMAFCA is also a member of the MS4 TAG. Part I.D.5.b.(ii).(d) - AMAFCA will conduct inspections at the beginning and end of construction, (see Construction Site Stormwater Runoff Control Measure), conduct Post-Construction inspection and maintenance (AMAFCA's routine O&M activities address post-construction stormwater management), and enforce contractual penalty provisions for noncompliance by the Operator during construction. These items will be discussed periodically with the AMAFCA Field Engineer.	• AMAFCA will ensure the appropriate implementation of structural BMPs on AMAFCA owned projects through pre-construction design review (see Construction Site Stormwater Runoff Control Measure). • AMAFCA will continue to work with the watershed MS4s, TAG, and other agencies to discuss cooperative implementation of structural BMPs. • AMAFCA will conduct inspections as required during construction, (see Construction Site Stormwater Runoff Control Measure). • AMAFCA's Post-Construction inspections and maintenance will be through the AMAFCA O&M activities (see Pollution Prevention /Good Housekeeping Control Measure).	**Met FY 2023 Goals.** • See the Construction Site Stormwater Runoff Control Measure for pre-construction design review and inspections during construction. • AMAFCA continued to be involved in the MS4 TAG, facilitating cooperation and coordination with other MS4s in the Middle Rio Grande. • See the Pollution Prevention/Good Housekeeping Control Measure for post-construction inspections and maintenance, which are part of AMAFCA O&M activities. These inspections and maintenance continued to be discussed in the AMAFCA staff meetings. • In FY 2023, the MRGSQT members continued discussions and agency implementation related to the Post-Construction Stormwater Quality Design Standards in the Middle Rio Grande Watershed study.
2.5	69	Develop procedures as required in Part I.D.5.b.(ii).(e) - Procedure to develop and implement an educational program for project developers regarding designs to control water quality effects from stormwater, and a training program for plan review staff regarding stormwater standards, site design techniques and controls, including training regarding GI/LID/ Sustainability practices. Training may be developed independently or obtained from outside resources; Part I.D.5.b.(ii).(f) - Procedures for site inspection and enforcement to ensure proper long-term operation, maintenance, and repair of storm water management practices that are put into place as part of construction projects/activities; Part I.D.5.b.(ii).(g) - Procedures to control the discharge of pollutants related to commercial application and distribution of pesticides, herbicides, and fertilizers; and Part I.D.5.b.(ii). (h) - Procedure or system to review and update, as necessary, the existing program to ensure that storm water controls or management practices for new development and redevelopment projects/ activities continue to meet the requirements and objectives of the permit.	Part I.D.5.b.(ii).(e) - As a cooperative program, AMAFCA contributes to the Mid Rio Grande Stormwater Quality Team (MRGSQT), which includes training on GI/LID and sustainability practices. This is achieved by sponsoring conferences featuring GI/LID lectures, such as the annual Land and Water Summit. Reporting on the MRGSQT activities will be part of Public Education and Outreach on Stormwater Impacts Control Measure. Part I.D.5.b.(ii).(f) - AMAFCA is responsible for all long term inspection, operation, maintenance, and repair of its own facilities. AMAFCA will perform inspections, maintenance and repair in accordance with the established procedures in the "AMAFCA O&M Manual for Dams", the "AMAFCA O&M Repair Replacement and Rehabilitation Manual", and Project O&M Plan (Plan No. 7). This is covered in the Pollution Prevention/Good Housekeeping Control Measure. Part I.D.5.b.(ii).(g) - AMAFCA will only allow licensed staff or professionally licensed contractors to apply herbicides and pesticides within AMAFCA rights-of-way (AMAFCA does not apply fertilizers in its operations). This is covered in the Pollution Prevention/Good Housekeeping Control Measure. Part I.D.5.b.(ii).(h) - AMAFCA's routine O&M activities address post-construction stormwater management at all AMAFCA facilities.	• As a cooperative program, AMAFCA contributes to the MRGSQT. AMAFCA's educational efforts are included in the MRGSQT Outcomes Report which will summarize, if applicable, the activities where educational materials were dispersed and shared with project developers. This report is available upon request and AMAFCA plans to share this document on its website. • AMAFCA will provide MS4 training for its staff and invite other agencies responsible for construction projects. AMAFCA may participate in other agencies' MS4 trainings. • AMAFCA's Post-Construction inspections and maintenance are conducted following the AMAFCA O&M procedures (see Pollution Prevention /Good Housekeeping Control Measure). • AMAFCA will only allow licensed staff or professionally licensed contractors to apply herbicides and pesticides within AMAFCA rights-of-way (AMAFCA does not apply fertilizers in its operations). • AMAFCA will compile and document applicable program procedures in its MS4 Strategies and Procedures Notebook.	**Met FY 2023 Goals.** • AMAFCA only allows certified staff or professionally licensed contractors to apply herbicides and pesticides within AMAFCA right-of-way. This is also discussed in Pollution Prevention/Good Housekeeping and Public Education and Outreach Control Measures of this Annual Report.

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2.6	70	Coordinate internally with all departments and boards with jurisdiction over the planning, review, permitting, or approval of public and private construction projects/ activities within the permit area as required in Part I.D.5.b.(iii) related to developed hydrology mimicking pre-development hydrology.	Part I.D.5.b.(iii) - AMAFCA does not have any internal departments or boards with jurisdiction. AMAFCA will coordinate with all entities as necessary. AMAFCA will coordinate internally and, to the extent possible and applicable, design AMAFCA facilities for compliance with developed hydrology mimicking pre-development hydrology. For AMAFCA led DMPs, Sediment Studies, Facility Plans, and WQ studies, AMAFCA will require, to the extent possible and applicable, that developed hydrology mimic pre-development hydrology. The NM OSE regulates the water delivery to the Rio Grande in order to meet water delivery requirements to Texas; therefore, AMAFCA's objective is to design its facilities to drain within 96 hours per the OSE requirements.	• AMAFCA will coordinate internally on studies and projects for MS4 Permit compliance with developed hydrology mimicking pre-development hydrology. AMAFCA will abide by the NM OSE rule and plan/design its facilities to drain within 96 hours per the OSE requirements. • AMAFCA will continue to follow the standard practice for Drainage Master Plans (DMPs) options development and consider two options for developed condition hydrology flowrates and volumes: 1) determine pond locations and volumes required on a sub-basin by sub-basin basis to mimic pre-development hydrology and, 2) determine pond locations and volumes required on a regional approach basis to mimic pre-development hydrology.	**Met FY 2023 Goals.** • AMAFCA continued to coordinate internally related to developed hydrology mimicking pre-development hydrology. All active AMAFCA Drainage Management and Water Quality Plans considered the MS4 Permit stormwater quality design standard defined in Part I.D.5.b.(ii)(b). • In FY 2023, the MRGSQT members continued discussions and agency implementation related to the Post-Construction Stormwater Quality Design Standards in the Middle Rio Grande Watershed study.
2.7	71	As required in Part I.D.5.b.(iv), the permittee must assess all existing codes, ordinances, planning documents and other applicable regulations, for impediments to the use of GI/LID/Sustainable practices.	Part I.D.5.b.(iv) - AMAFCA does not have jurisdictional authority pertaining to codes, ordinances, planning documents and other applicable regulations, for impediments to the use of GI/LID/Sustainable practices. AMAFCA will provide information, as requested, and coordinate with other watershed MS4s for assessment of existing codes, ordinances, planning documents and other applicable regulations for impediments to the use of GI/LID/Sustainable practices. The NM OSE regulates the water delivery to the Rio Grande in order to meet water delivery requirements to Texas; therefore, AMAFCA's objective is to design its facilities to drain within 96 hours per the OSE requirements.	• AMAFCA will provide information, as requested, and coordinate and cooperate with other watershed MS4s for the assessment of existing codes, ordinances, planning documents, and other applicable regulations for impediments to the use of GI/LID/Sustainable practices.	**Met FY 2023 Goal.** • This Permit activity was conducted cooperatively with Bernalillo County in FY 2018. FY 2023 continued to focus on understanding the impediments and beginning discussions to address the findings. • AMAFCA participated as a review partner for the Bernalillo County's updated technical standards, which includes the Green Stormwater Infrastructure/Low Impact Development (GSI/LID) Standards document. During FY 2023, Bernalillo County continued the process of updating its Technical Standards. Integration of GSI/LID into the Technical Standards and review process was a key focus of this update. As a part of this update, the County developed a stand-alone GSI/LID Standards document that identifies GSI/LID best management practices (BMPs) that are arid-appropriate and support Bernalillo County's Stormwater Quality Ordinance, representing an increased commitment from the County toward the goal of broad implementation of GSI/LID in the MRG watershed.
2.8	72	As required in Part I.D.5.b.(iv), develop and submit a report of the assessment findings on GI/LID/Sustainable practices.	Part I.D.5.b.(iv) - AMAFCA does not have jurisdictional authority pertaining to codes, ordinances, planning documents and other applicable regulations, for impediments to the use of GI/LID/Sustainable practices. However, to the extent permitted by law, AMAFCA will comply with the requirements of this section. AMAFCA will provide information, as requested, and coordinate with other watershed MS4s for assessment of existing codes, ordinances, planning documents and other applicable regulations for impediments to the use of GI/LID/Sustainable practices.	**Met Permit Requirement - Activity is Complete. No additional measurable goals.** • AMAFCA provided information, as requested, and coordinated and cooperated with other watershed MS4s for the development of a report of the assessment of finding from Part I.D.5.b.(iv). This was completed in March 2017 and was submitted to the EPA with the Annual Report, due Dec. 1, 2017.	**No Goals Required for FY 2023.** **Met Permit Requirement - Activity is Complete.** • This Permit activity was conducted cooperatively with Bernalillo County in FY 2017 and this activity is complete.

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Not Included in NOI	73	As required in Part I.D.5.b.(v), Alternative compliance for infeasibility due to Site Constraints. Part I.D.5.b.(v).(a) - Infeasibility to manage the design standard volume specified in Part I.D.5.b.(ii).(b), or a portion of the design standard volume, onsite may result from site constraints including: A. too small a lot outside of the building footprint to create the necessary infiltrative capacity even with amended soils; B. soil instability as documented by a thorough geotechnical analysis; C. a site use that is inconsistent with capture and reuse of storm water; D. other physical conditions; or, E. to comply with applicable requirements for on-site flood control structures leaves insufficient area to meet the standard. Part I.D.5.b.(v).(b) - A determination that it is infeasible to manage the design standard volume specified in Part I.D.5.b.(ii).(b), or a portion of the design standard volume, on site may not be based solely on the difficulty or cost of implementing onsite control measures, but must include multiple criteria that rule out an adequate combination of the practices set forth in Part I.D.5.b.(v).	Part I.D.5.b.(v).(a) and (b) - As previously mentioned, all AMAFCA projects are regional flood control or stormwater quality projects that function as BMPs, and AMAFCA does not have jurisdictional authority pertaining to new development or redevelopment activities. Therefore, AMAFCA itself will likely not have requirements for alternative compliance regarding infeasibility to manage the post construction design standard volume. However, AMAFCA's regional facilities may offer other MS4s an option for alternative compliance to manage the post-construction stormwater quality volume. The on-site stormwater management decisions and feasibility will typically be determined during development by other agencies (COA, Bernalillo County, etc.). AMAFCA will continue coordination with and support these agency decisions, as appropriate. AMAFCA's involvement will typically occur during the development review or stake-holder review.	• AMAFCA will continue to coordinate with and support these agency decisions, as appropriate, related to on-site stormwater management decisions and feasibility. AMAFCA's involvement will typically occur during the development review or stake-holder review. AMAFCA's regional facilities may offer other MS4s an option for alternative compliance to manage the post-construction stormwater quality volume.	**Met FY 2023 Goal.** • AMAFCA coordinated with and supported community agency decisions, as appropriate, related to on-site stormwater management decisions and feasibility. AMAFCA's involvement typically occurred during the development review or stake-holder review.
Not Included in NOI	74	Part I.D.5.b.(v) continued - Part I.D.5.b.(v).(c) - This permit does not prevent imposition of more stringent requirements related to flood control. Where both the permittee's site design standard ordinance or policy and local flood control requirements on site cannot be met due to site conditions, the standard may be met through a combination of on-site and off-site controls. Part I.D.5.b.(v).(d) - Where applicable New Mexico water law limits the ability to fully manage the design standard volume on site, measures to minimize increased discharge consistent with requirements under New Mexico water law must still be implemented. Part I.D.5.b.(v).(e) - In instances where an alternative to compliance with the standard on-site is chosen, technical justification as to the infeasibility of on-site management of the entire design standard volume, or a portion of the design standard volume, is required to be documented by submitting to the permittee a site-specific hydrologic and/or design analysis conducted and endorsed by a registered professional engineer, geologist, architect, and/or landscape architect.	Part I.D.5.b.(v).(c) - AMAFCA's primary function is to provide regional flood control; this includes stormwater quality projects that function as BMPs. Flood control requirements will continue to be required. Part I.D.5.b.(v).(d) - The NM ISC/OSE regulates the water delivery to the Rio Grande in order to meet water delivery requirements to Texas; therefore, AMAFCA's objective is to design its facilities to drain within 96 hours per the OSE requirements. Using AMAFCA facilities for off-site mitigation would assure the community that New Mexico water law limits are being met at the AMAFCA facilities. Part I.D.5.b.(v).(e) - Alternatives to compliance for on-site requirements are discussed below. AMAFCA itself will likely not have requirements for alternative compliance regarding infeasibility to manage the post construction stormwater quality volume. However, AMAFCA's regional facilities may offer other MS4s an option for alternative compliance to manage the post construction stormwater quality volume.	• AMAFCA will continue its primary function is to provide regional flood control; this includes stormwater quality projects that function as BMPs. Flood control requirements will continue to be required. • AMAFCA will abide by the NM OSE rule and plan/design its facilities to drain within 96 hours per the ISC/OSE guidance document. Using AMAFCA facilities for off-site mitigation would assure the community that New Mexico water law limits are being met at the AMAFCA facilities. • AMAFCA's regional facilities may offer other MS4s an option for alternative compliance to manage the post construction stormwater quality volume.	**Met FY 2023 Goals.** • AMAFCA continued its primary function to provide regional flood control; this included stormwater quality projects that function as BMPs. Flood control requirements will continue to be required. • AMAFCA abided by the NM ISC/OSE rule and plan/design its facilities to drain within 96 hours per the ISC/OSE requirements and guidelines. • AMAFCA continued discussions with Middle Rio Grande MS4 permittees regarding using AMAFCA's regional facilities as an option for alternative compliance to manage the post construction stormwater quality volume.

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Not Included in NOI	75	As required in Part I.D.5.b.(v).(f), when a Permittee determines a project applicant has demonstrated infeasibility due to site constraints specified in Part I.D.5.b.(v) to manage the design standard volume specified in Part I.D.5.b.(ii).(b) or a portion of the design standard volume on-site, the Permittee shall require one of the following mitigation options: A. The off-site mitigation option only applies to redevelopment sites and cannot be applied to new development. Management of the standard volume, or a portion of the volume, may be implemented at another location within the MS4 area, approved by the permittee. The permittee shall identify priority areas within the MS4 in which mitigation projects can be completed and shall determine who will be responsible for long-term maintenance on off-site mitigation projects. B. Implementation of a project that has been determined to provide an opportunity to replenish regional ground water supplies at an offsite location. C. Payment in lieu may be made to the permittee, who will apply the funds to a public storm water project. MS4s shall maintain a publicly accessible database of approved projects for which these payments may be used.	Part I.D.5.b.(v).(f) - AMAFCA may continue to coordinate with watershed MS4s and other entities within its jurisdiction to discuss areas requiring drainage and water quality improvements, project priorities, and multi-agency funding opportunities. Off-site stormwater quality mitigation projects will be included in these discussions. As part of the development of the AMAFCA Project Schedule, a system review will be completed. AMAFCA will publish projects, including schedule and cost sharing, in the biennial AMAFCA Project Schedule. AMAFCA, as part of the MS4 TAG, has discussed with EPA Region 6 (verbally and in writing) the MS4 Permit language for this section. The MS4 TAG members and EPA discussed how some of the terms/language of the Permit may limit the flexibility of the MS4s to allow off-site stormwater mitigation. The MS4s identified terms in the Permit which restrict the flexibility to achieve stormwater quality objectives by using alternate methods of compliance with post-construction permit requirements. The MS4 TAG provided this in writing to EPA on August 19, 2017 (letter from Dave Gatterman, SSCAFCA, "August 8, 2016 Meeting Follow-up"). This letter included scanned page 30 of Permit No. NMR04A000 to illustrate language changes the MS4 TAG think would allow the permittees to move forward and comply with both the Permit and state statute. Removing these limitations relative to post construction runoff will better allow the permittees flexibility to comply with New Mexico water law, protect the quality of the river, and not overly constrict development of our arid watershed. AMAFCA will continue discussions with EPA Region 6 regarding Permit language related to off-site stormwater mitigation.	• AMAFCA may coordinate with watershed MS4s as well as other entities during project review, complete a system review, and publish projects, including schedule and cost sharing, in the biennial AMAFCA Project Schedule. Off-site stormwater quality mitigation projects may be included in these discussions. • AMAFCA will continue discussions with EPA Region 6 regarding Permit language related to off-site stormwater mitigation. Removing these Permit limitations relative to post construction runoff will better allow the permittees flexibility to comply with New Mexico water law, protect the quality of the river, and not overly constrict development of our arid watershed.	**Met FY 2023 Goals.** • In FY 2023, AMAFCA worked on the 2024 Project Schedule which covers a six-year planning horizon (2024-2029). The 2024 Project schedule will be finalized in 2024. Coordination meetings with watershed MS4s, TAG members, and other entities occurred during the development of this Project Schedule and included the ranking of stormwater quality projects. • AMAFCA continued discussions with stakeholders regarding Permit language related to off-site stormwater quality mitigation. Utilizing the Permit opportunities relative to post construction runoff will better allow the permittees flexibility to comply with New Mexico water law, protect the quality of the river, and not overly constrict development of our arid watershed.
2.9	76	Estimation of the number of acres of IA and DCIA as required in Part I.D.5.b.(vi).	Part I.D.5.b.(vi) - AMAFCA will estimate the Impervious Area (IA) and Directly Connected Impervious Area (DCIA) within AMAFCA's jurisdiction and/or rights of way.	• AMAFCA will estimate the IA and DCIA within AMAFCA's jurisdiction and/or rights of way. AMAFCA will update this estimate, as appropriate, given development in the watersheds. This will be a cooperative effort with other watershed MS4s.	**Met FY 2023 Goal.** • This Permit activity was conducted cooperatively in FY 2023 and IA values will be updated in FY 2023 with AMAFCA projects.

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2.10	77	Inventory and priority ranking as required in Part I.D.5.b.(vii) for MS4-owned property and infrastructure (including public right-of-way) that may have the potential to be retrofitted with control measures designed to control the frequency, volume, and peak intensity of stormwater discharges to and from its MS4. The NM Office of the State Engineer (OSE) regulates the water delivery to the Rio Grande in order to meet water delivery requirements to Texas; therefore, AMAFCA's objective is to design its facilities to drain within 96 hours per the OSE requirements.	Part I.D.5.b.(vii) - AMAFCA will continue to keep an inventory and develop a priority ranking of AMAFCA owned properties and facilities that may have the potential for retrofitted control measures and stormwater quality facilities and BMPs. AMAFCA may continue to coordinate with watershed MS4s and other entities within its jurisdiction to discuss areas requiring drainage and water quality retrofits, project priorities, and multi-agency funding. AMAFCA will publish projects, including schedule and cost sharing, in the biennial AMAFCA Project Schedule. As part of the development of the AMAFCA Project Schedule, a system review will be completed. Internally, using the Project Schedule, water quality projects and water quality retrofit projects may be ranked and tabulated. AMAFCA may evaluate the existing BMPs based on their effectiveness and capacity in order to identify where additional BMPs are needed. AMAFCA is also a member of the cooperative MS4 TAG, facilitating cooperation and coordination with other watershed MS4s. AMAFCA will operate and maintain Leveloggers in major inlets into the NDC on AMAFCA ROW and analyze the data to assist in the priority ranking. AMAFCA will complete, as allowed, updated hydrologic analyses for the Rio Grande watersheds to assist with determining priority ranking.	• AMAFCA may continue to coordinate with watershed MS4s and other entities within its jurisdiction to discuss the areas requiring drainage and water quality retrofitting within the Middle Rio Grande Watershed, project priorities, and multi-agency funding contributions. • AMAFCA will publish the AMAFCA-funded projects, including the schedule and proposed cost-sharing, in the biennial AMAFCA Project Schedule. As part of the development of the AMAFCA Project Schedule, a system review will be completed. AMAFCA may utilize the Project Schedule, in part, to rank and tabulate water quality projects and water quality retrofit projects. • AMAFCA will continue membership and involvement in the cooperative MS4 TAG which will facilitate cooperation and coordination with other MS4s in the Middle Rio Grande. • AMAFCA will operate and maintain Leveloggers in major channel inlets into the NDC on AMAFCA ROW and analyze the data to assist with priority ranking. • AMAFCA will complete updated hydrologic analyses, utilizing the AMAFCA White Paper Methodology, for the NDC watersheds, to assist with determining priority ranking.	**Met FY 2023 Goals.** • In FY 2023, AMAFCA worked on the 2024 Project Schedule which covers a six-year planning horizon (2024-2029). The 2024 Project schedule will be finalized in 2024. Coordination meetings with watershed MS4s, TAG members, and other entities occurred during the development of this Project Schedule and included the ranking of stormwater quality projects. • AMAFCA continued to operate and analyze data from 14 Leveloggers located at the channelized inlets to the NDC on AMAFCA ROW. Reports from this monitoring program are available upon request. • In FY 2023, AMAFCA continued working on Drainage Management Plans (DMPs) and Water Quality Plans to plan for flood protection and water quality volumes.
2.11	78	Incorporate watershed protection elements into regular planning or policy documents as required in Part I.D.5.b.(viii). As applicable to each permittee's MS4 jurisdiction, policy and/or planning documents must include the following: Part I.D.5.b.(viii).(a) - A description of master planning and project planning procedures to control the discharge of pollutants to and from the MS4. Part I.D.5.b.(viii).(b) - Minimize the amount of impervious surfaces (roads, parking lots, roofs, etc.) within each watershed, by controlling the unnecessary creation, extension and widening of impervious parking lots, roads and associated development. Part I.D.5.b.(viii) (c) - Identify environmentally and ecologically sensitive areas that provide water quality benefits and serve critical watershed functions within the MS4 and ensure requirements to preserve, protect, create and/or restore these areas are developed and implemented during the plan and design phases of projects in these identified areas.	Part I.D.5.b.(viii).(a) - AMAFCA will continue to produce and publish the biennial AMAFCA Project Schedule for all regional drainage and water quality projects within AMAFCA's jurisdiction that will either be led or partly funded by AMAFCA. For the projects led by AMAFCA, watershed protection elements may be incorporated, when feasible, into drainage management plans, as appropriate, in order to identify watersheds which can be retrofitted with regional water quality facilities. Part I.D.5.b.(viii).(b) - This section is not applicable to AMAFCA's projects, which are regional flood control or water quality projects. Part I.D.5.b.(viii).(c) - During planning of AMAFCA projects, environmentally and ecologically sensitive areas that provide water quality benefits are considered.	• Produce and publish the AMAFCA Project Schedule for CY 2016 and every other year thereafter. • AMAFCA may coordinate with MS4s to provide input for project planning of infrastructure retrofitting. • For projects led by AMAFCA, watershed protection elements may be incorporated into Drainage Management Plans, as appropriate, in order to identify watersheds which potentially can be retrofitted with regional water quality facilities. • All AMAFCA projects will obtain USFWS, USACE, and/or pueblo consultation, if required.	**Met FY 2023 Goals.** • In FY 2023, AMAFCA worked on the 2024 Project Schedule which covers a six-year planning horizon (2024-2029). The 2024 Project schedule will be finalized in 2024. Coordination meetings with watershed MS4s, TAG members, and other entities occurred during the development of this Project Schedule and included the ranking of stormwater quality projects. • In FY 2023, AMAFCA continued working on Drainage Management Plans (DMPs) and Water Quality Plans to plan for watershed flood protection and water quality volumes.

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2.11	79	Continuation of incorporate watershed protection elements into regular planning or policy documents as required in Part I.D.5.b.(viii). Part I.D.5.b.(viii).(d) - Implement stormwater management practices that minimize water quality impacts to streams, including disconnecting direct discharges to surface waters from impervious surfaces such as parking lots. Part I.D.5.b.(viii).(e) - Implement stormwater management practices that protect and enhance groundwater recharge as allowed under the applicable water rights laws. Part I.D.5.b.(viii).(f) - Seek to avoid or prevent hydromodification of streams and other water bodies caused by development, including roads, highways, and bridges. Part I.D.5.b.(viii).(g) - Develop and implement policies to protect native soils, prevent topsoil stripping, and prevent compaction of soils. Part I.D.5.b.(viii).(h) - The program must be specifically tailored to address local community needs (e.g. protection to drinking water sources, reduction of water quality impacts) and must be designed to attempt to maintain pre-development runoff conditions.	Part I.D.5.b.(viii).(d) - This section is rarely applicable to AMAFCA's projects. In the arid southwest, direct discharges to surface waters are rare. Part I.D.5.b.(viii).(e) - The NM OSE regulates the water delivery to the Rio Grande in order to meet water delivery requirements to Texas; therefore, AMAFCA's objective is to design its facilities to drain within 96 hours per the OSE requirements. Part I.D.5.b.(viii).(f) - AMAFCA projects, to the extent feasible and as consistent with O&M of sediment removal, will continue to seek to avoid or prevent hydromodification of streams and other water bodies. Part I.D.5.b.(viii).(g) - AMAFCA projects and those in coordination with other MS4s, will, to the extent possible, protect native soils, prevent topsoil stripping, and prevent compaction of soils. Part I.D.5.b.(viii).(h) - AMAFCA does not have jurisdictional authority pertaining to development or redevelopment activities. However, through AMAFCA's involvement with the MRGSQT and TAG, AMAFCA will support programs tailored to address local community needs and that are designed to attempt to maintain pre-development runoff conditions.	• AMAFCA will develop written procedures that include applicable watershed protection elements in Part I.D.5.b.(viii).(f), (g) and (h) as required in the MS4 Permit and as applicable to AMAFCA. • AMAFCA will continue to contribute and participate in the MRGSQT, which supports programs tailored to address local community needs and are designed to attempt to maintain pre-development runoff conditions. • AMAFCA will complete updated hydrologic analyses, utilizing the AMAFCA White Paper Methodology, for the NDC watersheds, to assist with understanding options for maintaining pre-development runoff conditions.	**Met FY 2023 Goals.** • Many of these applicable Permit activities are being conducted cooperatively. • AMAFCA continued to contribute and participate in the MRGSQT, which supports programs tailored to address local community needs and are designed to attempt to maintain pre-development runoff conditions.

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Not Included in NOI	80	Update the SWMP document and annual report as required in Part I.D.5.b.(ix) and Part I.D.5.b.(x). The permittee must update the SWMP as necessary to include a description of the mechanism(s) utilized to comply with the permit elements listed above as well as the citations/descriptions of design standards for structural and non-structural controls to control pollutants in runoff. The following information must be included in each Annual Report: Part I.D.5.b.(x).(a) - Include a summary and analysis of all maintenance, inspections and enforcement, and the number and frequency of inspections performed annually. Part I.D.5.b.(x).(b) - A cumulative listing of the annual modifications made to the Post-Construction Stormwater Management Program, and Part I.D.5.b.(x).(c) - According to the schedule presented in Table 3, the permittee must: A. Report the no. of MS4-owned properties and infrastructure that have been retrofitted with control measures designed to control the frequency, volume, and peak intensity of stormwater discharges. B. As required in Part I.D.5.b.(vi), report the tabulated results for IA & DCIA and its estimation methodology.	Part I.D.5.b.(ix) - AMAFCA will update the SWMP as necessary to comply with the permit elements listed above as well as the citations and descriptions of design standards for structural and non-structural controls to control pollutants in stormwater runoff, including discussion of the methodology used during design for estimating impacts to water quality and selecting structural and non-structural controls. Part I.D.5.b.(x).(a) - AMAFCA tracks all crew activity related to maintenance of all water quality structures. Part I.D.5.b.(x).(b) - AMAFCA does not have any development or redevelopment projects - all AMAFCA projects are regional flood control or water quality projects. AMAFCA will continue to maintain a cumulative listing of the annual modifications made to the Post-Construction Stormwater Management Program. Part I.D.5.b.(x).(c).A - AMAFCA will continue to maintain a list of properties and infrastructure within AMAFCA rights-of-way that have been retrofitted with control measures designed to control frequency, volume and peak intensity of stormwater discharges. Part I.D.5.b.(x).(c).B - AMAFCA will estimate the Impervious Area (IA) and Directly Connected Impervious Area (DCIA) within AMAFCA's jurisdiction and/or rights of way (refer to ID 76).	• AMAFCA will update the SWMP as necessary to comply with the permit elements listed above. • AMAFCA will continue to annually inspect and track all crew activity related to maintenance of all AMAFCA owned water quality structures. • AMAFCA will continue to maintain a cumulative listing of the annual modifications made to the Post-Construction Stormwater Management Program. • AMAFCA will continue to provide a cumulative list of AMAFCA's retrofit BMPs. AMAFCA will incorporate documentation by reference into the Annual Report and plans to document progress on the AMAFCA website. • AMAFCA will estimate the IA and DCIA within AMAFCA's jurisdiction and/or rights of way. AMAFCA will update this estimate, as appropriate, given development in the watersheds. This will be a cooperative effort with other watershed MS4s (refer to ID 76).	**Met FY 2023 Goals.** • AMAFCA conducted site inspections for 100% of the AMAFCA construction projects in accordance with this MS4 Permit in FY 2023. • Lists of MS4 program modifications and facility modifications/retrofits are available upon request.

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2.12	81	Enhance the program to include the elements in Part I.D.5.b.(xi) and Part I.D.5.a.(xii). These include: Part I.D.5.b.(xi) - Use of stormwater educational materials; and Part I.D.5.b.(xii) - When choosing appropriate BMPs, the permittee may participate in locally-based watershed planning efforts, which attempt to involve a diverse group of stakeholders including interested citizens. and Part I.D.5.b.(xiii) - The permittee may incorporate the following elements in the Post-Construction Stormwater Management in New Development and Redevelopment program required in Part I.D.5.b.(ii)(b): (a) Provide requirements and standards to direct growth to identified areas to protect environmentally and ecologically sensitive areas such as floodplains and/or other areas with endangered species and historic properties concerns; (b) Include requirements to maintain and/or increase open space/buffers along sensitive water bodies, minimize impervious surfaces, and minimize disturbance of soils and vegetation; and (c) Encourage in fill development in higher density urban areas, and areas with existing storm sewer infrastructure.	Part I.D.5.b.(xi) - As part of the MRGSQT, AMAFCA will continue to use stormwater educational materials, either developed locally or provided by EPA, NMED environmental groups, public interest groups, trade organizations, and/or other MS4 as well as utilizing the MRGSQT. Part I.D.5.b.(xii) - AMAFCA may continue to participate in the watershed-planning efforts with other MS4s in order to publish the AMAFCA Project Schedule biennially. AMAFCA will continue membership and involvement in the cooperative MS4 TAG, which will facilitate cooperation and coordination with other MS4s in the Middle Rio Grande watershed. Part I.D.5.b.(xiii) - These program enhancements are outside the AMAFCA's authority and mission. However, AMAFCA will cooperate with other watershed MS4s, as applicable, to support this program enhancement.	• AMAFCA will continue to contribute and participate in the MRGSQT. The MRGSQT Outcomes Report will summarize the activities where educational materials were dispersed and shared with the public. This report is available upon request and AMAFCA plans to share this document on its website. • AMAFCA may coordinate with MS4s for project planning of infrastructure retrofitting. AMAFCA will continue to produce and publish the AMAFCA Project Schedule for CY 2016 and every other year thereafter. • AMAFCA will continue membership and involvement in the cooperative MS4 Technical Advisory Group (MS4 TAG) which will facilitate cooperation and coordination with other MS4s in the Middle Rio Grande.	**Met FY 2023 Goals.** • AMAFCA continued to contribute and participate in the MRGSQT, which supports post-construction education and outreach programs. The Outcomes Report is included as a Program Summary to this Annual Report. • In FY 2023, AMAFCA worked on the 2024 Project Schedule which covers a six-year planning horizon (2024-2029). The 2024 Project schedule will be finalized in 2024. Coordination meetings with watershed MS4s, TAG members, and other entities occurred during the development of this Project Schedule and included the ranking of stormwater quality projects. • AMAFCA continued to be involved in the MS4 TAG group, facilitating cooperation and coordination with other MS4s in the Middle Rio Grande. • AMAFCA participated as a review partner for the Bernalillo County's updated technical standards, which includes the Green Stormwater Infrastructure/Low Impact Development (GSI/LID) Standards document. During 2023, Bernalillo County completed updating its Technical Standards. Integration of GSI/LID into the Technical Standards and review process was a key focus of this update. As a part of this update, the County developed a stand-alone GSI/LID Standards document that identifies GSI/LID BMPs that are arid-appropriate and support Bernalillo County's Stormwater Quality Ordinance, representing an increased commitment from the County toward the goal of broad implementation of GSI/LID in the MRG watershed.
2.13	82	Item from MS4 Permit NOI. Describe other proposed activities to address the Post-Construction Stormwater Management in New Development and Redevelopment Measure.	Because AMAFCA is a flood control authority, the legal authority and jurisdiction granted to it by the State of New Mexico is limited. AMAFCA has begun requiring, and will continue to require, MS4 permit elements into construction contracts.	• AMAFCA will continue, as appropriate, to insert MS4 Permit elements into construction contracts to provide AMAFCA with a contractual mechanism for MS4 elements.	**Met FY 2023 Goals.** • AMAFCA continued to, as appropriate, insert MS4 Permit elements into construction contracts to provide AMAFCA with a contractual mechanism for MS4 elements.

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	83	**TABLE 4: Pollution Prevention/Good Housekeeping for Municipal/Co-permittee Operations - Part I.D.5.c**			
3.1	84	Develop or update the Pollution Prevention/Good Housekeeping program to include the elements in Part I.D.5.c.(i). Elements include: Part I.D.5.c.(i).(a) - Employee training program to incorporate pollution prevention and good housekeeping, including a tracking procedure; Part I.D.5.c.(i).(b) - O&M activities, schedules, and long term inspections procedures for structural and non-structural stormwater controls; Part I.D.5.c.(i).(c) - Controls for reducing or eliminating the discharge of pollutants from AMAFCA maintenance and storage yards and shop; Part I.D.5.c.(i).(d) - Procedures for properly disposing of waste removed from separate storm sewers and facilities listed in Part I.D.5.c.(i).(c) (such as dredged spoil, accumulated sediments, floatables, and other debris); Part I.D.5.c.(i).(e) - Procedures to ensure that new flood management projects assess the impacts on water quality and examine existing projects for incorporating additional water quality protection devices or practices .	Part I.D.5.c.(i) - AMAFCA will continue its Pollution Prevention/Good Housekeeping Program. Part I.D.5.c.(i).(a) - AMAFCA will continue employee training to incorporate pollution prevention and good housekeeping; Part I.D.5.c.(i).(b) - AMAFCA will adhere to its current O&M and Safety procedures, which include employee training for maintenance of AMAFCA flood control and water quality facilities and BMPs. Part I.D.5.c.(i).(c) - AMAFCA will implement and maintain controls for reducing the discharge of pollutants from AMAFCA maintenance and storage yards and shop; Part I.D.5.c.(i).(d) - AMAFCA will develop procedures, where appropriate, for properly disposing of waste removed from AMAFCA facilities (sediment, floatables, and other debris); Part I.D.5.c.(i).(e) - AMAFCA ensures that new projects will assess the impacts on water quality and existing projects will be examined for retrofit opportunities as part of AMAFCA's Post Construction Control Measures.	• AMAFCA will document training provided to its employees & include pollution prevention and good housekeeping into training, as needed. • AMAFCA encourages that crew members are trained in spill prevention & control, as well as truck fueling activities during the Permit term. • AMAFCA will adhere to its current O&M and Safety Procedures. • In the Annual Report, AMAFCA will consider projected costs for the operation and maintenance of its stormwater quality facilities. • AMAFCA will continue development of this program element in its MS4 Strategies and Procedures Notebook. This will address stormwater controls for AMAFCA's yard and standard operating procedures, as applicable, for disposal activities. • AMAFCA will review new projects to assess the impacts on water quality and will examine existing projects for retrofit opportunities as part of AMAFCA's Post Construction Control Measure.	**Met FY 2023 Goals.** • In FY 2023, stormwater continued to be a topic at the staff and crew meetings, including discussions related to pollution prevention and good housekeeping. • Training records for AMAFCA staff & crew are available upon request. • In FY 2023, AMAFCA adhered to its current O&M and Safety Procedures. • The FY 2023 annual cost for maintenance of its stormwater quality facilities is available upon request. • Refer to AMAFCA's Post Construction Control Measure in this Annual Report for additional information on new and retrofit project assessments for impacts on water quality. • In FY 2023, AMAFCA worked on the 2024 Project Schedule which covers a six-year planning horizon (2024-2029). The 2024 Project schedule will be finalized in 2024. Coordination meetings with watershed MS4s, TAG members, and other entities occurred during the development of this Project Schedule and included the ranking of stormwater quality projects.
3.2	85	The program will include the elements in Part I.D.5.c.(ii). These include: Part I.D.5.c.(ii).(a) - Develop or update the existing list of all stormwater quality facilities by drainage basin, including location and description;	Part I.D.5.c.(ii).(a) - As part of the Program, AMAFCA will continue to up-date a map of all stormwater quality facilities by drainage basin, including location and description.	• AMAFCA will continue to up-date a map of all AMAFCA stormwater quality facilities by drainage basin, including location and description.	**Met FY 2023 Goal.** • AMAFCA's crew tracking system and database lists each of its stormwater quality facilities by drainage basin. These facilities are also shown on AMAFCA Maintenance Map, available online: https://amafca.org/gis-maps-data/
3.2	86	Part I.D.5.c.(ii).(b) - Develop or modify existing operational manual for de-icing activities addressing alternate materials and methods to control impacts to stormwater quality;	Part I.D.5.c.(ii).(b) - N/A - AMAFCA only has jurisdiction to maintain its facilities; AMAFCA does not engage in the following: de-icing, roadway debris control, street sweeping, or roadway pollutant removal.	N/A	N/A
3.2 & 3.4	87	Part I.D.5.c.(ii).(c) - Develop or modify existing program to control pollution in stormwater runoff from equipment and vehicle maintenance yards and maintenance center operations located within the MS4;	Part I.D.5.c.(ii).(c) - For compliance with this section of the MS4 Permit, AMAFCA's focus is to evaluate and modify, where necessary, the existing program to control pollution in stormwater runoff from AMAFCA's equipment and vehicle maintenance yard and satellite facilities.	• AMAFCA will continue to implement and maintain the recommended administrative and structural BMPs, as appropriate, from the Good Housekeeping Inspection Reports for AMAFCA facilities. • AMAFCA will continue development of this program element in its MS4 Strategies and Procedures Notebook.	**Met FY 2023 Goals.** • AMAFCA continued to review the Good Housekeeping Assessments for AMAFCA facilities.
3.2	88	Part I.D.5.c.(ii).(d) - Develop or modify existing street sweeping program. Assess possible benefits from changing frequency or timing of sweeping activities or utilizing different equipment for sweeping activities;	Part I.D.5.c.(ii).(d) - N/A - AMAFCA only has jurisdiction to maintain its facilities; AMAFCA does not engage in the following: de-icing, roadway debris control, street sweeping, or roadway pollutant removal.	N/A	N/A

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3.2	89	Part I.D.5.c.(ii).(e) - A description of procedures used by permittees to target roadway areas most likely to contribute pollutants to and from the MS4 (i.e., runoff discharges directly to sensitive receiving water, roadway receives majority of de-icing material, roadway receives excess litter, roadway receives greater loads of oil and grease);	Part I.D.5.c.(ii).(e) - AMAFCA only has jurisdiction to maintain its facilities; AMAFCA does not engage in the following: de-icing, roadway debris control, street sweeping, or roadway pollutant removal. AMAFCA will continue coordination, as applicable, with other MS4s in the watershed related to illicit discharge detection and elimination from roadways - refer to the Illicit Discharges and Improper Disposal Control Measure.	N/A	N/A
3.2	90	Part I.D.5.c.(ii).(f) - Develop or revise existing standard operating procedures for collection of used motor vehicle fluids (at a minimum oil and antifreeze) and toxics (including paint, solvents, fertilizers, pesticides, herbicides, and other hazardous materials) used in permittee operations or discarded in the MS4, for recycle, reuse, or proper disposal.	Part I.D.5.c.(ii).(f) - For compliance with this section of the MS4 Permit, AMAFCA's focus is to evaluate and modify, where necessary, the existing program to control pollution in stormwater runoff from the equipment and vehicle maintenance yard.	• AMAFCA will maintain the existing program to control polluted stormwater runoff from its equipment and maintenance yard. • AMAFCA will continue to implement and maintain the recommended BMPs, as appropriate, from the Good Housekeeping Inspection Report for AMAFCA facilities. • AMAFCA will continue development of this program element in its MS4 Strategies and Procedures Notebook.	**Met FY 2023 Goals.** • AMAFCA continued the existing program to control pollutants to stormwater runoff from its equipment and maintenance yard. • AMAFCA coordinated with local landfills for appropriate testing requirements for material disposal as a result of maintaining agency equipment, as needed. • AMAFCA continued to review the Good Housekeeping Assessments for AMAFCA facilities.
3.2	91	Part I.D.5.c.(ii).(g) - Standard operating procedure for disposal of accumulated sediments, floatables, and debris;	Part I.D.5.c.(ii).(g) - AMAFCA performs waste disposal for sediment, floatables, and other debris in accordance with the "AMAFCA Operations and Maintenance Manual for Dams" and "AMAFCA Operation and Maintenance Repair Replacement and Rehabilitation Manual" (OMRRR). As a cooperative program, AMAFCA is a participant in an OMRRR with Bernalillo County, the MRGCD, and the Bureau of Reclamation related to facilities that are connected to MRGCD ditches (primarily in the SW Valley of Albuquerque).	• Continue to perform all waste disposal for sediment, floatables, and other debris in accordance with the operation and maintenance manuals and direct vendor contractors to collect and dispose of trash, floatables, and debris. • AMAFCA will develop standard operating procedures, as applicable, for these disposal activities and include them in the program's MS4 Strategies and Procedures Notebook section. • AMAFCA will continue to participate, as appropriate, in the Operation Maintenance Repair, Replacement, and Rehabilitation (OMRRR) - Southwest Valley Flood Reduction Project cooperative program with MRGCD, Bernalillo County, and Bureau of Reclamation.	**Met FY 2023 Goals.** • AMAFCA continued to perform all waste disposal for sediment, floatables and other debris in accordance with the O&M manuals and direct vendor contractors to collect and dispose of trash, floatables, and debris. • AMAFCA continued to follow standard operating procedures, as applicable. • AMAFCA coordinated with local landfills for appropriate testing requirements for material disposal as a result of maintaining agency equipment, as needed. • AMAFCA continued to participate in the OMRRR - cooperative program with MRGCD, Bernalillo County, and Bureau of Reclamation.
3.2	92	Part I.D.5.c.(ii).(h) - litter source control program, include targeted public awareness campaign;	Part I.D.5.c.(ii).(h) - Through involvement in the MRGSQT, AMAFCA will continue to collaborate with the MS4 permittees to improve upon the existing litter source control program, including a targeted public awareness campaign.	• AMAFCA will continue its involvement with and financial support of the MRGSQT. • AMAFCA will continue to collaborate with the MS4 permittees to improve upon the existing litter source control program. • The MRGSQT Outcomes Report is available upon request and AMAFCA plans to share this document on its website.	**Met FY 2023 Goals.** • AMAFCA continued to contribute and participate in the MRGSQT, which supports litter source control public awareness programs. The MRGSQT Outcomes Report is included as a Program Summary to the Annual Report. A summary of trash removed from all AMAFCA facilities is provided in a Program Summary and information related to each AMAFCA facility is available upon request.

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3.2	93	Part I.D.5.c.(ii).(i) - Develop or review and revise, as necessary, the criteria, procedures and schedule to evaluate existing flood control devices, structures and drainage ways to assess the potential of retrofitting to provide additional pollutant removal from stormwater. Implement routine review to ensure new and/or innovative practices are implemented where applicable.	Part I.D.5.c.(ii).(i) - AMAFCA may continue to coordinate with watershed MS4s and other entities within its jurisdiction to discuss areas requiring drainage and water quality retrofits, project priorities, and multi-agency funding. AMAFCA will publish projects, including schedule and cost sharing, in the biennial AMAFCA Project Schedule. Operation and Maintenance procedures, inspections, repairs, and retrofits are evaluated through the annual cooperative Agency and Area Wide and Miscellaneous contracts.	• AMAFCA may continue to coordinate with watershed MS4s and other entities within its jurisdiction to discuss the areas requiring drainage and water quality retrofitting within the Middle Rio Grande Watershed, project priorities, and multi-agency funding contributions. AMAFCA will continue to produce and publish the biennial AMAFCA Project Schedule, which includes projects for retrofitting existing flood control devices, structures and drainage ways to provide additional pollutant removal from stormwater. • AMAFCA will continue to participate in the cooperative Agency and Area Wide contract and utilize the Miscellaneous contract to address rehabilitation, repair, and retrofit activities for AMAFCA structures.	**Met FY 2023 Goals.** •In FY 2023, AMAFCA worked on the 2024 Project Schedule which covers a six-year planning horizon (2024-2029). The 2024 Project schedule will be finalized in 2024. Coordination meetings with watershed MS4s, TAG members, and other entities occurred during the development of this Project Schedule and included the ranking of stormwater quality projects. • AMAFCA continued to utilize the Agency and Area Wide and Miscellaneous contracts to address rehabilitation, repair, and retrofit activities for AMAFCA structures and cooperative maintenance projects.
3.2	94	Part I.D.5.c.(ii).(j) -Enhance inspection and maintenance programs by coordinating with maintenance personnel to ensure that a target number of structures per basin are inspected and maintained per quarter;	Part I.D.5.c.(ii).(j) - AMAFCA has in place a well-defined and implemented routine inspection and O&M program that includes both formal and informal inspections and maintenance schedules. This program will be enhanced to ensure a target number of structures per basin are inspected and maintained per quarter, as required by the MS4 Permit, for annual compliance with the MS4 Permit. AMAFCA will enhance its inspection and maintenance programs, as required by the MS4 Permit, through improved coordination with the Stormwater Quality Engineer, Field Engineer, Maintenance Superintendent, and AMAFCA Maintenance Crew. AMAFCA will, depending on funding available, utilize the Agency and Area Wide and Miscellaneous contracts to address portions of the required inspection and maintenance.	• AMAFCA will continue coordination between maintenance personnel and staff to ensure that, on average, two (2) structures per basin are inspected and maintained per quarter. • AMAFCA will, depending on funding available, utilize the Agency and Area Wide and Miscellaneous contracts to address portions of the required inspection and maintenance.	**Met FY 2023 Goals.** • AMAFCA O&M activities are discussed at staff and crew meetings to allow coordination among staff and crew. • In this Permit term, AMAFCA inspected AMAFCA structures as required by the MS4 Permit. • AMAFCA continued to participate in the Agency and Area Wide contract and issue tasks under the annual Miscellaneous contract to address rehabilitation, repair, and retrofit activities for AMAFCA structures and cooperative maintenance projects.
3.2	95	Part I.D.5.c.(ii).(k) - Enhance the existing program to control the discharge of floatables and trash from the MS4 by implementing source control of floatables in industrial and commercial areas;	Part I.D.5.c.(ii).(k) - AMAFCA does not have jurisdiction over industrial and commercial areas in the MS4. AMAFCA will continue coordination with the MRG MS4s, as well as involvement with the MRGSQT and the MS4 TAG, to enhance the program to control the discharge of floatables and trash from the MS4 by implementing source control of floatables in industrial and commercial areas.	• AMAFCA will continue its involvement with and financial support of the MRGSQT. • AMAFCA will continue to collaborate with the MS4 permittees to improve upon the source control of floatables in industrial and commercial areas. • AMAFCA will continue membership and involvement in the cooperative MS4 TAG.	**Met FY 2023 Goals.** • AMAFCA continued to contribute and participate in the MRGSQT, which supports trash and litter control public awareness programs. • AMAFCA continued to be involved in the MS4 TAG group, facilitating cooperation and coordination with other MS4s in the Middle Rio Grande.

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3.2	96	Part I.D.5.c.(ii).(l) - Include in each Annual Report, a cumulative summary of retrofit evaluations conducted during the permit term on existing flood control devices, structures and drainage ways to benefit water quality. Update the SWMP to include a schedule (with priorities) for identified retrofit projects;	Part I.D.5.c.(ii).(l) - AMAFCA may continue to coordinate with watershed MS4s and other entities within its jurisdiction to discuss areas requiring drainage and water quality retrofits, project priorities, and multi-agency funding. As part of the development of the AMAFCA Project Schedule, a system review will be completed. AMAFCA will publish projects, including schedule and cost sharing, in the biennial AMAFCA Project Schedule. Using the Project Schedule process, water quality projects and water quality retrofit projects may be ranked and prioritized.	• AMAFCA will continue to provide a cumulative list of AMAFCA's retrofit BMPs. AMAFCA will incorporate documentation by reference into the Annual Report and plans to document progress on the AMAFCA website - refer to the Post-Construction Control Measure. • AMAFCA will continue including facility evaluations as part of AMAFCA studies, including drainage management plans, facility plans, and other analysis projects, as appropriate. • AMAFCA will continue to include BMP/water quality facility retrofit projects in the biennial Project Schedule.	**Met FY 2023 Goals.** • In FY 2023, AMAFCA worked on the 2024 Project Schedule which covers a six-year planning horizon (2024-2029). The 2024 Project schedule will be finalized in 2024. Coordination meetings with watershed MS4s, TAG members, and other entities occurred during the development of this Project Schedule and included the ranking of stormwater quality projects.
3.2	97	Part I.D.5.c.(ii).(m) - Flood management projects: review and revise, as necessary, technical criteria guidance documents and program for the assessment of water quality impacts and incorporation of water quality controls into future flood control projects. The criteria guidance document must include the following elements: Part I.D.5.c.(ii).(m).A. - Describe how new flood control projects are assessed for water quality impacts. Part I.D.5.c.(ii).(m).B. - Provide citations and descriptions of design standards that ensure water quality controls are incorporated in future flood control projects. Part I.D.5.c.(ii).(m).C. - Include method for permittees to update standards with new and/or innovative practices. Part I.D.5.c.(ii).(m).D. - Describe master planning and project planning procedures and design review procedures.	Part I.D.5.c.(ii).(m).A. - AMAFCA, through its processes, will assess new flood control projects for water quality impacts. As new flood control projects are constructed, AMAFCA will consider the appropriate time and location for the collection of water quality data to assess project water quality impacts. During facility planning, AMAFCA will adhere to current and future drainage and water quality management plans passed by the AMAFCA Board of Directors, Bernalillo County Commission, or Albuquerque City Council. AMAFCA will continue its proactive policy of incorporating stormwater quality BMPs into new flood control projects when feasible. AMAFCA will publish projects, including schedule and cost sharing, in the biennial AMAFCA Project Schedule. Using the Project Schedule process, water quality projects and water quality retrofit projects may be ranked and prioritized. Part I.D.5.c.(ii).(m).B. - AMAFCA is assessing the use of National design standards related to water quality controls. Part I.D.5.c.(ii).(m).C. - AMAFCA will continually assess design standards and practices, technical specifications, and BMPs and implement them, as applicable. Part I.D.5.c.(ii).(m).D. - AMAFCA has established procedures for master planning through its Drainage Master Plan development, project planning procedures using its Project Schedule, and design review procedures used by its Development Review Engineer.	• AMAFCA has all of the elements of the Technical Criteria Guidance Document as part of their various programs but not as part of one document. Many of these elements are done in cooperation with watershed MS4s. • AMAFCA's Project Schedule process includes, in part, coordination with watershed MS4s, TAG members, and other entities within its jurisdiction and may include the ranking of flood control and stormwater quality projects. • AMAFCA is assessing the use of National design standards related to water quality controls. • AMAFCA will continually assess design standards and practices and implementing them, as applicable. • AMAFCA will continue to follow its established procedures for Drainage Master Plan development, project planning procedures using its Project Schedule, and design review procedures used by its Development Review Engineer.	**Met FY 2023 Goals.** • In FY 2023, AMAFCA worked on the 2024 Project Schedule which covers a six-year planning horizon (2024-2029). The 2024 Project schedule will be finalized in 2024. Coordination meetings with watershed MS4s, TAG members, and other entities occurred during the development of this Project Schedule and included the ranking of stormwater quality projects. • AMAFCA is assessing the use of ASCE's "Standard Guidelines for the Design of Urban Stormwater Systems, Standard Guidelines for Installation of Urban Stormwater Systems, and Standard Guidelines for the Operation and Maintenance of Urban Stormwater Systems" for national design standards related to water quality controls. • AMAFCA participated as a review partner for the Bernalillo County's updated technical standards, which includes the GSI/LID Standards document. During 2023, Bernalillo County completed updating its Technical Standards. Integration of GSI/LID into the Technical Standards and review process was a key focus of this update. • AMAFCA continued to follow its established procedures for Drainage Master Plan development, project planning procedures using its Project Schedule (refer to the Post-Construction section of the Annual Report for additional information), and design review procedures used by its Development Review Engineer.

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3.2	98	Part I.D.5.c.(ii).(n) -Develop procedures to control the discharge of pollutants related to the storage and application of pesticides, herbicides, and fertilizers applied, by the permittee's employees or contractors, to public right-of-ways, parks, and other municipal property. The permittee must provide an updated description of the data monitoring system for all permittee departments utilizing pesticides, herbicides and fertilizers.	Part I.D.5.c.(ii).(n) - AMAFCA will only allow licensed staff or professionally licensed contractors to apply herbicides and pesticides within AMAFCA rights-of-way (AMAFCA does not apply fertilizers in its operations). In addition, AMAFCA will review, as necessary, leases and licenses, to ensure wording is included addressing the control of discharge of pollutants related to the storage and application of pesticides, herbicides, and fertilizers applied by entities leasing or licensed to use AMAFCA lands. AMAFCA will develop a tracking system to monitor herbicides and pesticides within AMAFCA rights-of-way (AMAFCA does not apply fertilizers in its operations). AMAFCA will store all herbicides and pesticides according to direction by product vendors.	• AMAFCA personnel will typically not apply fertilizers in its operations. • AMAFCA will only allow professional licensed contractors or licensed crew members to apply herbicides and pesticides within AMAFCA rights-of-way. • AMAFCA will be reviewing, as necessary, leases and licenses, to ensure wording is included addressing the control of discharge of pollutants related to the storage and application of herbicides, pesticides, and fertilizers applied by entities leasing or licensed to use AMAFCA lands. • AMAFCA will continue developing a tracking system to monitor herbicide and pesticide applications within AMAFCA ROW. • AMAFCA will store all herbicides and pesticides according to direction by product vendors.	**Met FY 2023 Goals.** • In FY 2023, the AMAFCA licensed crew members or professional licensed contractors were used when herbicide and/or pesticide application was necessary. • Herbicide and pesticide storage was reviewed as part of the Good Housekeeping assessment. • AMAFCA has a tracking system for the herbicide and pesticide inventory.
3.3	99	Develop or update a list and a map of industrial facilities owned or operated by the permittee as required in Part I.D.5.c.(iii).	Part I.D.5.c.(iii) - N/A - No EPA Multi Sector General Permit (MSGP) facilities within AMAFCA rights-of-way. This has been discussed and confirmed with NMED. This was submitted to EPA in AMAFCA's NOI and accepted.	N/A	N/A
Not Included in NOI	100	Update the SWMP document and annual report as required in I.D.5.c.(iv) and Part I.D.5.c.(v). Part I.D.5.c.(iv) - The permittee must include in the SWMP a description of the mechanism(s) utilized to comply with each of the elements required in Part I.D.5.c.(i) throughout Part I.D.5.c.(iii) and its corresponding measurable goal. and Part I.D.5.c.(v) - The permittee shall assess the overall success of the program, and document the program effectiveness in the Annual Report.	Part I.D.5.c.(iv) - AMAFCA's Stormwater Quality Engineer will review the program requirements for the above-mentioned SWMP elements during the Annual Report process. The measurable goals in this section of the SWMP are the mechanisms used to comply with the Permit elements. A strategy to implement any new program requirements will be developed as needed. Part I.D.5.c.(v) - The Annual Report will serve as the progress report for this program, if applicable. AMAFCA will incorporate documentation by reference into the Annual Report.	• As part of the Annual Report process, the Stormwater Quality Engineer will review the program requirements listed in Part I.D.5.c, for the above-mentioned SWMP elements and develop a strategy to implement any new program requirements. • The Annual Report will serve as the progress report for this program, if applicable. AMAFCA will incorporate documentation by reference into the Annual Report.	**Met FY 2023 Goals.** • During the Annual Report preparation, AMAFCA's Storm Water Quality Engineer reviewed the program requirements listed in Part I.D.5.c, for the program SWMP elements, and considered program needs and requirements. • This Annual Report documents the program effectiveness and program success in the status of implementation and performance assessment for each MS4 Permit requirement.

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	101	**TABLE 5: Industrial and High Risk Runoff - Part I.D.5.d**			
4	102	As described in Part I.D.5.d, the permittees shall: (i) control through ordinance, permit, contract, order or similar means, the contribution of pollutants to the municipal storm sewer by stormwater discharges associated with industrial activity and the quality of stormwater discharged from sites of industrial activity as defined in 40 CFR 122.26(b)(14)(i)-(ix) and (xi). If no such industrial activities are in a permittees jurisdiction, that permittee may certify that this program element does not apply.	Part I.D.5.d - Activity removed from AMAFCA's SWMP (Rev. 0, December 1, 2015). AMAFCA certifies with submittal of this SWMP that no such industrial activities are in AMAFCA's jurisdiction and this program element does not apply. This was submitted to EPA in AMAFCA's NOI and accepted.	N/A	N/A

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	103	**TABLE 6: Illicit Discharges and Improper Disposal - Part I.D.5.e**			
See NOI Sections Below	104	As described in Part I.D.5.e.(i), the permittee shall develop, revise, implement, and enforce a program to detect and eliminate illicit discharges (as defined at 40 CFR 122.26(b)(2)) entering the MS4. Permittees previously covered under NMS000101 or NMR040000 must continue existing programs while updating those programs, as necessary, to comply with the requirements of this permit. The permittee must (see required items listed below):	Part I.D.5.e.(i) - AMAFCA has developed a program to detect and eliminate illicit discharges. The program elements, as they relate to the permit requirements, are described in detail below.	• The AMAFCA Stormwater Quality Engineer will continue to review, revise, and implement the Illicit Discharge Detection and Elimination Program requirements, as needed. • AMAFCA will continue to update the current written procedure for this program element as part of the MS4 Strategies and Procedures Notebook.	**Met FY 2023 Goals.** • In FY 2023, AMAFCA followed its policy of immediate coordination with downstream MS4 permittees and/or appropriate local, state, tribal, or federal regulatory agencies when such discharges were detected by AMAFCA personnel. The Illicit Discharge Response Plan specifies that AMAFCA alert the proper agency, if required.
5.1	105	Mapping as required in Part I.D.5.e.(i).(a). Develop, if not already completed, a storm sewer system map, showing the names and locations of all outfalls as well as the names and locations of all waters of the United States that receive discharge from those outfalls. Identify all discharges points into major drainage channels draining more than twenty (20) percent of the MS4 area;	Part I.D.5.e.(i).(a) - AMAFCA will continue to update its Maintenance Responsibilities for Drainage Facilities in the Albuquerque Metropolitan Area (Map). This is a color coded, detailed maintenance map showing all AMAFCA facilities (water quality BMPs, channels, large diameter storm drains, ponds, berms or dikes, dams, and receiving waters) and AMAFCA outfalls. AMAFCA cooperates with COA, NMDOT, Bernalillo County, SSCAFCA, Village of Los Ranchos, and MRGCD to collect their data for AMAFCA's map. This map is available on the AMAFCA website: http://www.amafca.org/maps-2/	• AMAFCA will continue to keep this maintenance map up-to-date for AMAFCA facilities and other MS4 permittee facilities, as information is provided. Cooperation with other MS4s will continue related to this map. • AMAFCA will continue to update the map and publish this map on-line.	**Met FY 2023 Goals.** • In FY 2023, AMAFCA updated the GIS and webpage Interactive Map. This map is available online: https://amafca.org/gis-maps-data/
5.2	106	Ordinance (or other control method) as required in Part I.D.5 .e.(i)(b).	Because AMAFCA is a flood control authority, the legal authority and jurisdiction granted to it by the State of New Mexico is limited. Part I.D.5 .e.(i)(b) - AMAFCA will contractually and/or administratively require the control of non-stormwater discharges from third-party operations within AMAFCA's jurisdiction and/or rights of way to the extent allowable under State, Tribal, or local law.	• AMAFCA will begin development of contractually and/or administratively requiring the control of non-stormwater discharges on turn-key projects that AMAFCA will take over for operation and maintenance after construction to the extent allowable under State, Tribal, or local law.	N/A
5.3	107	Develop and implement a IDDE plan as required in Part I.D.5.e.(i).(c). The permittee must include the following elements in the plan: A. Procedures for locating priority areas likely to have illicit discharges including field tests for selected pollutant indicators (ammonia, boron, chlorine, color, conductivity, detergents, E. coli, enterococci, total coliform, fluoride, hardness, pH, potassium, conductivity, surfactants), and visually screening outfalls during dry weather; B. Procedures for enforcement, including enforcement escalation procedures for recalcitrant or repeat offenders; C. Procedures for removing the source of the discharge; D. Procedures for program evaluation and assessment; and E. Procedures for coordination with adjacent municipalities and/or state, tribal, or federal regulatory agencies to address situations where investigations indicate the illicit discharge originates outside the MS4 jurisdiction.	Part I.D.5.e.(i).(c) - AMAFCA will continue to assess its IDDE program, as appropriate.	• AMAFCA will continue to implement the updated IDDE program elements. • AMAFCA will continue membership and involvement in the cooperative MS4 Technical Advisory Group (MS4 TAG) which will facilitate cooperation and coordination with other MS4s in the Middle Rio Grande related to the IDDE program. • AMAFCA will continue development of this program element in its MS4 Strategies and Procedures Notebook.	**Met FY 2023 Goals.** • AMAFCA continued its membership and involvement in the cooperative MS4 TAG, which facilitated cooperation and coordination with other MS4s in the Middle Rio Grande related to the IDDE program. • In FY 2023, AMAFCA continued to add the ABCWUA monthly DMR reports for SSOs to a maintained GIS database to help identify sources, trends, and issues. ABCWUA's CMOM Annual Report (which includes the Overflow Emergency Response Plan) is available upon request to the ABCWUA. • AMAFCA continued utilizing established IDDE screening procedures, protocols, and response plan.

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5.4	108	Develop an education program as required in Part I.D.5.e.(i).(d). Develop an education program to promote, publicize, and facilitate public reporting of illicit connections or discharges, and distribution of outreach materials. The permittee shall inform public employees, businesses and the general public of hazards associated with illegal discharges and improper disposal of waste.	Part I.D.5.e.(i).(d) - AMAFCA will continue to participate in the MRGSQT and collaborate with the MS4 permittees to provide educational information regarding stormwater quality to the community. This information will promote, publicize, and facilitate public reporting of illicit connections or discharges, and distribution of outreach materials. This program informs the public of hazards associated with illicit discharges and improper waste disposal, as well as proper ways to dispose of hazardous wastes.	• AMAFCA will continue work with the MRGSQT to inform the general public of the hazards associated with illegal discharges and improper disposal of waste. • AMAFCA will continue its involvement with and financial support of BEMP and through the MRGSQT. • The MRGSQT Outcomes Report is available upon request and AMAFCA plans to share this document on its website. • AMAFCA will continue an in-house training program for its administrative, engineering, and field employees regarding illegal discharges and improper disposal of waste.	**Met FY 2023 Goals.** • AMAFCA continued its partnership with the MRGSQT to inform the general public of the hazards associated with illegal discharges and improper disposal of waste. • In FY 2023, AMAFCA continued its involvement with and financial support of BEMP through the MRGSQT. • The MRGSQT Outcomes Report summarizes the educational and outreach programs for FY 2023. This report is included as a Program Summary. • Stormwater continues to be a topic at the weekly staff and monthly crew meetings, including discussions related to pollution prevention and good housekeeping. In addition, pertaining to AMAFCA employees, AMAFCA continues utilizing the IDDE Incident Report Form.
5.5	109	Establish a hotline as required in Part I.D.5.e.(i).(e).	Part I.D.5.e.(i).(e) - MS4s that are members of the MRGSQT benefit from the Albuquerque 311 Citizen Contact Center. The 311 service is a single telephone number for all non-emergency inquiries and services. This program includes citizen calls regarding illicit discharges.	• MS4s in the watershed will continue to participate in the 311 call in program.	**Met FY 2023 Goal.** • AMAFCA investigated and documented all jurisdictional illicit discharge complaints received through the 311 call in program, as well as other complaints received directly by AMAFCA staff through email, phone, or ABCWUA's monthly DMR Sanitary Sewer Overflow Reports provided to AMAFCA. AMAFCA continued use of the IDDE Incident Report Form, which is used to report illicit discharges that were witnessed by or reported to AMAFCA staff. The 311 complaints that are not in AMAFCA's jurisdiction are directed to the appropriate jurisdictional agency. • AMAFCA continued to discuss illicit discharges (events, issues, and follow-up) at staff meetings. • A copy of the IDDE Incident Report Form as well as the current Illicit Discharge Response Plan and testing procedures are available upon request.
5.6	110	Investigate suspected significant/severe illicit discharges as required in Part I.D.5.e.(i).(f). Investigate suspected significant/severe illicit discharges within forty-eight (48) hours of detection and all other discharges as soon as practicable; elimination of such discharges as expeditiously as possible; and, requirement of immediate cessation of illicit discharges upon confirmation of responsible parties. Illicit Discharge is defined in 40 CFR 122.26(b)(2)as "Illicit discharge means any discharge to a municipal separate storm sewer that is not composed entirely of stormwater except discharges pursuant to a NPDES permit (other than the NPDES permit for discharges from the municipal separate storm sewer) and discharges resulting from fire fighting activities."	Part I.D.5.e.(i).(f) - AMAFCA will continue its policy of investigation of suspected significant/severe illicit discharges within forty-eight (48) hours of detection/reporting and all other discharges as soon as practicable. AMAFCA plans to continue removing/treating such discharges as expeditiously as possible and requiring immediate cessation of illicit discharges upon confirmation of responsible parties. AMAFCA will continue its procedures for illicit discharge investigation and use of its IDDE Incident Report Form. "Illicit discharge" also covers illegal or improper disposal or dumping of wastes into AMAFCA facilities. For AMAFCA, "illicit discharges" typically fall into two categories: (1) liquid discharge, or (2) solid discharge (dumped trash, debris, dirt/sediment, tires). Liquid discharges are considered urgent in order to quickly determine if they are significant/severe illicit discharges and are investigated within forty-eight (48) hours of detection. Solid discharge are investigated and identified for clean-up during the weekly staff meetings.	• AMAFCA will continue its policy of investigation of suspected significant/severe illicit discharges within 48 hours of detection and all other discharges as soon as practicable. • MS4s in the watershed will continue to participate in the 311 call in program. • AMAFCA will continue membership and involvement in the cooperative MS4 Technical Advisory Group (MS4 TAG) which will facilitate cooperation and coordination with other MS4s in the Middle Rio Grande related to investigation of illicit discharges. • AMAFCA will continue development of this program element in its MS4 Strategies and Procedures Notebook.	**Met FY 2023 Goals.** • In FY 2023, AMAFCA continued its policy of investigation of suspected significant/severe illicit discharges within 48 hours of detection and all other discharges as soon as practicable. • In addition, AMAFCA investigated and documented all jurisdictional illicit discharge complaints received through the 311 call in program, as well as other complaints received directly by AMAFCA staff through email, phone, or received through ABCWUA's monthly DMR Sanitary Sewer Overflow Report provided to AMAFCA. The 311 complaints that are not in AMAFCA's jurisdiction are directed to the jurisdictional agency. • AMAFCA continued to be involved in the MS4 TAG group, facilitating cooperation and coordination with other MS4s in the Middle Rio Grande.

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5.7	111	Review complaint records and develop a targeted source reduction program as required in Part I.D.5.e.(i).(g). Review complaint records for the last permit term and develop a targeted source reduction program for those illicit discharge /improper disposal incidents that have occurred more than twice in two (2) or more years from different locations.	Part I.D.5.e.(i).(g) - AMAFCA will continue its policy of reviewing complaint records. In addition, complaint records that are determined to be illicit discharges will be added to the AMAFCA GIS database. The location, date, type of illicit discharge, and source (if known) will be documented. This database was developed in 2014 and is updated annually. To meet the Permit requirements in Table 1.a (Part I.C.2), regarding discharges to impaired waters with a TMDL (E. coli), AMAFCA's review of complaint records will include a focus on illicit discharges contributing bacteria to the MS4. AMAFCA will develop a targeted source reduction program for those illicit discharge/improper disposal incidents that have occurred more than twice in 2 or more years from different locations. AMAFCA coordinates with COA and the Albuquerque Bernalillo Water Utility Authority (ABCWUA) for notification of illicit discharges.	• AMAFCA will continue its policy of reviewing complaint records. This will include a focus on illicit discharges contributing bacteria to the MS4. • Annually, AMAFCA will reevaluate its targeted source reduction program. Potential future targets will be determined and cooperative efforts for targeted source reduction programs with MRGSQT members will be considered. • AMAFCA will continue adding illicit discharge complaint records for the Permit term to the AMAFCA GIS database to help identify sources and trends. • AMAFCA will continue development of this program element in its MS4 Strategies and Procedures Notebook. • AMAFCA will continue coordination with other agencies for this program element.	**Met FY 2023 Goals.** • In FY 2023, AMAFCA continued to keep a record of the MS4 311 call in program complaints and communicated with the appropriate agency regarding these notifications. • In FY 2023, AMAFCA continued to add the ABCWUA monthly DMR reports for SSOs to a maintained GIS database to help identify sources, trends, and issues. ABCWUA's CMOM Annual Report (which includes the Overflow Emergency Response Plan) is available upon request from the ABCWUA.
Not Included in NOI	112	As required in Part I.D.5.e.(ii), the permittee shall address the following categories of non-stormwater discharges or flows (e.g., illicit discharges) only if they are identified as significant contributors of pollutants to the MS4: water line flushing, landscape irrigation, diverted stream flows, rising ground waters, uncontaminated ground water infiltration (as defined at 40 CFR 35.2005(90)), uncontaminated pumped ground water, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation water, springs, water from crawl space pumps, footing drains, lawn watering, individual residential car washing, flows from riparian habitats and wetlands, dechlorinated swimming pool discharges, and street wash water. Note: Discharges or flows from fire fighting activities are excluded from the effective prohibitions against non-stormwater and need only be addressed where they are identified a significant sources of pollutants to water of the United States).	Part I.D.5.e.(ii) - Any such discharge that is identified as a significant contributor of pollutants to the AMAFCA MS4, or is causing or contributing to a water quality standards violation, will be addressed as an illicit discharge pursuant to Part I.D.5.e of the MS4 Permit. The Permit lists authorized non-stormwater discharges in Part I.D.5.e.(ii). Many of these authorized non-stormwater discharges are not applicable to AMAFCA and none of these discharges are expected to be significant contributors of pollutants to the MS4. The AMAFCA Stormwater Quality Engineer will continue coordination & communication with ABCWUA regarding well flushing and rehabilitation schedules to ensure that AMAFCA is aware of authorized non-stormwater discharges into its facilities.	• The AMAFCA Stormwater Quality Engineer will review this list annually to check that the categories of authorized non-stormwater discharges are still not considered significant contributors of pollutants to the MS4. • The AMAFCA Stormwater Quality Engineer will communicate with ABCWUA regarding well flushing and rehabilitation schedules to ensure that AMAFCA is aware of authorized non-stormwater discharges into its facilities.	**Met FY 2023 Goals.** • The AMAFCA Storm Water Quality Engineer reviewed this list as part of the Annual Report preparation to check that the categories of authorized non-stormwater discharges are still not considered significant contributors of pollutants to the MS4. • The AMAFCA Storm Water Quality Engineer continued coordination & communication with ABCWUA regarding well, tank, and line flushing schedules to ensure that AMAFCA was aware of authorized non-stormwater discharges into its facilities.

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5.8	113	As required in Part I.D.5.e.(iii), the permittee must screen the entire jurisdiction at least once every five (5) years and high priority areas at least once every year. High priority areas include any area where there is ongoing evidence of illicit discharges or dumping, or where there are citizen complaints on more than five (5) separate events within twelve (12) months. The permittee must: (a) Include in its SWMP document a description of the means, methods, quality assurance and controls protocols, and schedule for successfully implementing the required screening, field monitoring, laboratory analysis, investigations, and analysis evaluation of data collected. (b) Comply with the dry weather screening program established in Table 6 and the monitoring requirements specified in Part III.A.2. (c) If applicable, implement the priority ranking system developed in previous permit term.	AMAFCA will continue to make progress with its IDDE activities and program. Much of this effort may be in coordination with MS4 permittees COA, Bernalillo County, and NMDOT, as the AMAFCA facilities are stormwater collectors for the basins that are primarily controlled by other MS4 programs, rules, and regulations. Part I.D.5.e.(ii).(a) - IDDE screening methods and protocols for implementing the required screening, field monitoring, laboratory analysis, investigations, and analysis evaluation of data collected has been developed. AMAFCA has in place a well-defined and implemented routine inspection and O&M program that includes both formal and informal inspections. These O&M inspections are part of the IDDE screening program. Part I.D.5.e.(ii).(b) - AMAFCA screening procedures and protocols will comply with the dry weather screening program monitoring requirements specified in Part III.A.2 of the MS4 Permit. COA and AMAFCA have a cooperative dry weather screening program. In addition, as part of AMAFCA's Levelogger monitoring, AMAFCA screens all inlets to the NDC on AMAFCA ROW monthly. Part I.D.5.e.(ii).(c) - For AMAFCA, facility screening is part of AMAFCA's routine O&M activities. All areas are screened and there are no low priority areas.	• AMAFCA has developed screening procedures, protocols, and plan. • AMAFCA will continue routine inspections through its O&M program, including both formal and informal inspections. These O&M inspections are part of the IDDE screening program. • As a cooperative program, COA will continue to perform dry weather screening. • AMAFCA will screen major channelized inlets to the NDC on AMAFCA ROW monthly through its Levelogger monitoring program. • AMAFCA will continue membership and involvement in the cooperative MRGSQT and TAG, which will facilitate cooperation and coordination with other MS4s in the Middle Rio Grande related to screening for illicit discharges.	**Met FY 2023 Goals.** • AMAFCA continued utilizing established IDDE screening procedures, protocols, and plan. • In FY 2023, AMAFCA continued routine inspections through its O&M program, including both formal and informal inspections. These O&M inspections were part of the IDDE screening program. • As a cooperative program, COA continued to perform dry weather screening. Additional information for this is provided in the Dry Weather Screening section of the Annual Report. • AMAFCA continued its Levelogger monitoring program in FY 2023, which includes monthly dry weather screening of 14 channelized inlets to the NDC on AMAFCA ROW. Copies of the Levelogger reports are available upon request. • AMAFCA continued membership and involvement in the cooperative MRGSQT and TAG, both which facilitated cooperation and coordination with other MS4s in the Middle Rio Grande related to screening for illicit discharges.
5.9	114	Develop, update, and implement a Waste Collection Program as required in Part I.D.5.e.(iv).	Part I.D.5.e.(iv) - Activity removed from AMAFCA's SWMP. Public waste collection is the responsibility of the municipalities. AMAFCA does not have the jurisdictional authority to perform these activities. AMAFCA will continue to regularly collect waste within its rights-of-way. This was submitted to EPA in AMAFCA's NOI and accepted.	N/A	N/A
5.10	115	Develop, update and implement a Spill Prevention and Response program to prevent, contain, and respond to spills that may discharge into the MS4 as required in Part I.D.5.e.(v). The Spill Prevention and Response program shall include: (a) Where discharge of material resulting from a spill is necessary to prevent loss of life, personal injury, or severe property damage, the permittee(s) shall take, or ensure the party responsible for the spill takes, all reasonable steps to control or prevent any adverse effects to human health or the environment: and (b) The spill response program may include a combination of spill response actions by the permittee (and/or another public or private entity), and legal requirements for private entities within the permittee's municipal jurisdiction.	Part I.D.5.e.(v) - AMAFCA will continue its Spill Prevention and Response program. This program element relates to Illicit Discharge, reporting requirements, crew training, spill response materials on hand (in maintenance vehicles), and good housekeeping. For AMAFCA facilities, AMAFCA encourages that crew members are trained in spill prevention and control (refer to Pollution Prevention/Good Housekeeping Control Measure).	• AMAFCA will continue development of its cooperative Spill Response Program with agency partners and as part of its MS4 Strategies and Procedures Notebook. • AMAFCA encourages that crew members are trained in spill prevention and control (refer to Pollution Prevention/Good Housekeeping Control Measure). • AMAFCA will continue membership and involvement in the cooperative MS4 TAG and the MRGSQT, which will facilitate cooperation and coordination with other MS4s in the Middle Rio Grande related to spill prevention and response.	**Met FY 2023 Goals.** • AMAFCA continued to follow the Spill Prevention and Response Plan. • AMAFCA continued development of its cooperative Spill Prevention and Response Program with agency partners. As part of this cooperative, MS4s have established contracts with an environmental clean-up company to assist the Middle Rio Grande MS4s with IDDE response. • AMAFCA continued to be involved in the MS4 TAG group, facilitating cooperation and coordination with other MS4s in the Middle Rio Grande.

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Not Included in NOI	116	Part I.D.5.e.(vi) - The permittee must include in the SWMP a description of the mechanism(s) utilized to comply with each of the elements required in Part I.D.5.e.(i) throughout Part I.D.5.e.(v) and its corresponding measurable goal. A description of the means, methods, quality assurance and controls protocols, and schedule for successfully implementing the required screening, field monitoring, laboratory analysis, investigations, and analysis evaluation of data collected; and Part I.D.5.e.(vii) - The permittee shall assess the overall success of the program, and document the program effectiveness in the Annual Report.	Part I.D.5.e.(vi) - AMAFCA's Stormwater Quality Engineer will review the program requirements listed for the above-mentioned program elements, during the Annual Report process. A review of the screening completed and the data collected, if any, will be available upon request and AMAFCA will incorporate documentation by reference into the Annual Report and plans to document progress on the AMAFCA website. A strategy to implement any new program requirements will be developed as needed. AMAFCA will maintain and update, as necessary, its MS4 Strategies and Procedures Notebook for this MS4 Program. Part I.D.5.e.(vii) - AMAFCA will document the program effectiveness and program success. AMAFCA will incorporate documentation by reference into the Annual Report.	• As part of the Annual Report process each year, the Stormwater Quality Engineer will review the program requirements listed in Part I.D.5.e, for the above-mentioned SWMP elements, and develop a strategy, if applicable, to implement any new program requirements. • A review of the screening completed and the data collected, if any, will be available upon request and AMAFCA will incorporate documentation by reference into the Annual Report and plans to document progress on the AMAFCA website. • AMAFCA will document the program effectiveness and program success. AMAFCA will incorporate documentation by reference into the Annual Report.	**Met FY 2023 Goals.** • AMAFCA's Program was reviewed by the Storm Water Quality Engineer for the reporting period as part of this Annual Report process. • Screening documentation in the Levelogger monitoring reports is available upon request. The Levelogger locations focus on the NDC watershed, which is a water quality priority area for AMAFCA because of the larger residential, industrial, and commercial developments in this watershed. • This Annual Report and associated Program Summaries document the program effectiveness and program success in the status of implementation and performance assessment for each MS4 Permit requirement.
5.11	117	Enhance the program to include requirements in Part I.D.5.e.(ix). The permittee may: (a) Divide the jurisdiction into assessment areas where monitoring at fewer locations still provides sufficient information; (b) Downgrade high priority areas after the area has been screened at least once and there are citizen complaints on no more than 5 separate events within a 12 month period; (c) Rely on a cooperative program with other MS4s for detection and elimination of illicit discharges and illegal dumping; (d) If cooperative program, required detection program frequencies may be based on the combined jurisdictional area rather than individual jurisdictional areas to reduce total number of screening locations; (e) After screening a non-high priority area once, adopt an "in response to complaints only" IDDE for that area (no more than 2 separate events within a 12 month period); (f) Enhance the program to utilize methodologies consistent with those described in "Illicit Discharge Detection and Elimination, A Guidance Manual for Program Development and Technical Assessments."	Part I.D.5.e.(ix).(a) - AMAFCA operates and maintains Leveloggers and rainfall gauges for the NDC watershed to better understand runoff and evaluate monitoring locations. Future telemetry project will add screening capabilities for other outfalls. Part I.D.5.e.(ix).(b) - This enhancement may be considered and included in the future. Part I.D.5.e.(ix).(c) - AMAFCA currently coordinates with MS4s, as appropriate, and the ABCWUA for notification of illicit discharges. AMAFCA will continue to pursue developing similar cooperative coordination with other agencies. Part I.D.5.e.(ix).(d) and (e) - These cooperative elements may be considered in the future. Part I.D.5.e.(ix).(f) - AMAFCA had a consultant evaluate the AMAFCA IDDE program and develop recommendations for improving the program in order to comply with the MS4 Permit. The report included evaluating the procedures and methodologies described in "IDDE, A Guidance Manual for Program Development and Technical Assessments", for incorporation into AMAFCA's IDDE program. AMAFCA will continue to implement recommendations from this report, as appropriate.	• AMAFCA will document progress made, if any, with these program enhancement activities.	**Met FY 2023 Goals.** • In FY 2023, AMAFCA continued monitoring water Leveloggers to better understand runoff and evaluate monitoring locations and needs. Monthly, throughout FY 2023, the Leveloggers were monitored in the field with accompanying photo documentation and this allowed for additional dry weather/IDDE screening. • In FY 2023, AMAFCA worked with COA and ABCWUA for notification of illicit discharges. AMAFCA also cooperated with Bernalillo County and NMDOT related to IDDE in FY 2023.
5.12	118	Item from MS4 Permit NOI. Describe other proposed activities to address the Illicit Discharges and Improper Disposal Measure.	AMAFCA will continue to utilize the Annual Report process as a means to perform a self-audit with the goal to improve its MS4 Programs.	• AMAFCA will annually document progress made, if any, related to the Annual Report and SWMP revision process as a means to perform a self-audit on the MS4 Program elements.	**Met FY 2023 Goal.** • AMAFCA continued to utilize the Annual Report process as a means to perform a self-audit on the MS4 Program elements.

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	119	**TABLE 7: Control of Floatables Discharges - Part I.D.5.f**			
6.1	120	As required in Part I.D.5.f.(i), the permittee must develop, update, and implement a program to address and control floatables in discharges into the MS4. The floatables control program shall include source controls and, where necessary, structural controls. Permittees previously covered under NMS000101 or NMR04A000 must continue existing programs while updating those programs, as necessary, to comply with the requirements of this permit. The permittee shall develop or update a schedule to implement as required in Part I.D.5.f.(i).(a). Note: AMAFCA and COA should update the schedule according to the findings of the 2005 AMAFCA/COA Floatable and Gross Pollutant Study and other studies.	Part I.D.5.f.(i) and (i).(a) - AMAFCA will continue to implement a program to address and control floatables in discharges into the MS4. AMAFCA will continue to install stormwater quality features to control floatables, such as ported risers, trash racks, and screened inlets in both new construction and retrofits where appropriate. AMAFCA will continue to coordinate with COA relative to structural BMPs within AMAFCA rights-of-way.	• The AMAFCA Stormwater Quality Engineer will continue to review, revise, and implement a program to address and control floatables in discharges into the MS4. AMAFCA will develop a written procedure for this program element. • AMAFCA will continue to cooperate and coordinate with COA relative to structural BMPs within AMAFCA rights-of-way. • AMAFCA will continue membership and involvement in the cooperative MS4 Technical Advisory Group (MS4 TAG), which will facilitate cooperation and coordination with other MS4s in the Middle Rio Grande related control of floatables discharges. • AMAFCA will continue utilizing the manual trash collection contracts. • AMAFCA is pursuing developing a cooperative program for this program element.	**Met FY 2023 Goals.** • The AMAFCA Storm Water Quality Engineer continued to implement a program to address and control floatables in discharges into the MS4. • AMAFCA continued to be involved in the MS4 TAG, facilitating cooperation and coordination with other MS4s in the Middle Rio Grande. • AMAFCA continued utilizing the manual trash collection contracts in FY 2023. • Photos of AMAFCA operations to remove floatables and sediment in FY 2023 are provided in the Pollution Prevention/ Good Housekeeping Program & Control of Floatables Program Summary.
6.2	121	Estimate the annual volume of floatables and trash removed from each control facility and characterize the floatable type as required in Part I.D.5.f.(i).(b).	Part I.D.5.f.(i).(b) - AMAFCA will continue to estimate the annual volume of floatables and trash removed from each control facility as well as to characterize the floatable type. The AMAFCA operations and maintenance crew and subcontractors track the volume of floatables, sediment, trash, and debris removed from AMAFCA facilities. This tracking procedure includes the location of removal by facility and watershed.	• AMAFCA will continue to estimate the annual volume of floatables and trash removed from each control facility and characterize the floatable type. • AMAFCA will continue to utilize crew activity tracking, allowing AMAFCA to better and more easily determine the volume of floatables and sediment removed from each AMAFCA facility. • AMAFCA has updated, cooperative waste characterization study in the watershed during the Permit term.	**Met FY 2023 Goals.** • In FY 2023, AMAFCA continued to implement its crew tracking system and database. A summary of trash, sediment, and vegetation removed within AMAFCA's jurisdiction is included in the relevant Program Summary.
6.3	122	Item from MS4 Permit NOI. Describe other proposed activities to address the Control of Floatables Discharges Measure.	AMAFCA will continue to utilize the Annual Report and SWMP revision process as a means to perform a self-audit with the goal to improve its MS4 Programs.	• AMAFCA will document progress made, if any, related to the Annual Report and SWMP revision process as a means to perform a self-audit on the MS4 Program elements.	**Met FY 2023 Goal.** • AMAFCA continued to utilize the Annual Report process as a means to perform a self-audit on the MS4 Program elements.
Not Included in NOI	123	Update the SWMP document and Annual Report as required in Part I.D.5.f.(ii) and Part I.D.5.f.(iii). Part I.D.5.f.(ii) - The permittee must include in the SWMP a description of the mechanism(s) utilized to comply with each of the elements required in Part I.D.5.f.(i). Part I.D.5.f.(iii) - The permittee shall assess the overall success of the program, and document the program effectiveness in the Annual Report.	Part I.D.5.f.(ii)- AMAFCA's Stormwater Quality Engineer will review the program requirements listed for the above-mentioned program elements, during the Annual Report process. A strategy to implement any new program requirements or improve the compliance with program requirements will be developed as needed. Part I.D.5.f.(iii) - AMAFCA will document the program effectiveness and program success. AMAFCA will incorporate documentation by reference into the Annual Report.	• As part of the Annual Report process each year, the Stormwater Quality Engineer will review the program requirements listed in Part I.D.5.f, for the above-mentioned SWMP elements, and assess the overall success of the program. AMAFCA will document the program effectiveness and program success. AMAFCA will incorporate documentation by reference into the Annual Report.	**Met FY 2023 Goals.** • In FY 2023, as part of the Annual Report development, AMAFCA's Storm Water Quality Engineer reviewed the program requirements listed in Part I.D.5.f for this section. • This Annual Report and associated Program Summaries document the program effectiveness and program success in the status of implementation and performance assessment for each MS4 Permit requirement. Additional documentation available upon request.

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	124	**TABLE 8: Public Education and Outreach on Stormwater Impacts - Part I.D.5.g**			
7.1	125	Develop, revise, implement, and maintain an education and outreach program as required in Part I.D.5.g.(i) and Part I.D.5.g.(ii). This comprehensive stormwater program should educate the community, employees, businesses, and the general public of hazards associated with the illegal discharges and improper disposal of waste and about the impact that stormwater discharges on local waterways, as well as the steps that the public can take to reduce pollutants in stormwater.	Part I.D.5.g.(i) - Through involvement in the MRGSQT and Bernalillo County, AMAFCA will continue to collaborate with the MS4 permittees to implement and improve upon the existing Public Education and Outreach program. The MRGSQT has a consulting firm under contract to act as Stormwater Coordinator and assist the team in providing public education and outreach on stormwater impacts. Included in the Stormwater Coordinator scope is to provide an Outcomes Report to the team members to summarize the yearly outreach activities through different media and methods, target audiences, and estimate of people reached. In addition to the cooperative elements with MRGSQT, AMAFCA will continue to conduct education and outreach presentations to the community specific to AMAFCA facilities and water quality.	• AMAFCA will continue to contribute to and participate in the MRGSQT. • AMAFCA will continue to conduct education and outreach presentations to the community specific to AMAFCA facilities and water quality. AMAFCA's efforts will be included in the MRGSQT Outcomes Report. This report is available upon request and AMAFCA plans to share this document on its website.	**Met FY 2023 Goals.** • AMAFCA continued to contribute to and participate in the MRGSQT. • AMAFCA's efforts are included in the MRGSQT Outcomes Report. This report is included as a Program Summary.
Not Included in NOI	126	Part I.D.5.g.(ii), the permittee must implement a public education program to distribute educational knowledge to the community or conduct equivalent outreach activities about the impacts of storm water discharges on water bodies and the steps that the public can take to reduce pollutants in storm water runoff. The permittee must: Part I.D.5.g.(ii).(a),Define the goals and objectives of the program based on high priority community-wide issues; Part I.D.5.g.(ii)(b),Develop or utilize appropriate educational materials, such as printed materials, billboard and mass transit advertisements, signage at select locations, radio advertisements, television advertisements, and websites.	Part I.D.5.g.(ii).(a) - The MRGSQT has developed a matrix to define the Public Education and Outreach objectives, priorities, and target audiences. The matrix will be reviewed and updated, as necessary, throughout the Permit term. Part I.D.5.g.(ii).(b) - The MRGSQT will continue to develop and utilize appropriate educational materials such as brochures, media campaigns, public presentations/events, giveaways, display booths/kiosks, signage at select locations, and postings on social media sites (Facebook) and websites. The types of materials utilized by the MRGSQT are summarized in the annual Outcomes Report.	• AMAFCA, through its participation in the MRGSQT will review, throughout the Permit term, and update, as necessary, the program matrix to define the Public Education and Outreach and Public Involvement and Participation objectives, priorities, and target audiences. • The MRGSQT will continue to develop and utilize appropriate educational materials such as brochures, media campaigns, public presentations/events, giveaways, display booths/kiosks, signage at select locations, and postings on social media sites (Facebook) and websites.	**Met FY 2023 Goals.** • The MRGSQT continued to use the matrix this year to guide the Public Education and Outreach and Public Involvement and Participation objectives, priorities, and target audiences. • The types of materials utilized are summarized in the attached Program Summary MRGSQT Outcomes Report. The Facebook page and website (www.keeptheriogrande.org) remained active in FY 2023. • MRGSQT continued to distribute BMP brochures in English and Spanish for specific industries (Contractors, Food Preparation or Service, Parking Lots and Drive Through Lanes, Fueling Stations, Vehicle and Equipment Repair, Carpet and Upholstery Cleaning, Scrap Metal Recycling, and Landscaping). These materials are available upon request.
Not Included in NOI	127	Part I.D.5.g.(ii).(c), Inform individuals and households about ensuring proper septic system maintenance, ensuring the proper use and disposal of landscape and garden chemicals including fertilizers and pesticides, protecting and restoring riparian vegetation, and properly disposing of used motor oil or household hazardous wastes;	Part I.D.5.g.(ii).(c) - The MRGSQT's program matrix and Public Education and Outreach programs include proper septic system maintenance, proper use and disposal of landscape and garden chemicals including fertilizers and pesticides, and properly disposing of household hazardous wastes.	• The MRGSQT will continue to include these specific educational areas in their program matrix and reporting on these areas in their annual Outcomes Report.	**Met FY 2023 Goal.** • The MRGSQT Outcomes Report typically includes a table summarizing the MS4 Permit Public Education and Outreach Component/reference with the MRGSQT activities, as well as including the type of audiences reached. In addition, information on these topics is available on the MRGSQT website (www.keeptheriogrande.org). • In FY 2023, the MRGSQT continued distribution of brochures targeting septic system education. • AMAFCA and Bernalillo County continued to distribute BMPs brochures for specific industries. Landscaping was one industry area of focus. • Both COA and Bernalillo County sponsor Household Hazardous Waste (HHW) collection events throughout the year.

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Not Included in NOI	128	Part I.D.5.g.(ii).(d), Inform individuals and groups how to become involved in local stream and beach restoration activities as well as activities that are coordinated by youth service and conservation corps or other citizen groups.	Part I.D.5.g.(ii).(d) - The MRGSQT, which AMAFCA is a member, utilizes volunteers throughout communities within the watershed to assist with park, open space, trail, and river cleanup projects. Communication for Public Education and Outreach and Public Involvement and Participation is achieved by activities organized with youth service groups, conservation corps, and other citizen groups. In addition, AMAFCA will continue to foster Public Education and Outreach and Public Involvement and Participation programs, including Earth Force - Keep it Clean student outreach, Talking Talons Youth Leadership Activities, and Rocky Mountain Youth Corps programs.	• The MRGSQT will continue communication for public involvement and participation activities as well as assist with communication for Public Education and Outreach and Public Involvement and Participation activities organized by youth service groups, conservation corps, and other citizen groups. These volunteer activities will be summarized in the annual MRGSQT Outcomes Report. The MRGSQT Outcomes Report is available upon request and AMAFCA plans to share this document on its website. • Through the MRGSQT, two partner education programs, BEMP and , are supported. is an innovative, long-term outreach program that integrates water resource topics with computer technology, student writing, and a hands-on curriculum to meet specific, measurable outcomes. The main objective of the Stormwater Science outreach education program BEMP is to teach students that the health of the Rio Grande is directly related to the health of the surrounding watershed. • AMAFCA will continue to foster Public Education and Outreach and Public Involvement and Participation programs, including Earth Force, Talking Talons Youth Leadership Activities, and Rocky Mountain Youth Corps programs.	**Met FY 2023 Goals.** • The MRGSQT Outcomes Report typically documents volunteer participation in park, open space, trail, and river cleanup projects. The Keep the Rio Grande website has been updated to better assist with implementation of this activity. • Through the MRGSQT, three partner education and student involvement programs, Arroyo Classroom, BEMP, and RiverXchange, were supported in FY 2023.
Not Included in NOI	129	Part I.D.5.g.(ii).(e), Use tailored public education program, using a mix of locally appropriate strategies, to target specific audiences and communities. Examples of strategies include distributing brochures or fact sheets, sponsoring speaking engagements before community groups, providing public service announcements, implementing educational programs targeted at school age children, and conducting community-based projects such as storm drain stenciling, and watershed cleanups;	Part I.D.5.g.(ii).(e) - The MRGSQT will continue to organize comprehensive Public Education and Outreach programs with appropriate strategies to target specific audiences in the Middle Rio Grande community.	• The MRGSQT will continue to include comprehensive education programs with appropriate strategies to target specific audiences in the Middle Rio Grande community. The target audiences for the educational programs will be identified in the Outcomes Report.	**Met FY 2023 Goal.** • The MRGSQT Outcomes Report includes information on the comprehensive Public Education and Outreach programs, community events, presentations, and participation activities in FY 2023. The MRGSQT participated in a wide variety of community events. Through the MRGSQT, three partner education and student involvement programs, Arroyo Classroom, BEMP, and RiverXchange, were supported in FY 2023. The target audiences for these activities are typically identified in the Outcomes Report. The Keep the Rio Grande website has been updated to better assist with implementation of this activity.
Not Included in NOI	130	Part I.D.5.g.(ii).(f), Use materials or outreach programs directed toward targeted groups of commercial, industrial, and institutional entities likely to have significant stormwater impacts. For example, providing information to restaurants on the impact of grease clogging storm drains and to garages on the impact of oil discharges. The permittee may tailor the outreach program to address the viewpoints and concerns of all communities, particularly minority and disadvantaged communities, as well as any special concerns relating to children. The permittee must make information available for non-English speaking residents, where appropriate.	Part I.D.5.g.(ii).(f) - The MRGSQT will continue to include Public Education and Outreach programs directed toward commercial, industrial, engineering/contractors, and other institutional entities to meet the MS4 Permit requirements. Where outreach target groups include Spanish-speaking residents, MRGSQT may have Spanish-translations available of public meeting announcements and data sheets. The need for bi-lingual outreach will be assessed by the MRGSQT as needed.	• The MRGSQT cooperative programs will continue to include information on Public Education and Outreach and Public Involvement and Participation programs directed toward commercial, industrial, engineering/contractors, and other institutional entities. • Where outreach target groups include Spanish-speaking residents, MRGSQT may have Spanish-translations available of public meeting announcements and data sheets. The need for bi-lingual outreach will be assessed by the MRGSQT as needed.	**Met FY 2023 Goals.** • The MRGSQT Outcomes Report includes information on Public Education and Outreach and Public Involvement and Participation programs directed toward commercial, industrial, engineering/contractors, and other institutional entities. • The MRGSQT continued to distribute BMP brochures in English and Spanish for specific industries (Contractors, Food Preparation or Service, Parking Lots and Drive Through Lanes, Fueling Stations, Vehicle and Equipment Repair, Carpet and Upholstery Cleaning, Scrap Metal Recycling, and Landscaping). These materials are available upon request.

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7.2	131	Update the SWMP document and Annual Report as required in Part I.D.5.g.(iii) and Part I.D.5.g.(iv). Part I.D.5.g.(iii), The permittee must include the following information in the SWMP document: (a) A description of a program to promote, publicize, facilitate public reporting of the presence of illicit discharges or water quality associated with discharges from MS4s; (b) A description of the education activities, public information activities, and other appropriate activities to facilitate the proper management and disposal of used oil and toxic materials; (c) A description of the mechanism(s) utilized to comply with each of the elements required in Part I.D.5.g.(i) and Part I.D.5.g.(ii) and its corresponding measurable goal. Part I.D.5.g.(iv), The permittee must assess the overall success of the program, and document both direct and indirect measurements of program effectiveness in the Annual Report.	Part I.D.5.(g).(iii) - (a) MS4s that are members of the MRGSQT benefit from the Albuquerque 311 Citizen Contact Center. Reports for illicit discharge can be done by phone, on-line, e-mail, or through an app on cellular phones. (b) Educational and public outreach activities are primarily handled through the MRGSQT. (c) This SWMP, AMAFCA's Annual Reports, and the MRGSQT outreach coordinator contract all serve an mechanisms to comply with the elements in this section of the permit. Refer to the above SWMP program elements for additional information. AMAFCA's Stormwater Quality Engineer will review the program requirements listed for the above-mentioned program elements during the SWMP update and Annual Report process. A strategy to implement any new program requirements or improve compliance with the program requirements will be discussed with the MRGSQT and developed as needed. Part I.D.5.(g).(iv) - AMAFCA will document the program effectiveness and program success. AMAFCA will incorporate documentation by reference into the Annual Report and plans to document progress on the AMAFCA website.	• The AMAFCA Stormwater Quality Engineer will review and include the program requirements listed in Part I.D.5.g during the SWMP update and Annual Report process. • AMAFCA will document the program effectiveness and program success. AMAFCA will incorporate documentation by reference into the Annual Report and plans to document progress on the AMAFCA website. • AMAFCA (both through the MRGSQT and individually) will use surveys to assist with determining the effectiveness of programs.	**Met FY 2023 Goals.** • The SWMP was reviewed during the FY 2023 Annual Report development. • The MRGSQT website (www.keeptheriogrande.org) has links related reporting illicit discharge and the COA website promotes the 311 Citizen Contact Center. • AMAFCA projects require SWPPP Management boards for all their construction projects to provide the public with contact information for reporting indicators of stormwater discharges. • This Annual Report and the MRGSQT Outcomes Report document the program effectiveness and program success in the status of implementation and performance assessment for each MS4 Permit requirement in this section of the Permit. • The MRGSQT utilized updated stormwater surveys to assess the effectiveness of the Public Education and Outreach and Public Involvement and Participation program elements. An example of the MRGSQT/AMAFCA survey, as well as survey results trendline data, are available upon request.
7.2	132	Enhance the program to include Program Flexibility Elements in Part I.D.5.g.(v) through Part I.D.5.g.(viii). Part I.D.5.g.(v), Where necessary to comply with the MS4 Permit, the permittee should develop a program or modify/revise an existing education and outreach program to: (a) Promote, publicize, and facilitate the use of GI/LID/Sustainability practices; and (b) Include an integrated public education program regarding litter reduction, reduction in pesticide/herbicide use, recycling, and disposal (including yard waste, hazardous waste materials, and used motor vehicle fluids), and GI/ LID/ Sustainable practices (as allowed by the NM OSE).	Part I.D.5.g.(v).(a) and (b) - AMAFCA will continue to include in its (and in the cooperative MRGSQT) Public Education and Outreach program: GI/LID/sustainability practices, litter reduction, herbicide and pesticide proper use and reduction (AMAFCA does not apply fertilizers in its operations), recycling, proper disposal of hazardous waste, proper disposal motor vehicle fluids, and proper disposal of yard waste.	• AMAFCA will document progress made with these program enhancement activities.	**Met FY 2023 Goal.**
Not Included in NOI	133	Enhance the program to include Program Flexibility Elements in Part I.D.5.g.(v) through Part I.D.5.g.(viii) [continued] Part I.D.5.g.(vi), The permittee may collaborate or partner with other MS4 operators to maximize the program and cost effectiveness of the required outreach.	Part I.D.5.g.(vi) - The MRGSQT is a cooperative effort allowing watershed MS4 participants to maximize their education, outreach, participation, and involvement programs in a cost effective manner. Through involvement in the MRGSQT, AMAFCA will continue to collaborate with the MS4 permittees to implement and improve upon the existing Public Education and Outreach and Public Involvement and Participation programs.	• AMAFCA will continue to contribute to and participate in the MRGSQT in order to maximize their Public Education and Outreach and Public Involvement and Participation programs in a cost effective manner.	**Met FY 2023 Goal.** • AMAFCA continued to contribute to and participate in the MRGSQT.

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Not Included in NOI	134	Enhance the program to include Program Flexibility Elements in Part I.D.5.g.(v) through Part I.D.5.g.(viii). [continued] Part I.D.5.g. (vii), The education and outreach program may use citizen hotlines as a low-cost strategy to engage the public in illicit discharge surveillance.	Part I.D.5.g.(vii) - MS4s that are members of the MRGSQT benefit from the Albuquerque 311 Citizen Contact Center. The 311 service is a single telephone number for all non-emergency inquiries and services. This program includes citizen calls regarding illicit discharges and notifies AMAFCA of such calls within its jurisdiction.	• MS4s that are members of the MRGSQT benefit from the Albuquerque 311 Citizen Contact Center. This is discussed in more detail in the Illicit Discharges and Improper Disposal Control Measure.	**Met FY 2023 Goal.** • AMAFCA continued to participate in the 311 citizen hotline as well as the Illegal Dumping Partnership, which has various jurisdictional reporting contacts. The MRGSQT website (https://keeptheriogrand.org/resources/) has additional information. This is discussed in more detail in the Illicit Discharges and Improper Disposal section of the Annual Report.
Not Included in NOI	135	Enhance the program to include Program Flexibility Elements in Part I.D.5.g.(v) through Part I.D.5.g.(viii). [continued] Part I.D.5.g. (viii), The permittee may use stormwater educational materials provided by the State, Tribe, EPA, environmental groups, public interest or trade organ., or other MS4s. The permittee may also integrate the education and outreach program with existing education and outreach programs in the MRG area. Examples of existing programs include: Classroom education on stormwater that allows students to develop watershed map to help students visualize area impacted and develop pet specific education. As well as education and outreach programs for commercial activities, lawn and garden activities, sustainable practices, pet waste management, proper disposal of household waste, trash management, water conservation practices designed to reduce pollutants in stormwater for home residences. Existing programs should include regular employee trainings with industry groups and contribute and participate in Stormwater Quality Team.	Part I.D.5.g.(viii) - The MRGSQT may utilize educational materials provided by the State, Tribe, EPA, environmental groups, public interest or trade organizations, or other MS4s.	• The MRGSQT may utilize materials, as appropriate, provided by the State, Tribe, EPA, environmental groups, public interest or trade organizations, or other MS4s. The types of materials and program focus for the materials utilized will be summarized in the annual MRGSQT Outcomes Report. This report is available upon request and AMAFCA plans to share this document on its website.	**Met FY 2023 Goal.** • Educational materials are provided on the MRGSQT website (https://keeptheriogrand.org) and are typically summarized in the MRGSQT Outcomes Report.

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	136	**TABLE 9: Public Involvement and Participation - Part I.D.5.h**			
8.1	137	Develop (or update), implement, and maintain a public involvement and participation plan as required in Part I.D.5.h.(ii). This plan should provide opportunities for participation in the review, modification and implementation of the SWMP; develop and implement a process by which public comments to the plan are received and reviewed by the person(s) responsible for the SWMP; and make the SWMP available to the public and to the operator of any MS4 or Tribal authority receiving discharges from the MS4.	Part I.D.5.h.(ii) - AMAFCA will continue its Public Involvement and Participation program to encourage public involvement in the review, modification and implementation of the AMAFCA SWMP.	• AMAFCA will post the draft SWMP, any SWMP amendments or modifications, and draft Annual Reports to the www.amafca.org website with an explanation of the public comment period and instructions on how to submit comments. The posted documents will provide explanations of substantial changes, if applicable. • At least 30-days prior to submission of each updated SWMP, AMAFCA will provide public notice and make a draft copy of the updated SWMP available for public review and comment. • At least 45-days prior to submission of each Annual Report, AMAFCA will provide public notice and make a draft copy of the Annual Report available for public review and comment, as required in Part III.B of the MS4 Permit. • AMAFCA will implement, and update as needed, the Public Involvement and Participation Plan.	**Met FY 2023 Goals.** • AMAFCA posted the availability of a draft Annual Report on the www.AMAFCA.org website with an explanation of the public comment period and instructions on how to submit comments. • AMAFCA met the Permit required 45-day notice period for the draft FY 2023 Annual Report.
8.1	138	As required in Part I.D.5.h.(iii), the Public Involvement and Participation Plan shall include a comprehensive planning process which involves public participation and where necessary intergovernmental coordination. The permittee must include the following elements in the plan: (a) A detailed description of the general plan for informing the public of involvement and participation opportunities, including types of activities; target audiences; how interested parties may access the SWMP; and how the public was involved in development of the SWMP; (b) The development and implementation of at least one (1) assessment of public behavioral change following a public education and/or participation event; (c) A process to solicit involvement by environmental groups, environmental justice communities, civic organizations or other neighborhoods /organizations interested in water quality-related issues; and (d) An evaluation of opportunities to utilize volunteers for stormwater pollution prevention activities and awareness throughout the area.	Part I.D.5.h.(iii) - As allowed in this Permit section's "Program Flexibility Elements", AMAFCA, through its involvement with the MRGSQT, has integrated this section of the Public Involvement and Participation program with the existing Public Education and Outreach programs in the Middle Rio Grande area. The program includes: (a) A general plan for public of involvement and participation opportunities, including types of activities; target audiences; how interested parties may access the SWMP; and how to encourage public involvement in development and updates of the SWMP; (b) The development and implementation of water quality surveys to assess public knowledge and behavioral change following a public education and/or participation event; (c) A process to solicit involvement in development and updates of the SWMP through following the 45-day Annual Report and 30-day SWMP public comment period; and (d) An evaluation of opportunities to utilize volunteers for stormwater pollution prevention activities, including maintaining Mutt Mitt stations.	• AMAFCA will contribute and participate in the MRGSQT, which participates in public events and solicits public participation and feedback by way of volunteer participation and water quality surveys. Both the BEMP and program include participation metrics. In addition, the MRGSQT has developed and will include surveys for public behavior changes and feedback at their events. • AMAFCA will continue to follow the 45-day Annual Report and 30-day SWMP public comment period during the term of this Permit. • AMAFCA will continue to provide Mutt Mitt stations and seek volunteers to maintain the stations. AMAFCA will continue tracking this activity and reviewing metrics during the term of this Permit.	**Met FY 2023 Goal.** • AMAFCA continued to contribute to and participate in the MRGSQT; the Outcomes Report is attached to this Annual Report. BEMP, River Xchange, and Arroyo Classroom programs continued in FY 2023. • AMAFCA met the Permit required notice period for the FY 2023 Annual Report documents public review. • When appropriate, AMAFCA held project specific project meetings to solicit involvement from organization interested in water quality related issues. In addition, AMAFCA participates in the Water Protection Advisory (WPAB) Board Public Involvement Committee (PIC) and presented to the Board in FY 2023. • AMAFCA continued its focus on reducing pet waste through providing Mutt Mitt Stations and bags, maintained by community volunteers. Summary information for the Mutt Mitt Stations Program is available upon request.
8.2	139	Comply with State, Tribal, and local notice requirements when implementing a Public Involvement and Participation Program as required in Part I.D.5.h.(iv). Reporting notification requirements also in Part III.D.4.	Part I.D.5.h.(iv) & Part III.D.4 - AMAFCA will provide digital copies of all MS4 compliance reporting documents to the NMED, Pueblos of Sandia and Isleta as required of the MS4 Permit. The SWMP and Annual Reports are also available on the amafca.org website.	• AMAFCA will provide digital copies of MS4 compliance reporting documents, as appropriate, to the NMED, Pueblos of Sandia and Isleta as required here and in Part III.D.4 of the MS4 Permit. • AMAFCA will continue to post the SWMP and Annual Reports on the www.amafca.org website.	**Met FY 2023 Goal.** • AMAFCA provided copies of the FY 2023 Annual Report to the NMED, Pueblo of Sandia, and Pueblo of Isleta as required here and in Part III.D.4 of the MS4 Permit. • AMAFCA continued its process of posting the current SWMP and the most recent Annual Report on the www.keeptheriograndе.org and/or the www.amafca.org websites.

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8.3	140	Include elements as required in Part I.D.5.h.(v). The public participation process must reach out to all economic and ethnic groups. Opportunities for members of the public to participate in program development and implementation include serving as citizen representatives on a local stormwater management panel, attending public hearings, working as citizen volunteers to educate other individuals about the program, assisting in program coordination with other preexisting programs, or participating in volunteer monitoring efforts.	Part I.D.5.h.(v) - As allowed in this Permit section's "Program Flexibility Elements", AMAFCA, through its involvement with the MRGSQT cooperative programs, has integrated this section of the Public Involvement and Participation program with existing Public Education and Outreach programs in the Middle Rio Grande area. AMAFCA will continue to include stormwater quality information for the public at events, including public meetings. AMAFCA may have Spanish translations, as needed, of public meeting announcements and data sheets.	• AMAFCA will continue to include (along with the cooperative MRGSQT programs) water quality information for the public at events, including public meetings. Where neighborhoods include Spanish-speaking residents, MRGSQT may have Spanish-translations available of public meeting announcements and data sheets. By attending a variety of events at widespread locations throughout the area and by using the leading area newspaper (Albuquerque Journal) to advertise events, the MRGSQT ensures that a wide-range of economic and ethnic groups are reached, as documented in the Outreach Report. • AMAFCA will use the Watershed Protection Advisory Board, Public Involvement Committee as a mechanism to reach out to the community for volunteers and to solicit input through public meetings and discussions.	**Met FY 2023 Goals.** • AMAFCA participated in the Watershed Protection Advisory Board (WPAB) Public Involvement Committee (PIC).
8.4	141	Update the SWMP document and Annual Report as required in Part I.D.5.h.(vi), Part I.D.5.h.(vii), and Part I.D.5.h.(viii). The permittee must include in the SWMP a description of the mechanisms utilized to comply with each of the elements required in Parts I.D.5.h.(i) throughout part I.D.5.h.(iv) and its corresponding measurable goal. The permittee shall assess the overall success of the program, and document the program effectiveness in the Annual Report. The permittee must provide public accessibility of the SWMP and Annual Reports online via the Internet and during normal business hours at the MS4 operator's main office for public inspection and copying consistent with any applicable federal, state, tribal, or local open records requirements. Upon a showing of significant public interest, the MS4 operator is encouraged to hold a public meeting (or include in the agenda of in a regularly scheduled city council meeting, etc.) on the NOI, SWMP, and Annual Reports.	Part I.D.5.h.(vi) - AMAFCA's Stormwater Quality Engineer will review the program requirements listed for the above-mentioned program elements during the SWMP update and Annual Report process. A strategy to implement any new program requirements or improve compliance with the program requirements will be discussed with the MRGSQT, if applicable, and developed as needed. Part I.D.5.h.(vii) - AMAFCA will document the program effectiveness and program success. AMAFCA will incorporate documentation by reference into the Annual Report. Part I.D.5.h.(viii) - AMAFCA will provide public accessibility of the SWMP and Annual Reports online via the Internet on the www.amafca.org website. At least 30-days prior to submission of each updated SWMP, AMAFCA will provide public notice and make a draft copy of the updated SWMP available for public review and comment and at least 45-days prior to submission of each Annual Report, AMAFCA will provide public notice and make a draft copy of the Annual Report available for public review and comment, as required in Part III.B of the MS4 Permit.	• The AMAFCA Stormwater Quality Engineer will review and include the program requirements listed in Part I.D.5.g during the SWMP update and Annual Report process. • AMAFCA will document the program effectiveness and program success. AMAFCA will incorporate documentation by reference into the Annual Report. • AMAFCA will provide public accessibility of the current SWMP document and the most recent Annual Report online via the Internet on the www.amafca.org website.	**Met FY 2023 Goals.** • AMAFCA continued to utilize the Annual Report process as a means to perform a self-audit on the MS4 Program elements. • This Annual Report and the MRGSQT Outcomes Report document the program effectiveness and program success in the status of implementation and performance assessment for each MS4 Permit requirement. The MRGSQT Outcomes Report document is an attached Program Summary. • AMAFCA continued to provide public accessibility of the current SWMP document and the most recent Annual Report online via the Internet (www.amafca.org and/or www.keeptheriograndorg) and during normal business hours at the AMAFCA office. AMAFCA is located at 2600 Prospect Avenue NE, Albuquerque, NM 87107. The phone number is 505-884-2215. • AMAFCA met the Permit required 45-day notice period for the FY 2023 Annual Report. Documentation for the public review notices are provided in this section of the Annual Report.
8.5	142	Enhance the program to include requirements in Part I.D.5.h.(ix). The permittee may integrate the public involvement and participation program with existing education and outreach programs in the Middle Rio Grande area. Example of existing programs include: Adopt-A-Stream Programs; Attitude Surveys; Community Hotlines (e.g. establishment of a '311'-type number and system established to handle storm-water-related concerns, setting up a public tracking/reporting.	Part I.D.5.h.(ix) - AMAFCA will continue to include in its (and in the cooperative MRGSQT programs) public involvement and participation programs: funds toward groups which include public participation, such as Boy or Girl Scouts of America, , the Bosque Ecosystem Monitoring Program (BEMP), Earth Force - Keep it Clean student outreach, Talking Talons Youth Leadership Activities, and Youth Corps programs. MS4s that are members of the MRGSQT benefit from the Albuquerque 311 Citizen Contact Center.	• AMAFCA will document progress made with these program enhancement activities. AMAFCA and the MRGSQT will continue to review, update, and enhance public involvement and participation programs. The MRGSQT Outcomes Report will provide the documentation for this Permit activity. This report is available upon request and AMAFCA plans to share this document on its website. • MS4s that are members of the MRGSQT benefit from the Albuquerque 311 Citizen Contact Center. This is discussed in more detail in the Illicit Discharges and Improper Disposal Control Measure.	**Met FY 2023 Goals.** • The MRGSQT Outcomes Report summarizes the public involvement and participation programs and activities for FY 2023. This report is an attached Program Summary. • AMAFCA continued to participate in the 311 call in program. This is discussed in more detail in the Illicit Discharges and Improper Disposal Control Measure section.

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8.6	143	Item from MS4 Permit NOI. Describe other proposed activities to address the Public Involvement and Participation Measure.	AMAFCA will continue to utilize the Annual Report and SWMP revision process as a means to perform a self-audit with the goal to improve its MS4 Programs.	• AMAFCA will document progress made, if any, related to the Annual Report and SWMP revision process as a means to perform a self-audit on the MS4 Program elements.	**Met FY 2023 Goal.** • AMAFCA continued to utilize the Annual Report process as a means to perform a self-audit on the MS4 Program elements.

NOI Section	ID	Permit Activity Description	Plan SWMP Rev. 6 - July 1, 2021	Measurable Goal SWMP Rev. 6 - July 1, 2021	Status of Implementation and Performance Assessment Permit Year July 2022 to June 2023 (FY 2023)
	144	**Part III - Monitoring, Assessment and Reporting Requirements**			
	145	**TABLE 10: Wet Weather Monitoring Program - Part III.A.1**			
See NOI Sections Below	146	According to the requirements in Part III.A.1., The permittee must develop, in consultation with NMED and EPA (and affected Tribes if monitoring locations would be located on Tribal lands), and implement a comprehensive monitoring and assessment program. The permittees shall conduct wet weather monitoring to gather information on the response of receiving waters to wet weather discharges from the MS4 during both wet season (July 1 through October 31) and dry season (November 1 through June 30). Wet Weather Monitoring shall be conducted at outfalls, internal sampling stations, and/or in-stream monitoring locations at each water of the US that runs in each entity or entities' jurisdiction(s).	Part III.A.1 - Wet weather screening is synonymous with compliance monitoring. In the MRG MS4 Permit area, stormwater runoff discharges to the Rio Grande at outfall locations via major drainage channels, storm drains, and pump stations. The Rio Grande, the only perennial river in the watershed, enters the MRG Watershed in one location (North of Albuquerque) and leaves the MRG Watershed south of Albuquerque. Details for this program are provided in the SWMP sections below.	The program details and measurable goals are described below. The Final Sampling Plan for Cooperative Compliance Monitoring (CMC) was submitted to EPA on May 5, 2016. The sampling plan was accepted by the EPA and NMED. The current 2014 Middle Rio Grande Watershed Based Municipal Separate Storm Sewer System (MS4) Permit, NPDES Permit No. NMR04A000, expired on December 19, 2019. The MRG Watershed Based MS4 Permit entered into administrative continuance in Dec. 2019 when EPA Region 6 did not issue a new MS4 Permit before the current MS4 Permit expirations date. The MS4 TAG sent EPA an Administrative Continuance letter dated October 15, 2019. Until a new MS4 Permit is issued, there are no wet and dry weather monitoring requirements in the Rio Grande. However, during administrative continuance, the CMC members will evaluate and may choose to continue sampling to support their MS4 program needs, demonstrate program progress, or gather additional data in support of the future Permit compliance.	**See specific Permit activity below.**
IV	147	Part III.A.3.1.b. Option B: Cooperative Monitoring Program Develop a cooperative wet weather monitoring program with other permittees in the Middle Rio Grande Watershed. The program will monitor waters coming into the watershed (upstream) and leaving the watershed (downstream). The program must include sampling for TSS, TDS, COD, BOD5, DO, oil and grease, E. coli, pH, total kjeldahl nitrogen, nitrate plus nitrite, dissolved phosphorus, total ammonia plus organic nitrogen, total phosphorus, PCBs and Gross alpha. Monitoring of temperature shall be also conducted at outfalls and/or Rio Grande monitoring locations. Permittees must include additional parameters from monitoring conducted under permits NMS000101, NMR04A000 or/and NMR040001 whose mean values are at or above a WQS. The monitoring program must sample the pollutants for a minimum of 7 storm events per location during the permit term with at least 3 events in the wet season and 2 events in the dry season.	Part III.A.3.1.b. Option B: Cooperative Monitoring Program -The cooperative wet weather compliance monitoring will monitor waters coming into the watershed (upstream) and leaving the watershed (downstream) for a minimum of 7 storm events per location during the Permit term with at least 3 in the events in the wet season and 2 events in the dry season. The wet season is defined in the permit as July 1 through October 31 and the dry season as November 1 through June 30. AMAFCA joined the Compliance Monitoring Cooperative (CMC) group, which includes 12 watershed partners. The participatory permittees have developed a cooperative wet weather compliance monitoring program to assess the effect of stormwater discharges on the receiving water, the Middle Rio Grande. This monitoring plan was reviewed and discussed with NMED and EPA during its development. The cooperative sampling plan was accepted by EPA and permittees submitted the sampling plan on May 5, 2016 and sampling certification to EPA on June 28, 2016. At the end of FY 2019, all Permit required samples have been obtained by the CMC.	• If the CMC does continue wet weather compliance monitoring during administrative continuance of this Permit, the monitoring program will follow the Permit requirements for parameters tested (TSS, TDS, COD, BOD5, DO, oil and grease, E. coli, pH, total kjeldahl nitrogen, nitrate plus nitrite, dissolved phosphorus, total ammonia plus organic nitrogen, total phosphorus, PCBs, Gross alpha, and temperature). In addition, parameters from stormwater monitoring conducted under Permit NMS000101, whose mean values were at or above a WQS, will also be tested. The complete list of parameters is listed in the CMC sampling plan. In addition, DO, pH, conductivity, and temperature will be analyzed in the field within 15 minutes of sample collection. • If the CMC does continue wet weather compliance monitoring during administrative continuance of this Permit, the parameter list may be modified based on a review of the results obtained within the watershed and the program assessment needs for the permittees. AMAFCA will document, as applicable, any wet weather monitoring activity. AMAFCA will incorporate documentation by reference into the Annual Report and plans to document progress on the AMAFCA website. • If the CMC does continue wet weather compliance monitoring during administrative continuance of this Permit, the monitoring program will be conducted according to the approved Sampling Plan for Compliance Monitoring.	**Met FY 2023 Goals.** • The required CMC sampling for the MS4 Permit term in the Rio Grande (2016 to 2019) was completed in FY 2019. The MRG Watershed Based MS4 Permit entered into administrative continuance in Dec. 2019 when EPA Region 6 did not issue a new MS4 Permit before the current MS4 Permit expired. The MS4 TAG sent EPA an Administrative Continuance letter dated October 15, 2019, acknowledging that until a new MS4 Permit is issued, there are no compliance monitoring requirements in the Rio Grande. Although compliance sampling is currently not required, the CMC has opted to continue collecting samples while the permit is in administrative continuance. One (1) CMC monitoring and sampling event was conducted in FY 2023. The CMC sampled a wet season storm event on October 5-6, 2022. • The CMC continued to maintain a database of the analysis results from the collected samples for the approved parameters. This database is available upon request. The E. coli loading and load allocation calculations related to the CMC monitoring program are available upon request for the cooperative sampling completed in FY 2016 – FY 2023.

NOI Section	ID	Permit Activity Description	Plan SWMP Rev. 6 - July 1, 2021	Measurable Goal SWMP Rev. 6 - July 1, 2021	Status of Implementation and Performance Assessment Permit Year July 2022 to June 2023 (FY 2023)
IV	148	As required in Part III.A.1.e. and Table 10, the permittees shall submit wet weather monitoring preference Option A or Option B to EPA (i.e., individual monitoring program vs. cooperative monitoring program) with NOI submittals.	Part III.A.1.e, Table 10 - AMAFCA submitted its NOI in compliance with the permit requirements and schedule. AMAFCA will participate in Option B - cooperative monitoring program.	• This Permit activity is complete.	**Permit Activity is Complete.**
Not Included in NOI	149	Part III.A.1.e, Table 10 - Submit a detailed description of the monitoring scheme to EPA and NMED for approval. The monitoring scheme should include: a list of pollutants; a description of monitoring sites with an explanation of why those sites were selected; and a detailed map of all proposed monitoring sites. In addition, as required in Part III.A.1.h, the monitoring program must include a contingency plan for collecting additional monitoring data within the MS4 or at additional appropriate instream locations should monitoring results indicate that MS4 discharges may be contributing to instream exceedances of WQS. The purpose of this additional monitoring effort would be to identify sources of elevated pollutant loadings so they could be addressed by the SWMP.	Part III.A.1.e, Table 10 - AMAFCA joined the Compliance Monitoring Cooperative (CMC) group, which includes 12 watershed partners. The participatory permittees have developed a wet weather cooperative monitoring program to assess the effect of stormwater discharges on the receiving water, the Middle Rio Grande. This monitoring plan was reviewed and discussed with NMED and EPA during its development. Multiple drafts were submitted to EPA and NMED by the CMC, including drafts on Sept. 16, 2015 and Dec. 21, 2015. The cooperative monitoring plan was accepted by EPA and permittees submitted the sampling plan on May 5, 2016 and sampling certification to EPA on June 28, 2016. Modifications to this sampling may be submitted to the EPA in the future, as needed for approval.	• This Permit activity is complete. • The CMC members have met all requirements for wet weather compliance monitoring. If the CMC does continue wet weather monitoring during administrative continuance of this Permit, the monitoring program will be conducted according to the EPA/NMED approved monitoring plan.	**Permit Activity is Complete.**
Not Included in NOI	150	Part III.A.1.e, Table 10 - Submit certification that all wet weather monitoring sites are operational and begin sampling.	Part III.A.1.e, Table 10 - AMAFCA submitted its sampling certification to EPA on June 28, 2016.	• This Permit activity is complete. • AMAFCA, with its cooperative partners, has submitted certifications to the EPA that all wet weather compliance monitoring sites are operational and the CMC has begun sampling, according to the Permit requirements.	**Permit Activity is Complete.**

NOI Section	ID	Permit Activity Description	Plan SWMP Rev. 6 - July 1, 2021	Measurable Goal SWMP Rev. 6 - July 1, 2021	Status of Implementation and Performance Assessment Permit Year July 2022 to June 2023 (FY 2023)
Not Included in NOI	151	As required in Part III.A.1.e, update SWMP document and submit Annual Reports. The results of the Wet Weather Monitoring must be provided in each Annual Report. As required in Part III.D.1 -Monitoring results obtained during the reporting period running from July 1st to June 30th shall be submitted on discharge monitoring report (DMR) forms along with the Annual Report required by Part III.B. A separate DMR form is required for each monitoring period (season) specified in Part III.A.I. If any individual analytical test result is less than the minimum quantification level (MQL) listed for that parameter, then a value of zero (0) may be used for that test result for the DMR calculations and reporting requirements. The Annual Report shall include the actual value obtained, if test result is less than the MQL.	Part II.A.1.e, Table 10 - AMAFCA's Stormwater Quality Engineer will review the program requirement for the above-mentioned program elements, during the Annual Report process. A strategy to implement any new program requirements or improve compliance with the program requirements will be developed as needed. Part III.D.1 - The wet weather compliance monitoring results obtained by the CMC from July 1st to June 30th will be submitted as required by the EPA using the netDMR online website or as otherwise approved by EPA as part of the cooperative sampling program. EPA has required that the NetDMR online system be used to submit DMR results. Since this Permit will be in administrative continuance, and all required compliance monitoring results have been obtained, AMAFCA anticipates additional coordination with EPA relative to future samples uploaded to the NetDMR system. AMAFCA will continue internal watershed stormwater quality monitoring, which typically collects samples from various locations. Collection of these samples are weather and equipment dependent. Monitoring results obtained from AMAFCA's internal stormwater quality assessment monitoring program and any continued CMC stormwater quality monitoring are available upon request.	• As part of the Annual Report process each year, the Stormwater Quality Engineer will review the program requirements listed in Part III.A.1, for the above-mentioned SWMP elements, and assess the overall success of the program. AMAFCA will document the program effectiveness and program success. AMAFCA will incorporate documentation by reference into the Annual Report. • The CMC members have met all requirements for wet weather compliance monitoring. If the CMC does continue wet weather monitoring during administrative continuance of this Permit, the wet weather compliance monitoring results obtained from July 1st to June 30th will be submitted as required by the EPA using the NetDMR online website or as otherwise approved by EPA as part of the cooperative sampling program. Since this Permit is in administrative continuance, and all required compliance monitoring results have been obtained, AMAFCA anticipates additional coordination with EPA relative to future samples uploaded to the NetDMR system. • Monitoring results obtained from AMAFCA's internal stormwater quality assessment monitoring program and any continued CMC stormwater quality monitoring are available upon request.	**Met FY 2023 Goals.** • Refer to ID # 30 above for monitoring program updates for FY 2023.

NOI Section	ID	Permit Activity Description	Plan SWMP Rev. 6 - July 1, 2021	Measurable Goal SWMP Rev. 6 - July 1, 2021	Status of Implementation and Performance Assessment Permit Year July 2022 to June 2023 (FY 2023)
	152	**Dry Weather Discharge Screening of MS4 - Part III.A.2**			
Not Included in NOI	153	According to the requirements in Part III.A.2., Each permittee shall identify, investigate, and address areas within its jurisdiction that may be contributing excessive levels of pollutants to the Municipal Separate Storm Sewer System as a result of dry weather discharges (i.e., discharges from separate storm sewers that occur without the direct influence of runoff from storm events, e.g. illicit discharges, allowable non-stormwater, groundwater infiltration, etc.). Due to the arid and semi-arid conditions of the area, the dry weather discharges screening program may be carried out during both wet season (July I through October 31) and dry season (November 1 through June 30). Results of the assessment shall be provided in each Annual Report.	Part III.A.2 - The program details and measurable goals are described below, in the Pollution Prevention/Good Housekeeping Control Measure, and in the Illicit Discharge and Improper Disposal Control Measure. There are no perennial streams in the Albuquerque area that contribute to the Rio Grande. As such, the dry weather screening program serves a dual purpose as an illicit discharge screening analysis.	• The program details and measurable goals are described below, in the Pollution Prevention/Good Housekeeping Control Measure, and in the Illicit Discharge and Improper Disposal Control Measure.	**Met FY 2023 Goal.** • The program details and measurable goals are described below, in the Pollution Prevention/Good Housekeeping Control Measure, and in the Illicit Discharge and Improper Disposal Control Measure.
Not Included in NOI	154	Part III.A.2 -This program may be coordinated with the illicit discharge detection and elimination program required in Part I.D.5.e. The dry weather screening program shall be described in the SWMP and comply with the schedules contained in Part I.D.5.e.(iii). The permittee shall: a) Include sufficient screening points to adequately assess pollutant levels from all areas of the MS4. b) Screen for, at a minimum, BOD5, sediment or a parameter addressing sediment (e.g., TSS or turbidity), E. coli, Oil and Grease, nutrients, any pollutant that has been identified as cause of impairment of a waterbody receiving discharges from that portion of the MS4, including temperature. c) Specify the sampling and non-sampling techniques to be issued for initial screening and follow-up purposes. d) Perform monitoring only when an antecedent dry period of at least 72 hours after a rain event greater than 0.1 inch in magnitude is satisfied. Monitoring methodology shall consist of collecting a minimum of 4 grab samples spaced at a minimum interval of 15 minutes each.	Part III.A.2 - AMAFCA will continue with the existing, cooperative Dry Weather Screening program in place under MS4 Permit NMS000101. The existing Dry Weather Screening program cooperative program with COA includes screening various locations, which screen 100% of COA/AMAFCA jurisdiction and targets industrial areas. Should any discharge be present in a quantity sufficient for analysis, it will be screened for BOD5, sediment (e.g., TSS or turbidity), E. coli, oil and grease, and nutrients. Any discharge collected will be a grab sample according to the Permit monitoring methodology. In addition, AMAFCA has in place a well-defined and implemented routine inspection and O&M program that includes both formal and informal inspections and maintenance schedules for its watershed protection elements. Also, as part of AMAFCA's Levelogger monitoring, AMAFCA screens all major channel inlets to the NDC on AMAFCA ROW monthly. These inspections all function as dry weather inspections. AMAFCA will continue membership and involvement in the cooperative MS4 Technical Advisory Group (MS4 TAG), which will facilitate cooperation and coordination with other MS4s in the Middle Rio Grande related to screening for illicit discharges.	• Under MS4 Permit NMR04A000, COA has taken the lead on this program and is responsible for the dry weather screening and documentation for this existing program. Screening results collected by the COA can be provided upon request. • AMAFCA will continue to perform inspections according to the applicable O&M Manuals and Plans. These inspections also function as dry weather inspections. • As part of AMAFCA's Levelogger monitoring, AMAFCA will continue to inspect all channelized inlets to the NDC on AMAFCA ROW monthly. In addition, AMAFCA will incorporate dry weather inspections into projects, as applicable, to increase the documentation of facility inspections. • AMAFCA will continue membership and involvement in the cooperative MS4 Technical Advisory Group (MS4 TAG) which will facilitate cooperation and coordination with other MS4s in the Middle Rio Grande related to screening for illicit discharges.	**Met FY 2023 Goals.** • In cooperation with the COA, the Dry Weather Screening for 40 locations throughout the Middle Rio Grande Watershed, including the AMAFCA MS4, was completed and shared with AMAFCA by COA. The screening followed the requirements in (a) through (d) for this Permit element. The screening report is included as a Program Summary for the Annual Report. • In FY 2023, AMAFCA continued to implement routine inspections and maintenance that included both formal and informal inspections and maintenance schedules for its watershed protection elements. These inspections also functioned as dry weather inspections. Refer to the Pollution Prevention/Good Housekeeping Control Measure for additional information. In FY 2023, AMAFCA continued to perform inspections according to the applicable Manuals and Plans. • AMAFCA continued dry weather/illicit discharge inspections with its Levelogger monitoring. Fourteen (14) sites on AMAFCA ROW were inspected monthly and inspections (with photos) documented in the monitoring reports. Refer to the Illicit Discharges and Improper Disposal Program Summary for additional information. • AMAFCA continued to be involved in the MS4 TAG group in FY 2023.

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	155	**Floatables Monitoring - Part III.A.3**			
Not Included in NOI	156	According to the requirements in Part III.A.3., The permittees shall establish locations for monitoring/assessing floatable material in discharges to and/or from their MS4. A cooperative monitoring program may be established in partnership with other MS4s to monitor and assess floatable material in discharges to and/or from a joint jurisdictional area or watershed basis. Floatable material shall be monitored at least twice per year at priority locations and at minimum of two (2) stations. The amount of collected material shall be estimated in cubic yards. a) One (1) station should be located in the North Diversion (only applicable to COA and AMAFCA).	Part III.A.3 - AMAFCA will continue to monitor floatable material and the amount collected in participation with other MS4s. AMAFCA will monitor floatable material in the settling area of the NDC and at the I-25/SDC Baffle Chute Stormwater Quality Facility. Note the NDC settling area is within the AMAFCA easement on Sandia Pueblo property, but that is where AMAFCA has monitored floatables for many years. The requirements in this Permit section will be completed in conjunction with the requirements in TABLE 7: Control of Floatables Discharges - Part I.D.5.f. AMAFCA monitors and tracks collection of floatables at all AMAFCA facilities.	• AMAFCA will continue to monitor floatable material and estimate the amount collected at least twice per year at a minimum of 2 stations. • AMAFCA will maintain its 5 drying stations, locations where floatable material, sediment and debris is hauled, separated, and properly disposed of. These stations help AMAFCA meet the requirements for this activity.	**Met FY 2023 Goals.** • AMAFCA continued to monitor floatables and the amount collected in the settling area of the NDC and at the I-25/SDC Baffle Chute Stormwater Quality Facility. In addition to these two locations, AMAFCA continued the task of determining the amount of floatables collected from each of the AMAFCA water quality facilities. In FY 2023, AMAFCA continued to use its crew tracking system and database created internally, specifically to meet the MS4 Permit needs. AMAFCA has estimated quantities for the volume of trash, sediment, and vegetation removed from its water quality facilities in FY 2023. Refer to the Annual Report Program Summary for additional information related to control of floatables.

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	157	**Industrial and High Risk Runoff Monitoring - Part III.A.4**			
4	158	The permittees shall monitor stormwater discharges from Type 1 and 2 industrial facilities which discharge to the MS4 provided such facilities are located in their jurisdiction. (Note: if no such facilities are in the permittee's jurisdiction, the permittee must certify that this program element does not apply).	Activity removed from AMAFCA's SWMP (Rev. 0, December 1, 2015). AMAFCA certifies with submittal of this SWMP that no such industrial activities are located in AMAFCA's jurisdiction and this program element does not apply. This was submitted to EPA in AMAFCA's NOI and accepted.	N/A	N/A

AMAFCA Board Meeting Memorandum Agenda Item 18a
Information Item

To: AMAFCA Board of Directors
From: Patrick J. Chavez, PE, Stormwater Quality Engineer
Date: November 10, 2022

Subject: AMAFCA Stormwater Quality Program Annual Overview

Action Requested: None

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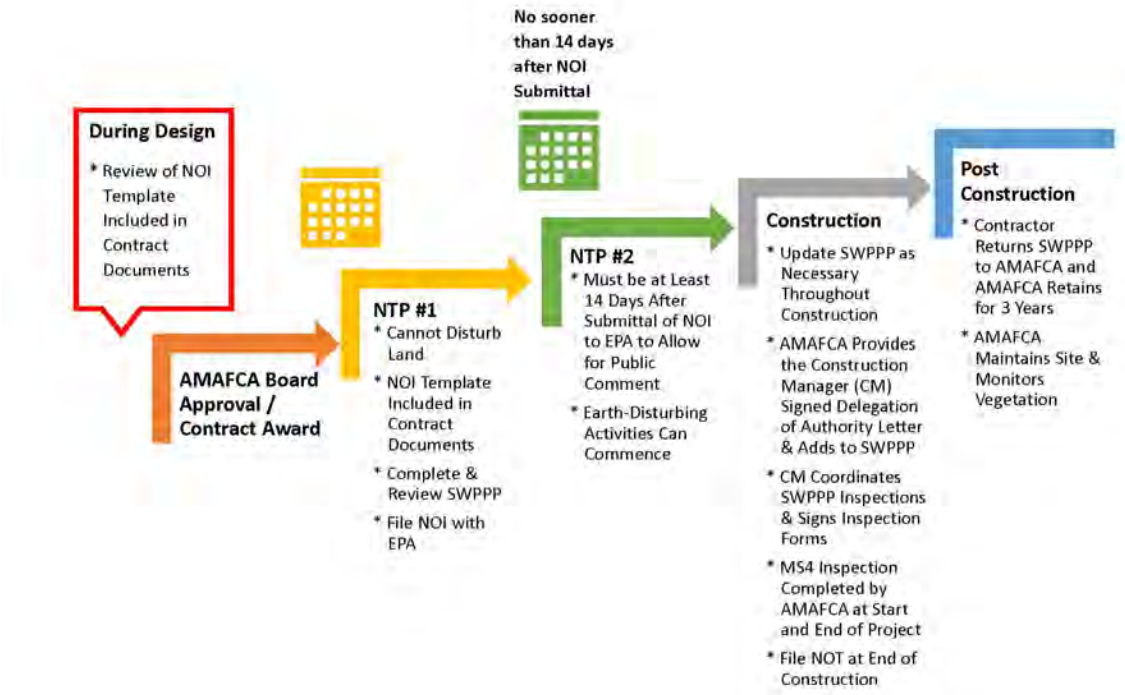
The Municipal Separate Storm Sewer System (MS4) stormwater quality program at AMAFCA was established to comply with National Pollution Discharge Elimination System (NPDES) requirements under the Clean Water Act as administered by the Environmental Protection Agency (EPA). The Annual Report (AR) is the reporting mechanism required in the Middle Rio Grande Watershed Based MS4 Permit (Permit) for measurable work done towards a proposed plan within the water quality program. The Draft Fiscal Year (FY) 2022 Annual Report has been advertised in the Albuquerque Journal (October 16, 2022) and posted on AMAFCA's website to comply with the required 45-day public comment period. Presented below are a several highlights from FY22 MS4 Annual Report that can be attributed to the AMAFCA stormwater quality program.

FY 2022 Construction General Permit (CGP) Update

Construction site stormwater runoff control is intended to control polluted stormwater runoff from a construction site to Municipal Separate Storm Sewer Systems (MS4s) that is ultimately discharged into local rivers and streams. Sediment is usually the main pollutant of concern for construction site stormwater runoff. Sediment runoff rates from construction sites are typically 10 to 20 times greater than those of agricultural lands, and 1,000 to 2,000 times greater than those of forest lands. During a short period of time, construction sites can contribute more sediment to streams than can be deposited naturally during several decades. In accordance with AMAFCA's SWMP, AMAFCA has continued and will continue to follow its program to control construction site stormwater runoff.

AMAFCA files Notice of Intent (NOI) documents for a Construction General Permit (CGP) for each of their construction sites that is greater than 1 acre in size. AMAFCA also requires contractors to file CGP NOI documents for any AMAFCA construction sites that are greater than 1 acre in size. AMAFCA reviews each contractor provided SWPPP document to determine their compliance with permit requirements. AMAFCA's timeline related to the CGP requirements, developed as part of the program to control construction site stormwater runoff is shown below.



AMAFCA's Timeline Related to the CGP Requirements

EPA published the final 2022 CGP in January 2022. AMAFCA worked closely with area MS4s to develop and submit comments on the draft 2022 CGP during FY 2021. AMAFCA attended an EPA webinar on February 24, 2022, as well as a New Mexico Environment Department (NMED) webinar on April 21, 2022, on the final 2022 CGP requirements. These webinars assisted with AMAFCA's training and knowledge of the new CGP requirements. During FY 2022, AMAFCA worked to update their program to control construction site stormwater runoff to reflect the new 2022 CGP requirements. These efforts included review and update of the Template & Instructions for Electronic CGP Notice of Intent (NOI) or Low Erosivity Waiver (LEW) Application for AMAFCA Projects, which AMAFCA provides with its construction contract documents to assist contractors and AMAFCA with meeting CGP requirements.

In the fall of 2022, EPA released a new Construction Inspection Training Course for CGP Operators. Construction site operators permitted under EPA's 2022 CGP are required to ensure that any individual conducting site inspections is a "qualified person". The 2022 CGP includes new requirements for qualified persons that apply to all sites that receive permit coverage on or after February 17, 2023. AMAFCA's Storm Water Quality Engineer, completed the EPA course

and passed the exam and is considered qualified to conduct inspections under Part 4 of the 2022 CGP. Documentation showing a member of staff's successful completion of the EPA course is shown below.

CERTIFICATE
OF COMPLETION

presented to

Patrick J. Chavez, MSCE, PE,
LEED AP+

who has successfully completed EPA's Construction General Permit (CGP) Site Inspector Training Course
and passed the final exam

Chris Kloss, Water Permits Division Director

Date Certified: 9/22/2022

Expiration Date: May 17, 2027

By completing this course and passing the final exam, Patrick J. Chavez, MSCE, PE, LEED AP+ has complied with the CGP Part 6.3.a training requirements for conducting construction inspections under the 2022 CGP.

EPA
United States
Environmental Protection
Agency

FY 2022 AMAFCA Dissolved Oxygen Program Summary

AMAFCA monitors and evaluates the potential effect of stormwater discharges related to dissolved oxygen (DO) in the Rio Grande. The DO of stormwater discharges to the Rio Grande at the North Diversion Channel (NDC) outfall has been monitored by AMAFCA and cooperative Municipal Separate Storm Sewer System (MS4) agencies, with communication with the United Stated Fish and Wildlife Service (USFWS) and EPA, since 2004. Several strategies and constructed modifications to the NDC Embayment have been implemented from 2011-2016. Currently, in normal river flow conditions, water from the Rio Grande will not stagnate in the NDC Embayment and create low DO conditions. These improvement projects provided control measures to eliminate conditions that cause or contribute to exceedances of applicable DO water quality standards.

In accordance with AMAFCA's Stormwater Management Program (SWMP), AMAFCA has and will continue to assess the potential effect of stormwater discharges into the Rio Grande by collecting and evaluating additional DO data.

The purpose of AMAFCA's Sonde Monitoring Program is to obtain surface water quality data within the Rio Grande to support AMAFCA and the cooperative MS4 agencies

with the assessment of surface water quality parameters, as required by the Endangered Species Act requirements incorporated into the MS4 Permit. In addition, the Sonde Monitoring Program data supports determination of long-term surface water quality trends, related to stormwater impacts and impairments, within the Middle Rio Grande. The sondes monitor temperature, barometric pressure, pH, turbidity, DO, DO saturation (%), and water depth above each sonde. AMAFCA has improved the Sonde Program through the years with current access to real-time online data using the HydroVu data management application, allowing quicker response and solutions to maintenance issues.

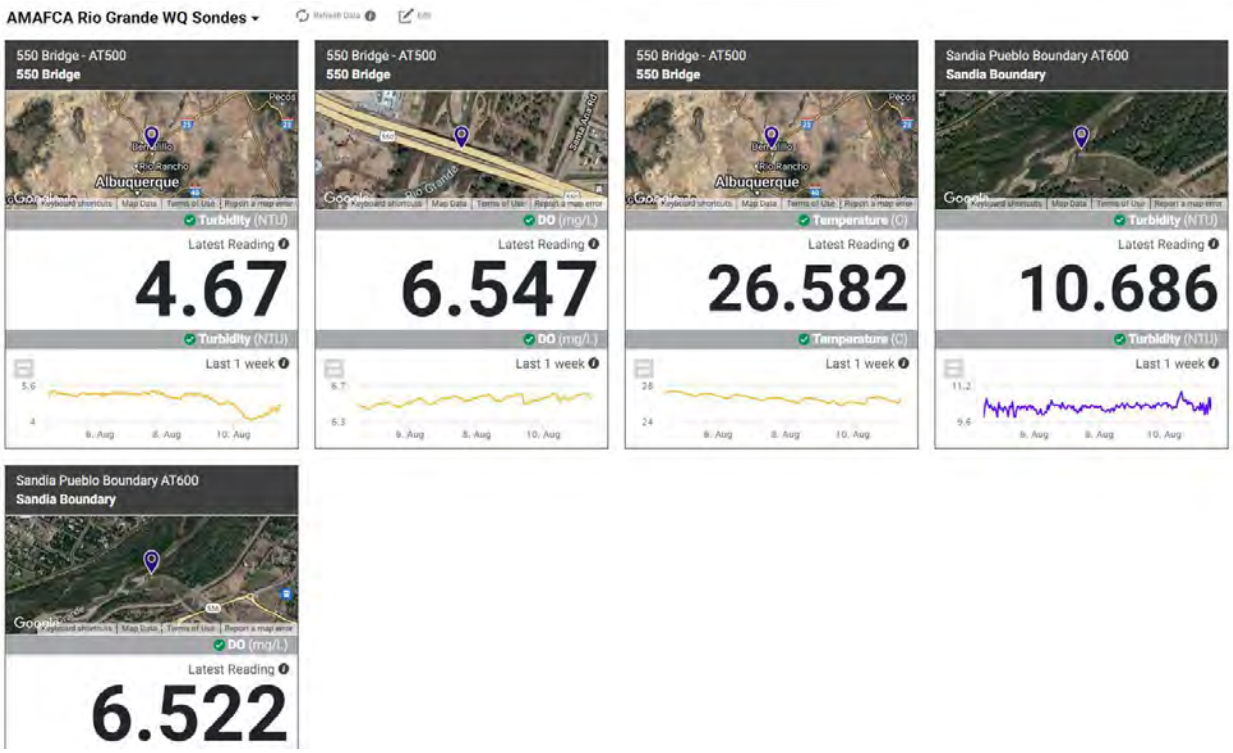
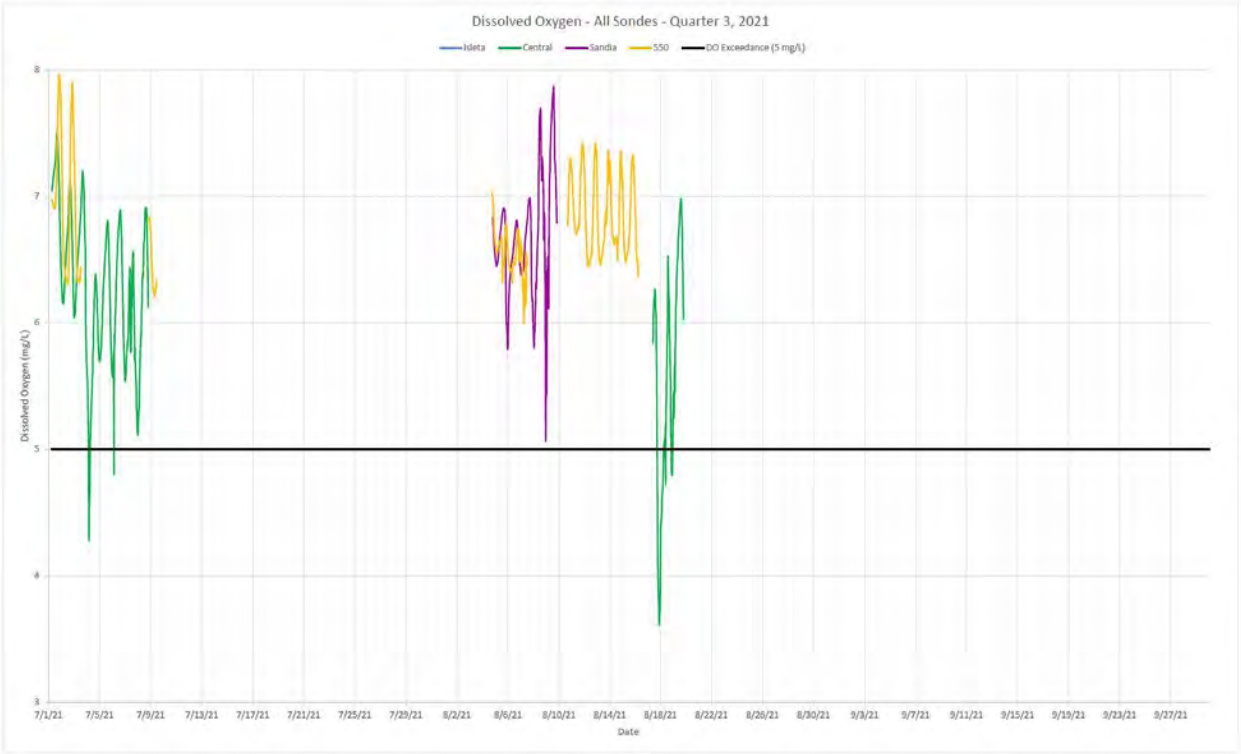


Image of Online Portal Allowing AMAFCA Access to Real-Time Sonde Data in the Rio Grande

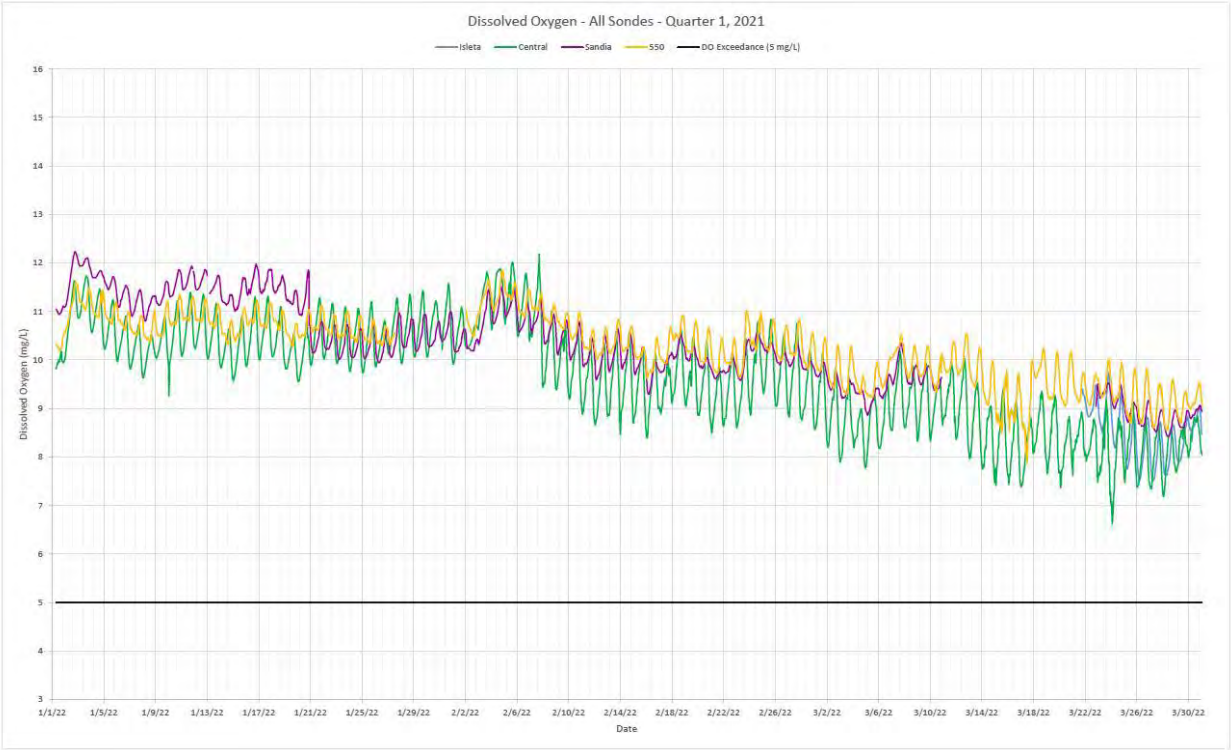
From the AMAFCA FY 2022 In-Stream Water Quality Monitoring Memos, which report on the AMAFCA sonde data, the DO fell slightly below 5 mg/L related to storm events within the watershed for the following locations:

- Central Ave. Bridge – Five dates in FY 2022 (July 2021, August 2021, and June 2022), for a total of approximately 37 hours (0.4 % of the year) – the DO was in the range of 2.1 – 4.8 mg/L.
- Isleta Dam – At various times between June 18, 2022 and June 25, 2022, the DO was below 5 mg/l, in the range of 0.9 – 4.3 mg/L, for approximately 60 hours during these dates. The low DO for 60 hours represents 0.7 % of the year.

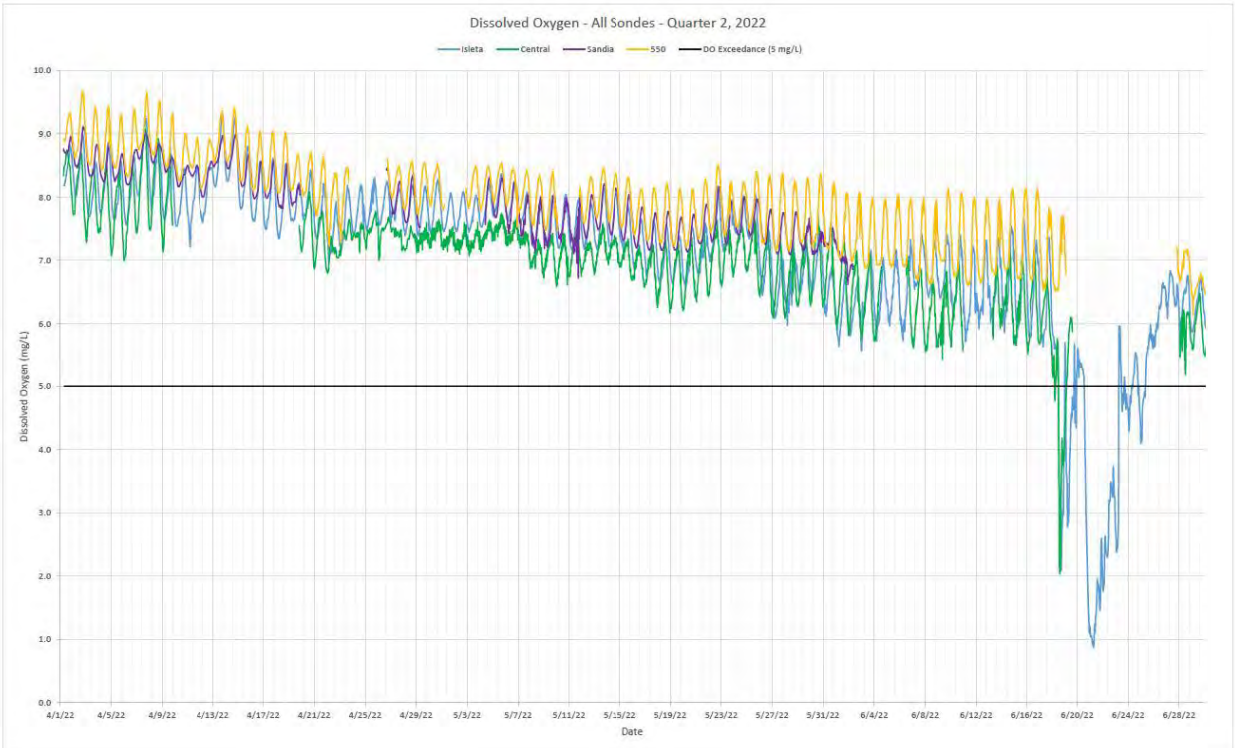


Plot of DO Data Collected From Sondes Deployed During FY 2022 (July – September 2021)

Plot of DO Data Collected From Sondes Deployed During FY 2022 (October – December 2021)



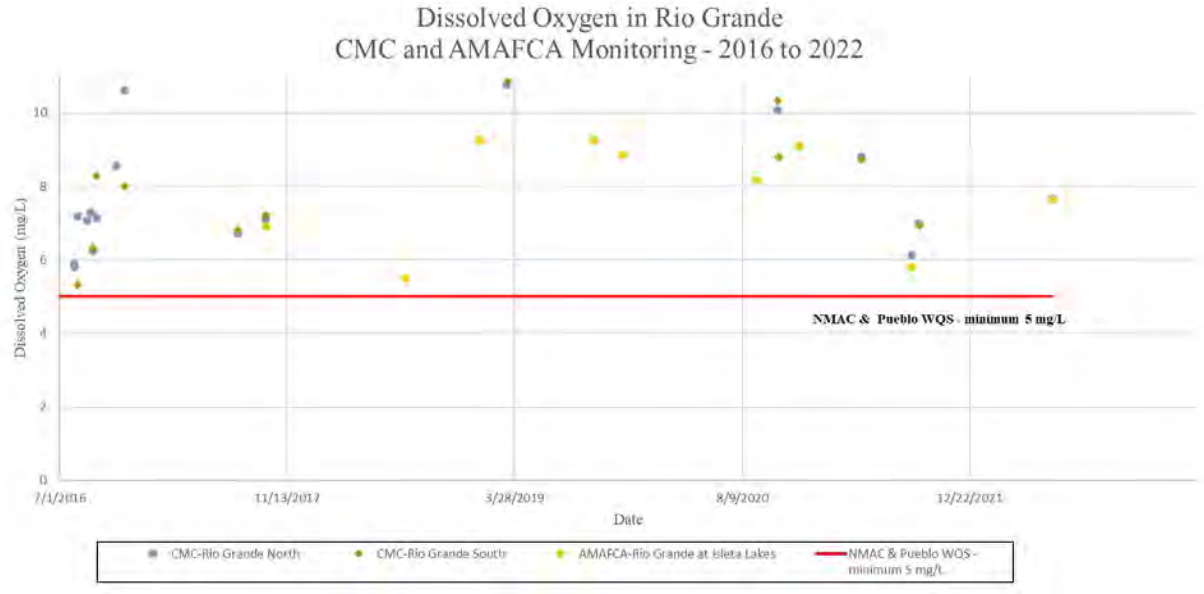
Plot of DO Data Collected From Sondes Deployed During FY 2022 (January – March 2022)



Plot of DO Data Collected From Sondes Deployed During FY 2022 (April – June 2022)

In addition to the Sonde Program, both AMAFCA and the Middle Rio Grande Compliance Monitoring Cooperative (CMC) collect grab samples within the Rio Grande during storm events. Field data is measured, including DO, for these samples. For MS4 Permit compliance, the Middle Rio Grande CMC has two monitoring points where DO field measurements are collected, north and south of the urbanized portion of the river. The AMAFCA Monitoring Program collects samples in the Rio Grande at the downstream (south) end of the watershed (Rio Grande at Isleta Lakes). The below graph shows the DO data from all AMAFCA and CMC samples collected from July 2016 – June 2022. None of the field DO data collected from these programs, from 2016 to 2022, have recorded DO in the Rio Grande during stormwater discharge events below the water quality standard of 5 mg/L for the Rio Grande (NMAC 20.6.4).

Collecting an upstream sample from the Angostura Diversion



Plot of DO Data Collected from Grab Samples in the Rio Grande Through the AMAFCA and CMC Monitoring Programs

The Annual Incidental Take Report estimates the potential Rio Grande Silvery Minnow (RGSM) harassments and lethality near the North Diversion Channel (NDC) outfall, using the method defined by the USFWS for the Biological Opinion (BO) completed in August 2014. This analysis calculates the frequency (number) of anoxic and hypoxic events and determines if the events meet the measurable goals provided in the December 2014 MS4 Permit No. NMR04A000. It also determines the number of RGSM mortalities and harassments using the BO specified methodology. For the entire MS4 Permit term, including during administrative continuance, zero anoxic events and zero hypoxic events have been identified in the field or during the incidental take analysis (refer to table below). Please note that for this draft Program Summary the FY 2022 (July 2021 – June 2022) Annual Incidental Take Report has not yet been completed but will be updated before December 1, 2022 to reflect the FY 2022 information.

MRG Watershed MS4 Permit [issued 2014]	Annual Report Year	Measurable Goals Frequency of Anoxic Events/year	Actual No. of Anoxic Events for Year	Measurable Goals Frequency of Hypoxic Events/year	Actual No. of Hypoxic Events for Year
Permit Year 1	July 2015 - June 2016	18	0	35	0
Permit Year 2	July 2016 - June 2017	18	0	35	0
Permit Year 3	July 2017 - June 2018	9	0	18	0
Permit Year 4	July 2018 - June 2019	9	0	18	0
Permit Year 5	July 2019 - June 2020	9	0	18	0
Admin. Continuance	July 2020 - June 2021	9*	0	18*	0

Values in this table are from Table 1.c from MS4 Permit (p. 21 of part 1).

* MS4 Permit expired and is in administrative continuance. The same measurable goals as Permit Year 5 are assumed.

Table Summarizing the Incidental Take Analysis Compared to the MS4 Permit Measurable Goals from 2015 – 2021

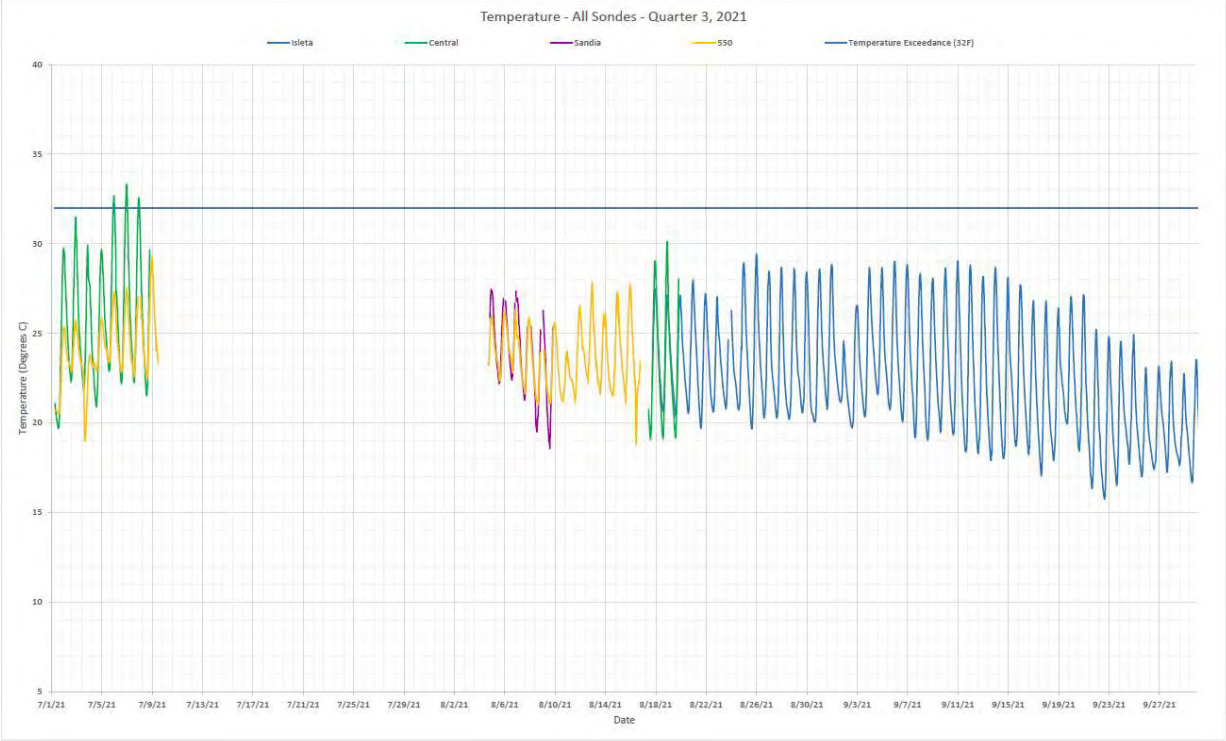
AMAFCA follows a standard procedure for completing the incidental take analysis to ensure the MS4 Permit requirements are met and that this analysis is consistently completed each year. For this entire MS4 Permit term, FY 2016 to FY 2021, none of the NDC qualifying events were found to be hypoxic or anoxic. The oxygen percent saturation, for all data collected for the NDC qualifying events, was greater than 54.3%.

FY 2022 AMAFCA Temperature Monitoring Program Summary

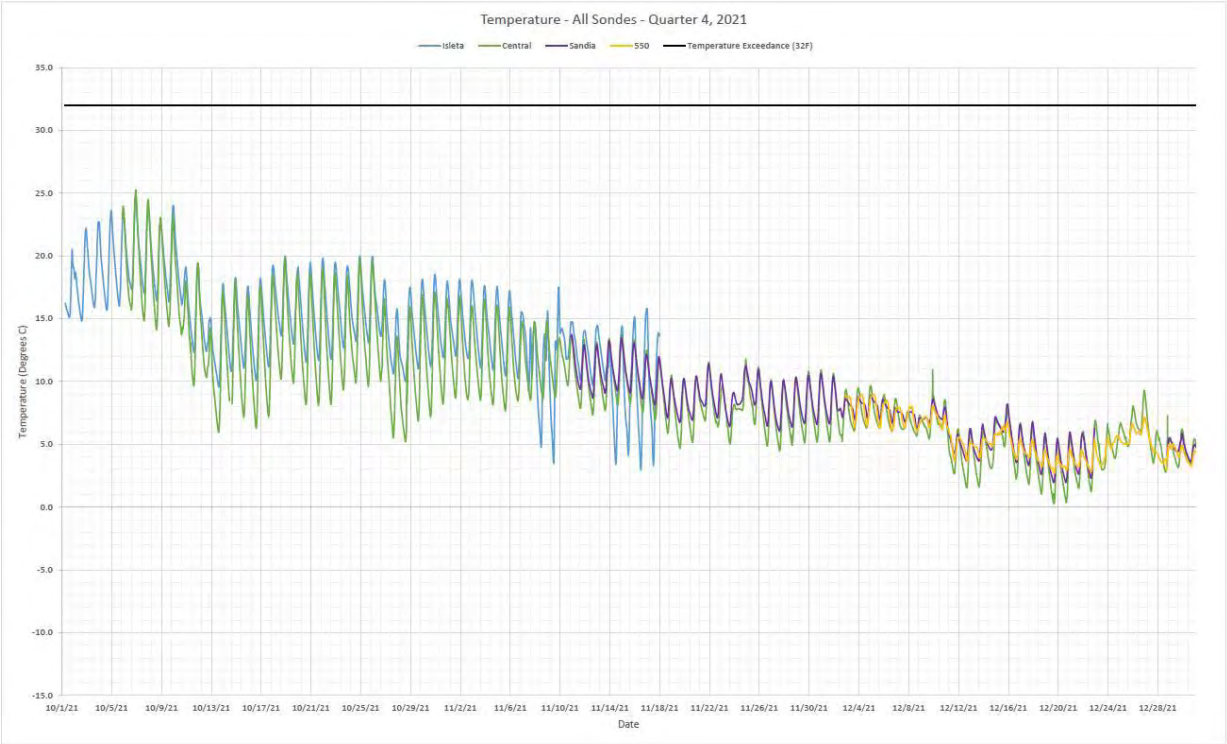
AMAFCA monitors and evaluates the potential effect of stormwater discharges related to temperature in the Rio Grande. AMAFCA and the original Municipal Separate Storm Sewer System (MS4) co-permittees (the City of Albuquerque, New Mexico Department of Transportation, and the University of New Mexico) assembled and analyzed temperature data from 1982 to 2012. This data analysis proved the assertion that the receiving waters of the Rio Grande are not adversely affected by the temperature of stormwater from the Albuquerque MS4. This data was presented in an initial report that was submitted to EPA on May 1, 2012.

Since 2012, the MS4 permittees have continued to collect and submit temperature data, with each Annual Report, showing that the Rio Grande (receiving water for the Middle Rio Grande watershed) is not adversely affected by the temperature of stormwater from the Albuquerque MS4. AMAFCA has collected data from 2012 to 2022 using tidbit probes and sondes. In accordance with AMAFCA's Stormwater Management Program (SWMP), AMAFCA has and will continue to assess the potential effect of stormwater discharges into the Rio Grande by collecting and evaluating additional temperature data.

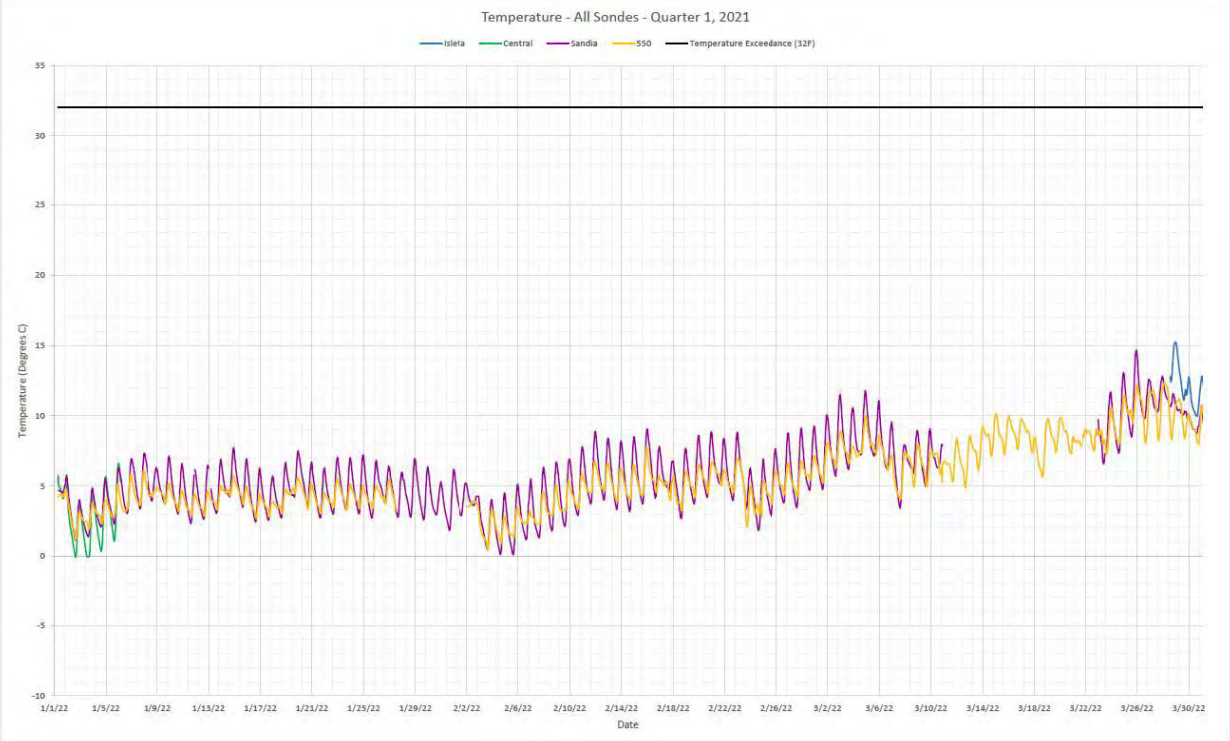
From the AMAFCA FY 2022 In-Stream Water Quality Monitoring Memos, which report on the AMAFCA sonde data, the temperature was below the water quality standard 32.2 ℃, which is the maximum temperature water quality standard for Marginal Warmwater Aquatic for the Rio Grande (NMAC 20.6.4) for all (4) four sondes, for all data related to storm events within the watershed except for two (2) instances. There were two (2) temperature exceedances (max. temperature reported of 33.3 ℃) indicated by the sondes in July 2021, both occurring at the Central Ave. Bridge sonde. There was precipitation in the watershed when the two (2) exceedances occurred.



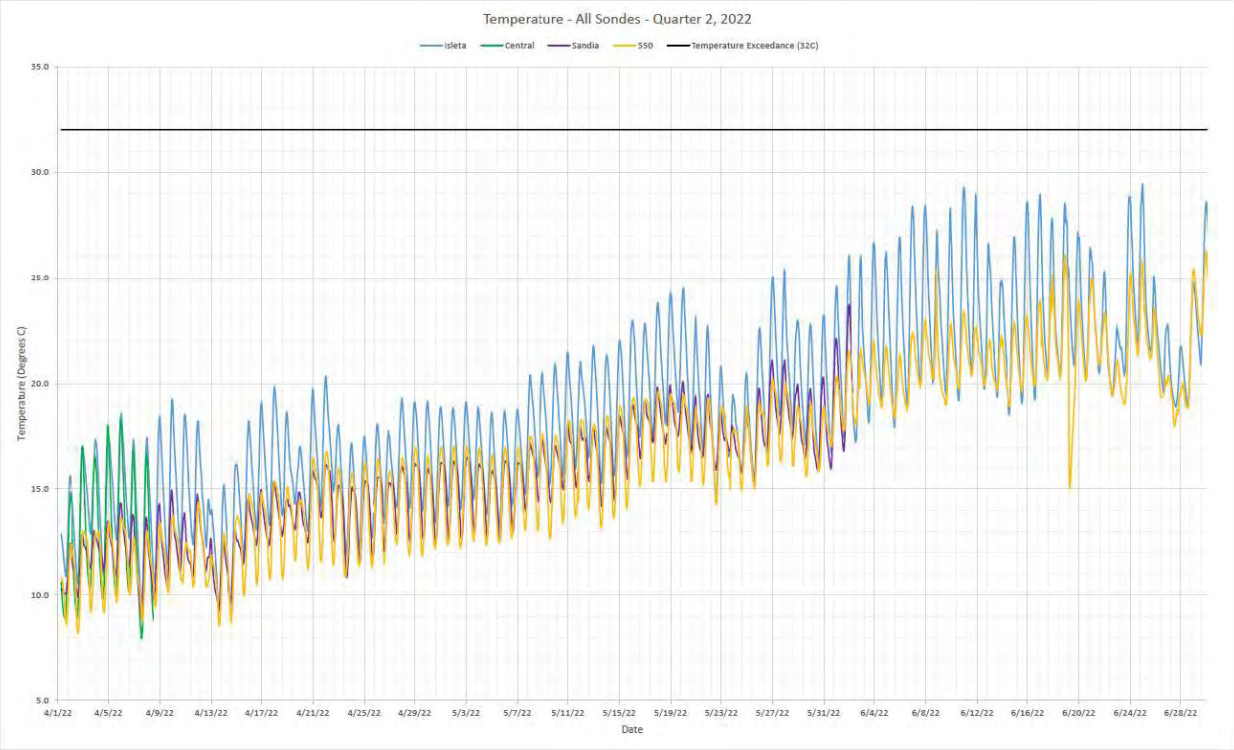
Plot of Temperature Data Collected From Sondes Deployed During FY 2022 (July – September 2021)



Plot of Temperature Data Collected From Sondes Deployed During FY 2022 (Oct. – December 2021)

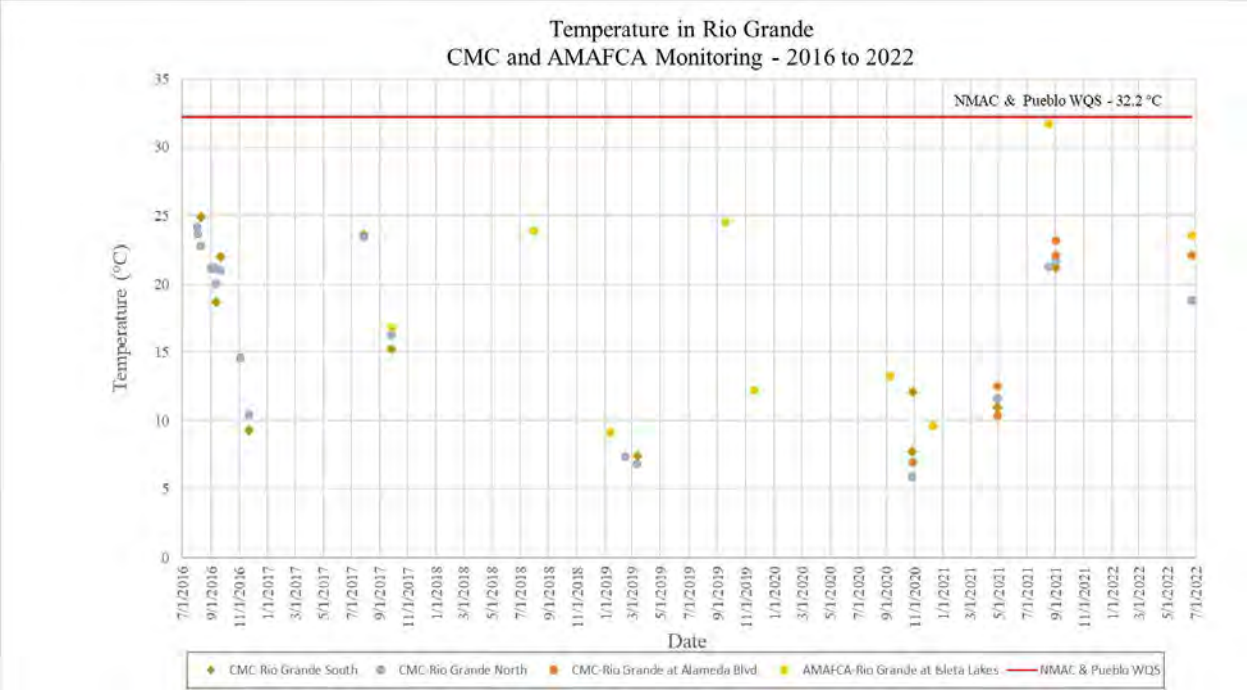


Plot of Temperature Data Collected From Sondes Deployed During FY 2022 (January – March 2022)



Plot of Temperature Data Collected From Sondes Deployed During FY 2022 (April – June 2022)

In addition to the Sonde Program, both AMAFCA and the Middle Rio Grande Compliance Monitoring Cooperative (CMC) collect grab samples within the Rio Grande during storm events. Field data is measured, including temperature, for these samples. For MS4 Permit compliance, the Middle Rio Grande CMC has three monitoring points, north and south of the urbanized portion of the river, as well at the Alameda Bridge. The AMAFCA Monitoring Program collects samples in the Rio Grande at the downstream (south) end of the watershed (Rio Grande at Isleta Lakes). The below graph shows the temperature data from all AMAFCA and CMC samples collected from July 2016 – June 2022. None of the field temperature data collected from these programs have recorded temperature in the Rio Grande during stormwater discharge events above the water quality standard of 32.2 °C.



Plot of Temperature Data Collected From Grab Samples in the Rio Grande Through the AMAFCA and CMC Monitoring Programs

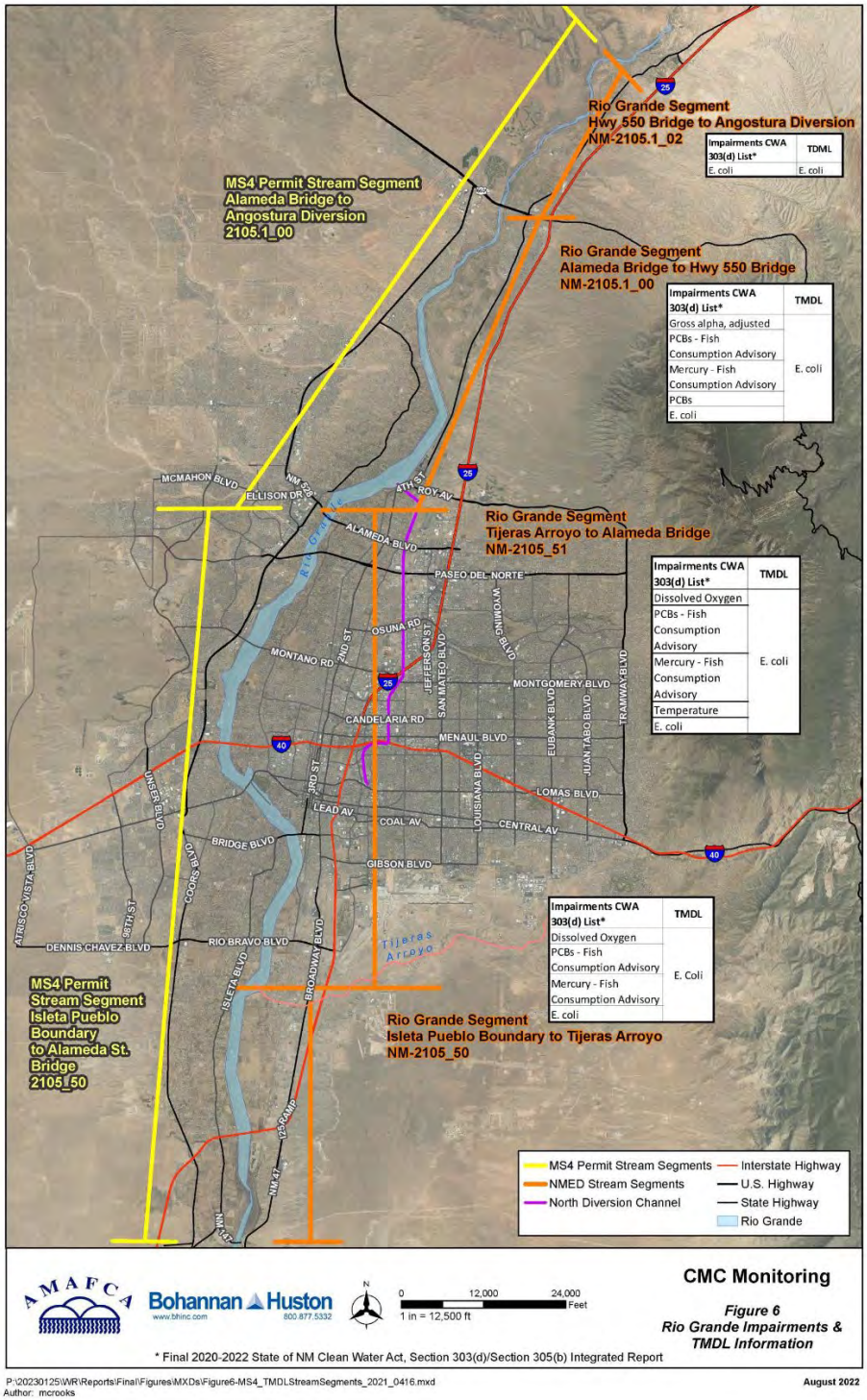
FY 2022 AMAFCA MS4 Discharges to Water Quality Impaired Water Bodies without an Approved TMDL Program Summary

Impairments for the Rio Grande are documented in the Clean Water Act (CWA) 303(d)/305(b) Integrated Report (IR). The IR is updated every three years by a review process that is conducted by the New Mexico Environment Department (NMED). For AMAFCA and other Municipal Separate Storm Sewer System (MS4) permittees in the watershed, compliance sampling is done in the Rio Grande at upstream and downstream locations of the urbanized area for impairment parameters, as well as other parameters identified in the MS4 Permit.

AMAFCA and other MS4s covered under the MS4 Permit are required to comply with water quality standards that are comprised of designated uses for surface waters of the state, associated water quality criteria necessary to protect these uses, and an antidegradation policy. Designated uses in the Middle Rio Grande include aquatic life, fish culture, primary and secondary contact (including cultural, religious, or ceremonial purposes), public water supply, industrial water supply, domestic water supply, irrigation, livestock watering, and wildlife habitat. Impairments are identified when sampling results show that the water quality is not meeting the designated uses requirements. Once an impairment is identified; a Total Maximum Daily Load (TMDL) may be considered in the future if continued monitoring does not show improvement. AMAFCA's stormwater discharges protect these uses and fulfill the requirements set forth in the MS4 Permit. Coordinated water quality sample collection programs through AMAFCA, the Stormwater Quality Team, Compliance Monitoring Cooperative (CMC), and Bosque Ecosystem Monitoring Program (BEMP) have been

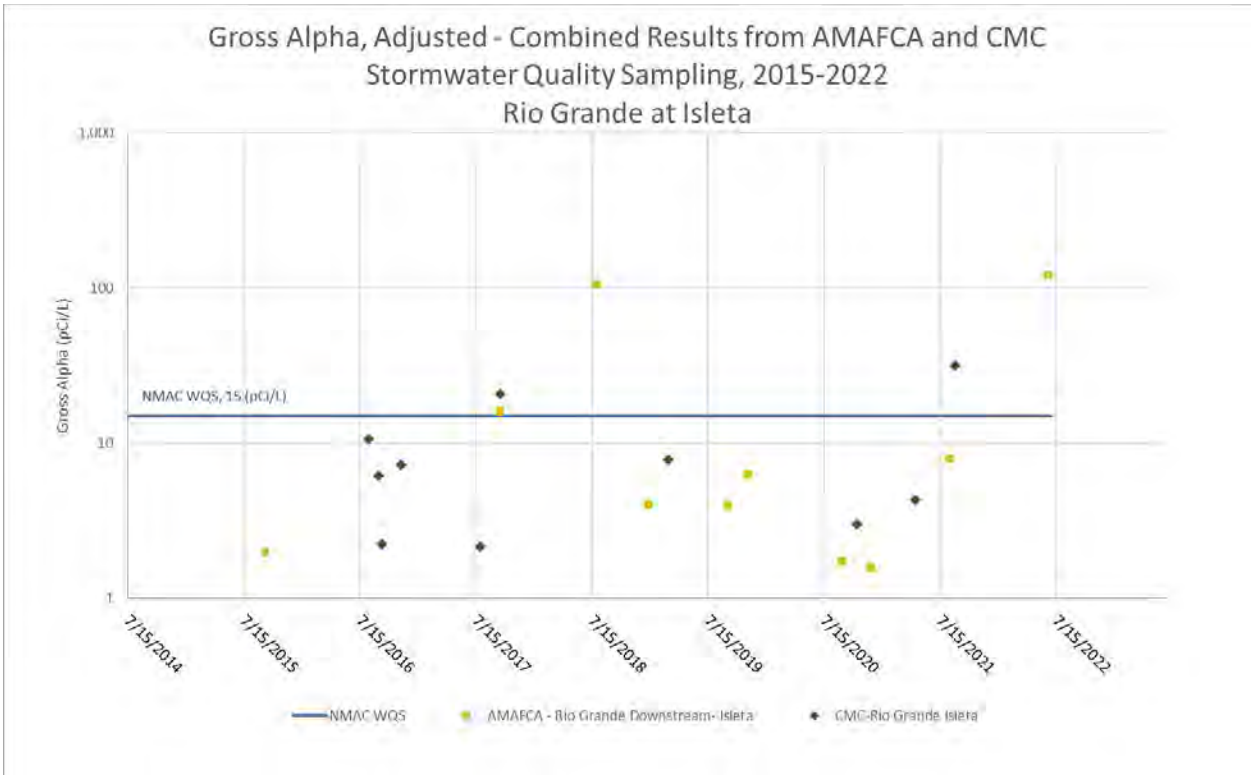
developed and are annually funded to monitor, assess, protect, and restore surface water quality to the Middle Rio Grande watershed.

The current impairments for the Rio Grande stream segments are shown in the figure below.



Impairments in the Rio Grande Segments in the Middle Rio Grande Watershed

Both AMAFCA and the Middle Rio Grande Compliance Monitoring Cooperative (CMC) collect grab samples within the Rio Grande during storm events. Parameters, including the identified impaired parameters, are tested for these in-stream samples. For MS4 Permit compliance, the Middle Rio Grande CMC has monitoring points north and south of the urbanized portion of the river. The AMAFCA monitoring program collects samples in the Rio Grande at the downstream (south) end of the watershed (Rio Grande at Isleta Lakes). The graph below shows the Gross Alpha concentrations from AMAFCA and CMC samples collected from 2016 – 2022.

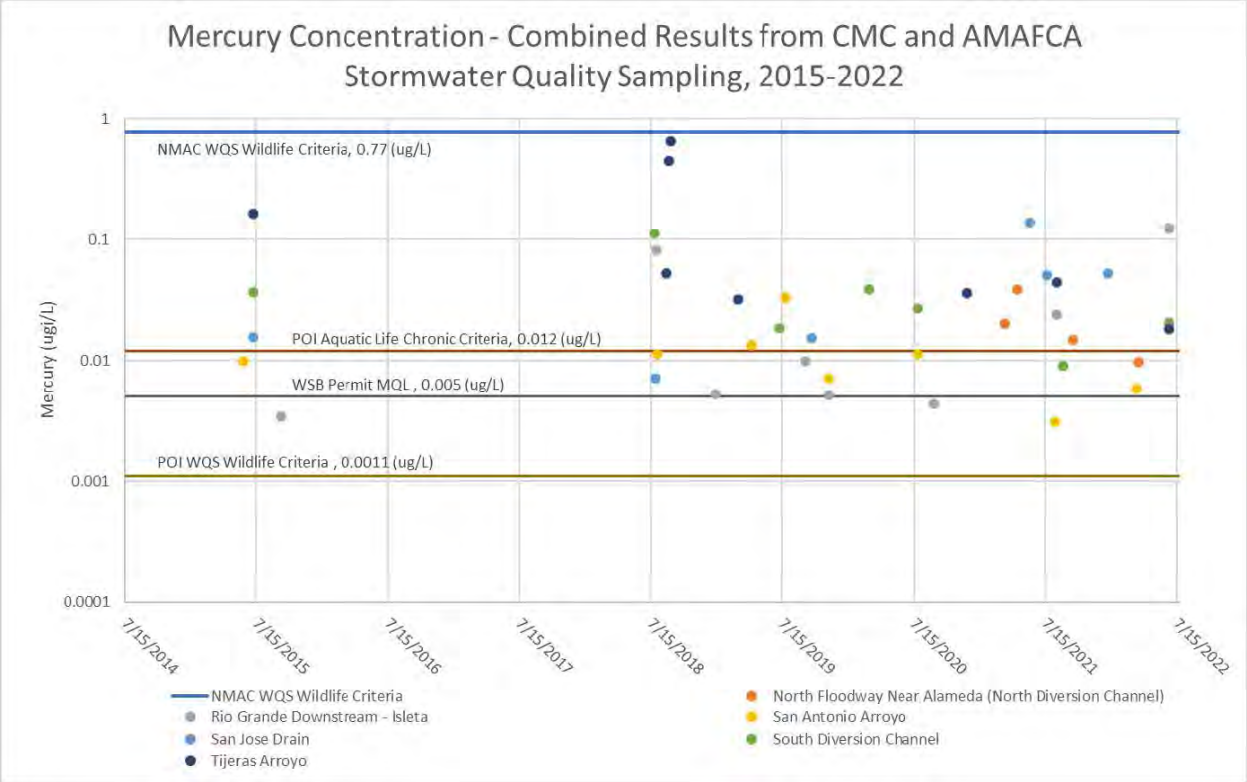


Gross Alpha Results From Grab Samples in the Rio Grande Through AMAFCA and CMC Monitoring

AMAFCA has been monitoring for mercury in stormwater samples and the graph below shows results obtained throughout the watershed. The CMC has not been monitoring for mercury, as it is not a required parameter in the MS4 Permit. Mercury levels reported as exceeding applicable in-stream water quality standard (WQS) values relate to 'Wildlife Usage' WQS for the Pueblo of Isleta; this WQS value is an order of magnitude lower than other mercury WQSs – refer to the table below. AMAFCA has discussed the concern about the magnitude difference and potential error of this WQS with the Pueblo of Isleta related to their Triennial Review.

Mercury **Pueblo of Isleta *Wildlife Usage Criteria***	**Mercury** ***Pueblo of Isleta & Sandia, Fresh Water Aquatic Life Chronic Toxicity***	**Mercury** **State of NM NMAC 20.6.4 *Wildlife Habitat***	**Mercury** **State of NM NMAC 20.6.4 *Drinking Water Supply***	**Mercury** ***Pueblo of Isleta & Sandia, Fresh Water Aquatic Life Acute Toxicity***
WQS: 0.0011 ug/L	WQS: 0.012 ug/L	WQS: 0.77 ug/L	WQS: 2 ug/L	WQS: 2.4 ug/L

Water Quality Standards for Mercury for the Middle Rio Grande

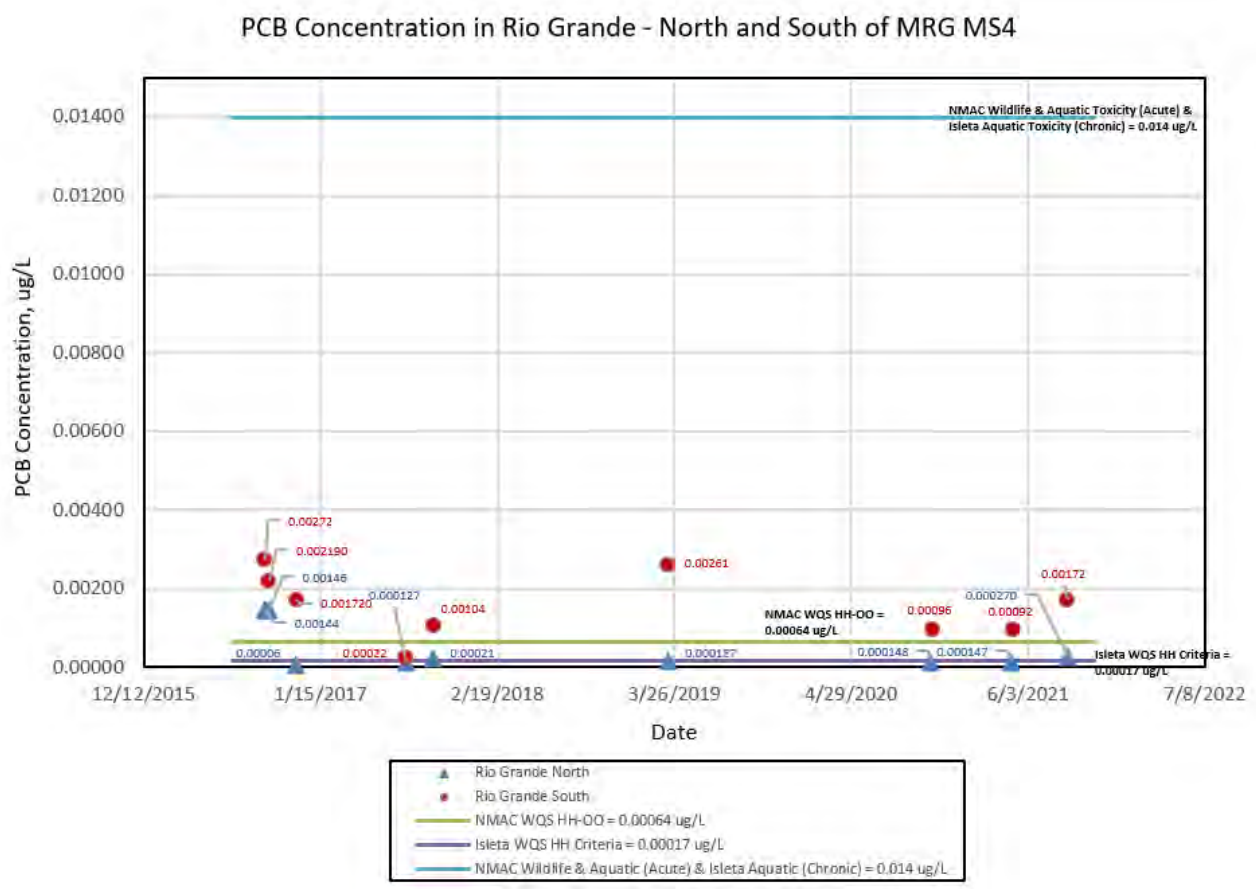


Mercury Results From Stormwater Samples Collected Through the AMAFCA Monitoring Program

AMAFCA and the CMC have been monitoring for PCBs in stormwater samples. The current AMAFCA watershed screening (also referred to as non-compliance sampling) is using Method 608 to test for PCBs. If results are detected with the screening method, AMAFCA would then sample and test with Method 1668. Method 608 tests for both PCBs and pesticides. All AMAFCA screening tests for PCBs have been non-detect.

The CMC tests all samples for PCBs using Method 1668. This is the required PCB testing methodology for stormwater compliance permit requirements, as is stated in the MS4

Permit, p. 6 of Part III. There are multiple surface WQS values listed for PCBs in both the Pueblo of Isleta and the State of New Mexico standards for the various designated uses. The PCBs measured in samples collected from the Rio Grande during the FY 2022 storm events were all below the minimum quantification level (MQL) established in EPA standards for the MS4 NPDES Permit (Appendix F, 0.2 ug/L for PCBs). The PCB results were also well below the New Mexico Surface WQSs and Pueblo of Isleta Surface WQSs for designated uses, including drinking water (0.5 ug/L) and wildlife habitat, acute aquatic life, and chronic aquatic life (0.014 ug/L). However, the CMC samples from the Rio Grande North (pre-storm) and South (post-storm) locations were above the Pueblo of Isleta human health criteria (based on fish consumption only) WQS for surface waters. The human health-organism only criterion is based upon human consumption of fish and other aquatic life that bioaccumulate contaminants over time. The PCB results from 2016 through 2022 are shown below relative to several of the WQSs for PCBs.



PCB Results From Stormwater Samples Collected in the Rio Grande Through the AMAFCA Program

FY 2022 AMAFCA Illicit Discharge and Improper Disposal Program Summary

AMAFCA's successful Illicit Discharge and Improper Disposal Control Program depends on strong collaborative programs and community relationships, as well as AMAFCA's commitment to addressing illicit discharges. AMAFCA has teamed with the City of Albuquerque on its 311 Community Contact Center hotline (includes website and phone app) for reporting illicit discharges. All AMAFCA staff are trained to address illicit discharge reports. AMAFCA has created forms and procedures for this program, as well as provided staff education. In accordance with AMAFCA's SWMP, AMAFCA has and will continue to follow its procedures and practices to detect and eliminate illicit discharges.

This program uses GIS to track illicit discharge reports and identify areas of concern where additional public outreach and education may be needed. AMAFCA is the leader in the watershed for its Maintenance Responsibilities for Drainage Facilities.

AMAFCA also continuously looks for opportunities to add dry weather screening to assist with identifying potential illicit discharges to its numerous projects, leveraging opportunities where staff or consultants are already out in the field. AMAFCA has the added benefit of professional on-staff maintenance crew members who are working throughout their jurisdiction and are equipped and educated to detect illicit discharges.

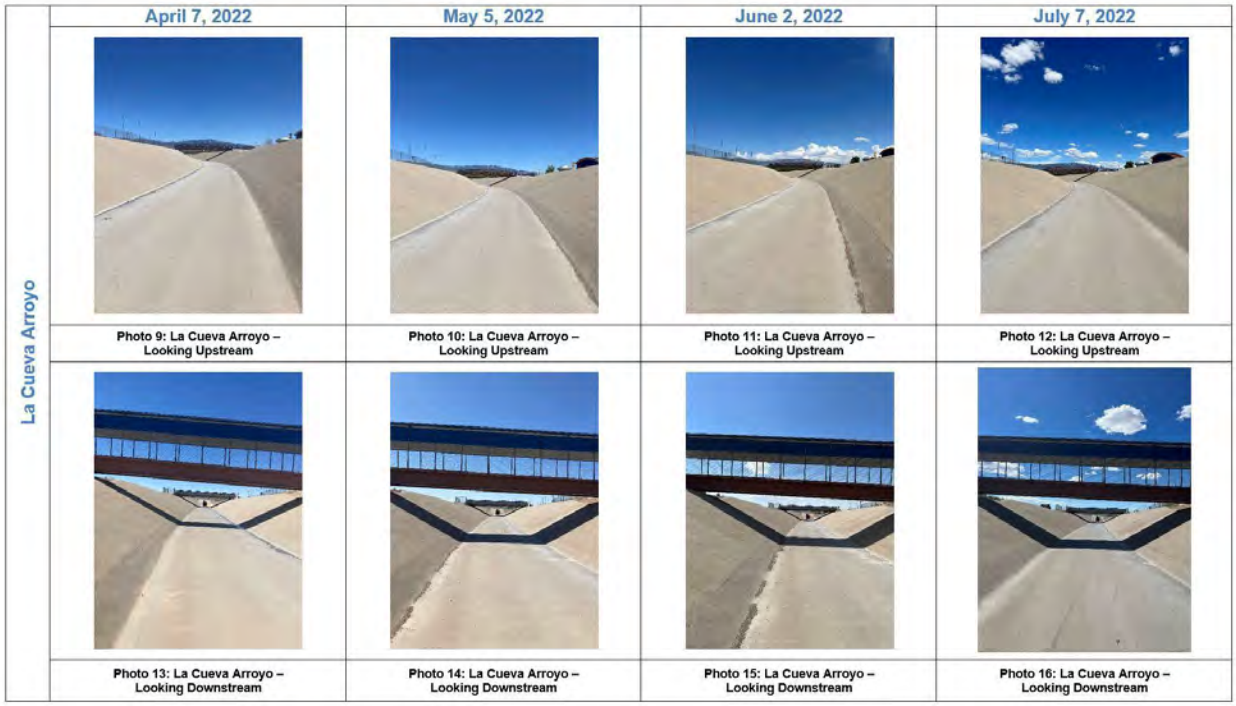
As an example, AMAFCA's Levelogger flow monitoring in arroyos contributing stormwater runoff to the North Diversion Channel also includes an illicit discharge monthly screening component. The graphics below highlight the Levelogger locations and program visual screening tracking, locations, and photos.

Table 1: Summary of Visual Screenings and Potential Illicit Discharges Detected

AMAFCA/City of Albuquerque Facility - Levelogger Data Site Location	Number of Visual Screenings July 2021 – July 2022													Cumulative Total of Visual Screenings Completed	Number of Potential Illicit Discharge Indicators Detected July 2021 – July 2022			Cumulative Total of Illicit Discharge Indicators Detected
	July 2021	August 2021	September 2021	October 2021	November 2021	December 2021	January 2022	February 2022	March 2022	April 2022	May 2022	June 2022	July 2022		Aug. – Nov. 2021	Dec. 2021 – March 2022	April – July 2022	
North Camino Arroyo	1	1	1	1	1	1	1	1	1	1	1	1	1	13	0	0	0	0
La Cueva Arroyo	1	1	1	1	1	1	1	1	1	1	1	1	1	13	0	0	0	0
North Domingo Baca	1	1	1	1	1	1	1	1	1	1	1	1	1	13	0	0	0	0
North Pino Arroyo	1	1	1	1	1	1	1	1	1	1	1	1	1	13	0	0	0	0
South Pino Arroyo	1	1	1	1	1	1	1	1	1	1	1	1	1	13	0	0	0	0
Bear Canyon Arroyo	1	1	1	1	1	1	1	1	1	1	1	1	1	13	0	0	0	0
Vineyard Arroyo	1	1	1	1	1	1	1	1	1	1	1	1	1	13	0	0	0	0
Grantline Arroyo	1	1	1	1	1	1	1	1	1	1	1	1	1	13	0	0	0	0
Hahn Arroyo	1	1	1	1	1	1	1	1	1	1	1	1	1	13	0	0	0	0
Embudo Arroyo	1	1	1	1	1	1	1	1	1	1	1	1	1	13	0	0	0	0
San Mateo Drain	1	1	1	1	1	1	1	1	1	1	1	1	1	13	0	0	0	0
Campus Wash	1	1	1	1	1	1	1	1	1	1	1	1	1	13	0	0	0	0
Lower Bear – Upstream (Wyoming)	1	1	1	1	1	1	1	1	1	1	1	1	1	13	0	0	0	0
Lower Bear – Downstream (Spain)	1	1	1	1	1	1	1	1	1	1	1	1	1	13	0	0	0	0

Months associated with site visits to collect the Levelogger data summarized in this report. Site visits retrieve data for the prior month – for example, the April 2022 site visit retrieved the March 2022 Levelogger data.

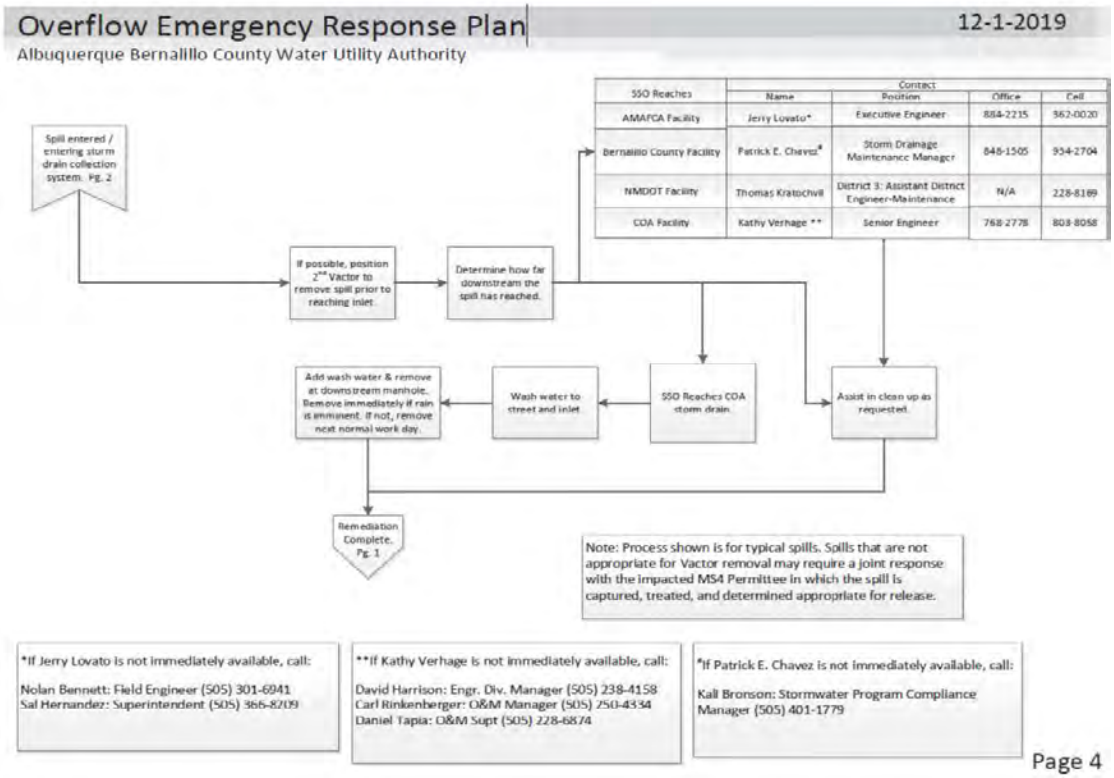
Levelogger Program Visual Screening Tracking Table for FY 2022



Levelogger Program Visual Screening Photo Documentation – Example from La Cueva Arroyo

Related to collaborative programs and community relationships, AMAFCA coordinates closely with the Albuquerque Bernalillo County Water Utility Authority (ABCWUA) as well as other area agencies, as shown in the ABCWUA's Collection System Overflow Emergency Response Plan (one page included below – full plan available on-line: https://www.abcwua.org/sewer-system-overview/). This plan helps ensure that the community responds to and cleans up spills that enter the storm drain collection system.

In addition, AMAFCA is a member in the cooperative Municipal Separate Storm Sewer System (MS4) Technical Advisory Group (MS4 TAG) which facilitates cooperation and coordination with other MS4s in the Middle Rio Grande related to the illicit discharge and improper disposal control program. AMAFCA is also a member of the Mid Rio Grande Stormwater Quality Team (MRGSQT – https://keeptheriogrand.org/), which has grown to 12 organizations who leverage their resources to ensure MS4 Permit public education and outreach requirements are met with the goal of preventing and reducing stormwater pollution throughout the watershed from reaching the Rio Grande. The MRGSQT provides educational information regarding stormwater quality to the community, including information that facilitates public reporting of illicit connections or discharges and educational programs that inform the public of hazards associated with illicit discharges and improper waste disposal, as well as proper ways to dispose of hazardous wastes.



Collaborating for Water Quality in the Watershed

The Stormwater Quality Program at AMAFCA further protects the environment by collaborating with other agencies in the watershed beyond the requirements of the MS4 Permit that to a certain extent incentivizes cooperative efforts between permittees. AMAFCA in coordination with other MS4 agencies in the watershed has defined what it means to collaborate for water quality and in the process has also developed a Stormwater Quality Program that can readily incorporate environmental protections across jurisdictional boundaries. The community continues to benefit by the exchange of information between entities.

Public education, outreach, involvement, and participation is the primary objective of the Stormwater Quality Team (Team). Collaborative education, outreach, involvement, and participation efforts focused on reducing E.coli pollutant concentrations from pet waste. AMAFCA's mutt mitt program has seen in increase in interest over the last few years. The City, County, and AMAFCA provide thousands of mutt mitt bags dispensed from installed stations in return for a member of the community making a pledge to also collaborate for water quality. It is encouraging that the public has become more aware and increasingly engaged with mutt mitt usage across multiple MS4 jurisdictions.

AMAFCA Memorandum
Information Item

To: Jerry Lovato, PE, Executive Engineer
From: Patrick J. Chavez, PE, Stormwater Quality Engineer
Date: March 22, 2023

Subject: 2023 Land and Water Summit – AMAFCA's Participation

Action Requested: None

***

Land and Water Summit History and Mission

The Land and Water Summit (Summit), created in 1986, has brought relevant, innovative, and exciting speakers and topics to its annual conferences held here in the Middle Rio Grande Watershed. The Land and Water Summit was originally organized by both the Xeriscape Council of New Mexico (XCNM) and Arid Lands LID. Ciudad Soil and Water Conservation District, the Summit's fiscal agent, now hosts the annual event.

The Land and Water Summit is committed to continually bringing together ideas, customs and practices from planners and policy makers, engineers, landscape architects and designers, and others from the richly diverse cultural knowledge of our region to develop a sustainable future, and to improve the social, economic, and environmental well-being of our communities.

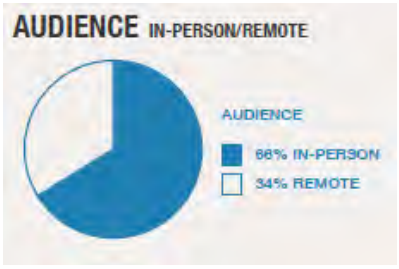
The 2023 Land and Water Summit Planning Committee members, as listed below, are respected experts on water quality, promoting the use of native and arid-adapted plants, rainwater harvesting, flood control, utilizing low impact/recycled building materials and landscaping/irrigation methods. The committee's primary goals are EPA permit compliance and to educate stakeholders about best practices for resource conservation in the watershed.

- **Steve Glass, Chair** • *Ciudad Soil and Water Conservation District*
- **Astrid Mooney, Treasurer** • *Ciudad Soil and Water Conservation District*
- **Megan Marsee, Vice Chair** • *Bernalillo County*
- **Paulina Aguilera-Eaton** • *Bernalillo County*
- **Kali Bronson** • *Bernalillo County*
- **Patrick Chavez** • *Albuquerque Metropolitan Arroyo Flood Control Authority*
- **Sarah Ganley** • *Bohannan Huston*
- **Jaren Peplinski** • *Ciudad Soil and Water Conservation District*
- **Richard Perce** • *Groundwork Studio*
- **George Radnovich** • *Sites Southwest*
- **Jeffrey Thornton**
- **Phyllis Baker, Consultant** • *Baker Creative*

AMAFCA's direct involvement in planning and participating in the Summit satisfies many of the Green Stormwater Infrastructure (GSI) and Low Impact Development (LID) requirements in the Middle Rio Grande Watershed Based Permit (Permit).

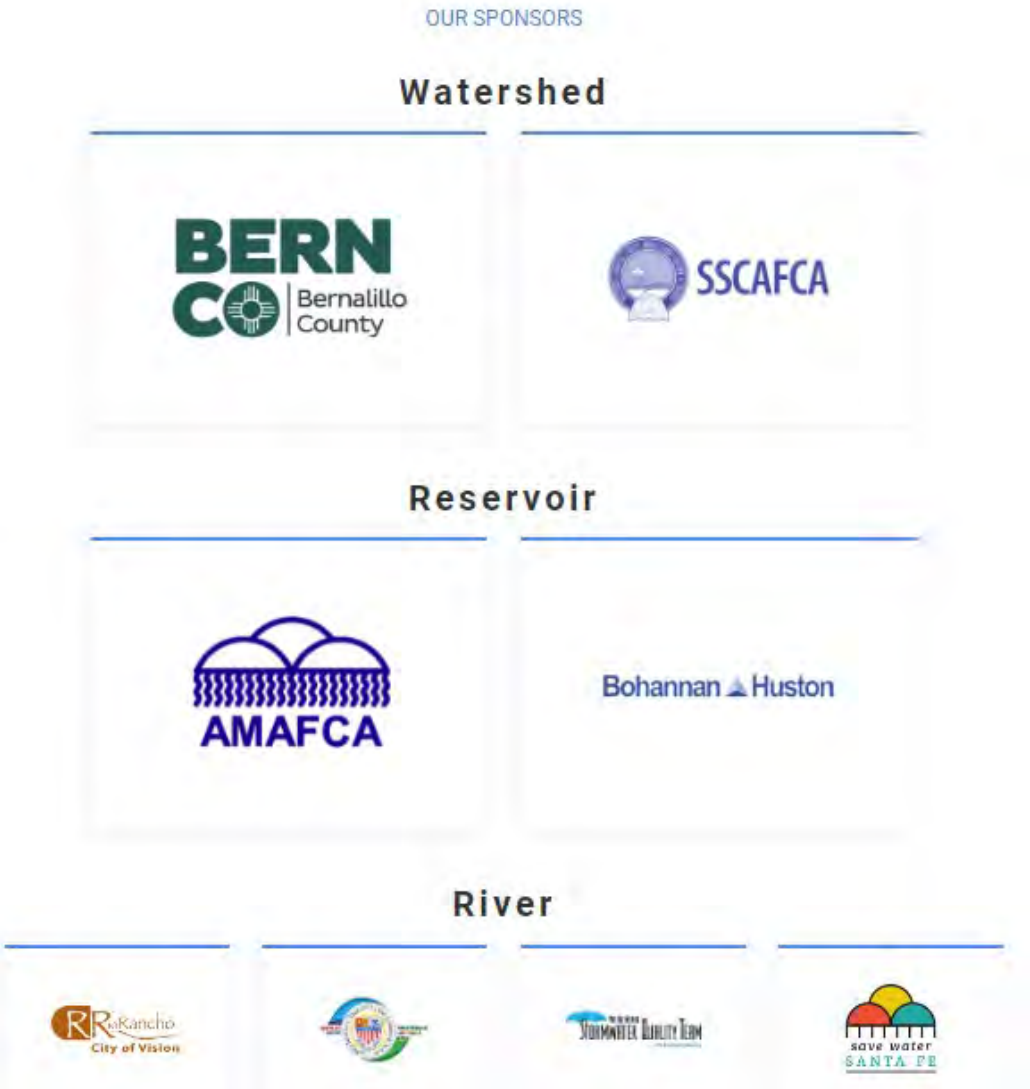
Land and Water Summit 2023 – AMAFCA's Participation

A total of 378 tickets were distributed to the 2023 Summit's activities. The number of tickets includes both remote and in-person attendees. Students were encouraged to attend the Summit remotely, free of charge, and 75 registrants were such students taking advantage of the opportunity to attend. See below pie chart for breakdown of audience between virtual and in-person (66% in-person and 34% remote).



The 2023 Summit Agenda included a Pre-conference Field Trip, two full days of presentations held at the Indian Pueblo Cultural Center and a special evening screening of the documentary "Acequias – The Legacy Lives On" held at the Valle De Oro Wildlife Refuge.

The Land and Water Summit would simply not be possible without the support of like-minded individuals, businesses, and organizations to address vital environmental issues like water quality that impact our local, regional, and global communities. There are five levels of sponsorship opportunities offered for the Summit and AMAFCA was again a sponsor of the Summit in 2023 at the Reservoir level. Refer to the next page for images of the Watershed, Reservoir, and River Level Sponsors.



The 2023 Land and Water Pre-Summit Field Trip was held on March 1, 2023 (see below image of bus tour flyer). The full day experience featured a bus tour of several local GSI and LID projects. The bus tour started and stopped at the Indian Pueblo Cultural Center and lunch was delivered by a local vendor to the Elena Gallegos Open Space making for an engaging and educational early spring day in the watershed.

The first stop of the field trip was at The Albuquerque Railyards Market and Event Space (see below two photos). The stop allowed for attendees to see the flexible use setting that further activates the Railyards district. The space includes areas for stages, food trucks, seating, and gathering, creating a prime venue for various event types and sizes. In addition to creating an event space, the design responsibly manages the stormwater runoff resulting from the new asphalt parking lot with a stormwater harvesting basin and on-site detention to handle peak flows from larger storm events.

The second stop on the bus tour was at the CNM Student Resource Center Plaza (see below two photos). The landscape architect that designed the project spoke to the attendees about how the onsite drainage is accomplished through a permeable paver system in and a subsurface infiltration system that uses perforated pipe to distribute runoff to root zones of the new trees in the plaza.

The next stop on the field trip was the High Desert Community Center (see below two photos). To lessen the impact on the environment, the development protected and enhanced the native landscape by utilizing a passive gravity irrigation system. This system provides a means of using moisture that would otherwise by lost and provides the community with a demonstration of an innovative alternative technology.

The next and final stop of the bus tour included two different sites. The first site of the last stop (see below two photos) was the Lower Bear Tributary Arroyo Regional Water Quality Improvements Pilot Project. The Executive Engineer and AMAFCA staff spoke to the attendees about the project and subsequently answered several interesting questions.

AMAFCA oversaw the design and construction of the pilot project. The project was jointly funded by AMAFCA and the City of Albuquerque (City), and per the funding agreement, maintenance responsibilities for the facility will transfer from AMAFCA to the City later this year. AMAFCA implemented the project to protect the water quality of the Rio Grande and the aquifer below the watershed. As stormwater runoff from rainfall events moves through this arroyo, it passes through a series of controls, each designed to remove specific pollutants from the stormwater. The "cars" in this treatment train each feature different components of stormwater quality enactment techniques.

The second site of the last stop on the bus tour was the Water Authority's Bear Canyon Aquifer Recharge Project (see below two photos). The managed aquifer recharge project was initiated in 2007 as a demonstration phase project.

The 2023 Land and Water Summit continued in a hybrid format on March 2-3, 2023 at the Indian Pueblo Cultural Center. The agenda featured many accomplished presenters from around the country. AMAFCA's Stormwater Quality Engineer presented the Land Acknowledgement to start each morning of the event's last two days (see below photo).

As with years past, the 2023 Summit provided a space for stakeholders in the watershed to continue collaborating for water quality. The mix of local design professionals that engaged with various Summit presenters having "out of state experience" was a benefit to the community as agencies move forward to continue regulatory compliance in a sustainable way that improves water quality in the environment.

Shown below is photocopy of the Governor's 2023 Proclamation of the week of this year's Summit to be "Land and Water Awareness Week" in New Mexico.

STATE OF NEW MEXICO **EXECUTIVE OFFICE** SANTA FE, NEW MEXICO

Proclamation

***WHEREAS**, the natural resources of the desert southwest are historically limited and will become increasingly more limited as the consequences of climate change unfold; and*

***WHEREAS**, water is a traditionally limiting resource in this region, easily susceptible to contamination, overuse, and misuse, but essential for all life; and*

***WHEREAS**, our land resources are finite, susceptible to wildfire, and dependent upon adequate water to produce the ecosystem goods and services necessary for the survival of all life; and*

***WHEREAS**, floods and droughts are likely to increase in frequency and severity as a consequence of the changing climate in the region; and*

***WHEREAS**, the human populations, as well as populations of plants, arthropods, mammals, reptiles and birds, are deeply dependent upon the natural resources of the desert southwest for their livelihood and survival; and*

***WHEREAS**, adapting to climate change impacts requires a community approach to ensure the survival not only of our human population, but also of those other populations with which we share this arid environment; and*

***WHEREAS**, awareness of efforts to mitigate climate change drivers and protect our common environment is vital to protect our shared resources from wildfire, flood and drought, and to recover degraded lands and water resources to the benefit of all.*

***NOW, THEREFORE**, I, Michelle Lujan Grisham, Governor of the State of New Mexico, do hereby proclaim February 27, 2023 through March 1, 2023 as:*

"Land and Water Awareness Week"

throughout the state of New Mexico.

Attest:

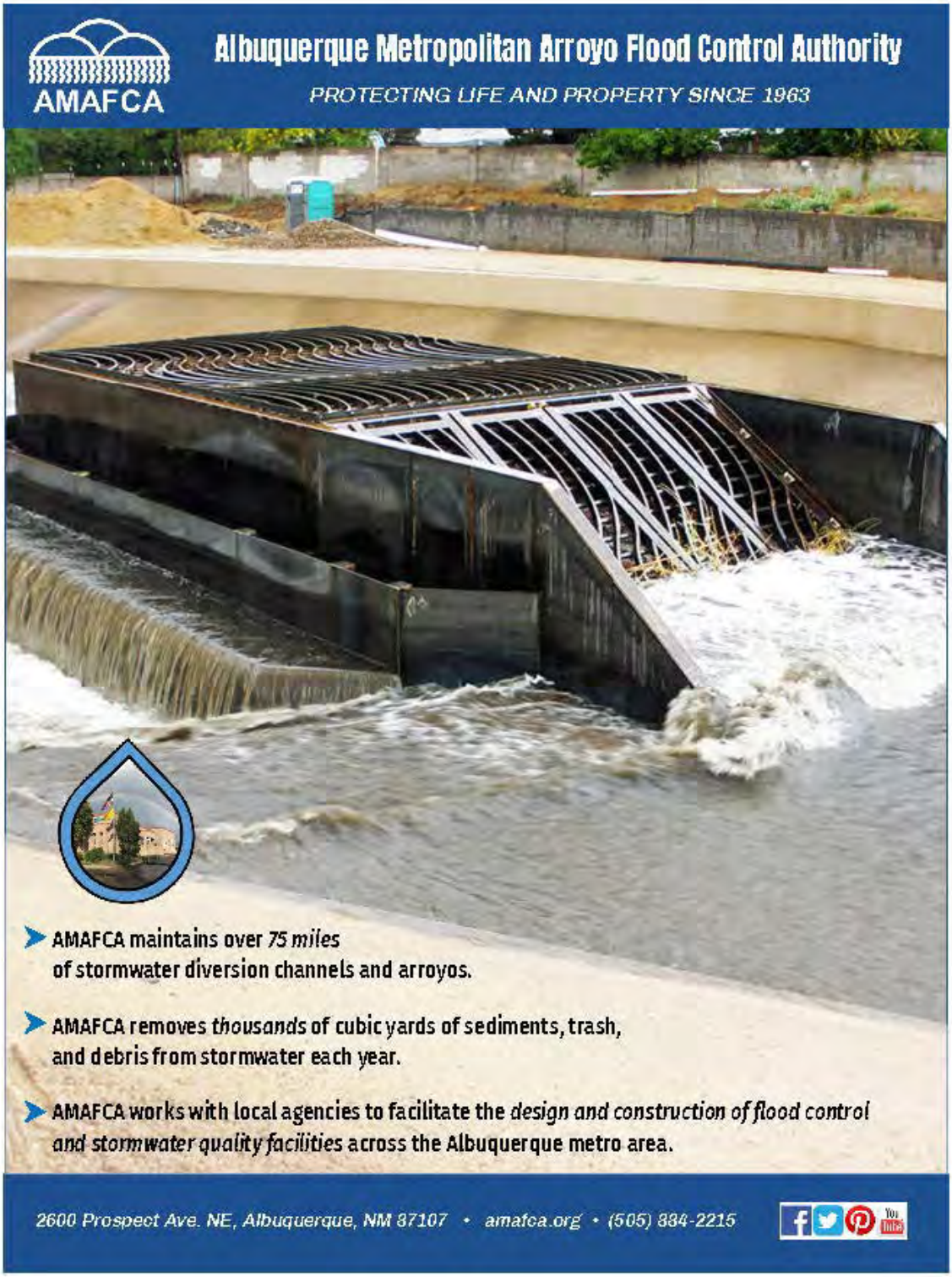
Maggie Toulouse Oliver
Secretary of State

Done at the Executive Office this 31st day of January 2023.

Witness my hand and the Great Seal of the State of New Mexico.

Michelle Lujan Grisham
Governor

Shown below is a copy of AMAFCA's full page advertisement featured in the 2023 Summit's Program.



AMAFCA Board Meeting Memorandum Agenda Item 13a
Information Item

To: AMAFCA Board of Directors
From: Patrick J. Chavez, PE, Stormwater Quality Engineer
Date: June 28, 2023

Subject: Stormwater Quality Program Update

Action Requested: None

***

The Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA) is currently authorized to discharge stormwater under the Municipal Separate Storm Sewer System (MS4) Watershed Based Permit NMR04A016 (Permit). A notification letter was sent to EPA Region 6 on June 15, 2023, stating that AMAFCA will continue in Fiscal Year 2024 to discharge stormwater, as described in the Revision 6 Stormwater Management Program (SWMP), given that the MS4 Permit NMRR04A016 was administratively continued December 19, 2019.

The Stormwater Quality Engineer will deliver a presentation, with an emphasis on streamlining the Program in FY24, on AMAFCA's Minimum Control Measures in the watershed, see below, that are featured in AMAFCA's Rev. 6 SWMP as required by the MS4 Permit:

Special Conditions (compliance with water quality standards, ESA requirements, et cetera)
Construction Site Stormwater Runoff Control
Post-Construction Stormwater Management
Pollution Prevent/Good Housekeeping
Illicit Discharges and Improper Disposal
Control of Floatables
Public Education and Outreach
Public Involvement and Participation

Possible Budget Impact
Marginal – The costs associated with SWMP compliance are included in the FY24 AMAFCA Stormwater Quality Program budget.

Possible Staff Impact
Marginal – Compliance with the SWMP is included in the FY24 AMAFCA Work Plan.

Summary of AMAFCA's MS4
Dissolved Oxygen Program
FY 2023 (July 1, 2022 – June 30, 2023)

NPDES Permit No. NMR04A000
Part I.C.1.d - Special Conditions, Compliance with Water Quality Standards and
Part I.C.3.a - Endangered Species Act (ESA) Requirements - Dissolved Oxygen Strategy

AMAFCA monitors and evaluates the potential effect of stormwater discharges related to dissolved oxygen (DO) in the Rio Grande. The DO of stormwater discharges to the Rio Grande at the North Diversion Channel (NDC) outfall has been monitored by AMAFCA and cooperative Municipal Separate Storm Sewer System (MS4) agencies, with communication with the United States Fish and Wildlife Service (USFWS) and EPA, since 2004. Several strategies and constructed modifications to the NDC Embayment were implemented from 2011-2016. Currently, in normal river flow conditions, water from the Rio Grande will not stagnate in the NDC Embayment and create low DO conditions. These improvement projects provided control measures to eliminate conditions that cause or contribute to exceedances of applicable DO water quality standards.

In FY 2023, AMAFCA continued to follow the updated quality assurance project plan (QAPP), the field sampling plan (FSP), and related Standard Operating Procedures (SOPs) for AMAFCA's stormwater quality monitoring program. The format and contents of these documents are modeled after the New Mexico Environment Department (NMED) Surface Water Quality Bureau (SWQB) water quality management programs to facilitate sharing of data between the agencies. These documents provide a framework and detailed methods for the collection and analysis of environmental data as well as provide guidance for generating data that is of the precision, accuracy, and completeness necessary for AMAFCA's program.

In accordance with AMAFCA's Stormwater Management Program (SWMP), AMAFCA has and will continue to assess the potential effect of stormwater discharges into the Rio Grande by collecting and evaluating DO data.

AMAFCA MS4 Sonde Program Summary

The purpose of AMAFCA's Sonde Monitoring Program is to obtain surface water quality data within the Rio Grande to support AMAFCA and the cooperative MS4 agencies with the assessment of surface water quality parameters, as required by the Endangered Species Act requirements incorporated into the MS4 Permit. In addition, the Sonde Monitoring Program data supports determination of long-term surface water quality trends, related to stormwater impacts and impairments, within the Middle Rio Grande. The sondes monitor temperature, barometric pressure, pH, turbidity, DO, DO saturation (%), and water depth above each sonde. AMAFCA has improved the Sonde Program through the years with current access to real-time online data using the HydroVu data management application, allowing quicker response and solutions to maintenance issues.

Photos of AMAFCA Sondes

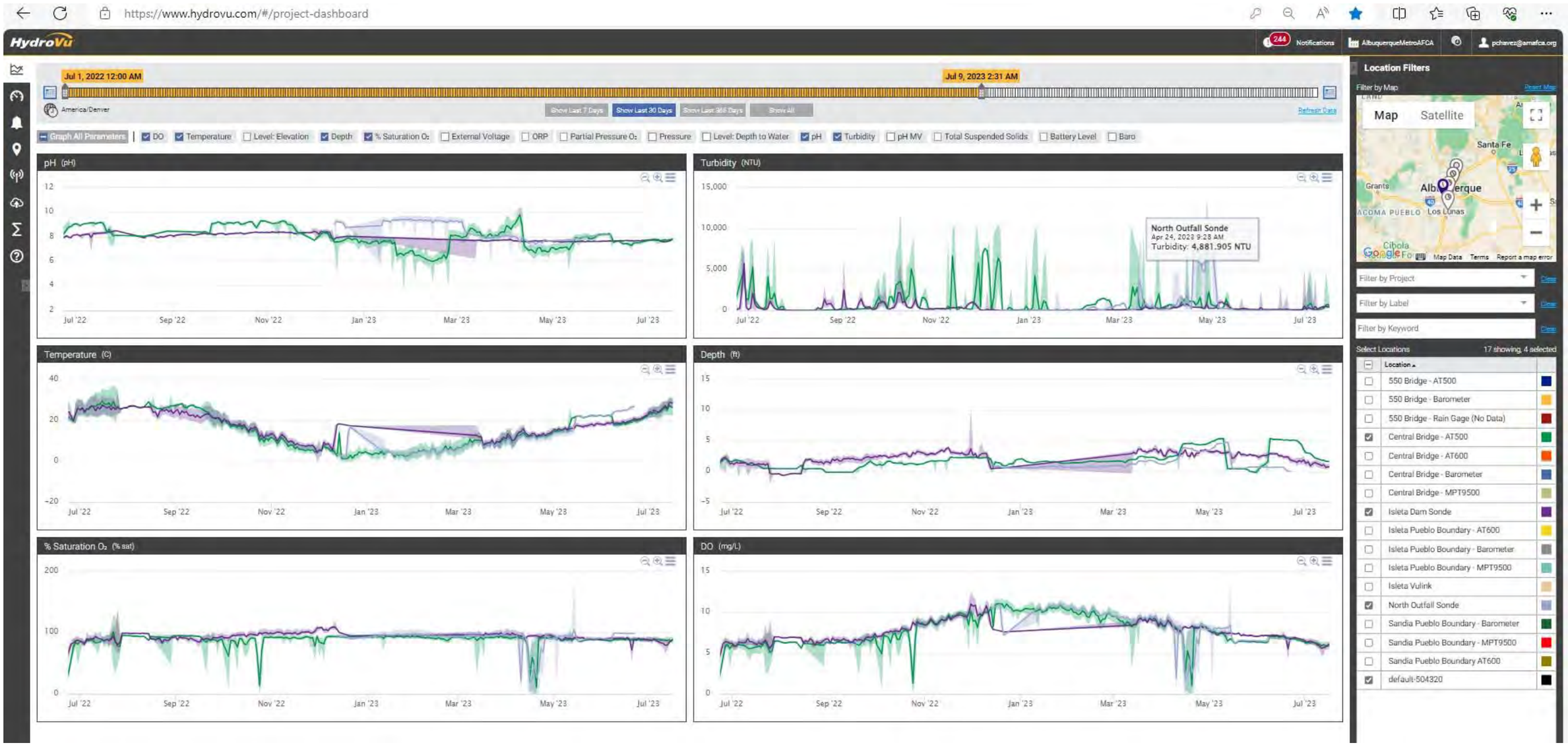
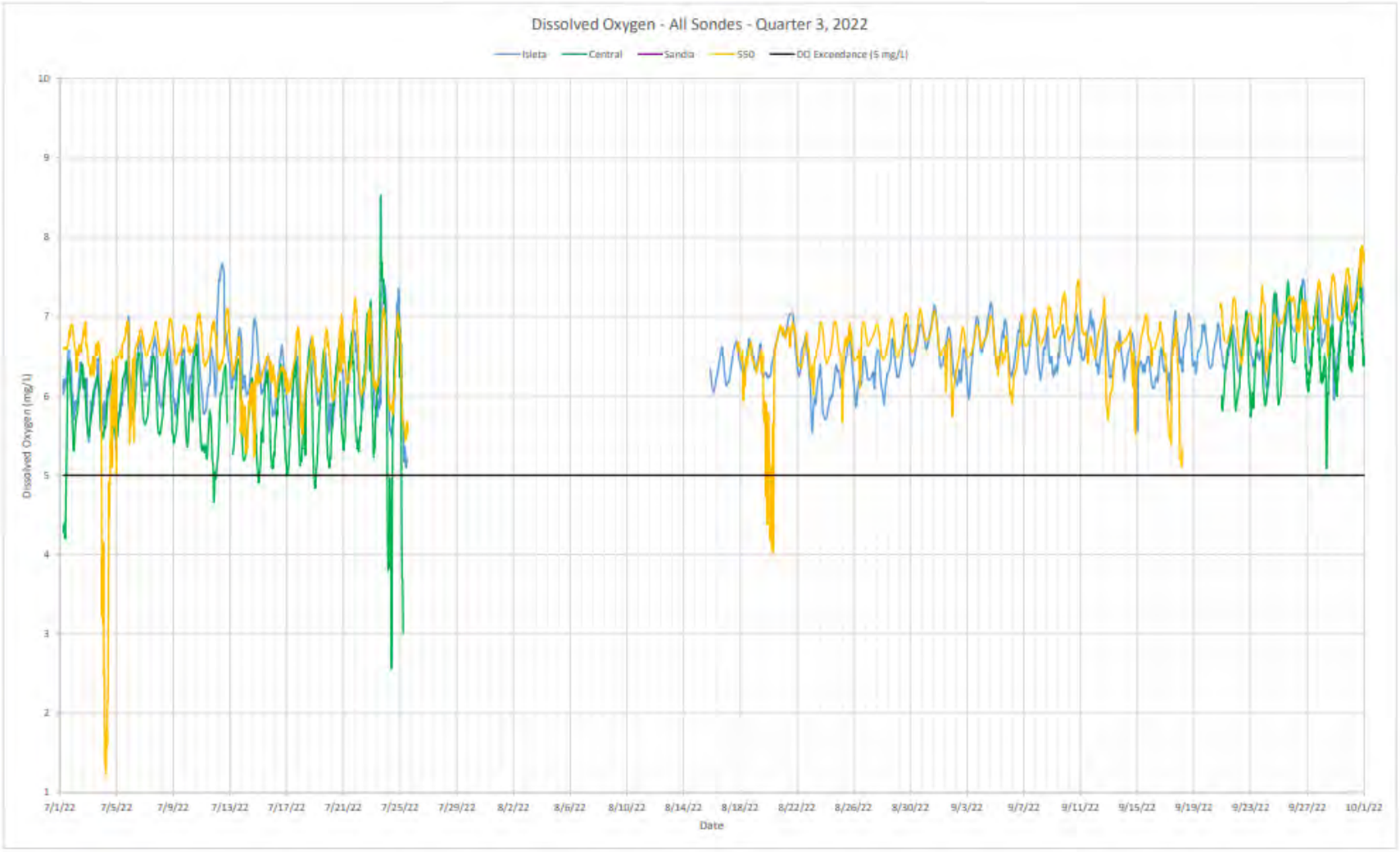


Image of Online HydroVu Portal View for FY 2023.

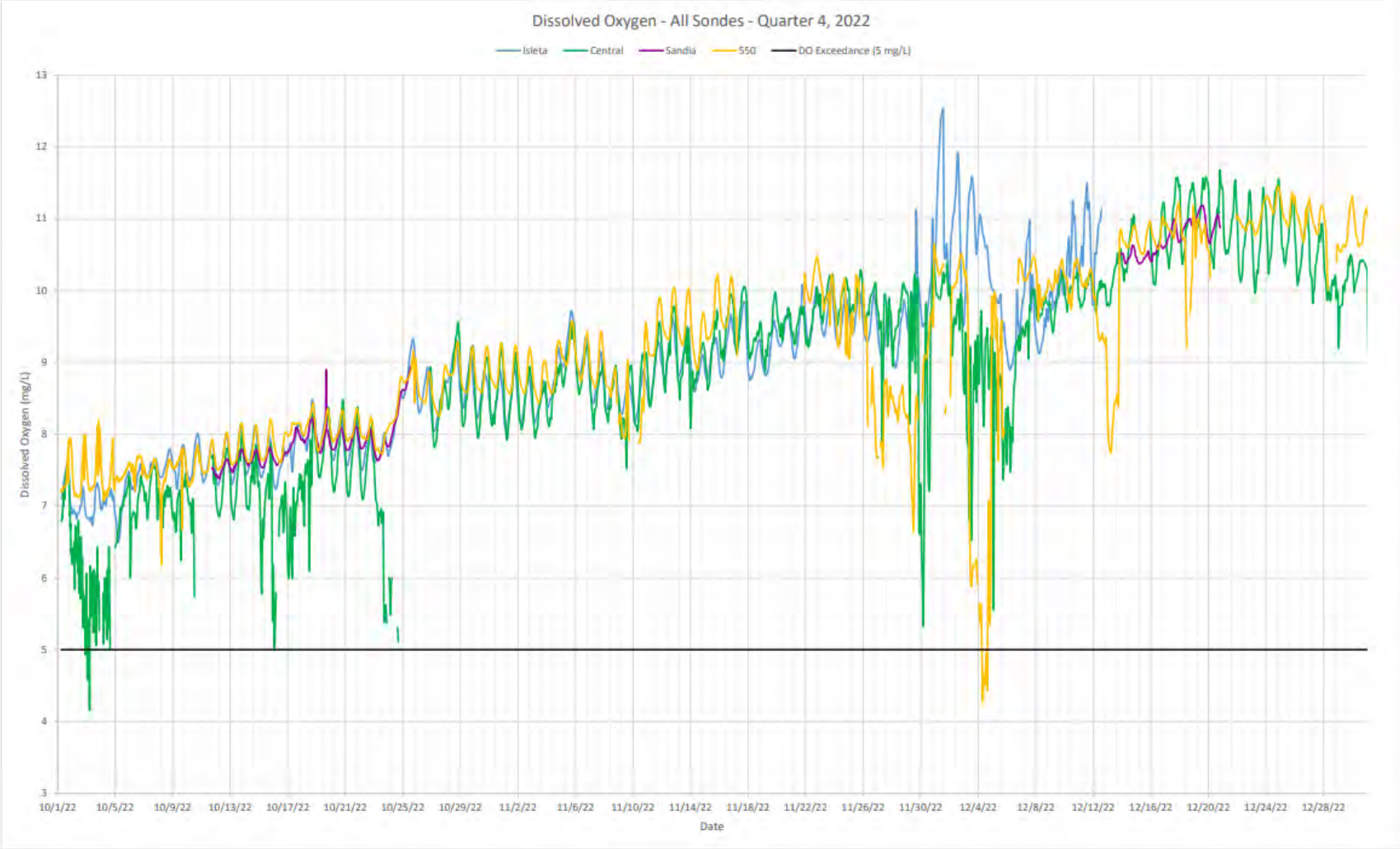
HydroVu Provides AMAFCA with Access to Real-Time Sonde Data in the Rio Grande

From the AMAFCA FY 2023 In-Stream Water Quality Monitoring Memos, which report on the AMAFCA sonde data, the DO fell slightly below 5 mg/L related to storm events within the watershed for the following locations:

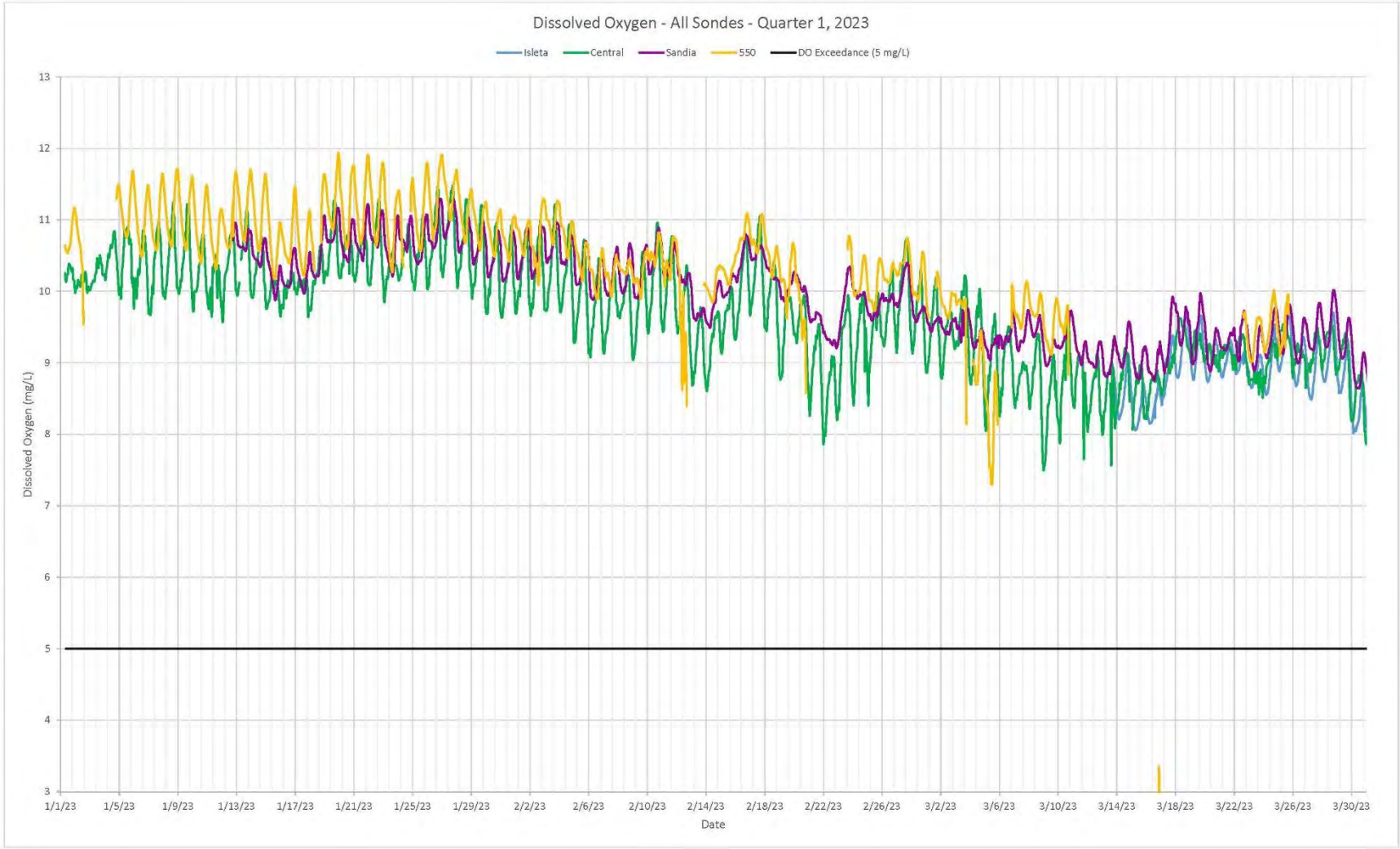
- US 550 Bridge – Four (4) instances in FY 2023 with DO levels below 5 mg/L (July 2022, August 2022, December 2022, and March 2023). These 4 instances represent approximately 38 hours (0.4% of the year).
- Central Bridge – Nine (9) instances in FY 2023 with DO levels below 5 mg/L (6 dates in July 2022 and 3 dates in October 2022) for approximately 30 hours during these dates (0.3% of the year).



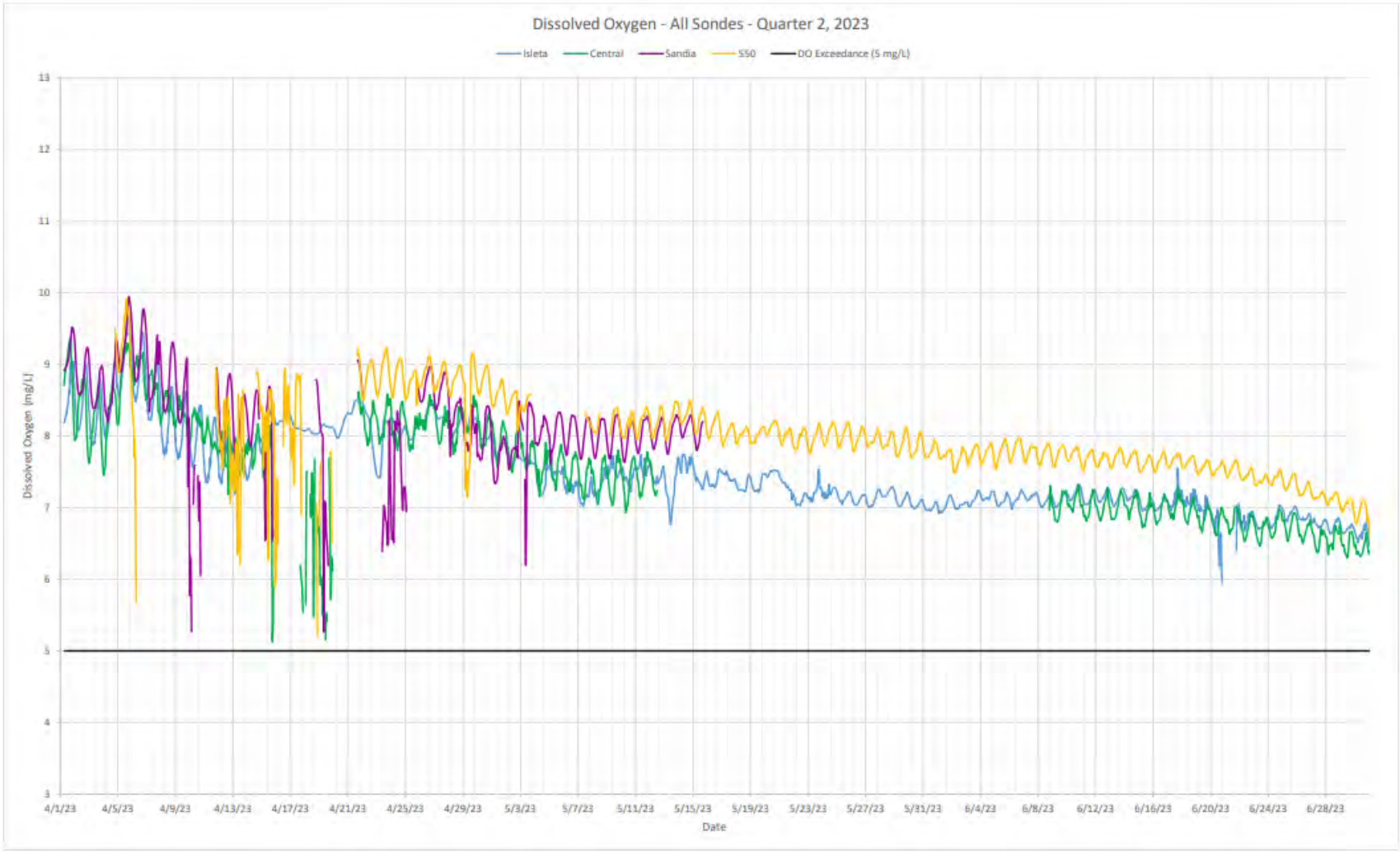
Plot of DO Data Collected From Sondes Deployed During FY 2023 (July – September 2022)



Plot of DO Data Collected From Sondes Deployed During FY 2023 (October – December 2022)



Plot of DO Data Collected From Sondes Deployed During FY 2023 (January – March 2023)

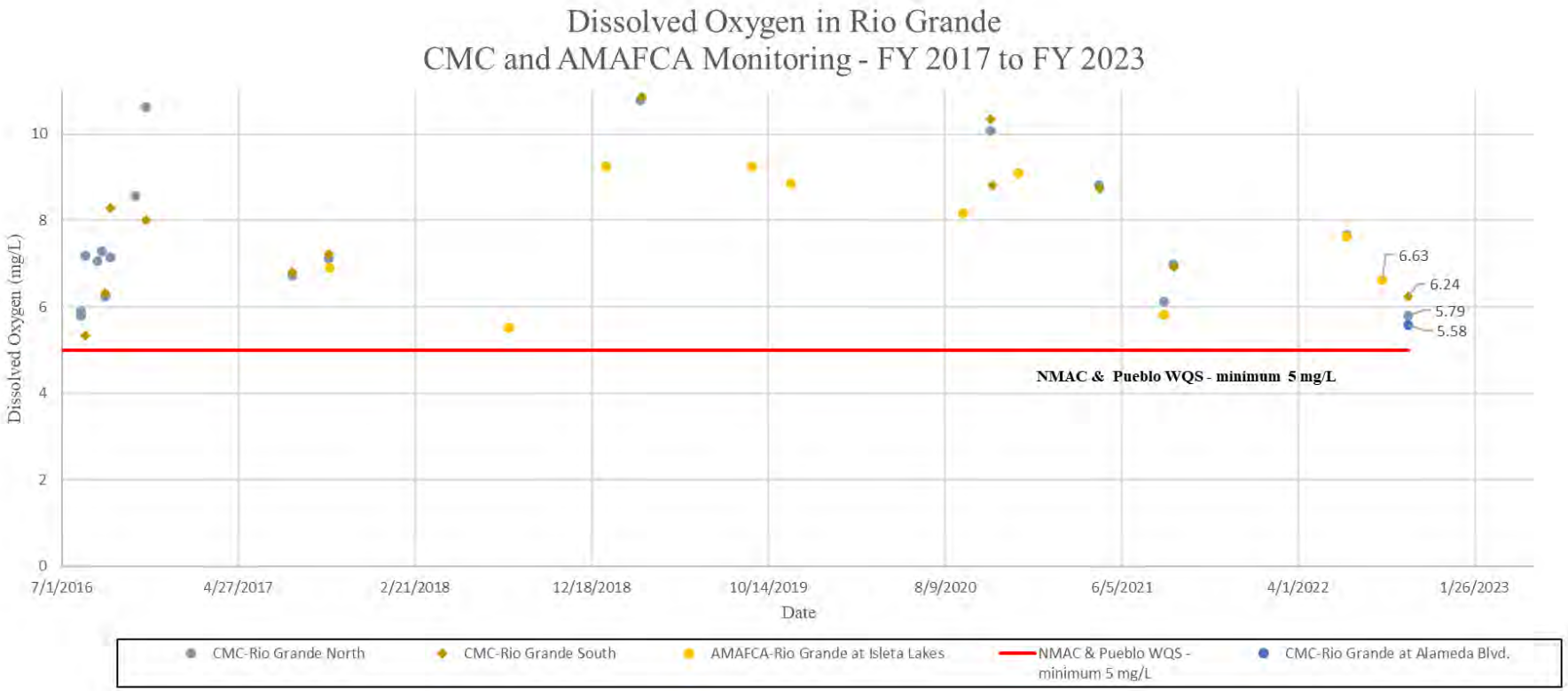


Plot of DO Data Collected From Sondes Deployed During FY 2023 (April – June 2023)

CMC and AMAFCA Water Quality Monitoring Program Summary for DO

In addition to the Sonde Program, both AMAFCA and the Middle Rio Grande Compliance Monitoring Cooperative (CMC) collect grab samples within the Rio Grande during storm events. Field data is measured, including DO, for these samples. For MS4 Permit compliance, the Middle Rio Grande CMC has two monitoring points where DO field measurements are collected, north and south of the urbanized portion of the river. The AMAFCA Monitoring Program collects samples in the Rio Grande at the downstream (south) end of the watershed (Rio Grande at Isleta Lakes). The graph on page 10 shows the DO data from all AMAFCA and CMC samples collected from July 2016 – June 2023. None of the field DO data collected from these programs, from 2016 to 2023, have recorded DO in the Rio Grande during stormwater discharge events below the water quality standard of 5 mg/L for the Rio Grande (NMAC 20.6.4).

Collecting a CMC sample from the Rio Grande at Angostura Diversion at the upstream (north) end of the Middle Rio Grande Watershed



Plot of DO Data Collected From Grab Samples in the Rio Grande Through the AMAFCA and CMC Monitoring Programs

AMAFCA Annual Incidental Take Report Summary

The Annual Incidental Take Report estimates the potential Rio Grande Silvery Minnow (RGSM) harassments and lethality near the North Diversion Channel (NDC) outfall, using the method defined by the USFWS for the Biological Opinion (BO) completed in August 2014. This analysis calculates the frequency (number) of anoxic and hypoxic events and determines if the events meet the measurable goals provided in the December 2014 MS4 Permit No. NMR04A000. It also determines the number of RGSM mortalities and harassments using the BO specified methodology.

For FY 2023, there were zero anoxic events and zero hypoxic events identified during the incidental take analysis. For the entire MS4 Permit term up through June 2023, including during administrative continuance, zero anoxic events and one hypoxic event have been identified during the incidental take analysis. Last FY, in June 2022 the flow conditions in the Rio Grande through Albuquerque were near dry conditions. The low flow conditions in the Rio Grande coupled with stormwater discharge did lead to the first, and only, hypoxic event (on June 22, 2022) reported during the permit term (refer to table below). Hypoxic events occur when the oxygen percent saturation in the river is less than 54.3%. Anoxic events occur when the oxygen percent saturation drop below 8.7%.

MRG Watershed MS4 Permit (issued 2014)	Annual Report Year	Measurable Goals Frequency of Anoxic Events/year	Actual No. of Anoxic Events for Year	Measurable Goals Frequency of Hypoxic Events/year	Actual No. of Hypoxic Events for Year
Permit Year 1	July 2015 - June 2016	18	0	36	0
Permit Year 2	July 2016 - June 2017	18	0	36	0
Permit Year 3	July 2017 - June 2018	9	0	18	0
Permit Year 4	July 2018 - June 2019	9	0	18	0
Permit Year 5	July 2019 - June 2020	9	0	18	0
Admin. Continuance	July 2020 - June 2021	9*	0	18*	0
Admin. Continuance	July 2021 - June 2022	9*	0	18*	1
Admin. Continuance	July 2022 - June 2023	9*	0	18*	0

Values in this table are from Table 1.c from MS4 Permit (p. 21 of part 1).
* MS4 Permit expired and is in administrative continuance. The same measurable goals as Permit Year 5 are assumed.

Table Summarizing the Incidental Take Analysis Compared to the MS4 Permit Measurable Goals from FY 2016 – FY 2023

Incidental Take Statement for NDC Discharges to the Rio Grande FY 2023 (July 1, 2022 to June 30, 2023)

NDC Qualifying Storm Event (>250 cfs and V > 13 ac-ft)			$Q_{P\ NDC}$	$Q_{P\ NDC}$	DO_{NDC}	DO $Saturation_{NDC}$	Barometric $Pressure_{NDC}$	$Temp_{NDC}$	$DO_{Rio\ Grande}$	DO $Saturation_{Rio\ Grande}$	$Q_{Daily\ Rio\ Grande}$	$Q_{Daily\ Rio\ Grande}$	No. of RGSM Killed	No. of RGSM Harassed	Was Event Anoxic?	Was Event Hypoxic?
Date	Time	Season (Per BO Table 1)	Actual 08329900	Rounded (Per BO App. A)	(Sandia Pueblo Sonde) (mg/L)	(Sandia Pueblo Sonde) (%)	(Airport or Barologger) (mm Hg)	(Sandia Pueblo Sonde or nearest sonde) (°C)	Rio Grande at Central (mg/L)	(%)	Actual 08330000	Rounded (Per BO Table 1)	in Lethal Zone DO % Sat < 8.7%, DO <0.7 mg/L	in Impact Area 8.7%< % DO Sat < 54.3%, 0.7<DO<4.4 mg/L	Enter '1' if Yes, '0' if No (% Sat <= 8.7%; 50% lethality)	Enter '1' if Yes, '0' if No (8.7% > % Sat <= 54.3%)
07/09/22	6:15:00 PM	Summer	247 [2]	0	6.0	91.31	634.11 [1]	28.32	6.0	No Data	307	500	N/A	N/A	0	0
07/29/22	7:30:00 PM	Summer	1,246 [2]	1,000	No Data	No Data	631.44 [1]	No Data	No Data	No Data	240	0	No Data	No Data	No Data	No Data
07/30/22	5:30:00 PM	Summer	790 [2]	1,000	No Data	No Data	631.95 [1]	No Data	No Data	No Data	711	500	No Data	No Data	No Data	No Data
08/09/22	6:30:00 PM	Summer	794 [2]	1,000	No Data	No Data	630.94 [1]	No Data	No Data	No Data	985	1,000	No Data	No Data	No Data	No Data
08/22/22	5:30:00 PM	Summer	638	500	6.5	88.33	630.17 [1]	23.37	6.63	89.88	861	1,000	N/A	N/A	0	0
08/26/22	4:50:00 PM	Summer	445	500	6.5	88.96	628.90 [1]	24.08	6.92	88.96	993	1,000	N/A	N/A	0	0
09/27/22	6:25:00 PM	Fall	2,360	2,500	6.8	91.46	632.71 [1]	21.46	6.8	91.46	390	500	N/A	N/A	0	0
10/04/22	12:05:00 AM	Fall	903	1,000	7.0	93.52	631.44 [1]	22.02	7.8	93.52	214	0	N/A	N/A	0	0
10/05/22	2:50:00 PM	Fall	496	500	7.1	88.50	631.83 [1]	17.42	7.1	88.06	333	500	N/A	N/A	0	0
10/16/22	4:45:00 AM	Fall	560	500	7.6	83.18	630.43 [1]	16.52	7.7	83.18	516	500	N/A	N/A	0	0
10/17/22	5:10:00 AM	Fall	477	500	7.8	83.90	632.97 [1]	14.8	6.6	84.40	558	500	N/A	N/A	0	0
12/03/22	9:00:00 PM	Fall	515	500	8.9	80.40	635.00 [1]	4.4	8.4	83.36	1,170	1,000	N/A	N/A	0	0
01/17/23	2:55:00 PM	Winter	263	500	10.0	93.30	619.25 [1]	4.4	10.0	92.31	531	500	N/A	N/A	0	0
03/16/23	7:25:00 AM	Winter	266	500	8.9	93.83	623.32 [1]	9.5	8.7	92.48	531	500	N/A	N/A	0	0
												Total #s / Events:	**0**	**0**	**0**	**0**

NOTE: No. of RGSM Killed or Harassed is based on lookup tables from BO Appendix A. From BO, p. 72, if stormwater discharges containing less than 0.7 mg/L DO occur during the period of May 15 to 31, then up to 300 larval silvery minnow per year may also die. This did not occur from July 2021 to June 2022.

[1] Sonde and Barologger data for pressure were not available for these dates (or pressures listed were unreasonably high). Pressure for this analysis was taken from NOAA climate data station at Albuquerque International Airport (WBAN: 23050). Data given in inHg, converted to mmHg using https://www.convertunits.com/from/inHg/to/mmHg. Data downloaded from: https://www.ncdc.noaa.gov/cdo-web/datasets/LCD/stations/WBAN:23050/detail

[2] No USGS flow data available for the NDC between 07/01/22-08/23/22. Flow data for this time frame was obtained from AMAFCA Telemetry data. During this time frame, AMAFCA Telemetry data has some negative data points between 07/25/22-06/29/23, so qualifying storm events could have been missed. Review of Levelogger Program Data and AMAFCA In-Stream Water Quality Monitoring Memos indicates there likely were no qualifying events during this period (07/25/22-08/23/23).

Green Shading	No Incidental Take according to BO; DO in NDC Outfall > 4.4 mg/L and oxygen saturation of 54.3%. Had sonde data available for complete analysis.
Gray Shading (Sonde Data not available). Incidental Take based on calculated DO concentration or DO saturation (Source: Sonde Data and Program memos from Weston)	Due to low flow conditions in the Rio Grande, the Sandia Pueblo Sonde was not deployed from 07/01/22 - 10/12/22 due to low water levels in the river.
	Sandia Pueblo Sonde was removed from the river from 10/25/22-12/13/22. Central Sonde was used for Temp and DO data. Central Sonde was not deployed from 07/25/22-09/20/22 due to low flows; data from 10/04/22 appeared erroneous and was removed from the data set. Isleta Sonde was used for DO and Temp data for any remaining dates.
	Sondes from all locations removed from the river (550: 07/25/22-08/17/22, Sandia: 07/01/22-10/12/22 & 10/25/22-12/13/22, Central: 07/25/22-09/20/22, Isleta: 07/25/22-08/15/22). No DO or Temp data available for these dates.
Purple Shading	NDC (Sandia Pueblo) Sonde did not report DO concentration, saturation, or temperature. The nearest available Sonde was used for DO concentration data and temperature (Central or Isleta).

No. Events w/ Takes for Year:		**0**	
Estimated Incidental Take			
July 2022 to June 2023		Allowed Per Year	Allowed Over 5-Year Permit Term
Mortalities =	**0**	2,280	10,410
Harassments =	**0**	32,616	163,080

Incidental Take Allowance Source: Biological Opinion for U.S. Environmental Protection Agency General NPDES Permit No. NMR04A000, Aug. 2014, USFWS

MRG Watershed MS4 Permit (issued 2014)	Annual Report Year	Measurable Goals Frequency of Anoxic Events/year	Actual No. of Anoxic Events for Year	Measurable Goals Frequency of Hypoxic Events/year	Actual No. of Hypoxic Events for Year
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Values in this table are from Table 1.c from MS4 Permit (p. 21 of part 1).
* MS4 Permit expired and is in administrative continuance. The same measurable goals as Permit Year 5 are assumed.

Summary of AMAFCA's MS4 Temperature Program FY 2023 (July 1, 2022 – June 30, 2023)

NPDES Permit No. NMR04A000
Part I.C.1.f - Special Conditions, Compliance with Water Quality Standards

AMAFCA monitors and evaluates the potential effect of stormwater discharges related to temperature in the Rio Grande. AMAFCA and the original Municipal Separate Storm Sewer System (MS4) co-permittees (the City of Albuquerque, New Mexico Department of Transportation, and the University of New Mexico) assembled and analyzed temperature data from 1982 to 2012. This data analysis proved the assertion that the receiving waters of the Rio Grande are not adversely affected by the temperature of stormwater from the Albuquerque MS4. This data was presented in an initial report that was submitted to EPA on May 1, 2012.

Since 2012, the MS4 permittees have continued to collect and submit temperature data, with each Annual Report, showing that the Rio Grande (receiving water for the Middle Rio Grande watershed) is not adversely affected by the temperature of stormwater from the Albuquerque MS4. AMAFCA has collected data from 2012 to 2023 using tidbit probes and sondes. In accordance with AMAFCA's Stormwater Management Program (SWMP), AMAFCA has and will continue to assess the potential effect of stormwater discharges into the Rio Grande by collecting and evaluating additional temperature data.

In FY 2023, AMAFCA continued to follow the updated quality assurance project plan (QAPP), the field sampling plan (FSP), and related Standard Operating Procedures (SOPs) for AMAFCA's stormwater quality monitoring program. The format and contents of these documents are modeled after the New Mexico Environment Department (NMED) Surface Water Quality Bureau (SWQB) water quality management programs to facilitate sharing of data between the agencies. These documents provide a framework and detailed methods for the collection and analysis of environmental data as well as provide guidance for generating data that is of the precision, accuracy, and completeness necessary for AMAFCA's program.

AMAFCA MS4 Sonde Program Summary

The purpose of AMAFCA's Sonde Monitoring Program is to obtain surface water quality data within the Rio Grande to support AMAFCA and the cooperative MS4 agencies with the assessment of surface water quality parameters, as required by the Endangered Species Act requirements incorporated into the MS4 Permit. In addition, the sonde monitoring program data supports determination of long-term surface water quality trends, related to stormwater impacts and impairments, within the Middle Rio Grande. The sondes monitor temperature, barometric pressure, pH, turbidity, dissolved oxygen (DO), DO saturation (%), and water depth above each sonde. AMAFCA has improved the Sonde Program through the years with current access to real-time online data using the HydroVu data management application, allowing quicker response and solutions to maintenance issues.

From the AMAFCA FY 2023 In-Stream Water Quality Monitoring Memos, which report on the AMAFCA sonde data, the temperature was below the water quality standard 32.2 ℃, which is the maximum temperature water quality standard for Marginal Warmwater Aquatic for the Rio Grande (NMAC 20.6.4) for all (4) four sondes, for all data related to storm events within the watershed except for sixteen (16) instances. There were fifteen (15) temperature exceedances (max. temperature reported of 36.9 ℃) indicated by the Central Ave. Bridge sonde in July 2022; all occurring between July 9 – July 25. There was one (1) temperature exceedance (32.3 ℃) indicated by the Isleta Dam sonde in July 2022. There was precipitation in the watershed when each of the sixteen (16) exceedances occurred.

Photos of AMAFCA Sondes

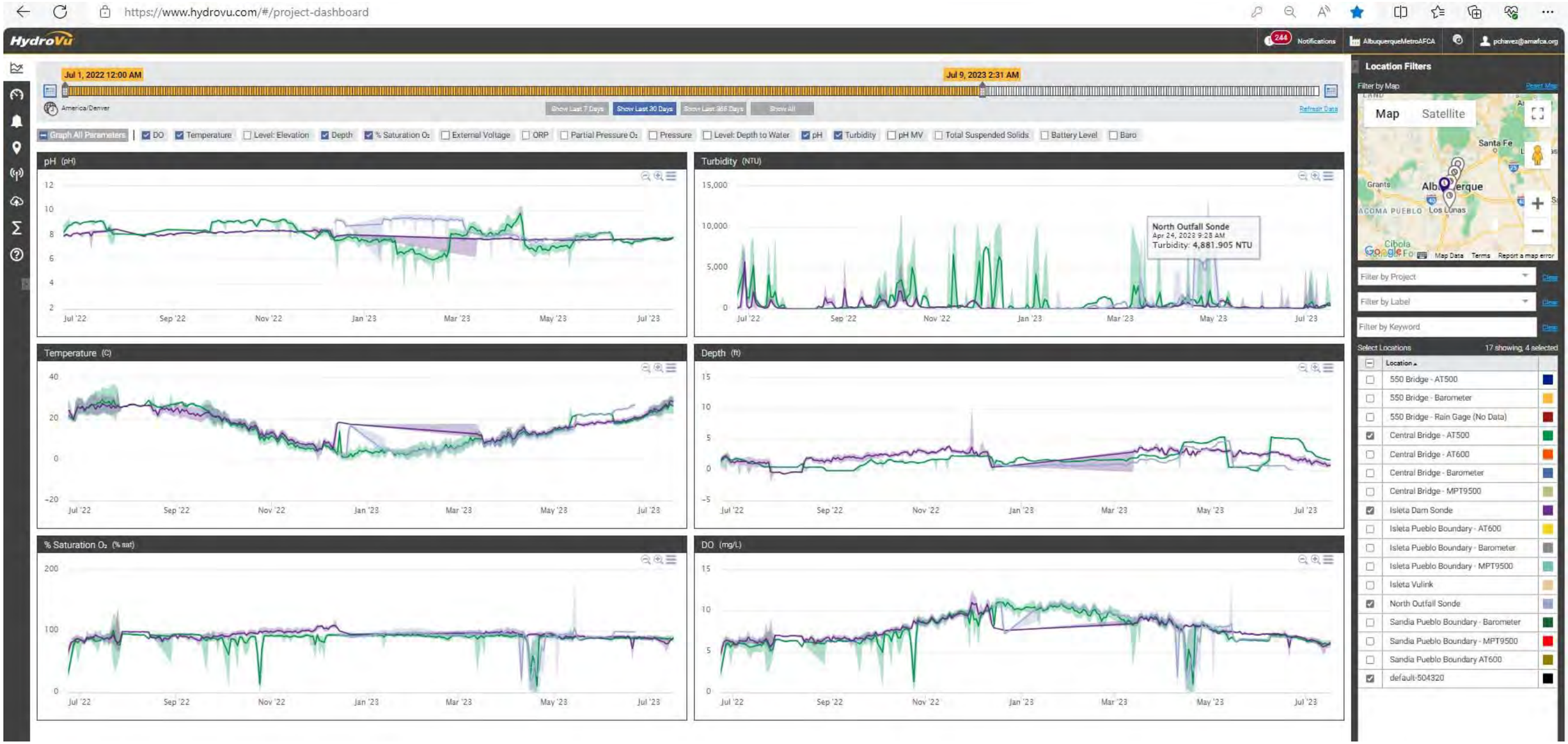
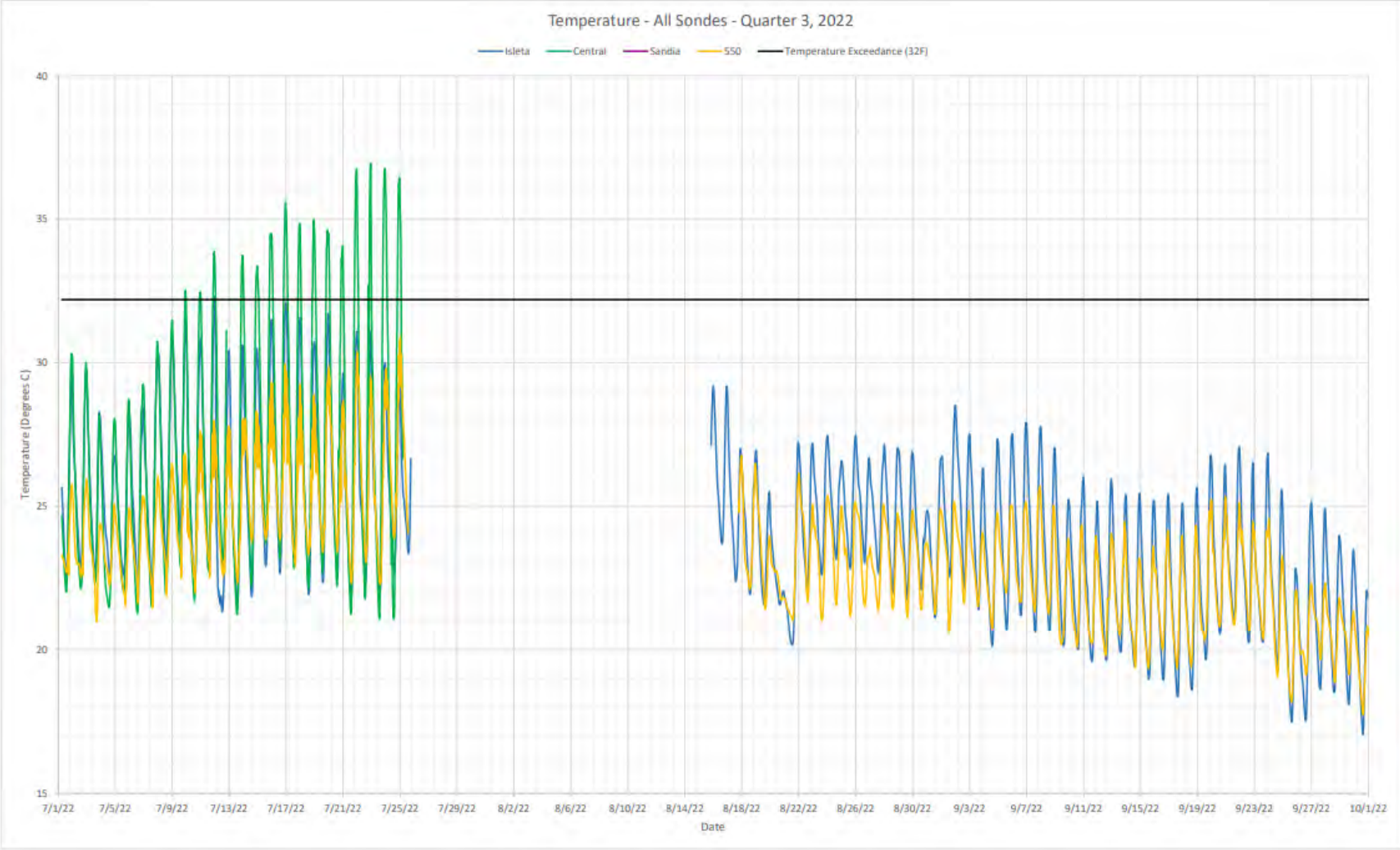
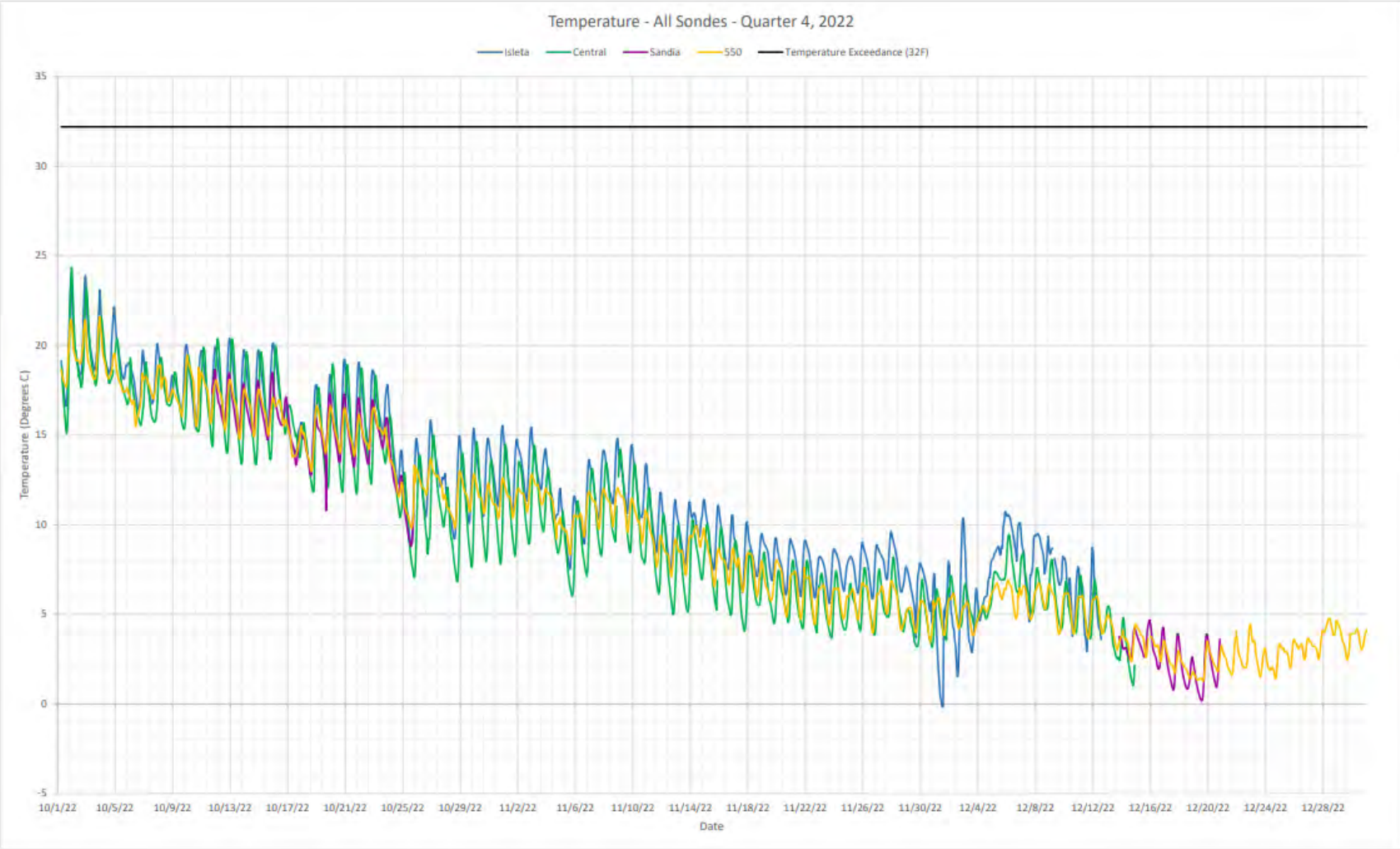


Image of Online HydroVu Portal View for FY 2023

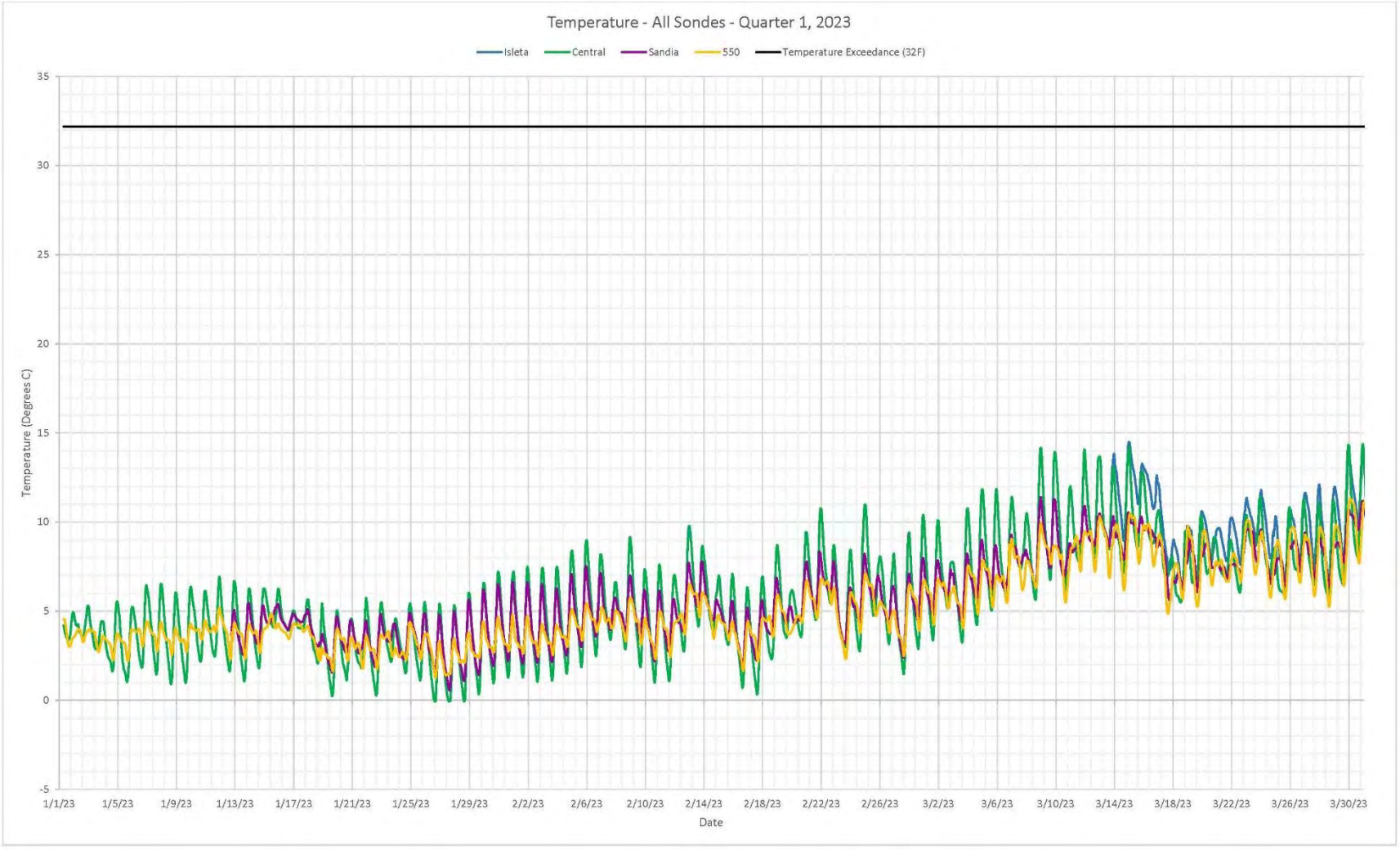
HydroVu Provides AMAFCA with Access to Real-Time Sonde Data in the Rio Grande



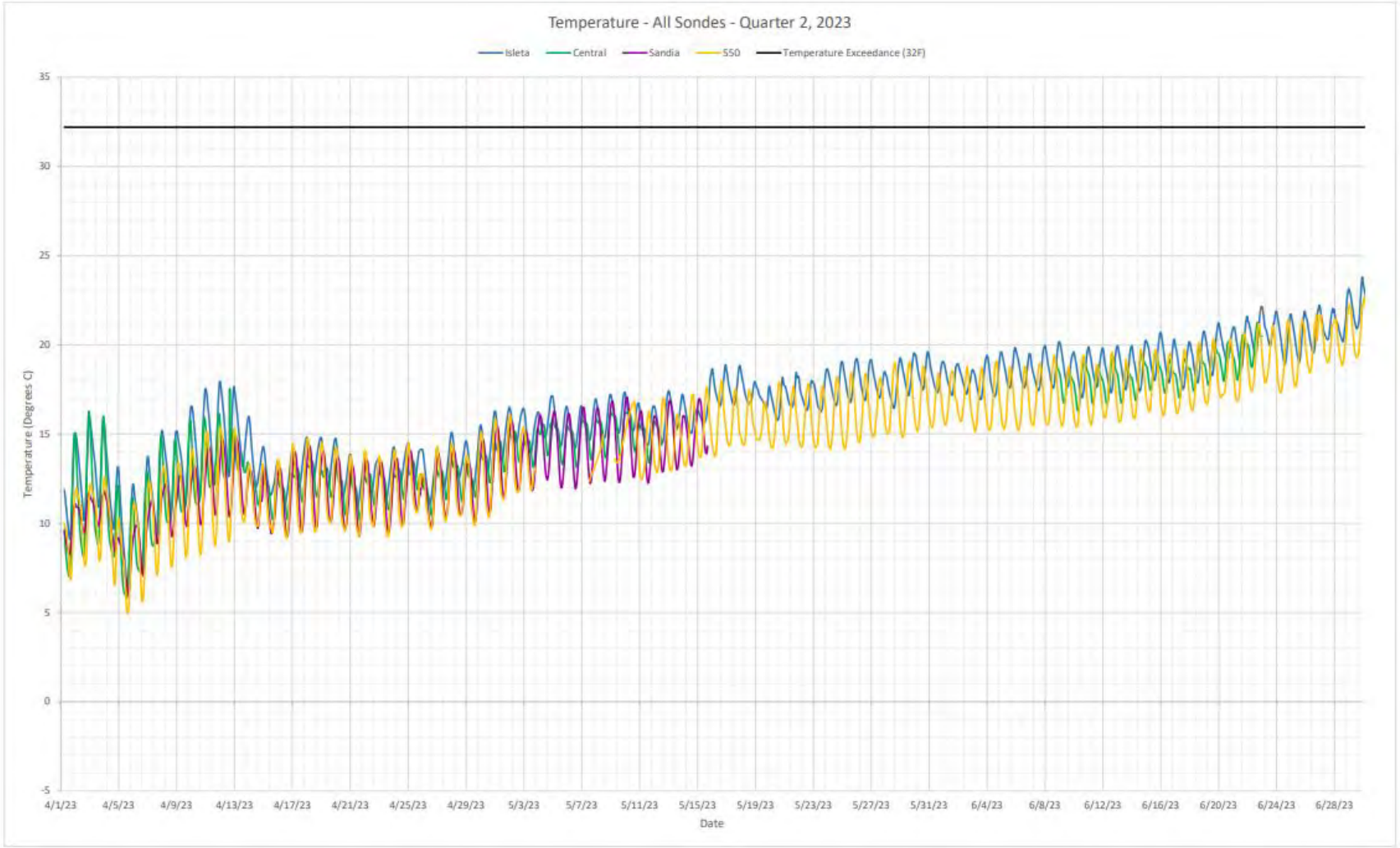
Plot of Temperature Data Collected From Sondes Deployed During FY 2023 (July – September 2022)



Plot of Temperature Data Collected From Sondes Deployed During FY 2023 (October – December 2022)



Plot of Temperature Data Collected From Sondes Deployed During FY 2023 (January – March 2023)

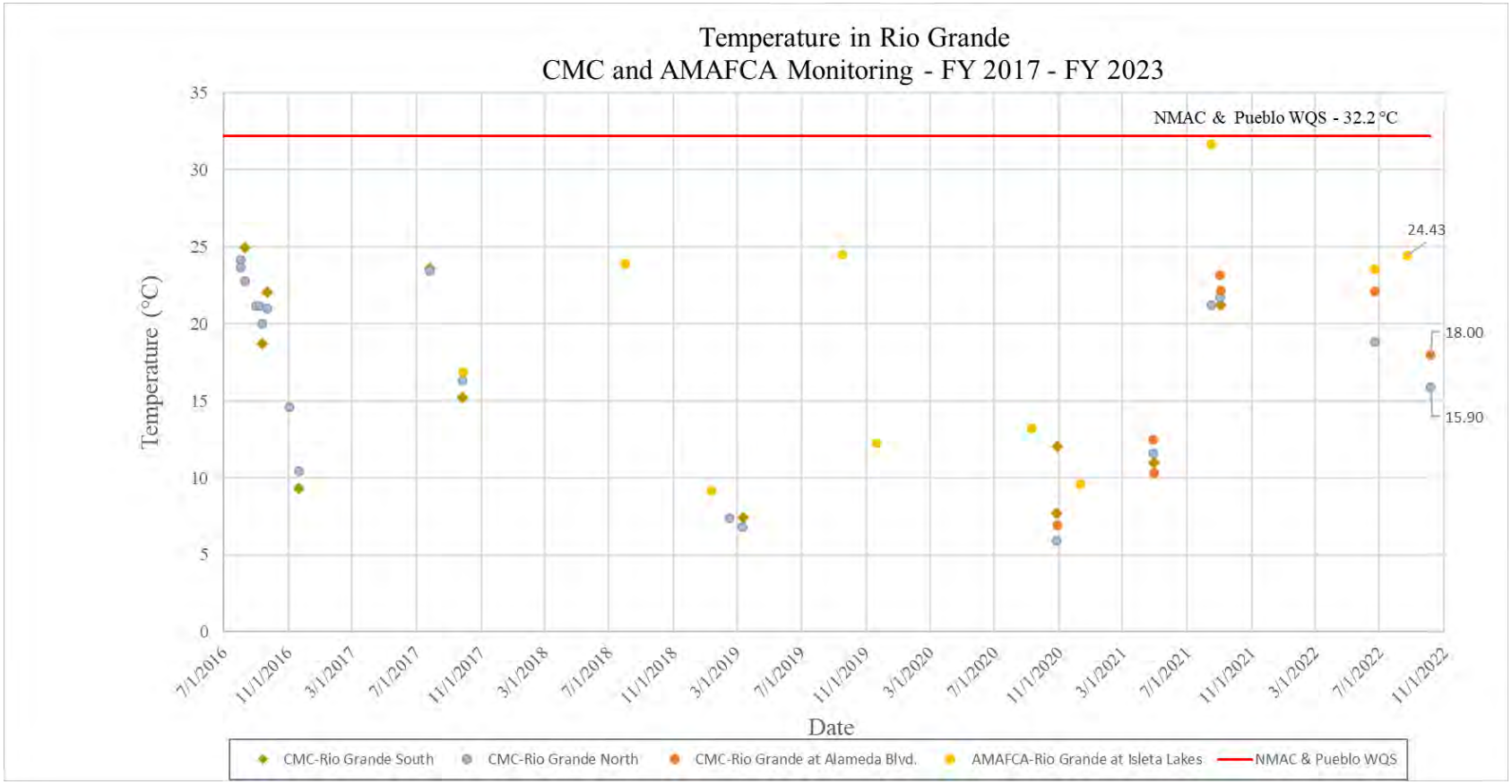


Plot of Temperature Data Collected From Sondes Deployed During FY 2023 (April – June 2023)

CMC and AMAFCA Water Quality Monitoring Program Summary

In addition to the Sonde Program, both AMAFCA and the Middle Rio Grande Compliance Monitoring Cooperative (CMC) collect grab samples within the Rio Grande during storm events. Field data is measured, including temperature, for these samples. For MS4 Permit compliance, the Middle Rio Grande CMC has three (3) monitoring points, north and south of the urbanized portion of the river, as well at the Alameda Bridge. The AMAFCA Monitoring Program collects samples in the Rio Grande at the downstream (south) end of the watershed (Rio Grande at Isleta Lakes). The graph on page 10 shows the temperature data from all AMAFCA and CMC samples collected from July 2016 through FY 2023. None of the field temperature data collected from these programs have recorded temperature in the Rio Grande during stormwater discharge events above the water quality standard of 32.2 ℃.

Collecting a CMC sample from the Rio Grande at Angostura Diversion at the upstream (north) end of the Middle Rio Grande Watershed



Plot of Temperature Data Collected From Grab Samples in the Rio Grande Through the AMAFCA and CMC Monitoring Programs

Summary of AMAFCA's MS4 Discharges to Water Quality Impaired Water Bodies with an Approved TMDL Program FY 2023 (July 1, 2022 – June 30, 2023)

NPDES Permit No. NMR04A000

Part I.C.2.b.(i) - Special Conditions, Compliance with Water Quality Standards

Total Maximum Daily Load (TMDL) – E. coli

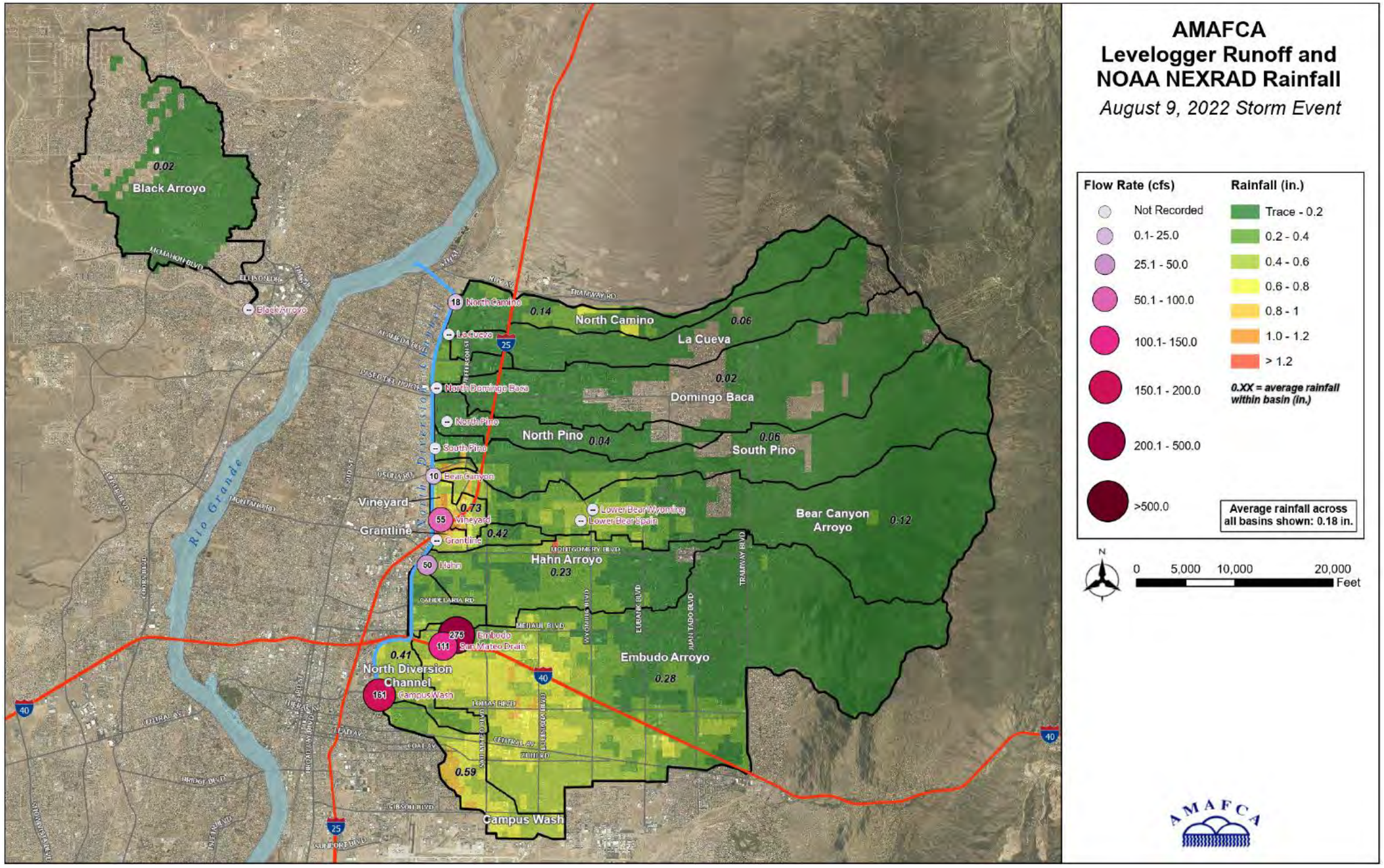
A Total Maximum Daily Load (TMDL) is the regulatory calculation of the maximum amount of a particular pollutant allowed to enter a water body (like the Rio Grande) so that the water body will continue to meet water quality standards for that particular pollutant. A TMDL can also determine a pollutant reduction target and allocates load reductions necessary to the source(s) of the pollutant.

The only TMDL in the Middle Rio Grande (MRG) is Escherichia coliform (E. coli). AMAFCA's required compliance for wet weather stormwater discharges with the Environmental Protection Agency's (EPA) TMDL for E. coli is documented in the Clean Water Act (CWA) 303(d)/305(b) Integrated Report (IR). The IR is updated every three years by a review process that is conducted by the New Mexico Environment Department (NMED). For AMAFCA and other Municipal Separate Storm Sewer System (MS4) permittees in the watershed, compliance sampling is done in the Rio Grande at upstream and downstream locations of the urbanized area to determine the collective E. coli load added to the river in response to a given storm's runoff to the water body. This monitoring is done through the Compliance Monitoring Cooperative (CMC), and the FY 2023 Wet Season, Wet Weather Stormwater Monitoring memo is included as an attachment to this Program Summary.

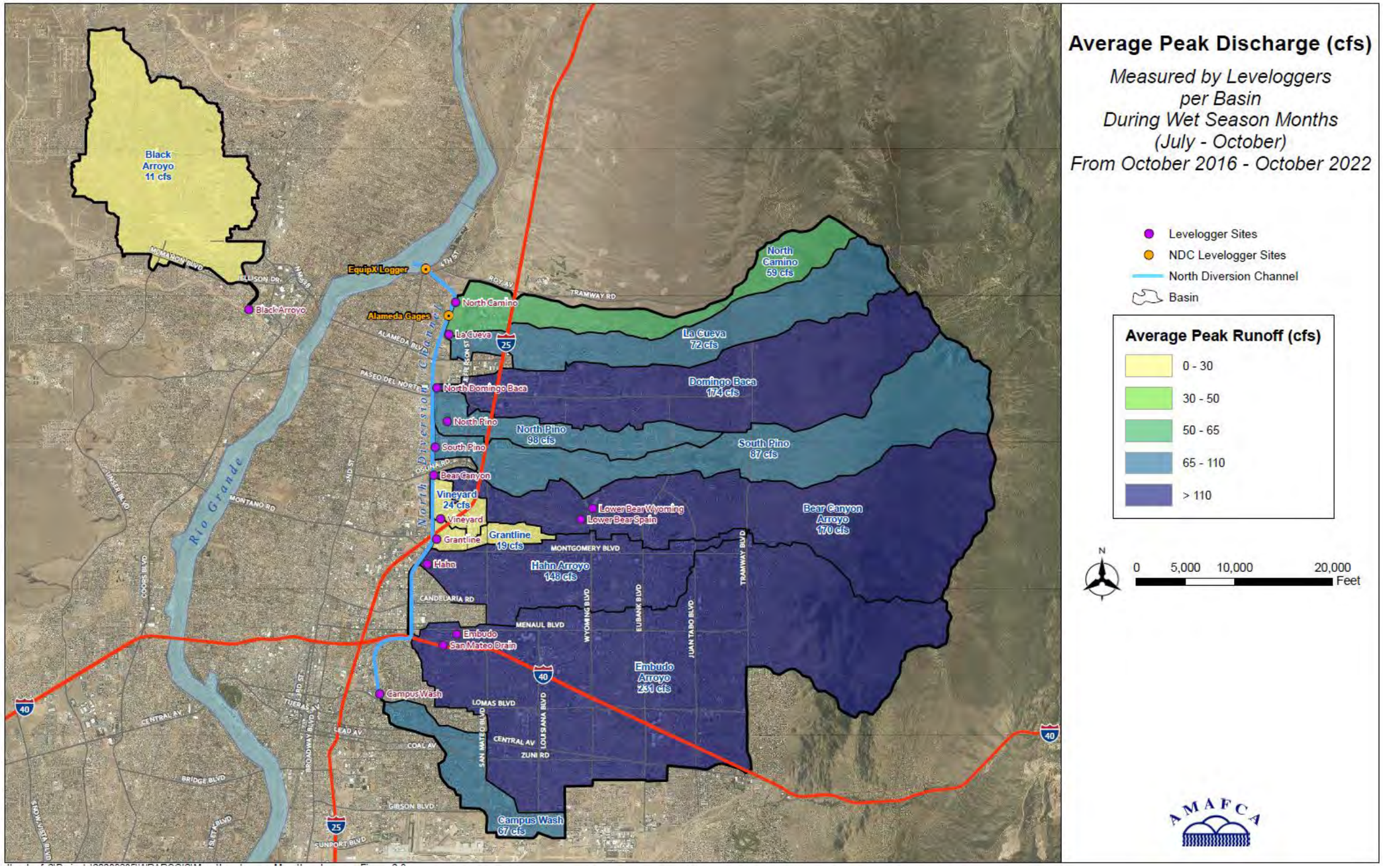
AMAFCA and other MS4s covered under the MS4 Permit are required to comply with water quality standards that are comprised of designated uses for surface waters of the state, associated water quality criteria necessary to protect these uses, and an antidegradation policy. Designated uses in the Middle Rio Grande include aquatic life, fish culture, primary and secondary contact (including cultural, religious, or ceremonial purposes), public water supply, industrial water supply, domestic water supply, irrigation, livestock watering, and wildlife habitat. AMAFCA's stormwater discharges protect these uses and fulfill the requirements set forth in the MS4 Permit. Coordinated water quality sample collection programs through AMAFCA, the Stormwater Quality Team, CMC, and Bosque Ecosystem Monitoring Program (BEMP) have been developed and annually funded to monitor, assess, protect, and restore surface water quality to the Middle Rio Grande watershed.

AMAFCA's Flow Monitoring Program

AMAFCA's flow monitoring program monitors stormwater runoff in arroyos contributing runoff to the North Diversion Channel (NDC) and eventually into the Rio Grande. This program supports AMAFCA's Municipal Separate Storm Sewer System (MS4) Discharges to Water Quality Impaired Water Bodies with an Approved TMDL Program to assess stormwater runoff from specific locations, assisting with an understanding on contributing pollutant loads, including E. coli, to the NDC and Rio Grande. The graphics below provide examples of the program flow analysis compared to the rainfall received in each subwatershed.



Levelogger GIS Map Showing Flow Rates Compared to Rainfall

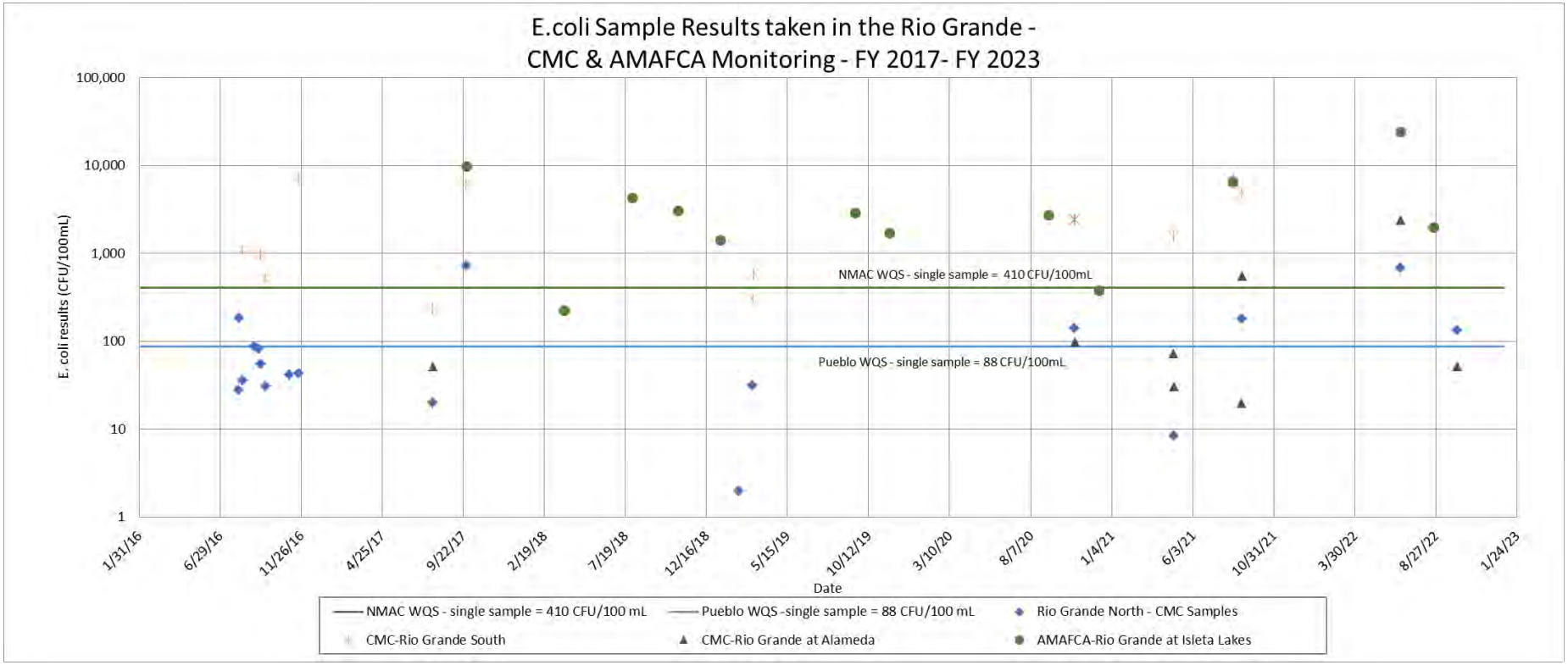


Levelogger GIS Map Average Peak Discharge for the Subwatersheds for Wet Season Months October 2016 – October 2022

CMC and AMAFCA Water Quality Monitoring Program for E. coli

Both AMAFCA and the MRG CMC collect grab samples within the Rio Grande during storm events. E. coli is tested for these in-stream samples. For MS4 Permit compliance, the MRG CMC has three monitoring points, north and south of the urbanized portion of the river as well at the Alameda Bridge. The AMAFCA monitoring program collects samples in the Rio Grande at the downstream (south) end of the watershed (Rio Grande at Isleta Lakes). The graph on page 6 shows the E. coli data from all AMAFCA and CMC samples collected from FY 2017 – FY 2023. Note, there are numerous E. coli results that exceed the applicable surface water quality standards.

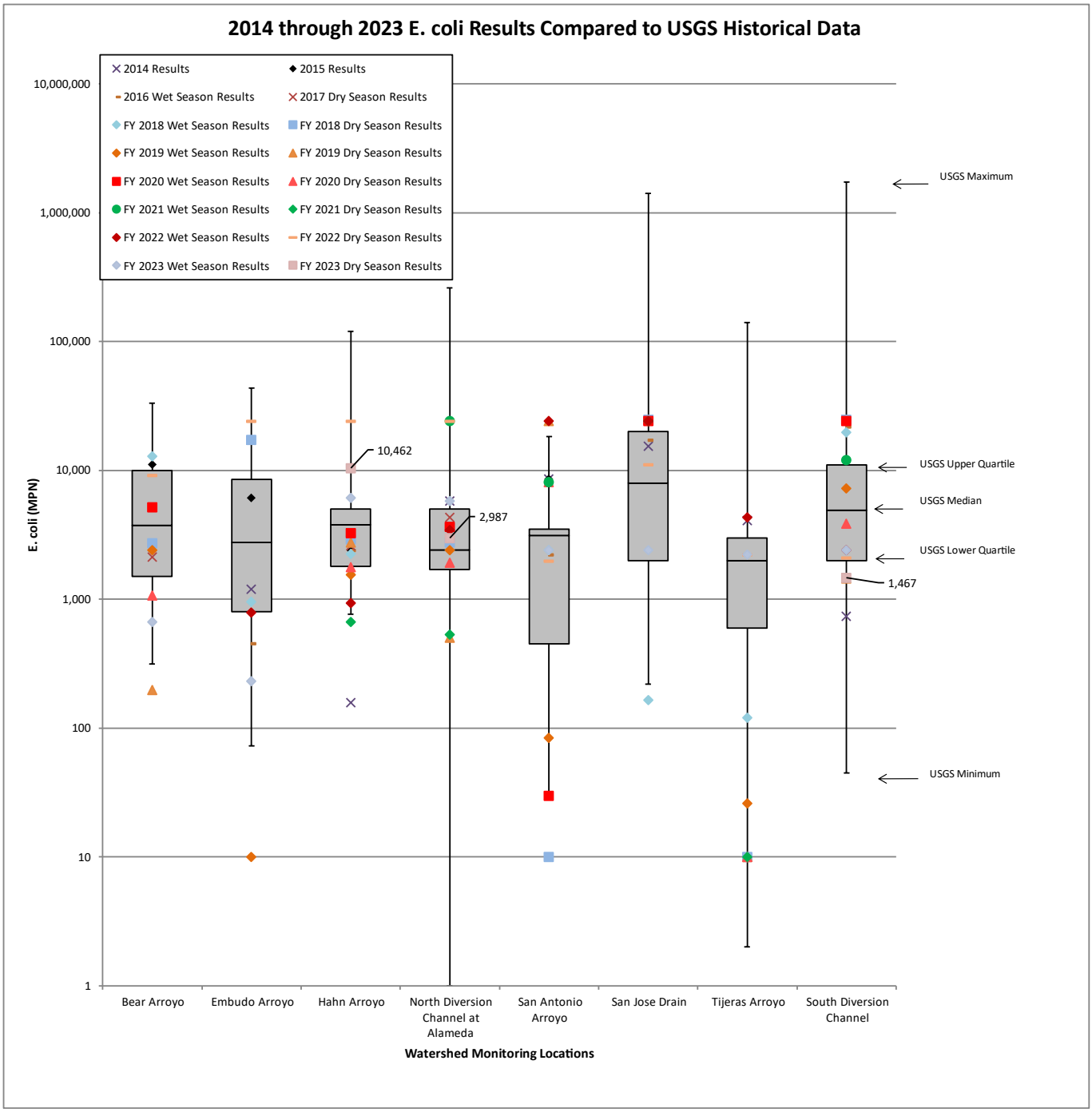
In FY 2023, The CMC collected samples within the Rio Grande on Oct. 5-6, 2022, related to the wet season storm event. Details on this sampling and the results are summarized in the CMC memo included as an attachment to this Program Summary. This E. coli lab result at the Rio Grande South location is the lowest value that the CMC obtained in the Rio Grande at this location. The calculated E. coli loading for the October 5-6, 2022 storm event for the northern segment (Alameda to Angostura) and the southern segment (Isleta to Almeda) of the Rio Grande was below the Waste Load Allocation (WLA) for the CMC MS4s. E. coli loading results below the WLA is a significant achievement for the MRG MS4s.



Plot of E. coli Results From Grab Samples in the Rio Grande Through the AMAFCA and CMC Monitoring Programs

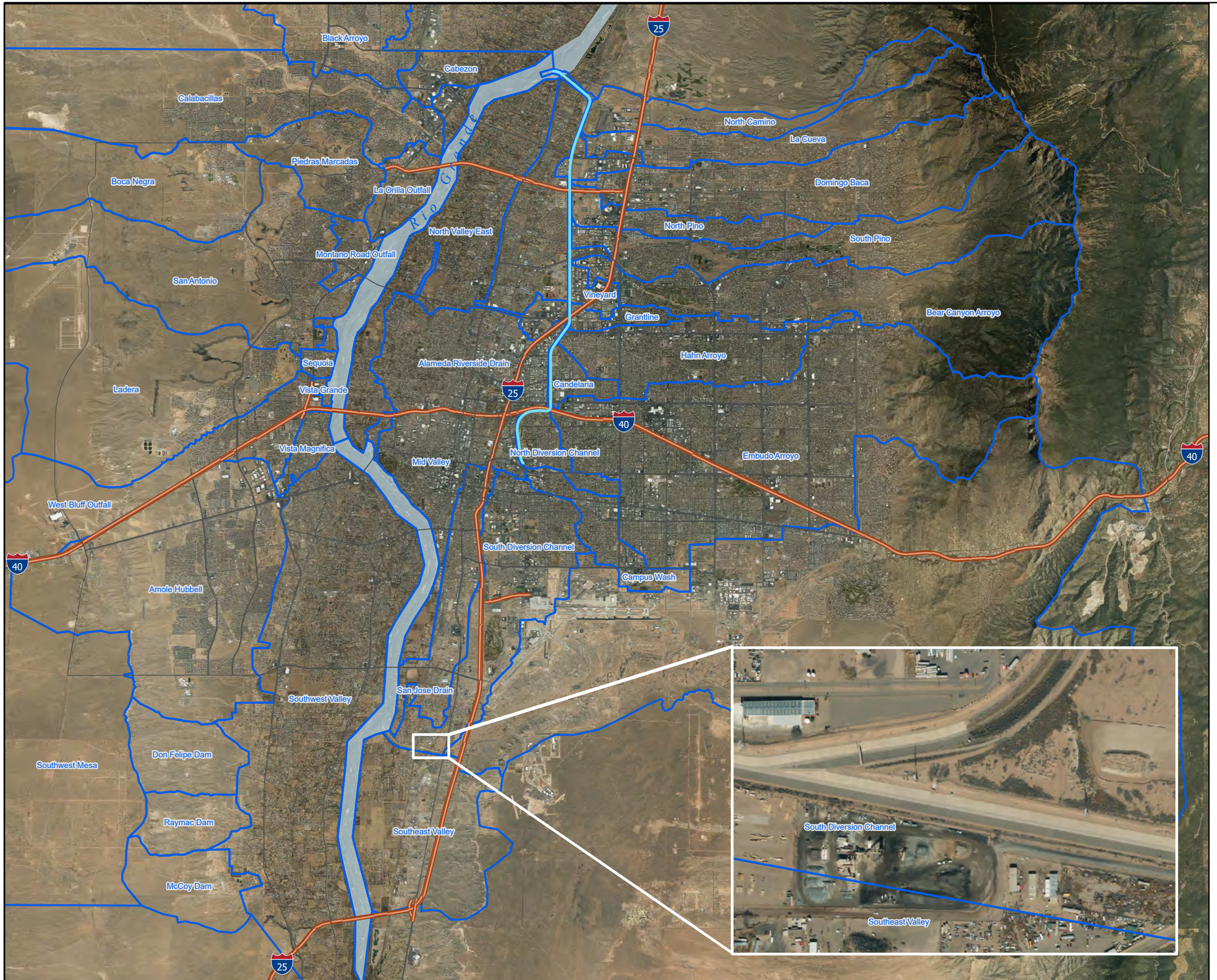
AMAFCA Water Quality Monitoring Program for E. coli

The AMAFCA monitoring program also collects and analyzes stormwater runoff from monitoring sites within the watershed, before it reaches the Rio Grande. The results from 2014 – 2023 compared to USGS historical results (maximum, minimum, median, and upper and lower quartile) are shown on page 7. A map showing E. coli data results throughout the North Diversion Watershed from AMAFCA's Water Quality Monitoring Program from FY 2015 through FY 2023 is provided on page 8.



AMAFCA Monitoring Program E. coli Results Within the Watershed (Not Including Samples in the Rio Grande) Compared to Historical USGS E. coli Data

Historic E. coli Results at AMAFCA Monitoring Locations FY 2014 - 2023



North Diversion Channel

Watershed

E. coli (CFU/100mL)

- Not Collected
- 0 - 88 (Meets WQS)
- 89 - 4,000
- 4,001 - 8,000
- > 8,000

Dry Season:
November - June

Wet Season:
July - October

Interactive map: select text below to view each map

FY 2014 - Dry Season
FY 2015 - Wet Season
FY 2015 - Dry Season
FY 2016 - Wet Season
FY 2016 - Dry Season
FY 2017 - Wet Season
FY 2017 - Dry Season
FY 2018 - Wet Season
FY 2018 - Dry Season
FY 2019 - Wet Season
FY 2019 - Dry Season
FY 2020 - Wet Season
FY 2020 - Dry Season
FY 2021 - Wet Season
FY 2021 - Dry Season
FY 2022 - Wet Season
FY 2022 - Dry Season
FY 2023 - Wet Season
FY 2023 - Dry Season

N

0 5,000 10,000 20,000 Feet

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AMAFCA

P:\20230168\WRARCGIS\Maps\AMAFA_WQS\AMAFA_WQS.aprx
Author: mcrooks

Interactive PDF Showing E. coli Data Within the North Diversion Watershed From AMAFCA's Water Quality Monitoring Program From FY 2014 Through FY 2023

March 2023

In FY 2023, AMAFCA continued to follow the recently updated quality assurance project plan (QAPP), the field sampling plan (FSP), and related Standard Operating Procedures (SOPs) for AMAFCA's stormwater quality monitoring program. The format and contents of these documents are modeled after the New Mexico Environment Department (NMED) Surface Water Quality Bureau (SWQB) water quality management programs to facilitate sharing of data between the agencies. These documents provide a framework and detailed methods for the collection and analysis of environmental data as well as provide guidance for generating data that is of the precision, accuracy, and completeness necessary for AMAFCA's program.

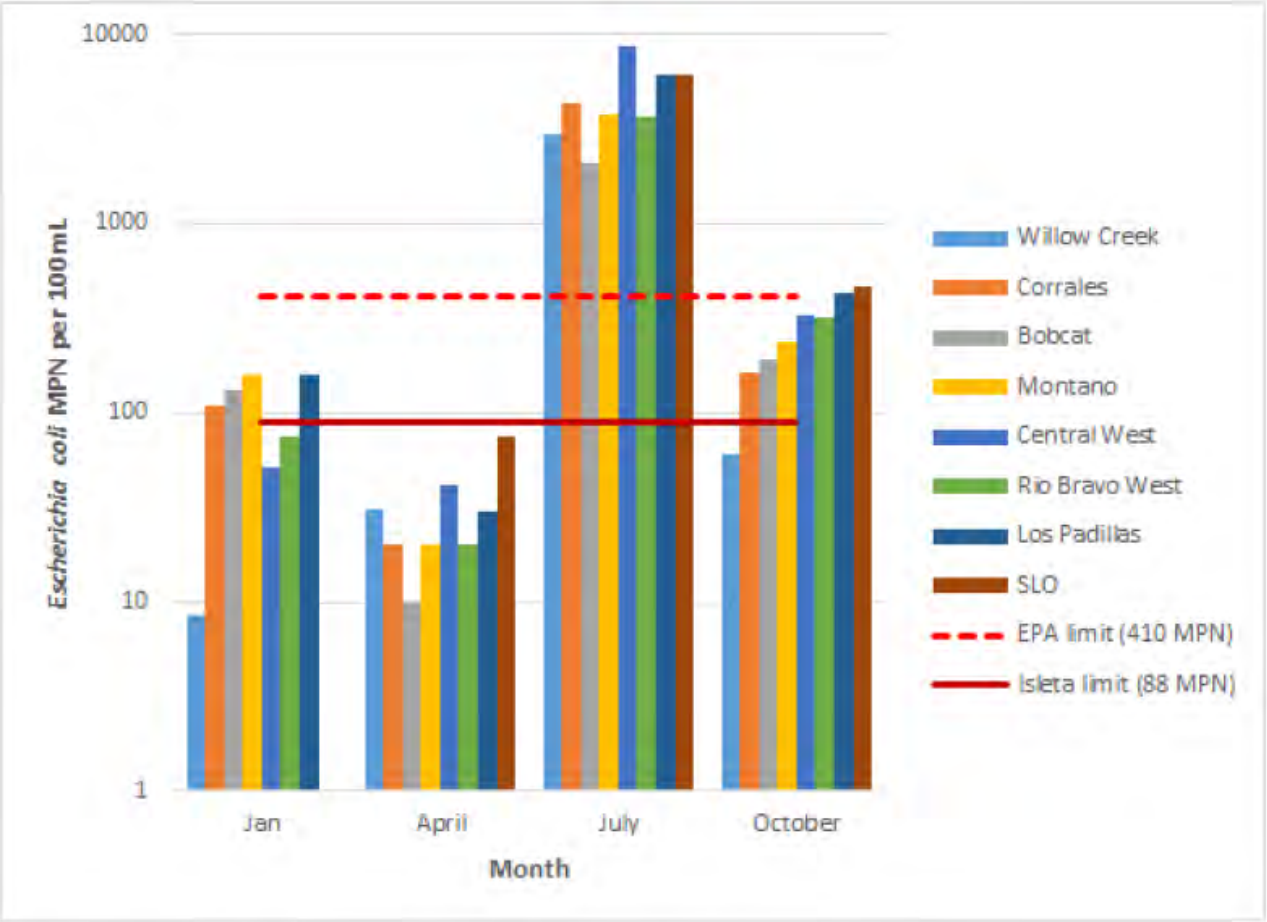
Photos of AMAFCA Autosamplers Used for the AMAFCA Monitoring Program

Bosque Ecosystem Monitoring Program (BEMP)

The Bosque Ecosystem Monitoring Program (BEMP) combines long-term ecological research with community outreach by involving K-12 students and their teachers, as well as university students, in monitoring key indicators of structural and functional change in the Middle Rio Grande riparian forest, or "bosque". During the 2022-2023 school year, 6,250 students throughout Bernalillo and Sandoval counties connected with their local watershed through participation in BEMP activities, with 4,988 contacts of this total engaged through purely stormwater science specific lessons (up 490% from, the previous year). The students' experiences support science education efforts and help to increase understanding and appreciation of the Rio Grande riparian ecosystem. Students also learn proper monitoring protocols, riparian ecology, and how to use data to answer questions through hands-on science. BEMP findings derived from student-gathered data are used by government agencies to inform multi-million dollar river and riparian management decisions.

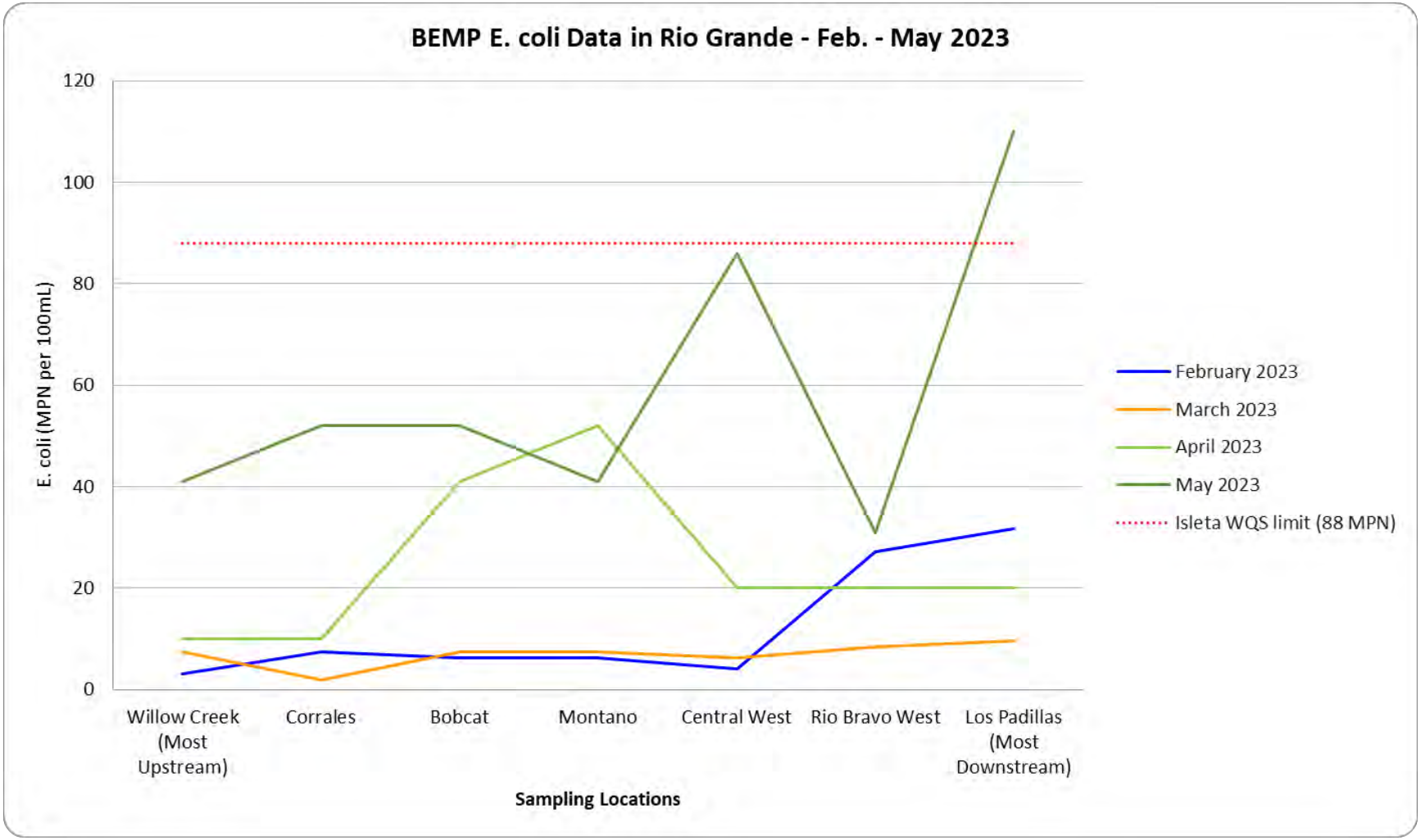
The BEMP sampling supports the collection and analysis of E. coli data in the Rio Grande. This program operates on a calendar year and does not follow the fiscal year timeline of this program summary. In FY 2023, BEMP collected quarterly water quality data from 8 sample locations in the Rio Grande in July 2022, October 2022, January 2023, and April 2023. Data collected included E. coli concentrations, dissolved oxygen (DO), turbidity, conductivity, temperature, and pH. The sample locations span from north to south over a 26 mile stretch with the most upstream site located just south of the US 550 bridge (Willow Creek sample location) to the most downstream site located at the State land Office (SLO), just north of the I-25 bridge near Valle de Oro.

In July 2022, samples exceeded both desired water quality limits (88 MPN/100mL) and EPA water quality limits (410 MPN/100mL) at all sampling locations. The highest E. coli level recorded for July was at Central West with 8,664 MPN/100mL. In October 2022, all BEMP sample locations, except Willow Creek (the most upstream sample location), exceeded the desired water quality limits (88 MPN/100mL) with the two downstream sample locations exceeding the EPA water quality limits (410 MPN/100mL). Related to units, in January 2017 the CMC members clarified with New Mexico Environment Department (NMED) that the units MPN/100 mL and CFU/100 mL are considered to be interchangeable for the purposes of this stormwater quality monitoring reporting. The bar graph below, from BEMP's 2022 Annual Stormwater Quality Team Technical Report, shows both the July 2022 and October 2022 E. coli results, as well as two results from FY 2022 (January and April 2022).



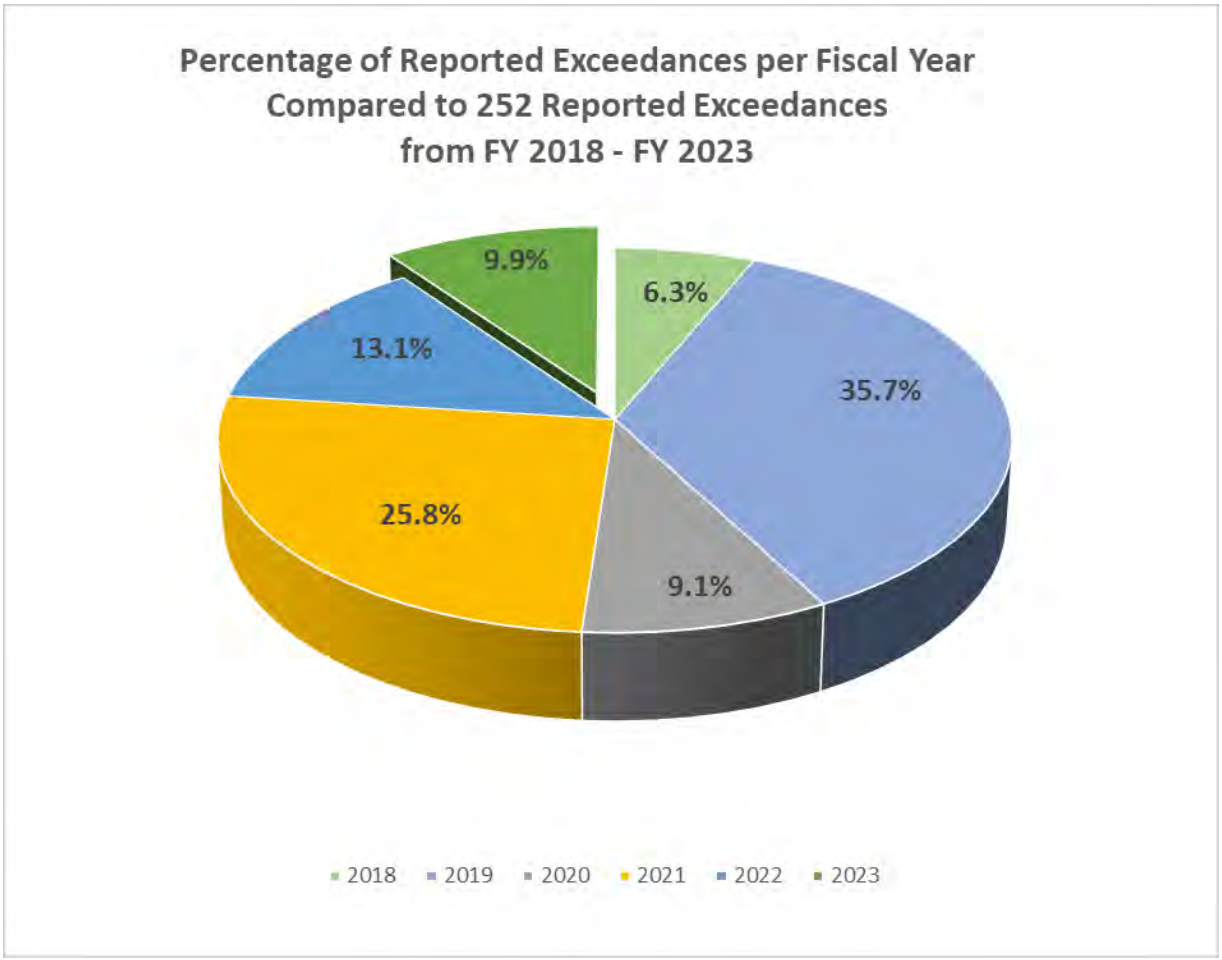
BEMP E. coli Data Plotted on Log 10 Scale at Sampling Sites
FY 2023 Includes the July and October 2022 Data
Graph is From the BEMP 2022 Annual Stormwater Quality Team Technical Report

In February – May 2023, BEMP collected E. coli data within the Rio Grande. Since the BEMP program operates on a calendar year, the BEMP 2023 Annual Technical Report has not yet been received. The E. coli data provided to AMAFCA is provided in the graph below. The data shows all sample results below the desired water quality limits (88 MPN/100mL) at all sampling locations except for the May sample at the most downstream location, Los Padillas. The May sample is below the EPA water quality limits (410 MPN/100mL) but higher than the Isleta Pueblo desired water quality limits (88 MPN/100mL).



BEMP E. coli Data at Sampling Sites in FY 2023
Graph is from BEMP Data Provided to AMAFCA

AMAFCA notifies EPA and the Pueblo of Isleta of any water quality standard exceedances at any in-stream sampling locations (within the Rio Grande). AMAFCA also continues to share access to the real-time DO and temperature sonde data in the Rio Grande with the Pueblo of Isleta. Notification of an exceedance is in writing as soon as practicable after receiving the lab report data. The graph below shows the reported exceedance notifications per FY.



Pie Chart of AMAFCA Reported Exceedance of Any Water Quality Standard Exceedances at Any In-Stream Sampling Locations (Within the Rio Grande) per Fiscal Year to EPA and the Pueblo of Isleta

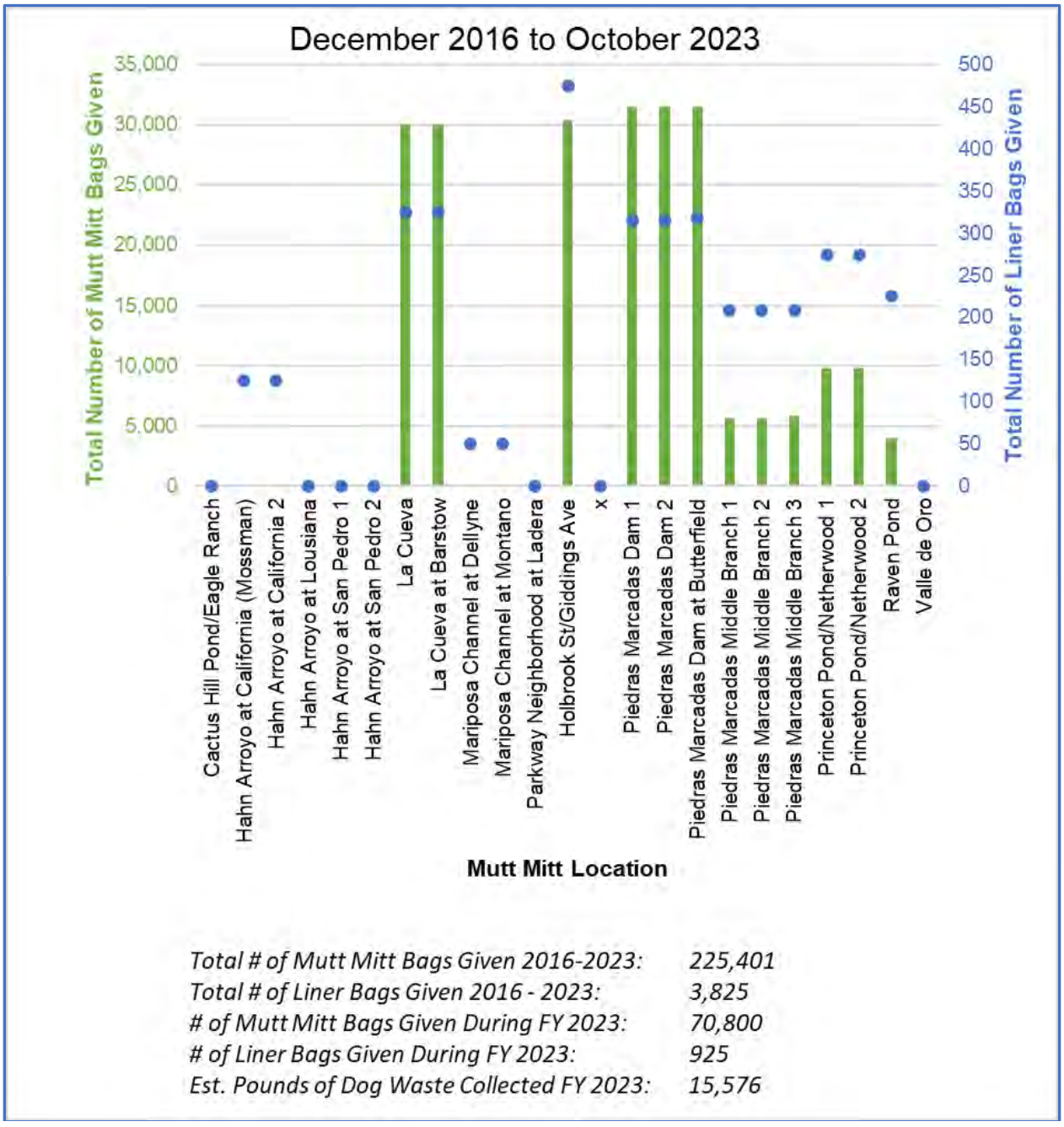
Public Education and Outreach Program

The previous sections of the program summary focus on the monitoring and data collection related to understanding E. coli within the Rio Grande and contributions from the watershed. Non-point source load reduction actions, like those taken by AMAFCA, the Mid Rio Grande Storm Water Quality Team (MRGSQT), and others, are implemented through a wide variety of programs at the state, local and federal level. AMAFCA is a member of the MRGSQT, which has grown to 12 organizations, who leverage their resources to ensure MS4 Permit public education and outreach requirements are met with the goal of preventing and reducing

stormwater pollution throughout the watershed from reaching the Rio Grande. These programs may be regulatory, non-regulatory, or incentive-based like a cost-share program. In addition, waterbody restoration can be assisted by voluntary actions on the part of citizen and/or environmental groups. Public education, outreach, involvement, and participation efforts have also been undertaken at the watershed level in the MRG to address the reduction of non-point source loads for the bacterial TMDL (E. coli) and various impairments on New Mexico's 303(d) list. Additional information is available at www.keeptheriogrand.org (see image below).

Mid Rio Grande Stormwater Quality Team Website

In addition, AMAFCA has a Mutt Mitt station program to reduce pet waste and increase public awareness, with the goal of reducing E. coli within the watershed. The Mutt Mitt program information is summarized below.



Summary of the AMAFCA Mutt Mitt Stations Available Throughout the Watershed to Promote Pet Waste Collection and Proper Disposal

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MEMORANDUM

DATE: December 29, 2022

TO: Patrick Chavez, PE, AMAFCA

FROM: Sarah Ganley, PE, ENV-SP
Savannah Maynard
Emma Adams, EI

SUBJECT: **CMC Wet Season, Wet Weather Stormwater Monitoring**
Data Verification, Analysis Results Database, and Reporting Memo
FY 2023 Wet Season (July 1, 2022 to October 31, 2022)

Notification of In-Stream Water Quality Exceedances

For downstream notification purposes, the following parameters for in-stream samples taken in the Rio Grande for the FY 2023 wet season had results that exceeded applicable water quality standards (WQSs) for one or more samples: E. coli, polychlorinated biphenyls (PCBs), and gross alpha, adjusted. Table 1 summarizes the samples with exceedances and the applicable WQS that was exceeded. Additional details on the sampling results are provided in this memo.

Table 1: Parameters Detected Above Applicable Water Quality Standards
CMC FY 2023 Wet Season Monitoring

Sampling Date Location	Parameters, Applicable Water Quality Standard (WQS), and Results Exceeding Applicable WQS		
	E. coli	**PCBs**	**Gross Alpha, Adjusted**
	WQS: 88 MPN (CFU/100 mL) Pueblo of Isleta Primary Contact Ceremonial & Recreational	**WQS: 0.00017 ug/L** Pueblo of Isleta Human Health Criteria (based on fish consumption only)	**WQS: 15 pCi/L** Pueblo of Isleta and NM Domestic Water Supply & Livestock Watering Designated Uses
10/5/2022 Rio Grande North Angostura Diversion Dam Pre-Storm Sample – E. coli Only	135 MPN (CFU/100mL)	No Exceedance	No Exceedance

Table 1 (continued).

Sampling Date Location	Parameters, Applicable Water Quality Standard (WQS), and Results Exceeding Applicable WQS		
	E. coli	**PCBs**	**Gross Alpha, Adjusted**
	WQS: 88 MPN (CFU/100 mL) Pueblo of Isleta Primary Contact Ceremonial & Recreational	**WQS: 0.00017 ug/L** Pueblo of Isleta Human Health Criteria (based on fish consumption only)	**WQS: 15 pCi/L** Pueblo of Isleta and NM Domestic Water Supply & Livestock Watering Designated Uses
10/5/2022 Rio Grande at Alameda Bridge E. coli Only	No Exceedance	Not Tested	Not Tested
10/6/2022 Rio Grande South Isleta Diversion Dam	No Exceedance	0.0011 ug/L	22.98 pCi/L

Overview of Stormwater Monitoring Activity

Bohannan Huston, Inc. (BHI) has been tasked to perform water quality services for the Compliance Monitoring Cooperative (CMC) Stormwater Data Verification, Database, and Reporting for the Wet Weather Stormwater Quality Monitoring Program for Fiscal Year (FY) 2023 (July 1, 2022 to June 30, 2023). The scope of work for this task includes data verification of the stormwater laboratory analysis results, compiling the analysis results into a database, and calculating the E. coli loading to compare with the Waste Load Allocation (WLA) for the qualifying storm events. The stormwater compliance monitoring is conducted separately by Daniel B. Stephens & Associates, Inc. (DBS&A) and is not a part of this task. This task is being conducted to assist the CMC members with their comprehensive monitoring and assessment program for compliance under the 2014 Middle Rio Grande (MRG) Watershed Based Municipal Separate Storm Sewer System (MS4) Permit, NPDES Permit No. NMR04A000 ("WSB MS4 Permit").

The WSB MS4 Permit entered Administrative Continuance in December 2019 when U.S. Environmental Protection Agency (EPA) Region 6 did not issue a new MS4 Permit before the current MS4 Permit's expiration date. The MRG Technical Advisory Group (TAG) sent EPA a letter dated October 15, 2019, acknowledging Administrative Continuance after the expiration date of the 5-year Permit term. Until a new MS4 Permit is issued, there are no compliance monitoring requirements for the CMC in the Rio Grande. As identified in the CMC Monitoring Plan, the WSB MS4 Permit required a minimum of seven (7) storm events be sampled at both the Rio Grande North and Rio Grande South locations (refer to Figure 1, page 4). All Permit required samples have been obtained by the CMC, as well as two (2) samples obtained in FY 2021, one

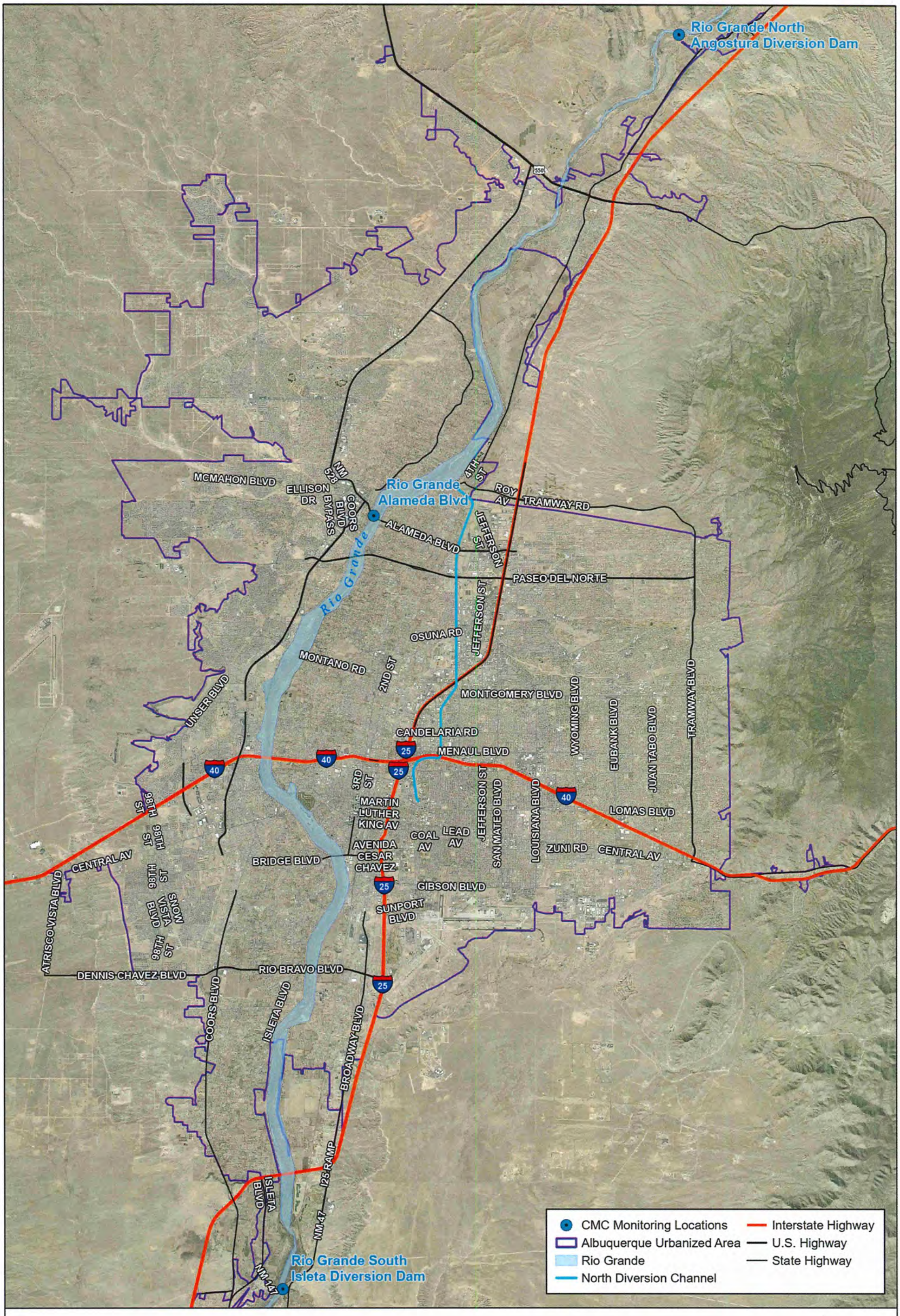
(1) sample obtained in FY 2022 wet season, and one (1) sample obtained in FY 2023 wet season during Administrative Continuance; all 11 CMC samples are summarized in Table 2 below.

Table 2: CMC Sample Summary
Compared to WSB MS4 Permit Requirements

No. of Storm Events Required to Sample	CMC-WSB MS4 Permit Required Samples per Season	FY (Date) Samples Obtained for CMC
1	#1 Wet Season	FY 2017 (8/10/2016)
2	#2 Wet Season	FY 2017 (9/12/2016)
3	#3 Wet Season	FY 2017 (9/21/2016)
4	#1 Dry Season	FY 2017 (11/21/2016)
5	#2 Dry Season	FY 2019 (3/13/2019)
6	Any Season	FY 2018 (Wet Season - 7/27/2017)
7	Any Season	FY 2018 (Wet Season - 9/27/2017)
Not Required	Wet Season	FY 2021 (10/28/2020)
Not Required	Dry Season	FY 2021 (4/28/2021)
Not Required	Wet Season	FY 2022 (9/1/2021)
Not Required	Wet Season	FY 2023 (10/5/2022)

During the WSB MS4 Permit Administrative Continuance, the CMC members chose to continue sampling within the Rio Grande to support their MS4 program needs and gather additional data in support of the future MS4 Permit compliance. This memo reports on the wet weather stormwater monitoring activity for the FY 2023 wet season (July 1, 2022 to October 31, 2022).

The CMC Excel database was updated with the FY 2023 wet season, wet weather monitoring data as results were received. The database contains sample location, sample date, analyses conducted, methods used, applicable surface WQSs, WSB MS4 Permit required Minimum Qualification Levels (MQL) and results.



AMAFCA

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N

0 6,000 12,000 24,000 Feet
1 inch = 12,205 feet

CMC Monitoring

Figure 1
Monitoring Locations

P:\20230125\WR\Reports\Preliminary & Draft\Figures\APRXs\Figure1.aprx
Author: mcrooks

Summary of the CMC Sampling Plan

Sampling Parameters:

Samples from both the Rio Grande North and Rio Grande South monitoring locations were analyzed for the parameters defined in the EPA approved WSB MS4 CMC Monitoring Plan, May 5, 2016. The parameter list for both locations, which is intended to characterize stormwater discharges into the river, is as follows:

Total Suspended Solids (TSS)
Total Dissolved Solids (TDS)
Chemical Oxygen Demand (COD)
Biological Oxygen Demand – 5-day (BOD_5)
Dissolved Oxygen (DO)
Oil & grease (N-Hexane Extractable Material)
E. coli
pH
Total Kjeldahl Nitrogen (TKN)
Nitrate plus Nitrite
Dissolved Phosphorus
Ammonia plus Organic Nitrogen (Nitrogen, Ammonia and Nitrogen, Total)
Phosphorous (Total Phosphorous)
Polychlorinated Biphenyls (PCBs - Method 1668A)
Gross Alpha, adjusted
Tetrahydrofuran
Benzo(a)pyrene
Benzo(b)fluoranthene (3, 4 Benzofluoranthene)
Benzo(k)fluoranthene
Chrysene
Indeno (1 ,2,3-cd) Pyrene
Dieldrin
Pentachlorophenol
Benzidine
Benzo(a)anthracene
Dibenzofuran
Dibenzo(a, h)anthracene
Chromium VI (Hexavalent)
Copper – Dissolved
Lead – Dissolved
Bis (2-ethylhexyl) phthalate
Conductivity
Temperature

Hardness (as CaCO3) was added to the parameter list to allow dissolved metal results to be compared to the applicable WQSs. DO, pH, conductivity, and temperature are required by the WSB MS4 Permit to be analyzed in the field during sample collection, which was conducted by DBS&A, within 15 minutes of sample collection. All E. coli samples were submitted to the laboratory within eight (8) hours of collection in order to meet the specified hold time.

Sampling Locations:

The sampling locations are shown in Figure 1, page 4.

Rio Grande North – In-stream sampling within the Rio Grande was performed upstream of the Angostura Diversion Dam at the north end of the watershed. The location is upstream of all inputs from the Urban Area (UA) to the river and provides the background water conditions.

Rio Grande South – In-stream sampling within the Rio Grande was performed at the Isleta Bridge at the south end of the watershed. The location is downstream of all inputs from the UA to the river and provides the downstream water conditions. These locations have been accepted by EPA and the New Mexico Environment Department (NMED) to meet the WSB MS4 Permit requirements in Part III.A.

During this FY 2023 wet season, an E. coli sample was collected within the Rio Grande at Alameda Blvd. This is the location of the NMED defined stream segment divide (refer to Figure 6). This sample point was added after discussion with NMED in February 2017 regarding potential refinements to E. coli loading calculations.

Sample Collection:

As mentioned previously, sample collection for the CMC is being conducted by DBS&A (through a separate on-call contract). Since BHI was not involved in the sample collection, this task and memo do not address the details of the methodologies regarding sampling, determining if an event was a qualifying storm event, or determining the timing of the hydrograph at the Rio Grande Alameda and Rio Grande South locations.

DBS&A provided BHI their field notes and field sample data (temperature, DO, specific conductivity, and pH) for the FY 2023 wet season sampling. AMAFCA provided BHI the completed laboratory analysis reports from Hall Environmental Analysis Laboratory (HEAL) for this monitoring season.

Quality Assurance Project Plan (QAPP):

AMAFCA provided BHI with the Draft Quality Assurance Project Plan (QAPP) for the CMC dated June 14, 2016. DBS&A followed this QAPP during sample collection. BHI used this QAPP and the included standard operating procedures (SOPs) for the data verification and validation.

Monitoring Activity & Lab Analysis Summary

The list below provides a summary of the CMC comprehensive monitoring program activities completed for the FY 2023 wet season from July 2022 through October 2022. One (1) qualifying storm event was sampled and analyzed during the FY 2023 wet season.

- **October 5-6, 2022 – Qualifying Storm Event – Full Analysis of Samples.** Samples were collected at the Rio Grande North and Alameda Blvd locations beginning at 11:25 a.m. and 1:30 p.m., respectively. These samples were sent to the laboratory for an E. coli test. The CMC determined that the storm event beginning October 5 was a qualifying storm event. A Rio Grande South sample was collected beginning at 8:15 a.m. on October 6. The samples from the North (collected October 5) and South (collected October 6) locations were taken to HEAL for full parameter testing.

Stormwater Quality Database for CMC

As stated previously, there was one (1) qualifying storm event during the FY 2023 wet season, wet weather monitoring sampled by the CMC, which occurred October 5-6, 2022. DBS&A's field notes containing DO, pH, conductivity, and temperature measurements, as well as sampling comments have been received, and field results have been added to the database. Additionally, the HEAL reports for the corresponding time period have been received, added to the database, and are provided with this memo (Attachment 1). The laboratory reports attached to this memo have BHI added comments including the field parameter measurements and other relevant notes related to the laboratory report.

Database Data Entry:

The CMC Excel database was updated with the FY 2023 wet season, wet weather monitoring data. The database contains sample locations, sample date, analyses conducted, methods used, applicable surface water quality standards (WQS), WSB MS4 Permit required Minimum Quantification Levels (MQL), and analysis results. The database was updated under this Task to include the Rio Grande at Alameda sample location. Applicable surface WQSs found in New Mexico Administrative Code (NMAC) 20.6.4, as well as the Pueblo of Isleta WQSs, are entered in the Excel database for comparison purposes with testing results. There is an indicator in the database to show if the monitoring results exceed the applicable surface WQS. An exceedance is not a violation of the WSB MS4 Permit, as the Permit does not have numeric discharge limitations. These ">WQ Standard" flags simply and quickly show the CMC members where the results of the lab data exceed the applicable WQS.

Water quality data was entered into the database upon receipt of the lab reports. All data entered into the database is initially denoted with a "P" to indicate that it is provisional and has not been through the verification and validation process yet. Full parameter analyses of qualifying storm events for both Rio Grande North and Rio Grande South locations were entered respectively into the database. The E. coli only samples from the Rio Grande Alameda location were also entered into the database.

Data Verification and Validation:

The HEAL analysis reports were provided to BHI by AMAFCA. The lab reports also contain the Chain of Custody for the submitted samples. Field data was requested by and provided to BHI by DBS&A. Data verification and validation (V&V) was conducted by BHI on all field notes, lab reports, and Chain of Custody documents in accordance with the CMC WQS Operating Procedure (SOP) #2, which is part of the existing CMC QAPP, Draft June 14, 2016. These procedures are based on EPA Guidance for Environmental Data Verification and Validation (EPA, 2008).

As stated in the QAPP, the V&V process was completed by a different person than the one who entered the data into the database. The V&V process included use of the *Data Verification and Validation Worksheet* (provided in the QAPP). For this task, field data was verified first, confirming all field notes were complete. BHI handled field parameter questions directly with DBS&A. Chemical data verification began as soon as the lab reports were received, checking that all parameters were tested and looking for any obvious exceedances of WQS. Other steps listed on the *Data Verification and Validation Worksheet* were completed after all data from the laboratory was received and entered into the database. Sample blank results were reviewed to identify potential contamination during field processing or transport. Replica/duplicate samples were evaluated based on relative

percent difference (as described in more detail in the QAPP) to determine the variability of the samples.

All CMC FY 2023 wet season data met the appropriate QA/QC requirements. If there were any data that did not meet the appropriate QA/QC requirements, it would have been assigned an appropriate laboratory qualifier or validation codes. A summary of validation codes is provided in the QAPP.

Once the V&V process was completed, the worksheets were signed. Copies of the V&V worksheets are provided with this memo (Attachment 2). In the database, data that was checked during the V&V process was then changed from being denoted with a “P” for provisional to a “V” for verified, and laboratory qualifiers were added, as needed.

CMC FY 2023 Wet Season Assessment and Evaluation of Monitoring Results

The EPA approved WSB MS4 CMC Monitoring Plan, May 5, 2016, has 33 parameters to monitor at the Rio Grande North and Rio Grande South monitoring locations. Of these 33 parameters, 19 parameters were not detected in the FY 2023 wet season samples at either the Rio Grande North or South locations. Refer to Table 3 for a list of the parameters that were not detected.

Table 3: Parameters Not Detected
CMC FY 2023 Wet Season Monitoring

Parameters Not Detected	
Oil and Grease (N-Hexane Extractable Material)	Dieldrin
Nitrate plus Nitrite	Pentachlorophenol
Dissolved Phosphorous	Benzidine
Ammonia (mg/L as N)	Benzo(a)anthracene
Tetrahydrofuran	Dibenzofuran
Benzo(a)pyrene	Dibenzo(a,h)anthracene
Benzo(b)fluoranthene (3, 4 Benzofluoranthene)	Dissolved Lead
Benzo(k)fluoranthene	Chromium VI (Hexavalent)
Chrysene	Bis (2-ethyhexyl) Phthalate (other names: Di(2-ethylhexly)phthalate, DEHP)
Indeno (1,2,3-cd) Pyrene	

For the remaining 14 parameters on the CMC monitoring parameter list, only three (3) parameters (E. coli, PCBs, and gross alpha, adjusted) had exceedances of the applicable surface WQS found in New Mexico Administrative Code (NMAC) 20.6.4 and the Pueblo of Isleta WQS during the FY 2023 wet season. These exceedances are summarized on Table 1, pages 1-2, and discussed below in further detail.

E. coli:

The E. coli results collected during the FY 2023 wet season are summarized in Table 4.

Table 4: E. coli Results
CMC FY 2023 Wet Season Monitoring

Date – Rio Grande Location	E. coli Results MPN (CFU/100 mL)
October 5, 2022 – North	135
October 5, 2022 – Alameda	52
October 6, 2022 – South	<1

At the Rio Grande North location (upstream of the Albuquerque UA, at the Angostura Diversion Dam), one (1) sample was collected and tested for E. coli. This E. coli result exceeded Pueblo of Isleta and Pueblo of Sandia's primary contact-single sample WQS of 88 CFU/100 mL. This October 5 sample was below NMAC's primary contact-single sample WQS of 410 CFU/100 mL. At the Rio Grande South location (downstream of the MS4 UA), one (1) sample was collected and tested for E. coli. This sample did not exceed any WQSs. This E. coli lab result at the Rio Grande South location is the lowest value that the CMC has seen reported in the Rio Grande at this location. AMAFCA called HEAL to discuss this result and verify that the reported result was correct.

In addition, the CMC collected one (1) E. coli sample in the Rio Grande at Alameda Blvd. during the FY 2023 wet season. The Alameda Blvd. analysis point was based on discussions with NMED in February 2017 on collecting actual E. coli data at the stream segment divide verses using an area percentage (as defined in the TMDL) for E. coli loading calculations. The lab results showed that the sample had an acceptable E. coli concentration below the primary contact-single sample Pueblo of Isleta WQS (88 CFU/100 mL) and the primary contact-single sample NMAC WQS (410 CFU/100 mL).

As a reminder, in January 2017 the CMC members clarified with NMED that the units MPN/100 mL and CFU/100 mL are considered to be interchangeable for the purposes of this stormwater quality monitoring reporting. The New Mexico and Pueblo WQSs for E. coli are currently in units of CFU/100 mL while the lab reports are typically in units of MPN/100mL. The graph presented in this section uses units of CFU/100 mL to be consistent with the WQS units. Refer to Figure 2 for a graphical representation of E. coli results from October 2022.

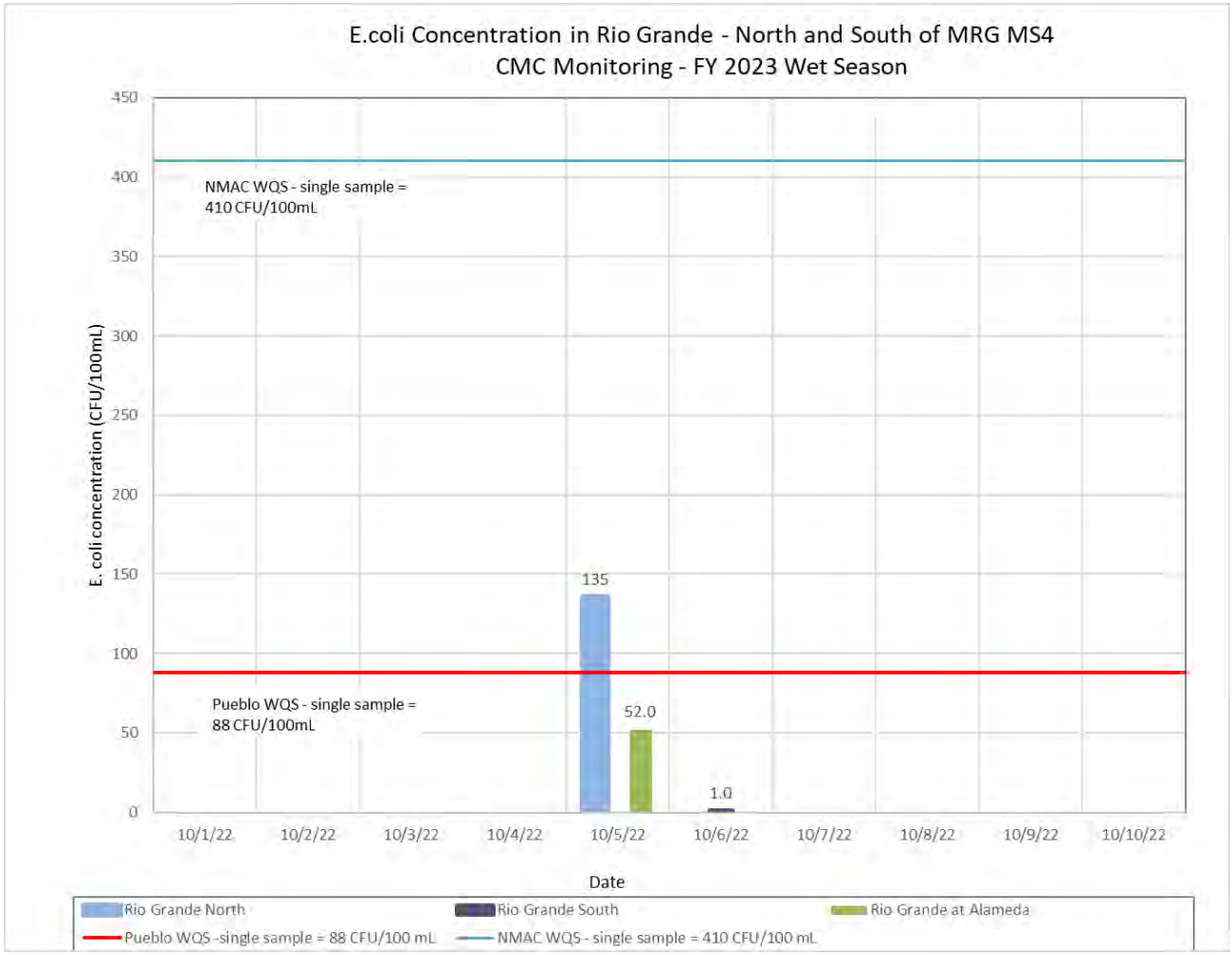


Figure 2: E. coli Results in Rio Grande
CMC Monitoring – FY 2023 Wet Season

PCBs:

There are multiple surface WQS values listed for PCBs in both the Pueblo of Isleta and the State of New Mexico standards for the various designated uses. The PCB results for samples collected from the Rio Grande during the FY 2023 wet season stormwater event were below the minimum quantification level (MQL) established in EPA standards for the MS4 NPDES Permit (Appendix F, 0.2 ug/L for PCBs). The PCB results for the Rio Grande North sample were also well below the New Mexico Surface WQSs and Pueblo of Isleta Surface WQSs for designated uses including drinking water (0.5 ug/L) and wildlife habitat, acute aquatic life, and chronic aquatic life (0.014 ug/L). However, the CMC sample from the Rio Grande South location was above the Pueblo of Isleta human health criteria (based on fish consumption only) WQS for surface waters. The human health-organism only criterion is based upon human consumption of fish and other aquatic life that bioaccumulate contaminants over time. The PCB results from 2016 through 2022 are shown in Figure 3 relative to several of the WQSs for PCBs.

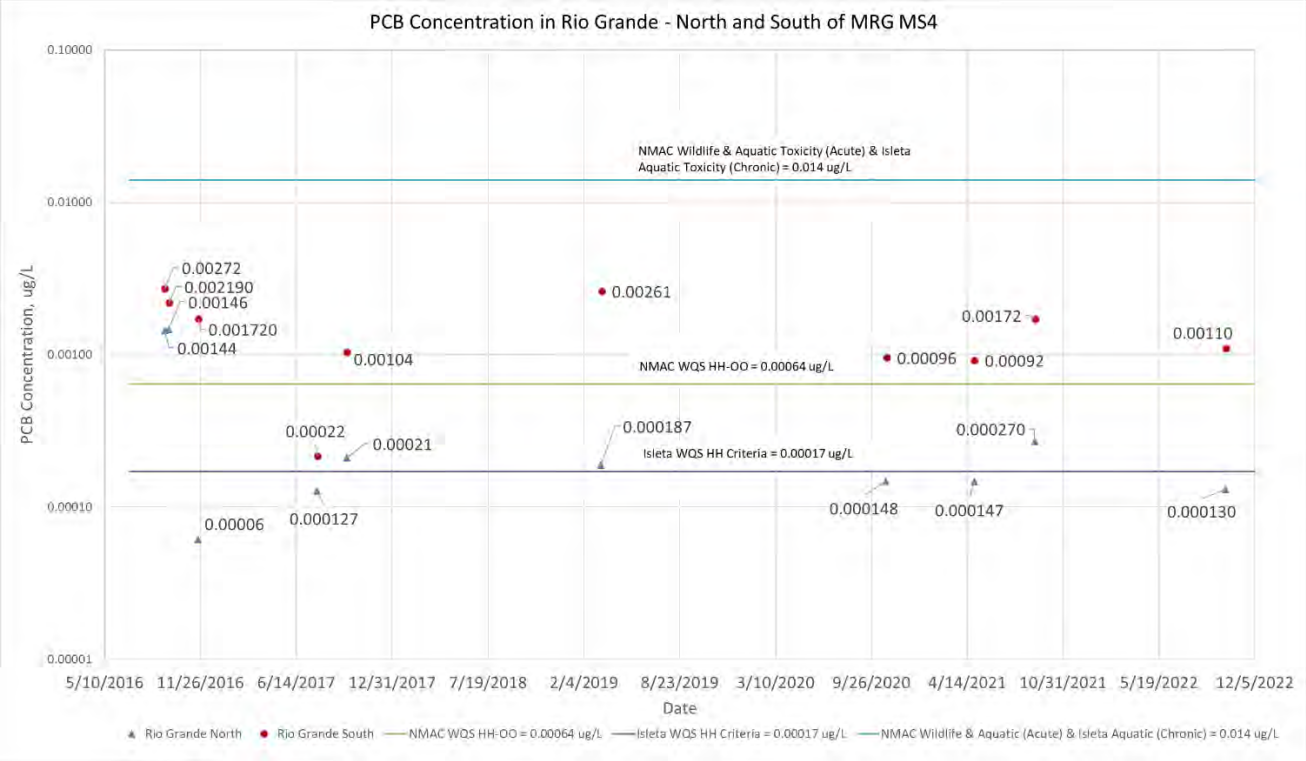


Figure 3: PCB Monitoring Results in Rio Grande
CMC Monitoring – 2016 - 2022

Gross Alpha, Adjusted:

The October 6, 2022, Rio Grande South sample result exceeded the New Mexico and Pueblo of Isleta WQS for gross alpha, adjusted. The WQS for gross alpha, adjusted is the same value for both the NMAC 20.6.4 Water Quality Criterion and Pueblo of Isleta; the WQS of 15 pCi/L ("pCi/L" means picocuries per liter) is a general standard for the Pueblo of Isleta, and for New Mexico it is based on Domestic Water Supply and Livestock Watering designated uses. In surface water, the gross alpha, adjusted analyses may be affected by a high content of suspended load, particularly where sediment sources may be derived from granitic terrain; gross alpha, adjusted results may reflect the radioactivity of the natural elements in the sediment more than the surface water.

The October 6, 2022, Rio Grande South gross alpha, adjusted analytical results are detailed below; the units are in pCi/L:

- Rio Grande South CMC sample result for gross alpha, adjusted = 22.98 pCi/L
- Gross alpha, adjusted WQS at the Rio Grande South location = 15 pCi/L (NMAC 20.6.4 Water Quality Criterion for livestock watering and domestic water supply designated uses and general standard for Pueblo of Isleta)

This is the third time since 2016 that the analytical results from a CMC sample have had an exceedance in gross alpha, adjusted. The prior exceedance was reported for the September 2, 2021, Rio Grande South sample. The CMC will continue to closely evaluate this parameter in future samples. If additional exceedances occur, the CMC will discuss the results further and may consult NMED for further guidance.

Dissolved Oxygen and Temperature:

Two (2) of the water quality parameters are specifically worth mentioning in this memo because they are listed in the WSB MS4 Permit, Part I.C.1 – Special Conditions: dissolved oxygen and temperature. These parameters did not have any surface water quality exceedances during the FY 2023 wet season sampling.

Dissolved oxygen is a water quality concern in the Rio Grande if it is below 5 mg/L. None of the samples taken from the Rio Grande during the FY 2023 wet season monitoring had dissolved oxygen values below 5 mg/L. This provides the MS4s with specific monitoring data showing that stormwater did not cause or contribute to exceedances of applicable dissolved oxygen water quality standards in the Rio Grande from any of the CMC samples from 2016 to 2022. Refer to Figure 4 for CMC dissolved oxygen results and comparison to applicable WQSs.

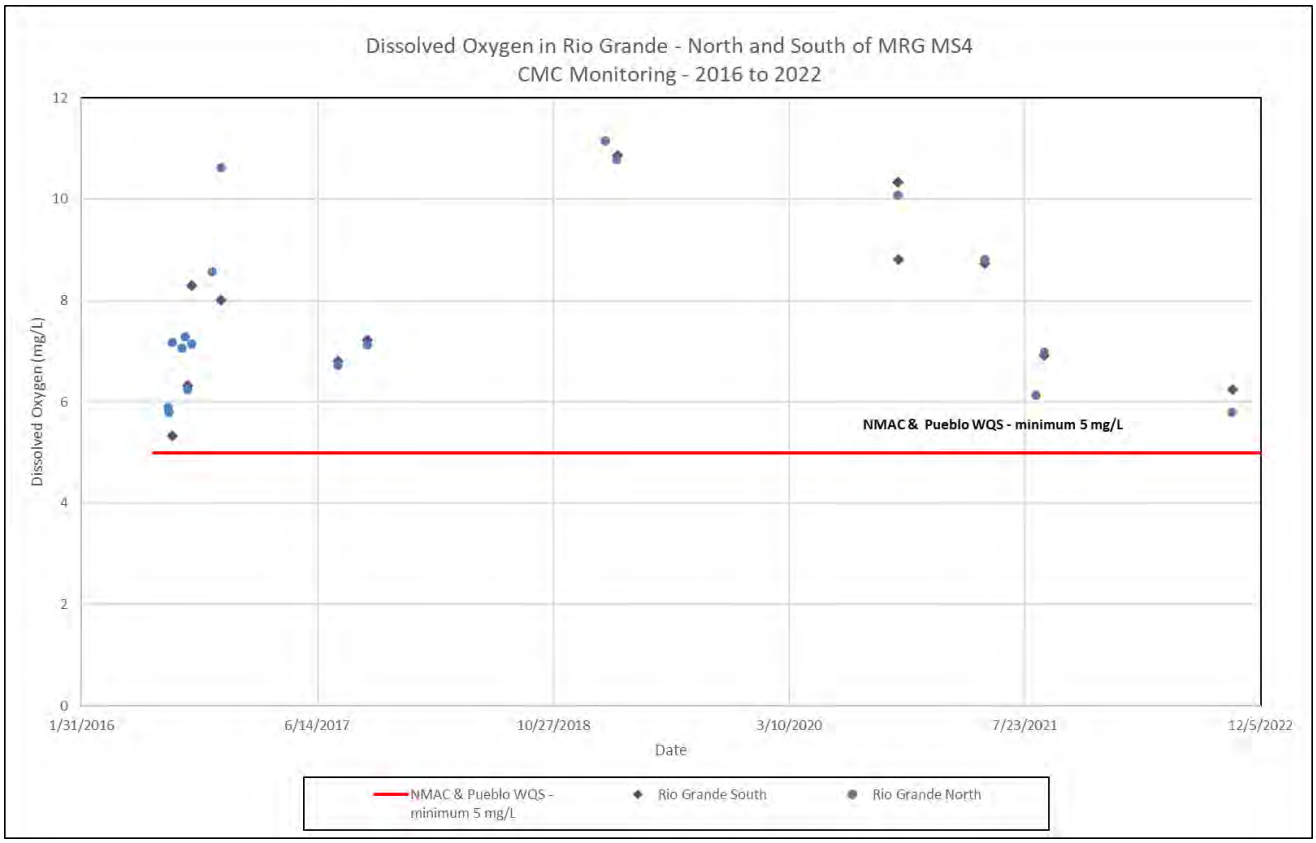


Figure 4: Dissolved Oxygen Results in the Rio Grande
CMC Monitoring – 2016 - 2022

Temperature is listed in the WSB MS4 Permit as a special condition (currently only applicable to the City of Albuquerque and AMAFCA). Past data submitted to EPA and NMED by the MS4 permittees have proven that stormwater discharges into the Rio Grande are not raising the Rio Grande temperature above the WQSs. The data collected during this FY 2023 wet season monitoring also supports this conclusion. All the temperature field readings taken in the Rio Grande during the CMC FY 2023 wet season were below 32.2°C (90°F), which is the WQS for the State of New Mexico and for the Isleta and Sandia Pueblos. Refer to Figure 5 for temperature results and comparison to applicable WQSs for all CMC samples taken upstream and downstream of the MRG MS4 area from 2016 to 2022.

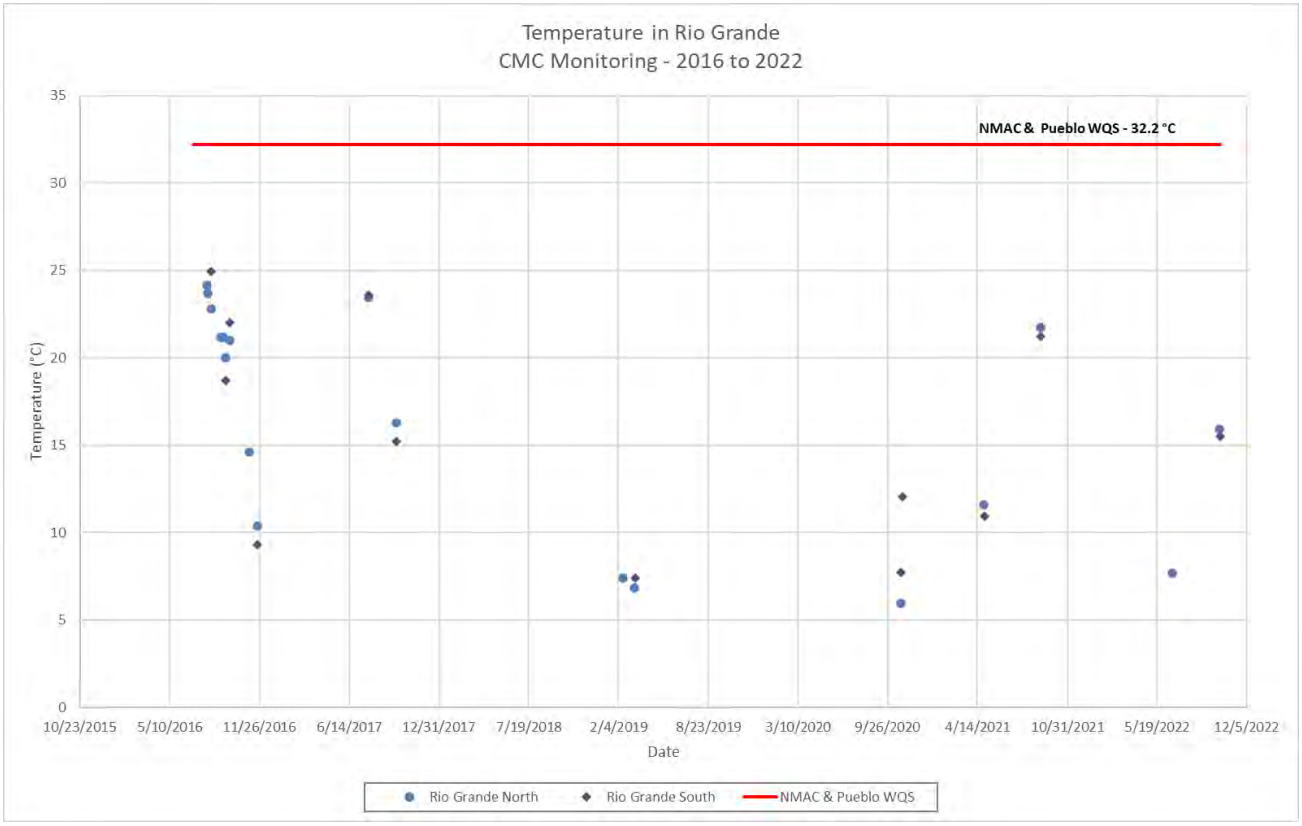


Figure 5: Temperature Monitoring Results in the Rio Grande
CMC Monitoring – 2016 - 2022

CMC FY 2023 Wet Season E. coli Loading Calculations and Waste Load Allocation (WLA)

Related to assessing the stormwater results, the E. coli loading was calculated and compared to the aggregate Total Maximum Daily Load (TMDL) Waste Load Allocation (WLA) for the CMC group. A TMDL is the maximum amount of a pollutant (E. coli in this case) that a water body (Rio Grande) can assimilate on a daily basis without violating applicable surface WQSs. The total TMDL for a stream segment consists of the multiple WLA for point sources, non-point sources, and natural sources, plus a margin of safety. The CMC MS4 allotted WLA was determined in the EPA Approved, Total Maximum Daily Load for the Middle Rio Grande Watershed, June 30, 2010, and subsequent communications with NMED. The WLA varies by flow condition in the Rio Grande and by stream segment.

E. coli loading calculations and comparison to the WLA follows the WSB MS4 Permit requirements in "Discharges to Water Quality Impaired Water Bodies with an Approved TMDL", Part I.C.2.b.(i).(c).B, Appendix B-Total Maximum Daily Loads (TMDLs) Tables of the WSB MS4 Permit, and the NMED guidance provided to the CMC. Attached to this memo is the WLA Calculation spreadsheet which steps through the E. coli loading calculations and assumptions comparing the calculated E. coli loading to the CMC aggregate WLA defined by NMED.

There are two (2) stream segments defined in the WSB MS4 Permit (Appendix B): Isleta Pueblo Boundary to Alameda Street Bridge (Stream Segment 2105_50) and Non-Pueblo Alameda Bridge to Angostura Diversion (Stream Segment 2105.1_00). These stream segments differ from NMED's current stream segments defined in the *2022-2024 State of New Mexico Clean Water Act Section 303(d)/Section 305(b) Integrated Report* (NMED, April 2022). NMED currently has four (4) stream segments instead of the two (2) WSB MS4 stream segments. These various stream segment designations are shown in Figure 6, page 16.

The *NMED 303(d)/305(b) 2020-2022 Integrated Report* tables show the most recent assessment results, and currently all segments of the Rio Grande (Isleta to Angostura Diversion) are impaired for E. coli and have a TMDL for E. coli.

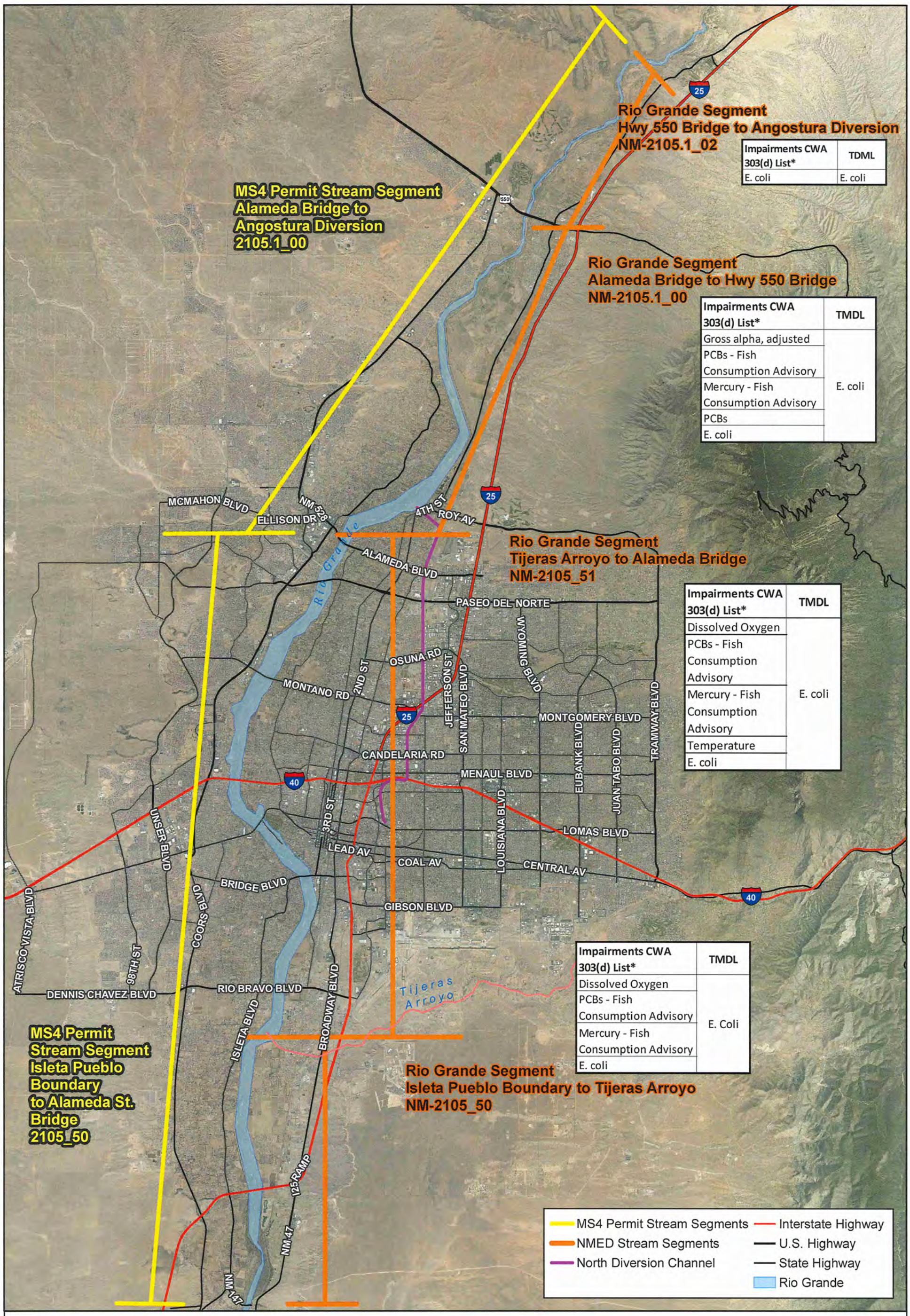
The E. coli daily loading associated with the CMC group and comparison to the NMED WLA was completed for the one (1) qualifying wet season storm event – October 5-6, 2022. For this event, the CMC obtained an E. coli sample in the Rio Grande at Alameda and used this to calculate the E. coli loading for the two (2) river segments. Refer to Table 5 for a summary of the WLA comparison results. A spreadsheet is attached to this memo that provides the detailed WLA calculations.

Table 5: Summary of CMC E. Coli Loading Compared to WLA for the CMC

Date / Stream Segment	Daily Mean Flow (cfs)	Flow Conditions (cfs) *range defined by NMED*	CMC Daily E. coli Loading (CFU/day)	NMED WLA for CMC for Stream Segment and Flow Conditions	Loading Compared to WLA Potential Exceedance or Acceptable
October 5-6, 2022 – Rio Grande North E. coli Concentration 10/5/2022 = 135 MPN (CFU/100 mL) Rio Grande at Alameda E. coli Concentration 10/5/2022 = 52 MPN (CFU/100 mL) Rio Grande South E. coli Concentration 10/6/2022 = <1 MPN (CFU/100 mL)					
Alameda to Angostura	146	Dry	0.00E+00	3.24E+10	WLA Acceptable
Isleta to Alameda	165	Dry	0.00E+00	1.57E+09	WLA Acceptable

As Table 5 illustrates, the calculated E. coli loading for the October 5-6, 2022 storm event for the northern segment (Alameda to Angostura) and the southern segment (Isleta to Almeda) of the Rio Grande was below the WLA for the CMC MS4s. This analysis used the mid-point E. coli sample result obtained in the Rio Grande at Alameda.

The WSB MS4 Permit implies that the WLA is a measurable goal for the MS4s related to E. coli. Based on extensive review of the EPA Approved, Total Maximum Daily Load (TMDL) for the Middle Rio Grande Watershed, June 30, 2010, this seems to be an unattainable goal for MS4s.



AMAFCA

Bohannan Huston
www.bhinc.com
800.877.5332

N

0 12,000 24,000 Feet
1 in = 12,500 ft

CMC Monitoring

Figure 6
Rio Grande Impairments & TMDL Information

* Final 2022-2024 State of NM Clean Water Act, Section 303(d)/Section 305(b) Integrated Report

P:\20230125\WR\Reports\Final\Figures\MXDs\Figure6-MS4_TMDLStreamSegments_2021_0416.mxd
Author: mcrooks

Page 40 of the 2010 TMDL Report states, “It is important to remember that the TMDL is a planning tool to be used to achieve water quality standards…Meeting the calculated TMDL may be a difficult objective.” The TMDL/WLA was calculated by NMED to meet the Pueblo (Sandia and Isleta) geometric mean maximum of 47 CFU/100 ml, which was done to be “protective of downstream waters” and “to provide an implicit margin of safety (MOS)”. A single grab sample E. coli result meeting this very low geometric means WQSs will be very difficult for the MS4s to obtain.

The CMC members discussed the difficulty of using the WLA as a measurable goal with NMED on February 1, 2017. NMED explained that exceeding the WLA does not trigger enforcement. However, NMED strongly encouraged the MS4s to document what they are doing once they realize the WLA is potentially exceeded. The meeting on February 1, 2017, and the CMC discussion with NMED on February 16, 2017, demonstrate CMC members are working toward understanding the WLA. In addition, the CMC members began implementing a refinement to the sampling plan discussed with NMED by obtaining an E. coli sample in the Rio Grande at Alameda effective the FY 2018 wet season, as feasible. This demonstrates that the CMC is continuing to investigate the potential exceedances and make improvements to monitor E. coli in the Rio Grande.

Data Entry for Discharge Monitoring Reports

The WSB MS4 Permit entered Administrative Continuance in December 2019 when EPA Region 6 did not issue a new MS4 Permit before the current MS4 Permit’s expiration date. Until a new MS4 Permit is issued, there are no compliance monitoring requirements for the CMC in the Rio Grande. As identified in the CMC Monitoring Plan, the WSB MS4 Permit required a minimum of seven (7) storm events be sampled at both the Rio Grande North and Rio Grande South locations. All MS4 Permit required samples have been obtained by the CMC and verified stormwater quality data from these required events have been submitted to the EPA using electronic Discharge Monitoring Report (DMR) forms. Data from the DMRs are uploaded to a comprehensive nationwide database that contains discharge data for facilities and other point sources that discharge directly to receiving streams. For this Task, BHI has not completed any data entry related to the EPA DMRs for the FY 2023 wet season.

Conclusions and Planning

During the FY 2023 wet season (July 1 to October 31, 2022), one (1) qualifying stormwater sample was obtained by the CMC. Lab results were received, and this data has been entered into the CMC Excel database. The lab data entered is marked in the spreadsheet as “V” (verified), and data V&V has been completed (refer to Attachment 2).

To summarize, monitoring results and E. coli loading calculations for the FY 2023 wet season show that:

- The WSB MS4 Permit entered Administrative Continuance in December 2019 when U.S. Environmental Protection Agency (EPA) Region 6 did not issue a new MS4 Permit before the current MS4 Permit’s expiration date. Until a new MS4 Permit is issued, there are no compliance monitoring requirements for the CMC in the Rio Grande. All MS4 Permit required samples have been obtained by the CMC, as well several samples collected during Administrative Continuance, including the one (1) sample obtained in the FY 2023 wet season, as reported in this memo.

- For the FY 2023 wet season, 19 of the 33 parameters tested were not detected in any of the Rio Grande North or South samples.
- Several key parameters all met the applicable WQSs, as they have for all the CMC samples to date:
    - All dissolved oxygen results were greater than 5 mg/L (minimum WQS).
    - All temperature results were less than 32.2°C (maximum WQS).
- The PCB results were below the New Mexico Surface WQSs and Pueblo of Isleta Surface WQSs for designated uses including drinking water, wildlife habitat, acute aquatic life, and chronic aquatic life. However, the Rio Grande South CMC sample from October 6, 2022, was above the Pueblo of Isleta and New Mexico human health criteria (based on fish consumption only) WQSs for surface waters.
- The October 6, 2022, Rio Grande South sample result exceeded the New Mexico Surface WQSs and Pueblo of Isleta Surface WQSs (15 pCi/L) for gross alpha, adjusted. This is the third time since 2016 that the analytical results from a CMC sample have had an exceedance in gross alpha, adjusted. The CMC will continue to closely evaluate this parameter in future samples.
- The calculated E. coli loading for the October 5-6, 2022 storm event for the northern segment (Alameda to Angostura) and the southern segment (Isleta to Almeda) of the Rio Grande was below the WLA for the CMC MS4s. This analysis used the mid-point E. coli sample result obtained in the Rio Grande at Alameda.
    - The E. coli lab result for the Rio Grande South location is the lowest value that the CMC has seen reported in the Rio Grande at this location. AMAFCA called HEAL to discuss this result and verify that the reported result was correct.
    - Sources for the E. coli loading measured in the river are not solely attributable to the CMC MS4 members; the E. coli loading calculations serve to provide a reasonable estimate of the CMC contribution to the measured E. coli loading.

For planning purposes for the CMC members, the FY 2023 dry season CMC monitoring, if a sample is obtained, will be summarized by BHI for the CMC in a dry season memo.

SG/ab

Attachments:

Attachment 1 – DBS&A Field Data & Hall Environmental Analysis Laboratory Reports with BHI Notes for FY 2023 Wet Season

Attachment 2 – FY 2023 Wet Season Completed Data Verification and Validation (V&V) Forms

Spreadsheets Included Separately:

E. coli Loading and Comparison to Waste Load Allocation (WLA) Excel Spreadsheet

Excel CMC Spreadsheet with FY 2023 Wet Season Stormwater Quality Monitoring Results

ATTACHMENT 1

DBS&A FIELD DATA & HALL ENVIRONMENTAL ANALYSIS LABORATORY REPORTS WITH BHI NOTES FOR FY 2023 WET SEASON

CMC Water Quality Results Database
Date: December 29, 2022
Summary of Lab Results for CMC samples for FY 2023 Wet Season

			Rio Grande - North				Rio Grande - South - At Isleta Dam				Rio Grande - Alameda Bridge (E. coli Only Samples)			
Parameter	**Permit Required Units**	**Analysis Method**	**Provisional or Verified**	**2023 CMC SAMPLE - EXTRA NORTH Collection Date 10/5/2022 Wet Season Sample**	**Qualifier**	**Check compared to Water Quality Criterion**	**Provisional or Verified**	**2023 CMC SAMPLE - EXTRA SOUTH Collection Date 10/6/2022 Wet Season Sample**	**Qualifier**	**Check compared to Water Quality Criterion**	**Provisional or Verified**	**2023 CMC SAMPLE - EXTRA ALAMEDA Collection Date 10/5/22 Wet Season Sample**	**Qualifier**	**Check compared to Water Quality Criterion**
Total Suspended Solids (TSS)	mg/L	SM 2540D	V	29		--	V	890	D	--				
Total Dissolved Solids (TDS)	mg/L	SM2540C MOD	V	195		OK	V	265	D	OK				
Chemical Oxygen Demand (COD)	mg/L	EPA 410.4	V	22.3		--	V	ND		--				
Biochemical Oxygen Demand (BOD_5)	mg/L	SM5210B	--	Not provided		--	--	Not provided		--				
Dissolved Oxygen (DO)	mg/L	FIELD	V	5.79		OK	V	6.24		OK	V	5.58		OK
Oil and Grease (N-Hexane Extractable Material)	mg/L	EPA 1664A	V	ND		OK	V	ND		OK				
E. coli	MPN (CFU/100 mL)	SM 9223B Fecal Indicator	V	135		>WQ Standard	V	<1		OK	V	52		OK
pH	S.U.	FIELD	V	8.24	H	OK	V	8.02	H	OK	V	7.6		OK
Total Kjedahl Nitrogen (TKN)	mg/L	SM 4500	V	ND		--	V	1.7		--				
Nitrate plus Nitrite	mg/L	EPA 300.0: Anions	V	ND		OK	V	ND		OK				
Dissolved Phosphorous	mg/L	EPA 365.1, filtered sample	V	ND	D	--	V	ND	D	--				
Ammonia (mg/L as N)	mg/L	SM 4500 NH3	V	ND		OK	V	ND		OK				
Total Nitrogen	mg/L	--	V	ND		OK	V	1.70		OK				
Total Phosphorous	mg/L	EPA 365.1	V	ND	D	--	V	0.97	D	--				
PCBS - 0.000064 (Method 1668A - sum of all congeners)	µg/L	EPA 1668	V	0.00013	J	OK	V	0.0011	J	>WQ Standard				
Gross Alpha, Adjusted	pCi/L	EPA 900.0	V	0.895 ± NA		OK	V	22.98 ± NA		>WQ Standard				
Tetrahydrofuran	µg/L	EPA 8260 C	V	ND		--	V	ND		--				
Benzo[a]pyrene	µg/L	EPA 625	V	ND		OK	V	ND		OK				
Benzo[b]fluoranthene (other name: 3,4-Benzofluoranthene)	µg/L	EPA 625	V	ND		OK	V	ND		OK				
Benzo(k)fluoranthene	µg/L	EPA 625	V	ND		OK	V	ND		OK				
Chrysene	µg/L	EPA 625	V	ND		OK	V	ND		OK				
Indeno(1,2,3-cd)Pyrene	µg/L	EPA 625	V	ND		OK	V	ND		OK				
Dieldrin	µg/L	EPA 608	V	ND		OK	V	ND		OK				
Pentachlorophenol	µg/L	EPA 625	V	ND		OK	V	ND		OK				
Benzidine	µg/L	EPA 625	V	ND		OK	V	ND		OK				
Benzo(a)anthracene	µg/L	EPA 625	V	ND		OK	V	ND		OK				
Dibenzofuran	µg/L	EPA 625	V	ND		--	V	ND		--				
Dibenzo(a,h)anthracene	µg/L	EPA 625	V	ND		OK	V	ND		OK				
Chromium VI (Hexavalent)	µg/L	3500Cr C-2011	V	ND		OK	V	ND		OK				
Dissolved Copper	µg/L	EPA 200.8	V	1.1		OK	V	ND		OK				
Dissolved Lead	µg/L	EPA 200.8	V	ND		OK	V	ND		OK				
Bis (2-ethyhexyl) Phthalate (other names: Di(2-ethylhexly)phthalate, DEHP) - 2.2	µg/L	EPA 625	V	ND		OK	V	ND		OK				
Conductivity	umhos/cm	FIELD	V	290		--	V	395		--	V	275		--
Temperature	°C	FIELD	V	15.9		OK	V	15.5		OK	V	18		OK
Hardness (as $CaCO_3$)	mg/L	SM2340B	V	120		--	V	280		--				
Mercury	µg/l	--												

Data Verification/Validation and Qualifier Notes:
(R) The sample results are unusable because certain criteria were not met. The analyte may or may not be present in the sample.
(H) Sample holding time exceeded.
(J) The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample.
(D) Sample was diluted by Lab due to matrix
(U) Analyte was analyzed for, but not detected above the specified detection limit.

Notes:
1. Wet Season monitoring period - July 1 to October 31 and Dry Season monitoring period - November 1 to June 30 according to the Watershed Based MS4 Permit NMR04A000.
mean monthly flow of 100 cfs, monthly average concentration for TDS 1,500 mg/l or less,
sulfate 500 mg/L or less, and chloride 250 mg/L or less.
3. Aquatic life criteria for metals are expressed as a function of total hardness (mg/L as
4. According to NMAC 20.6.4, E. coli bacteria for Primary Contact - monthly geometric
5. Water quality criterion for metals is based on dissolved metals, NMAC 20.6.4.900.I and
individual sample results compared to acute toxicity values.
6. HEAL lab method: SM 9223B Fecal Indicator. Note - lab method for units of MPN/100
ml, lab report uses units CFU/100 ml, for this analysis assuming two units are equivalent

ND - analyte not detected above the laboratory method detection limit
NA - not analyzed
Hatching also indicates that parameter was not analyzed

National recommended WQ criteria Human Health
https://www.epa.gov/wqc/national-recommended-water-quality-criteria-human-health-criteria-table

Samplers Chad Johansson
Sam Fire

CMC Sampling Data Sheet

Site Identification: Rio Grande North ; Angostura Diversion Dam

Notes:

Full Suite Sample Date and Time:	10/5/22 1215
Full Sample Identification:	RG North- 20221005
QC Samples:	Duplicate / (None) QC Sample ID:
QC samples require a DIFFERENT sample time than the environmental sample. QC Sample time:	

Full Suite Collection Point : Diversion Structure

Full Suite Sample Volume: 8gal Collection Time Start: 1125 End: 1210

Field Parameters for each 2-gallon grab

Grab	Time	Temp (°C)	pH	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	Dissolved Oxygen (%)
1	1125	16.4	8.56	334	6.56	66.6
2	1140	16.8	7.25	297	5.90	60.7
3	1155	16.8	8.01	295	3.42	34.6
4	1210	14.9	8.27	291	8.91	88.2
Composite	1215	15.9	8.24	290	5.79	59.6

☒Turbid Water ☐Color TAN ☒Solids ☐Oil/Sheen ☐Foam ☐Odor_____

Analytical - see 2021 COC table

☒Site Photo ☒Sample Photo

Samplers Chad Johannesen
Sam Fire

CMC Sampling Data Sheet

Site Identification: Rio Grande @ Isleta

Notes:

Full Suite Sample Date and Time:	10/6/22 0905
Full Sample Identification:	RG South- 20221006
QC Samples: Duplicate / None	QC Sample ID:
QC samples require a DIFFERENT sample time than the environmental sample. QC Sample time:	

Full Suite Collection Point : Isleta diversion structure

Full Suite Sample Volume: 8 gal Collection Time Start: 0815 End: 0900

Field Parameters for each 2-gallon grab

Grab	Time	Temp (°C)	pH	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	Dissolved Oxygen (%)
1	0815	15.9	8.51	423	5.43	54.7
2	0830	15.8	7.27	399	5.95	59.7
3	0845	15.6	7.97	394	6.08	60.7
4	0900	15.7	8.01	396	6.21	62.0
Composite	0905	15.5	8.02	395	6.24	62.1

☒Turbid Water ☐Color Brown ☒Solids ☐Oil/Sheen ☒Foam ☐Odor_____

Analytical - see 2021 COC table

☒Site Photo ☐Sample Photo

Samplers Chad Johnnesen
San Fe

CMC Sampling Data Sheet

Site Identification: Rio Grande at Alameda

Notes:

Full Suite Sample Date and Time:	10/5/22 1340
Full Sample Identification:	R6 Alameda- 20221005
QC Samples: Duplicate / None	QC Sample ID:
QC samples require a DIFFERENT sample time than the environmental sample. QC Sample time:	

Full Suite Collection Point : Alameda Bridge

Full Suite Sample Volume: 1 gal Collection Time Start: 1330 End: 1340

Field Parameters for each 2-gallon grab

Grab	Time	Temp (°C)	pH	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	Dissolved Oxygen (%)
1						
2						
3						
4						
Composite	1340	18.0	7.60	275	5.58	57.9

☒ *Turbid Water* ☐ *Color* Brown ☒ *Solids* ☐ *Oil/Sheen* ☐ *Foam* ☐ *Odor*_____

Analytical - see 2021 COC table

☒ Site Photo ☒ Sample Photo

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

October 10, 2022

10/5/2022: Alameda and Rio Grande North E.coli only samples

Patrick Chavez
AMAFCA
2600 Prospect Ave NE
Albuquerque, NM 87107
TEL: (505) 884-2215
FAX:

RE: CMC Wet 22

OrderNo.: 2210242

Dear Patrick Chavez:

Hall Environmental Analysis Laboratory received 2 sample(s) on 10/5/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Field Parameters:
Rio Grande North
Temp = 15.9°C
pH = 8.24
Conductivity = 290 uS/cm
Dissolved Oxygen = 5.79 mg/L

Field Parameters:
Rio Grande at Alameda
Temp = 18.0°C
pH = 7.60
Conductivity = 275 uS/cm
Dissolved Oxygen = 5.58 mg/L

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **2210242**
Date Reported: **10/10/2022**

CLIENT: AMAFCA
Project: CMC Wet 22
Lab ID: 2210242-001 **Matrix:** AQUEOUS

Client Sample ID: RG North-20221005
Collection Date: 10/5/2022 12:05:00 PM
Received Date: 10/5/2022 2:20:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
SM 9223B FECAL INDICATOR: E. COLI MPN							Analyst: **dms**	
E. Coli	135	10.00	10.00		MPN/100	10	10/7/2022 5:05:00 PM	70632

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **2210242**
Date Reported: **10/10/2022**

CLIENT: AMAFCA
Project: CMC Wet 22
Lab ID: 2210242-002
Matrix: AQUEOUS
Client Sample ID: RG Alameda-20221005
Collection Date: 10/5/2022 1:40:00 PM
Received Date: 10/5/2022 2:20:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
SM 9223B FECAL INDICATOR: E. COLI MPN							Analyst: **dms**	
E. Coli	52	10.00	10.00		MPN/100	10	10/7/2022 5:05:00 PM	70632

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **AMAFCA** Work Order Number: **2210242** RcptNo: 1

Received By: **Juan Rojas** **10/5/2022 2:20:00 PM**

Completed By: **Cheyenne Cason** **10/5/2022 2:45:18 PM**

Reviewed By: 10.5.22 @ 15:19

Chain of Custody

1. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
2. How was the sample delivered? Client

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☐ No ☑ NA ☐
   Samples were collected the same day and chilled.
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
8. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☐ No ☐ NA ☑
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

# of preserved bottles checked for pH: (<2 or >12 unless noted)
Adjusted?
Checked by: KPG 10.05.22

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:
By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:
Client Instructions:

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	15.1	Good	Not Present			

Chain-of-Custody Record

Client: AMAFCA

Mailing Address:

Phone #:

email or Fax#: pchavez@amafca.org

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other
☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: CMC - Wet 22

Project #:

Project Manager: Patrick Chavez

Sampler: CJohannesen

On Ice: ☒ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): 15.1 -0=15.1 (°C)

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2210242	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)	Ecoli - enumerated
10-5-22	1215	AQ	RG North - 20221005			001											X
10-5-22	1340	AQ	RG Alameda - 20221005			002											X

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
10-5-22	1420			COC	10/5/22	14:20

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

10/5/2022: Rio Grande North and 10/6/2022: Rio Grande South

November 23, 2022

Patrick Chavez
AMAFCA
2600 Prospect Ave NE
Albuquerque, NM 87107
TEL: (505) 884-2215
FAX:

RE: CMC Wet FY23 OrderNo.: 2210315

Dear Patrick Chavez:

Hall Environmental Analysis Laboratory received 3 sample(s) on 10/6/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Field Parameters:
- Rio Grande North
Temp = 15.9°C
pH = 8.24
Conductivity = 290 uS/cm
Dissolved Oxygen = 5.79 mg/L
- Rio Grande South
Temp = 15.5°C
pH = 8.02
Conductivity = 395 uS/cm
Dissolved Oxygen = 6.24 mg/L

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC Wet FY23
Lab ID: 2210315-001A

Client Sample ID: R6 North-20221005
Collection Date: 10/5/2022 12:15:00 PM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8081: PESTICIDES						Analyst: **JME**	
Dieldrin	ND	0.10		µg/L	1	10/17/2022 12:51:12 PM	70767
Surr: Decachlorobiphenyl	94.3	40.9-111		%Rec	1	10/17/2022 12:51:12 PM	70767
Surr: Tetrachloro-m-xylene	64.3	15-107		%Rec	1	10/17/2022 12:51:12 PM	70767

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC Wet FY23
Lab ID: 2210315-001D

Client Sample ID: R6 North-20221005
Collection Date: 10/5/2022 12:15:00 PM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 1664B						Analyst: **SMS**	
N-Hexane Extractable Material	ND	9.40		mg/L	1	10/18/2022 6:18:00 PM	70825

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC Wet FY23
Lab ID: 2210315-001E

Client Sample ID: R6 North-20221005
Collection Date: 10/5/2022 12:15:00 PM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst:	**JTT**
Nitrogen, Nitrite (As N)	ND	0.50		mg/L	5	10/6/2022 11:59:13 PM	A91618
Nitrogen, Nitrate (As N)	ND	0.50		mg/L	5	10/6/2022 11:59:13 PM	A91618
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst:	**SNS**
Total Dissolved Solids	195	20.0		mg/L	1	10/12/2022 8:50:00 AM	70696
SM 4500 NH3: AMMONIA						Analyst:	**EKM**
Nitrogen, Ammonia	ND	1.0		mg/L	1	10/21/2022 1:24:00 PM	R91993
SM4500-H+B / 9040C: PH						Analyst:	**JTT**
pH	8.24		H	pH units	1	10/10/2022 3:56:29 PM	R91722
EPA METHOD 365.1: TOTAL PHOSPHOROUS						Analyst:	**CJS**
Phosphorus, Total (As P)	ND	0.25	D	mg/L	1	10/25/2022 3:03:00 PM	71023
SM 4500 NORG C: TKN						Analyst:	**EKM**
Nitrogen, Kjeldahl, Total	ND	1.0		mg/L	1	10/24/2022 10:19:00 AM	70981
SM 2540D: TSS						Analyst:	**KS**
Suspended Solids	29	4.0		mg/L	1	10/10/2022 3:18:00 PM	70679

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC Wet FY23
Lab ID: 2210315-001F

Client Sample ID: R6 North-20221005
Collection Date: 10/5/2022 12:15:00 PM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 365.1: TOTAL PHOSPHOROUS						Analyst: **CJS**	
Phosphorus, Total (As P)	ND	0.25	D	mg/L	1	10/25/2022 3:04:00 PM	71023

Dissolved phosphorous

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC Wet FY23
Lab ID: 2210315-001G

Client Sample ID: R6 North-20221005
Collection Date: 10/5/2022 12:15:00 PM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
SM2340B: HARDNESS						Analyst: **VP**	
Hardness as CaCO3	120	6.6		mg/L	1	10/14/2022 2:05:00 PM	R91819
EPA METHOD 200.7: METALS						Analyst: **VP**	
Calcium	39	1.0		mg/L	1	10/14/2022 5:58:24 PM	70811
Magnesium	6.8	1.0		mg/L	1	10/14/2022 5:58:24 PM	70811

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC Wet FY23
Lab ID: 2210315-001N

Client Sample ID: R6 North-20221005
Collection Date: 10/5/2022 12:15:00 PM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: DISSOLVED METALS						Analyst: **bcv**	
Copper	0.0011	0.0010		mg/L	1	10/18/2022 1:04:27 PM	A91883
Lead	ND	0.00050		mg/L	1	10/18/2022 1:04:27 PM	A91883

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC Wet FY23
Lab ID: 2210315-002A

Client Sample ID: R6 South-20221006
Collection Date: 10/6/2022 9:05:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8081: PESTICIDES						Analyst: **JME**	
Dieldrin	ND	0.10		µg/L	1	10/17/2022 1:04:20 PM	70767
Surr: Decachlorobiphenyl	96.8	40.9-111		%Rec	1	10/17/2022 1:04:20 PM	70767
Surr: Tetrachloro-m-xylene	76.2	15-107		%Rec	1	10/17/2022 1:04:20 PM	70767

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC Wet FY23
Lab ID: 2210315-002B

Client Sample ID: R6 South-20221006
Collection Date: 10/6/2022 9:05:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
SM 9223B FECAL INDICATOR: E. COLI MPN						Analyst: **dms**	
E. Coli	<1	1.000		MPN/100	1	10/7/2022 5:05:00 PM	70671

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC Wet FY23
Lab ID: 2210315-002D

Client Sample ID: R6 South-20221006
Collection Date: 10/6/2022 9:05:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 1664B						Analyst: **SMS**	
N-Hexane Extractable Material	ND	9.50		mg/L	1	10/18/2022 6:18:00 PM	70825

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC Wet FY23
Lab ID: 2210315-002E

Client Sample ID: R6 South-20221006
Collection Date: 10/6/2022 9:05:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst:	**JTT**
Nitrogen, Nitrite (As N)	ND	0.50		mg/L	5	10/7/2022 1:16:26 AM	A91618
Nitrogen, Nitrate (As N)	ND	0.50		mg/L	5	10/7/2022 1:16:26 AM	A91618
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst:	**SNS**
Total Dissolved Solids	265	100	D	mg/L	1	10/12/2022 8:50:00 AM	70696
SM 4500 NH3: AMMONIA						Analyst:	**EKM**
Nitrogen, Ammonia	ND	1.0		mg/L	1	10/21/2022 1:24:00 PM	R91993
SM4500-H+B / 9040C: PH						Analyst:	**JTT**
pH	8.09		H	pH units	1	10/10/2022 4:00:35 PM	R91722
EPA METHOD 365.1: TOTAL PHOSPHOROUS						Analyst:	**CJS**
Phosphorus, Total (As P)	0.97	0.25	D	mg/L	1	10/25/2022 3:06:00 PM	71023
SM 4500 NORG C: TKN						Analyst:	**EKM**
Nitrogen, Kjeldahl, Total	1.7	1.0		mg/L	1	10/24/2022 10:19:00 AM	70981
SM 2540D: TSS						Analyst:	**KS**
Suspended Solids	890	20	D	mg/L	1	10/10/2022 3:18:00 PM	70679

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC Wet FY23
Lab ID: 2210315-002F

Client Sample ID: R6 South-20221006
Collection Date: 10/6/2022 9:05:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 365.1: TOTAL PHOSPHOROUS						Analyst: **CJS**	
Phosphorus, Total (As P)	ND	0.25	D	mg/L	1	10/25/2022 3:08:00 PM	71023

Dissolved phosphorous

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC Wet FY23
Lab ID: 2210315-002G

Client Sample ID: R6 South-20221006
Collection Date: 10/6/2022 9:05:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
SM2340B: HARDNESS						Analyst: **VP**	
Hardness as CaCO3	280	6.6		mg/L	1	10/14/2022 2:05:00 PM	R91819
EPA METHOD 200.7: METALS						Analyst: **VP**	
Calcium	82	1.0		mg/L	1	10/14/2022 6:01:40 PM	70811
Magnesium	17	1.0		mg/L	1	10/14/2022 6:01:40 PM	70811

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC Wet FY23
Lab ID: 2210315-002N

Client Sample ID: R6 South-20221006
Collection Date: 10/6/2022 9:05:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: DISSOLVED METALS						Analyst: **bcv**	
Copper	ND	0.0010		mg/L	1	10/18/2022 1:07:08 PM	A91883
Lead	ND	0.00050		mg/L	1	10/18/2022 1:07:08 PM	A91883

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

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Client:	Hall Environmental Analysis Lab	Work Order:	MCJ0294
Address:	4901 Hawkins NE Suite D	Project:	2210315
	Albuquerque, NM 87109	Reported:	11/1/2022 11:21
Attn:	Andy Freeman		

Analytical Results Report

Sample Location:	2210315-001H (R6 North-20221005)		
Lab/Sample Number:	MCJ0294-01	Collect Date:	10/05/22 12:15
Date Received:	10/07/22 14:03	Collected By:	
Matrix:	Water		

Analyte	Result	Units	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles							
Tetrahydrofuran	ND	ug/L	5.00	10/12/22 18:51	BKP	EPA 8260D	
Surrogate: 1,2-Dichlorobenzene-d4	*104%*		*70-130*	*10/12/22 18:51*	*BKP*	*EPA 8260D*	
Surrogate: 4-Bromofluorobenzene	*94.8%*		*70-130*	*10/12/22 18:51*	*BKP*	*EPA 8260D*	
Surrogate: Toluene-d8	*96.1%*		*70-130*	*10/12/22 18:51*	*BKP*	*EPA 8260D*	

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Analytical Results Report

(Continued)

Sample Location: 2210315-001I (R6 North-20221005)

Lab/Sample Number: MCJ0294-02 Collect Date: 10/05/22 12:15

Date Received: 10/07/22 14:03 Collected By:

Matrix: Water

Analyte	Result	Units	PQL	Analyzed	Analyst	Method	Qualifier
Semivolatiles							
Benzidine	ND	ug/L	1.00	10/18/22 0:20	MH	EPA 8270E	
Benzo[a]anthracene	ND	ug/L	1.00	10/18/22 0:20	MH	EPA 8270E	
Benzo[a]pyrene	ND	ug/L	1.00	10/18/22 0:20	MH	EPA 8270E	
Benzo[b]fluoranthene	ND	ug/L	1.00	10/18/22 0:20	MH	EPA 8270E	
Benzo[k]fluoranthene	ND	ug/L	1.00	10/18/22 0:20	MH	EPA 8270E	
bis(2-Ethylhexyl)phthalate	ND	ug/L	1.00	10/18/22 0:20	MH	EPA 8270E	
Chrysene	ND	ug/L	1.00	10/18/22 0:20	MH	EPA 8270E	
Dibenz[a,h]anthracene	ND	ug/L	1.00	10/18/22 0:20	MH	EPA 8270E	
Dibenzofuran	ND	ug/L	1.00	10/18/22 0:20	MH	EPA 8270E	
Indeno[1,2,3-cd]pyrene	ND	ug/L	1.00	10/18/22 0:20	MH	EPA 8270E	
Pentachlorophenol	ND	ug/L	1.00	10/18/22 0:20	MH	EPA 8270E	
Surrogate: Terphenyl-d14	*64.9%*		*57-133*	*10/18/22 0:20*	*MH*	*EPA 8270E*	

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Analytical Results Report

(Continued)

Sample Location: 2210315-002H (R6 South-20221006)

Lab/Sample Number: MCJ0294-03 Collect Date: 10/06/22 09:05

Date Received: 10/07/22 14:03 Collected By:

Matrix: Water

Analyte	Result	Units	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles							
Tetrahydrofuran	ND	ug/L	5.00	10/12/22 19:21	BKP	EPA 8260D	
Surrogate: 1,2-Dichlorobenzene-d4	*104%*		*70-130*	*10/12/22 19:21*	*BKP*	*EPA 8260D*	
Surrogate: 4-Bromofluorobenzene	*92.6%*		*70-130*	*10/12/22 19:21*	*BKP*	*EPA 8260D*	
Surrogate: Toluene-d8	*96.5%*		*70-130*	*10/12/22 19:21*	*BKP*	*EPA 8260D*	

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Analytical Results Report

(Continued)

Sample Location: 2210315-002I (R6 South-20221006)

Lab/Sample Number: MCJ0294-04 Collect Date: 10/06/22 09:05

Date Received: 10/07/22 14:03 Collected By:

Matrix: Water

Analyte	Result	Units	PQL	Analyzed	Analyst	Method	Qualifier
Semivolatiles							
Benzidine	ND	ug/L	2.50	10/18/22 0:47	MH	EPA 8270E	
Benzo[a]anthracene	ND	ug/L	2.50	10/18/22 0:47	MH	EPA 8270E	
Benzo[a]pyrene	ND	ug/L	2.50	10/18/22 0:47	MH	EPA 8270E	
Benzo[b]fluoranthene	ND	ug/L	2.50	10/18/22 0:47	MH	EPA 8270E	
Benzo[k]fluoranthene	ND	ug/L	2.50	10/18/22 0:47	MH	EPA 8270E	
bis(2-Ethylhexyl)phthalate	ND	ug/L	2.50	10/18/22 0:47	MH	EPA 8270E	
Chrysene	ND	ug/L	2.50	10/18/22 0:47	MH	EPA 8270E	
Dibenz[a,h]anthracene	ND	ug/L	2.50	10/18/22 0:47	MH	EPA 8270E	
Dibenzofuran	ND	ug/L	2.50	10/18/22 0:47	MH	EPA 8270E	
Indeno[1,2,3-cd]pyrene	ND	ug/L	2.50	10/18/22 0:47	MH	EPA 8270E	
Pentachlorophenol	ND	ug/L	2.50	10/18/22 0:47	MH	EPA 8270E	
Surrogate: Terphenyl-d14	*78.7%*		*57-133*	*10/18/22 0:47*	*MH*	*EPA 8270E*	

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Analytical Results Report

(Continued)

Sample Location:	2210315-003A (Trip Blank)		
Lab/Sample Number:	MCJ0294-05	Collect Date:	10/06/22 00:00
Date Received:	10/07/22 14:03	Collected By:	
Matrix:	Water		

Analyte	Result	Units	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles							
Tetrahydrofuran	ND	ug/L	0.500	10/12/22 19:51	BKP	EPA 8260D	
Surrogate: 1,2-Dichlorobenzene-d4	*104%*		*70-130*	*10/12/22 19:51*	*BKP*	*EPA 8260D*	
Surrogate: 4-Bromofluorobenzene	*91.6%*		*70-130*	*10/12/22 19:51*	*BKP*	*EPA 8260D*	
Surrogate: Toluene-d8	*104%*		*70-130*	*10/12/22 19:51*	*BKP*	*EPA 8260D*	

Authorized Signature,

Justin Doty For Todd Taruscio, Laboratory Manager

PQL	Practical Quantitation Limit
ND	Not Detected
MCL	EPA's Maximum Contaminant Level
Dry	Sample results reported on a dry weight basis
*	Not a state-certified analyte

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Quality Control Data

Semivolatiles

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BCJ0360 - SVOC Water										
Blank (BCJ0360-BLK1)				Prepared: 10/10/2022 Analyzed: 10/17/2022						
Dibenzofuran	ND		0.500	ug/L						
Benzidine	ND		0.500	ug/L						
Indeno(1,2,3-cd)pyrene	ND		0.500	ug/L						
Dibenz(a,h)anthracene	ND		0.500	ug/L						
Chrysene	ND		0.500	ug/L						
Di (2-ethylhexyl) phthalate	ND		0.500	ug/L						
Benzo[k]fluoranthene	ND		0.500	ug/L						
Benzo[b]fluoranthene	ND		0.500	ug/L						
Benzo[a]pyrene	ND		0.500	ug/L						
Benzo[a]anthracene	ND		0.500	ug/L						
Pentachlorophenol	ND		0.500	ug/L						
Surrogate: Terphenyl-d14			*18.7*	*ug/L*	*25.0*		*74.9*	*57-133*		
LCS (BCJ0360-BS1)				Prepared: 10/10/2022 Analyzed: 10/17/2022						
Dibenzofuran	4.43		0.500	ug/L	5.00		88.6	75-120		
Benzo[a]anthracene	4.38		0.500	ug/L	5.00		87.6	80-120		
Benzo[a]pyrene	4.25		0.500	ug/L	5.00		85.0	66-116		
Benzo[b]fluoranthene	4.61		0.500	ug/L	5.00		92.2	72-116		
Benzo[k]fluoranthene	4.97		0.500	ug/L	5.00		99.4	71-121		
Di (2-ethylhexyl) phthalate	5.39		0.500	ug/L	5.00		108	60-144		
Indeno(1,2,3-cd)pyrene	4.19		0.500	ug/L	5.00		83.8	62-123		
Pentachlorophenol	4.17		0.500	ug/L	5.00		83.4	51-118		
Chrysene	4.70		0.500	ug/L	5.00		94.0	74-124		
Dibenz(a,h)anthracene	4.16		0.500	ug/L	5.00		83.2	62-120		
LCS Dup (BCJ0360-BSD1)				Prepared: 10/10/2022 Analyzed: 10/17/2022						
Di (2-ethylhexyl) phthalate	4.79		0.500	ug/L	5.00		95.8	60-144	11.8	32
Pentachlorophenol	4.51		0.500	ug/L	5.00		90.2	51-118	7.83	25
Indeno(1,2,3-cd)pyrene	4.05		0.500	ug/L	5.00		81.0	62-123	3.40	25
Dibenzofuran	4.46		0.500	ug/L	5.00		89.2	75-120	0.675	25
Chrysene	4.79		0.500	ug/L	5.00		95.8	74-124	1.90	25
Benzo[k]fluoranthene	5.08		0.500	ug/L	5.00		102	71-121	2.19	25
Benzo[b]fluoranthene	4.47		0.500	ug/L	5.00		89.4	72-116	3.08	25
Benzo[a]pyrene	4.07		0.500	ug/L	5.00		81.4	66-116	4.33	25
Benzo[a]anthracene	4.38		0.500	ug/L	5.00		87.6	80-120	0.00	25
Dibenz(a,h)anthracene	3.91		0.500	ug/L	5.00		78.2	62-120	6.20	30

Quality Control Data

Volatiles

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BCJ0445 - VOC										
Blank (BCJ0445-BLK1)				Prepared & Analyzed: 10/12/2022						
Tetrahydrofuran	ND		0.500	ug/L						
Surrogate: 4-Bromofluorobenzene			*23.7*	*ug/L*	*25.0*		*94.6*	*70-130*		
Surrogate: Toluene-d8			*24.7*	*ug/L*	*25.0*		*98.6*	*70-130*		
Surrogate: 1,2-Dichlorobenzene-d4			*19.1*	*ug/L*	*19.0*		*100*	*70-130*		

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Quality Control Data

(Continued)

Volatiles (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BCJ0445 - VOC (Continued)										
LCS (BCJ0445-BS1)					Prepared & Analyzed: 10/12/2022					
Tetrahydrofuran	11.7		1.00	ug/L	10.0		117	80-120		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

Hall

MCJ0294

Due: 10/24/22

We

SUB CONTRATOR: **Anatek ID**	COMPANY: **Anatek Labs, Inc.**	PHONE: **(208) 883-2839**	FAX: **(208) 882-9246**
ADDRESS: **1282 Alturas Dr**		ACCOUNT #:	EMAIL:
CITY, STATE, ZIP: **Moscow, ID 83843**			

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS
1	2210315-001H	R6 North-20221005	VOAHCL	Aqueous	10/5/2022 12:15:00 PM	3	8260 Tetrahydrofuran Only
2	2210315-001I	R6 North-20221005	1LAMGU	Aqueous	10/5/2022 12:15:00 PM	3	8270 - See attached
3	2210315-002H	R6 South-20221006	VOAHCL	Aqueous	10/6/2022 9:05:00 AM	3	8260 Tetrahydrofuran Only
4	2210315-002I	R6 South-20221006	1LAMGU	Aqueous	10/6/2022 9:05:00 AM	2	8270 - See attached
5	2210315-003A	Trip Blank	VOAHCL	Trip Blank		2	8260 Tetrahydrofuran Only

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By:	Date: 10/6/2022	Time: 2:34 PM	Received By: JKT	Date: 10/7/22	Time: 14:03
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard ☑ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:

☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY

Temp of samples _____ °C Attempt to Cool ? _____

Comments: _____

Attached Sheet

MCJ0294

Due 10/24/22

Collaborative Monitoring Cooperative - Analyses List

Attach to Chain of Custody

Please refer to attached NPDES Permit No. NMR04A00 Appendix F. Methods and minimum qu
(MQL's) will be those approved under 40 CFR 136 and specified in the attached permit

Analyte (Bold Indicates WQS)	CAS #	Fraction	Method #	MDL (µg/L)
Hardness (Ca + Mg)	NA	Total	200.7	2.4
Lead	7439-92-1	Dissolved	200.8	0.09
Copper	7440-50-8	Dissolved	200.8	1.06
Ammonia + organic nitrogen	7664-41-7	Total	350.1	31.32
Total Kjehldal Nitrogen	17778-88-0	Total	351.2	58.78
Nitrate + Nitrite	14797-55-8	Total	353.2	10.17
Polychlorinated biphenyls (PCBs)	1336-36-3	Total	1668	0.014
Tetrahydrofuran (THF)	109-99-9	Total	8260C	7.9
bis(2-Ethylhexyl)phthalate	117-81-7	Total	8270D	0.2
Dibenzofuran	132-64-9	Total	8270D	0.2
Indeno(1,2,3-cd)pyrene	193-39-5	Total	8270D	0.2
Benzo(b)fluoranthene	205-99-2	Total	8270D	0.1
Benzo(k)fluoranthene	207-08-9	Total	8270D	0.1
Chrysene	218-01-9	Total	8270D	0.2
Benzo(a)pyrene	50-32-8	Total	8270D	0.1
Dibenzo(a,h)anthracene	53-70-3	Total	8270D	0.3
Benzo(a)anthracene	56-55-3	Total	8270D	0.2
Dieldrin	60-57-1	Total	8081	0.1
Pentachlorophenol	87-86-5	Total	8270D	0.2
Benzidine	92-87-5	Total	8270D	0.1
Chemical Oxygen Demand	E1641638[2]	Total	HACH	5100
Gross alpha (adjusted)	NA	Total	Method 900	0.1 pCi/L
Total Dissolved Solids	E1642222[2]	Total	SM 2540C	60.4
Total Suspended Solids	NA	Total	SM 2540D	3450
Biological Oxygen Demand	N/A	Total	Standard Methods	930
Oil and Grease		Total	1664A	5000
Ecoli-enumeration			SM 9223B	
pH			SM 4500	
Phosphorus		Dissolved	365.1	100
Phosphorus		Total	365.1	100
Chromium IV		Total	3500Cr C-2011	100

MCJ0294

Due: 10/24/22

Anatek Labs, Inc.

Sample Receipt and Preservation Form

Client Name: Hall

TAT: (Normal) RUSH: _____ days

Samples Received From: (FedEx) UPS USPS Client Courier Other: _____

Custody Seal on Cooler/Box: (Yes) No Custody Seals Intact: (Yes) No N/A

Number of Coolers/Boxes: 4 Type of Ice: Wet Ice (Ice Packs) Dry Ice None

Packing Material: (Bubble Wrap) Bags Foam/Peanuts Paper (None) Other: _____

Cooler Temp As Read (°C): 3.8 Cooler Temp Corrected (°C): _____ Thermometer Used: IR-5

				Comments:
Samples Received Intact?	(Yes)	No	N/A	
Chain of Custody Present?	(Yes)	No	N/A	
Samples Received Within Hold Time?	(Yes)	No	N/A	
Samples Properly Preserved?	(Yes)	No	N/A	
VOC Vials Free of Headspace (<6mm)?	(Yes) &	(No)	N/A	One of 2 trip blanks
VOC Trip Blanks Present?	Yes	No	N/A	2210315-003A excessive HS
Labels and Chains Agree?	(Yes)	No	N/A	
Total Number of Sample Bottles Received: 11				

Chain of Custody Fully Completed?	(Yes)	No	N/A	
Correct Containers Received?	(Yes)	No	N/A	
Anatek Bottles Used?	Yes	(No)	Unknown	

Record preservatives (and lot numbers, if known) for containers below:

HCl - 8260 Tetrahydrofuran only - g 44mL x 6 + 2 TBs

Notes, comments, etc. (also use this space if contacting the client - record names and date/time)

8270 (See attached) - gIL x 3 (2210315-001I x2)

Received/Inspected By: JKT Date/Time: 10/7/22 14:03

ANALYTICAL REPORT

October 18, 2022

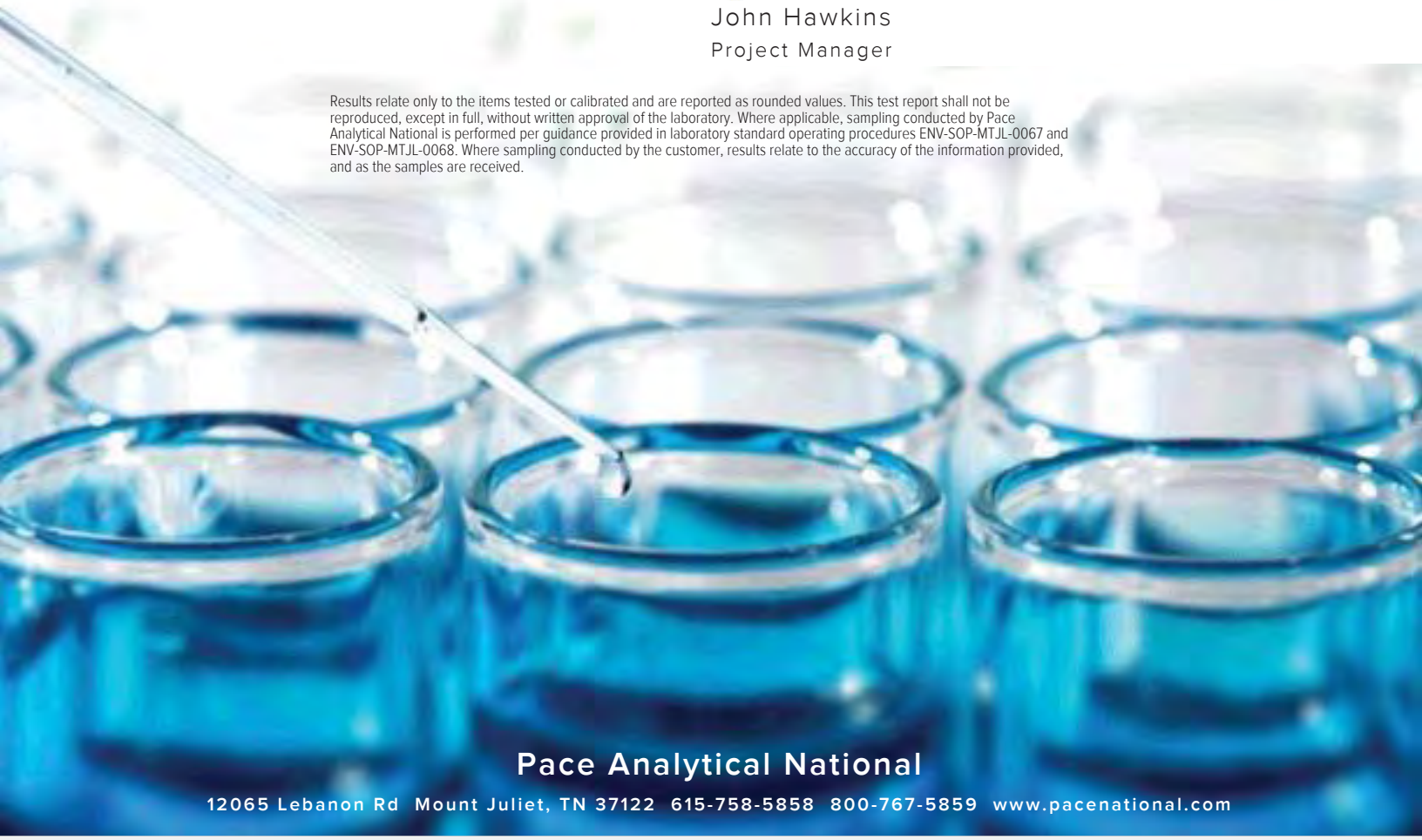
Hall Environmental Analysis Laboratory

Sample Delivery Group:	L1544321
Samples Received:	10/07/2022
Project Number:	
Description:	

Report To: Andy Freeman
4901 Hawkins NE
Albuquerque, NM 87109

Entire Report Reviewed By:

John Hawkins
Project Manager



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

SAMPLE SUMMARY

2210315-001KM R6 NORTH-20221005 L1544321-01 GW

Collected by	Collected date/time	Received date/time
	10/05/22 12:15	10/07/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 3500Cr C-2011	WG1938076	1	10/12/22 07:17	10/12/22 07:17	ARD	Mt. Juliet, TN
Wet Chemistry by Method 410.4	WG1939857	1	10/09/22 17:30	10/09/22 20:03	EPW	Mt. Juliet, TN

2210315-002KM R6 SOUTH-20221006 L1544321-02 GW

Collected by	Collected date/time	Received date/time
	10/06/22 09:05	10/07/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 3500Cr C-2011	WG1938076	1	10/12/22 07:25	10/12/22 07:25	ARD	Mt. Juliet, TN
Wet Chemistry by Method 410.4	WG1940273	1	10/10/22 13:00	10/10/22 16:42	TQP	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Project Manager

Wet Chemistry by Method 3500Cr C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Hexavalent Chromium	ND		0.000500	1	10/12/2022 07:17	WG1938076

Wet Chemistry by Method 410.4

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
COD	22.3		20.0	1	10/09/2022 20:03	WG1939857

Wet Chemistry by Method 3500Cr C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Hexavalent Chromium	ND		0.000500	1	10/12/2022 07:25	WG1938076

Wet Chemistry by Method 410.4

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
COD	ND		20.0	1	10/10/2022 16:42	WG1940273

QUALITY CONTROL SUMMARY

L1544321-01,02

Method Blank (MB)

(MB) R3849771-1 10/11/22 21:36

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Hexavalent Chromium	U		0.000150	0.000500

L1542321-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1542321-01 10/11/22 22:35 • (DUP) R3849771-5 10/11/22 22:42

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Hexavalent Chromium	ND	ND	1	0.000		20

L1542881-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1542881-01 10/12/22 00:15 • (DUP) R3849771-6 10/12/22 00:22

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Hexavalent Chromium	ND	ND	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3849771-2 10/11/22 21:43

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Hexavalent Chromium	0.00200	0.00205	102	90.0-110	

L1542312-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1542312-01 10/11/22 22:10 • (MS) R3849771-3 10/11/22 22:19 • (MSD) R3849771-4 10/11/22 22:27

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Hexavalent Chromium	0.0500	ND	0.0507	0.0511	101	102	1	90.0-110			0.884	20

L1543260-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1543260-01 10/12/22 00:38 • (MS) R3849771-7 10/12/22 01:01

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Hexavalent Chromium	0.0500	ND	0.0503	101	1	90.0-110	

Method Blank (MB)

(MB) R3846395-1 10/09/22 19:50

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
COD	U		11.7	20.0

L1543424-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1543424-01 10/09/22 19:54 • (DUP) R3846395-3 10/09/22 19:55

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
COD	47.4	47.7	1	0.610		20

L1544335-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1544335-01 10/09/22 20:03 • (DUP) R3846395-6 10/09/22 20:04

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
COD	32.2	32.7	1	1.60		20

Laboratory Control Sample (LCS)

(LCS) R3846395-2 10/09/22 19:53

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
COD	500	537	107	90.0-110	

L1543925-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1543925-02 10/09/22 19:56 • (MS) R3846395-4 10/09/22 19:57 • (MSD) R3846395-5 10/09/22 19:58

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
COD	500	263	1160	1170	180	181	1	80.0-120	E J5	E J5	0.549	20

Sample Narrative:

MS: Matrix spike failure due to matrix interference.

MSD: Matrix spike failure due to matrix interference.

Method Blank (MB)

(MB) R3846784-1 10/10/22 16:33

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
COD	U		11.7	20.0

L1544252-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1544252-02 10/10/22 16:36 • (DUP) R3846784-5 10/10/22 16:36

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
COD	33.9	37.2	1	9.50		20

L1544331-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1544331-02 10/10/22 16:42 • (DUP) R3846784-6 10/10/22 16:42

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
COD	33.9	28.6	1	16.9		20

Laboratory Control Sample (LCS)

(LCS) R3846784-2 10/10/22 16:34

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
COD	500	483	96.7	90.0-110	

L1544093-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1544093-01 10/10/22 16:34 • (MS) R3846784-3 10/10/22 16:34 • (MSD) R3846784-4 10/10/22 16:34

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
COD	500	ND	532	549	106	110	1	80.0-120			3.15	20

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
website: www.hallenvironmental.com

J091

SUB CONTRATOR: Pace TN	COMPANY: PACE TN	PHONE: (800) 767-5859	FAX: (615) 758-5859
ADDRESS: 12065 Lebanon Rd		ACCOUNT #:	EMAIL:
CITY, STATE, ZIP: Mt. Juliet, TN 37122			

L1544321

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS
1	2210315-001K	R6 North-20221005	500HDPEH2SO4	Aqueous	10/5/2022 12:15:00 PM	1	COD
2	2210315-001M	R6 North-20221005	120mL	Aqueous	10/5/2022 12:15:00 PM	1	HEXAVALENT CHROMIUM
3	2210315-002K	R6 South-20221006	500HDPEH2SO4	Aqueous	10/6/2022 9:05:00 AM	1	COD
4	2210315-002M	R6 South-20221006	120mL	Aqueous	10/6/2022 9:05:00 AM	1	HEXAVALENT CHROMIUM

J01

J02

cont.- 4

0221 5755 8093 2632

Sample Receipt Checklist

COC Seal Present Intact: Y N
COC Signed Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
RAD Screen <0.5 mR/hr: Y N

If Applicable
VOA Zero Headspace: Y N
Pres.Correct/Check: Y N

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By:	Date: 10/6/2022	Time: 11:42 AM	Received By:	Date: 10/07/22	Time: 0910
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard ☑ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:
☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY

NSM

Temp of samples 5.8+0-5.8 °C Attempt to Cool ? _____

Comments: _____

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

November 10, 2022

Andy Freeman
Hall Environmental
4901 Hawkins NE
Albuquerque, NM 87109

RE: Project: 2210315
Pace Project No.: 30528336

Dear Andy Freeman:

Enclosed are the analytical results for sample(s) received by the laboratory on October 07, 2022. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Greensburg

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Carla Cmar
carla.cmar@pacelabs.com
(724)850-5600
Project Manager

Enclosures

cc: Ms. Jackie Ball, Hall Environmental
Michelle Garcia, Hall Environmental

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

CERTIFICATIONS

Project: 2210315
Pace Project No.: 30528336

Pace Analytical Services Pennsylvania
1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Florida: Cert E871149 SEKS WET
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991
Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

SAMPLE SUMMARY

Project: 2210315
Pace Project No.: 30528336

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30528336001	**2210315-001L/R6 North-20221005**	Water	10/05/22 12:15	10/07/22 09:25
30528336002	**2210315-002L/ R6 South-2022100**	Water	10/06/22 09:05	10/07/22 09:25

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

SAMPLE ANALYTE COUNT

Project: 2210315
Pace Project No.: 30528336

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30528336001	**2210315-001L/R6 North-20221005**	EPA 900.0	SVM	1	PASI-PA
		EPA 900.0	JAL	1	PASI-PA
30528336002	**2210315-002L/ R6 South-2022100**	EPA 900.0	SVM	1	PASI-PA
		EPA 900.0	JAL	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

PROJECT NARRATIVE

Project: 2210315
Pace Project No.: 30528336

Method: **EPA 900.0**
Description: 900.0 Gross Alpha/Beta
Client: Hall Environmental
Date: November 10, 2022

General Information:
2 samples were analyzed for EPA 900.0 by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

PROJECT NARRATIVE

Project: 2210315
Pace Project No.: 30528336

Method: **EPA 900.0**
Description: Adjusted Gross Alpha
Client: Hall Environmental
Date: November 10, 2022

General Information:
2 samples were analyzed for EPA 900.0 by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 2210315
Pace Project No.: 30528336

Sample: 2210315-001L/R6 North-20221005 **Lab ID: 30528336001** Collected: 10/05/22 12:15 Received: 10/07/22 09:25 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
		Pace Analytical Services - Greensburg				
Gross Alpha	EPA 900.0	**2.00 ± 1.50 (2.55) C:NA T:NA**	pCi/L	10/14/22 08:41	12587-46-1	
		Pace Analytical Services - Greensburg				
Adjusted Gross Alpha	EPA 900.0	**0.895 ± NA (NA) C:NA T:NA**	pCi/L	11/10/22 15:20		

Sample: 2210315-002L/ R6 South-2022100 **Lab ID: 30528336002** Collected: 10/06/22 09:05 Received: 10/07/22 09:25 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
		Pace Analytical Services - Greensburg				
Gross Alpha	EPA 900.0	**25.3 ± 5.74 (3.07) C:NA T:NA**	pCi/L	10/13/22 19:38	12587-46-1	
		Pace Analytical Services - Greensburg				
Adjusted Gross Alpha	EPA 900.0	**22.98 ± NA (NA) C:NA T:NA**	pCi/L	11/10/22 15:20		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL - RADIOCHEMISTRY

Project: 2210315
Pace Project No.: 30528336

QC Batch: 538872
QC Batch Method: EPA 900.0
Analysis Method: EPA 900.0
Analysis Description: 900.0 Gross Alpha/Beta
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 30528336001, 30528336002

METHOD BLANK: 2614993
Matrix: Water
Associated Lab Samples: 30528336001, 30528336002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Gross Alpha	0.883 ± 0.808 (1.48) C:NA T:NA	pCi/L	10/14/22 08:19	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALIFIERS

Project: 2210315
Pace Project No.: 30528336

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Act - Activity

Unc - Uncertainty: For Safe Drinking Water Act (SDWA) analyses, the reported Unc. Is the calculated Count Uncertainty (95% confidence interval) using a coverage factor of 1.96. For all other matrices (non-SDWA), the reported Unc. is the calculated Expanded Uncertainty (aka Combined Standard Uncertainty, CSU), reported at the 95% confidence interval using a coverage factor of 1.96.

Gamma Spec: The Unc. reported for all gamma-spectroscopy analyses (EPA 901.1), is the calculated Expanded Uncertainty (CSU) at the 95.4% confidence interval, using a coverage factor of 2.0.

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: www.hallenvironmental.com

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

SUB CONTRATOR: **Pace-Greensburg**	COMPANY: **Pace Analytical Services, Inc.**		PHONE: **(724) 850-5600**	FAX: **(724) 850-5601**	
ADDRESS: **1638 Roseytown Rd Ste 2,3,4**			ACCOUNT #:	EMAIL:	
CITY, STATE, ZIP: **Greensburg, PA 15601**					

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS
1	2210315-001L	R6 North-20221005	1LHDPEHNO3	Aqueous	10/5/2022 12:15:00 PM	2	Adjusted Gross Alpha
2	2210315-002L	R6 South-20221006	1LHDPEHNO3	Aqueous	10/6/2022 9:05:00 AM	2	Adjusted Gross Alpha

WO# : 30528336

30528336

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By:	Date: 10/6/2022	Time: 11:46 AM	Received By:	Date: 10/7/22	Time: 7:25
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard ☑ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:

☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY

Temp of samples _____ °C Attempt to Cool ? _____

Comments: _____

Pace ANALYTICAL SERVICES	DC#_Title: ENV-FRM-GBUR-0088 v02_Sample Condition Upon Receipt-Pittsburgh
	Effective Date: 10/03/2022

Client Name: Hall **Project #:**

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other

Tracking Number: 5344 4102 7710

Examined By	PS
Labeled By	PS
Temped By	

Custody Seal on Cooler/Box Present: ☐ Yes ☑ No **Seals Intact:** ☐ Yes ☑ No

Thermometer Used: — **Type of Ice:** Wet Blue (None)

Cooler Temperature: Observed Temp — °C Correction Factor: — °C Final Temp: — °C

Temp should be above freezing to 6°C

Comments:	Yes	No	NA	pH paper Lot# 1000421 / D.P.D. Residual Chlorine Lot #
Chain of Custody Present	✓			1.
Chain of Custody Filled Out:	✓			2.
-Were client corrections present on COC		✓		
Chain of Custody Relinquished	✓			3.
Sampler Name & Signature on COC:		✓		4.
Sample Labels match COC:	✓			5.
-Includes date/time/ID				
Matrix:	WT			
Samples Arrived within Hold Time:	✓			6.
Short Hold Time Analysis (<72hr remaining):		✓		7.
Rush Turn Around Time Requested:		✓		8.
Sufficient Volume:	✓			9.
Correct Containers Used:	✓			10.
-Pace Containers Used		✓		
Containers Intact:	✓			11.
Orthophosphate field filtered:			✓	12.
Hex Cr Aqueous samples field filtered:			✓	13.
Organic Samples checked for dechlorination			✓	14:
Filtered volume received for dissolved tests:			✓	15:
All containers checked for preservation: exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, non-aqueous matrix	✓			16. pH<2
All containers meet method preservation requirements:	✓			Initial when completed: PS Date/Time of Preservation: Lot# of added Preservative:
Headspace in VOA Vials (>6mm):			✓	17.
Trip Blank Present:		✓		18.
Trip Blank Custody Seals Present		✓		
Rad Samples Screened <0.5 mrem/hr.	✓			Initial when completed: PS Date: 10/7/22 Survey Meter SN: 1563

Comments:

WO#: 30528336
Due Date: 10/28/22
PM: HMC
CLIENT: HALL ENVIRON

Note: For NC compliance samples with discrepancies, a copy of this form must be sent to the DEHNR Certification office.
PM Review is documented electronically in LIMS through the SRF Review schedule in the Workorder Edit Screen.

Pace Analytical®

Pace Greensburg Lab -Sample Container Count

Client _____ Profile Number 1845

Site 7210315 Notes _____

Sample Line Item	Matrix	AG1H	AG1S	AG1T	AG2U	AG3S	AG3U	AG5U	AG5T	BG1U	BG2U	BP1N	BP1U	BP2S	BP2U	BP3C	BP3N	BP3S	BP3U	DG9S	GCUB	VG9H	VG9T	VG9U	VOAK	WGFU	WGKU	ZPLC	
1	WT											2																	
2	↓											2																	
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

WO#: 30528336

PM: HMC Due Date: 10/28/22

CLIENT: HALL ENVIRON

Container Codes

Glass

GJN	1 Gallon Jug with HNO3	DG9S	40mL amber VOA vial H2SO4
AG5U	100mL amber glass unprserved	VG9U	40mL clear VOA vial
AG5T	100mL amber glass Na Thiosulfate	VG9T	40mL clear VOA vial Na Thiosul
GJN	1 Gallon Jug	VG9H	40mL clear VOA vial HCl
AG1S	1L amber glass H2SO4	JGFU	4oz amber wide jar
AG1H	1L amber glass HCl	WGFU	4oz wide jar unpreserved
AG1T	1L amber glass Na Thiosulfate	BG2U	500mL clear glass unpreserved
BG1U	1L clear glass unpreserved	AG2U	500mL amber glass unpreserve
AG3S	250mL amber glass H2SO4	WGKU	8oz wide jar unpreserved
AG3U	250mL amber glass unpreserved		

Plastic / Misc.

GCUB	1 Gallon Cubitainer
12GN	1/2 Gallon Cubitainer
SP5T	120mL Coliform Na Thiosulfate
BP1N	1L plastic HNO3
BP1U	1L plastic unpreserved
BP3S	250mL plastic H2SO4
BP3N	250mL plastic HNO3
BP3U	250mL plastic unpreserved
BP3C	250ml plastic NAOH
BP2S	500mL plastic H2SO4
BP2U	500mL plastic unpreserved

EZI	5g Encore
VOAK	Kit for Volatile Solid
I	Wipe/Swab
ZPLC	Ziploc Bag

WT	Water
SL	Solid
OL	Non-aqueous liquid
WP	Wipe

ANALYTICAL REPORT

November 10, 2022

Pace Analytical - Greensburg, PA

Sample Delivery Group:	L1547177
Samples Received:	10/15/2022
Project Number:	30528336
Description:	2210315
Site:	001
Report To:	Carla Cmar 1638 Roseytown Road Greensburg, PA 15601

Entire Report Reviewed By:

Donna Eidson
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

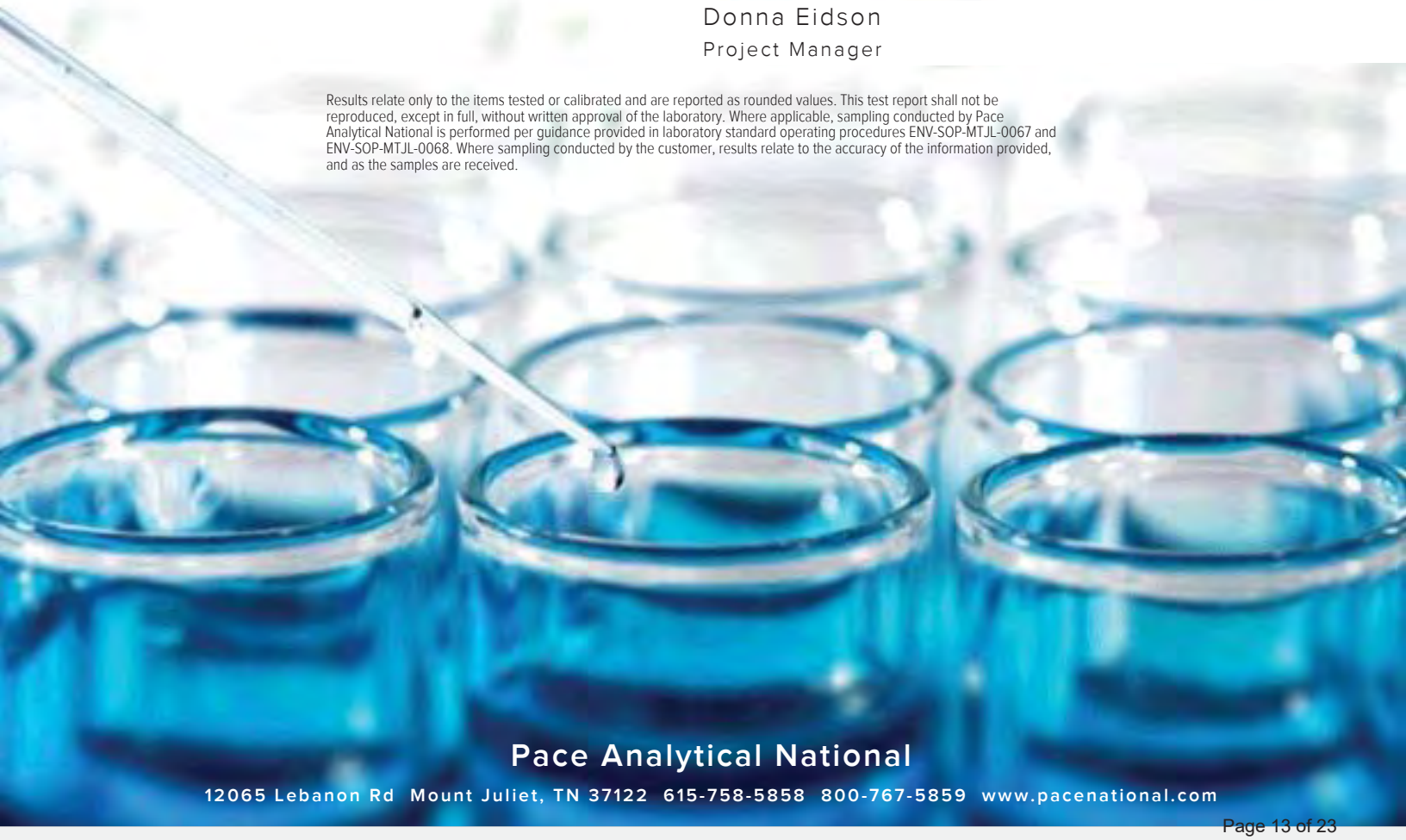


TABLE OF CONTENTS

2210315-001L/R6 NORTH-20221005 L1547177-01 Non-Potable Water

Collected by	Collected date/time	Received date/time
	10/05/22 12:15	10/15/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method D5174	WG1949166	1	11/03/22 14:48	11/09/22 16:17	SNR	Mt. Juliet, TN

2210315-002L//R6 SOUTH-2022100 L1547177-02 Non-Potable Water

Collected by	Collected date/time	Received date/time
	10/06/22 09:05	10/15/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method D5174	WG1949166	1	11/03/22 14:48	11/09/22 16:20	SNR	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Donna Eidson
Project Manager

Radiochemistry by Method D5174

Analyte	Result	Qualifier	Uncertainty	RDL	Analysis Date	Batch
	ug/l		+ / -	ug/l	date / time	
Uranium	1.65		0.0549	1.00	11/09/2022 16:17	WG1949166

Radiochemistry by Method D5174

Analyte	Result	Qualifier	Uncertainty	RDL	Analysis Date	Batch
	ug/l		+ / -	ug/l	date / time	
Uranium	3.46		0.115	1.00	11/09/2022 16:20	WG1949166

Method Blank (MB)

(MB) R3859221-1 11/09/22 15:57

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Uranium	U		1.00	1.00

Laboratory Control Sample (LCS)

(LCS) R3859221-2 11/09/22 16:00

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Uranium	30.0	29.2	97.5	80.0-120	

L1547600-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1547600-01 11/09/22 16:58 • (MS) R3859221-3 11/09/22 16:02 • (MSD) R3859221-5 11/09/22 16:07

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Uranium	20.0	ND	20.3	20.1	101	101	1	75.0-125			0.781	20

L1547600-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1547600-02 11/09/22 17:00 • (MS) R3859221-4 11/09/22 16:04 • (MSD) R3859221-6 11/09/22 16:10

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Uranium	20.0	ND	18.7	19.3	93.6	96.5	1	75.0-125			3.07	20

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

D171

Internal Transfer Chain of Custody

Pace Analytical® www.pacelabs.com

☐ Samples Pre-Logged into eCOC.

State Of Origin: NM
Cert. Needed: ☐ Yes ☐ No
Owner Received Date: 10/7/2022 Results Requested By: 11/4/2022

Workorder: 30528336 Workorder Name: 2210315

Report To	Subcontract To
Hollie M. Compton Pace Analytical Pittsburgh 1638 Roseytown Road Suites 2,3,4 Greensburg, PA 15601 Phone (724)850-5600	Pace National 12065 Lebanon Rd Mt. Juliet, TN 37122 Phone (615) 758-5858

Requested Analysis: Uranium KPA (2)

L1547177

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: HNO3	Uranium KPA	LAB USE ONLY
1	2210315-001L/R6 North-20221005	PS	10/5/2022 12:15	30528336001	Water	1	X	-01
2	2210315-002L/ R6 South-2022100	PS	10/6/2022 09:05	30528336002	Water	1	X	
3								
4								
5								

Transfers	Released By	Date/Time	Received By	Date/Time
1	Jacob [signature]	10/14/22 1700	D. Rambey	10/15/22 0900
2				
3				

Comments: OK

Cooler Temperature on Receipt °C | Custody Seal (Y) or N | Received on Ice (Y) or N | Samples Intact (Y) or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.*
This chain of custody is considered complete as is since this information is available in the owner laboratory.

Sample Receipt Checklist

COC Seal Present/Intact:	✓Y __N	If Applicable	
COC Signed/Accurate:	✓Y __N	VOA Zero Headspace:	__Y __N
Bottles arrive intact:	✓Y __N	Pres.Correct/Check:	✓Y __N
Correct bottles used:	✓Y __N		
Sufficient volume sent:	✓Y __N	DRA7 14.1+0=14.1	
RAD Screen <0.5 mR/hr:	✓Y N		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: www.hallenvironmental.com

U54777

SUB CONTRATOR: Pace-Greensburg	COMPANY: Pace Analytical Services, Inc.	PHONE: (724) 850-5600	FAX: (724) 850-5601
ADDRESS: 1638 Roseytown Rd Ste 2,3,4		ACCOUNT #:	EMAIL:
CITY, STATE, ZIP: Greensburg, PA 15601			

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS
1	2210315-001L	R6 North-20221005	1LHDPEHNO3	Aqueous	10/5/2022 12:15:00 PM	2	Adjusted Gross Alpha
2	2210315-002L	R6 South-20221006	1LHDPEHNO3	Aqueous	10/6/2022 9:05:00 AM	2	Adjusted Gross Alpha

WO#: 30528336

30528336

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By:	Date: 10/6/2022	Time: 11:46 AM	Received By:	Date: 10/7/22	Time: 9:25
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard ☑ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:

☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY

Temp of samples _____ °C Attempt to Cool ? _____

Comments: _____

CFA | Cape Fear Analytical LLC
an affiliate of The GEL Group INC

3306 Kitty Hawk Road, Suite 120 Wilmington, NC 28405
P 910.795.0421
www.capefearanalytical.com

November 23, 2022

Mr. Andy Freeman
Hall Environmental
4901 Hawkins NE
Suite D
Albuquerque, New Mexico 87109

Re: Routine Analysis
Work Order: 20534
SDG: 2210315

Dear Mr. Freeman:

Cape Fear Analytical LLC (CFA) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on October 07, 2022. This original data report has been prepared and reviewed in accordance with CFA's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at 910-795-0421.

Sincerely,

Cynde Larkins

Cynde Larkins
Project Manager

Purchase Order: IDIQ Pricing
Enclosures

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: www.hallenvironmental.com

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

CFA WO#20534

SUB CONTRATOR: **Cape Fear Analytical**	COMPANY: **Cape Fear Analytical**	PHONE: **(910) 795-0421**	FAX:
ADDRESS: **3306 Kitty Hawk Rd Ste 120**		ACCOUNT #:	EMAIL:
CITY, STATE, ZIP: **Wilmington, NC 28405**			

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS
1	2210315-001J	R6 North-20221005	1LAMGU	Aqueous	10/5/2022 12:15:00 PM	1	PCBs by 1668
2	2210315-002J	R6 South-20221006	1LAMGU	Aqueous	10/6/2022 9:05:00 AM	1	PCBs by 1668

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By: [signature]	Date: 10/6/2022	Time: 11:42 AM	Received By: Cynde Jakins	Date: 07OCT22	Time: 0947
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard ☑ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:
☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY
Temp of samples 5.2 °C Attempt to Cool ? ✓
Comments:

SAMPLE RECEIPT CHECKLIST

Cape Fear Analytical

Client: HALL	Work Order: 20534
Shipping Company: FedEx	Date/Time Received: 07OCT22 0947

Suspected Hazard Information	Yes	NA	No
Shipped as DOT Hazardous?			✓
Samples identified as Foreign Soil?			✓

DOE Site Sample Packages	Yes	NA	No*
Screened <0.5 mR/hr?		✓	
Samples < 2x background?		✓	

* Notify RSO of any responses in this column immediately.

Air Sample Receipt Specifics	Yes	NA	No
Air sample in shipment?			✓

Air Witness: _____

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: seals broken damaged container leaking container other(describe)
2	Custody seal/s present on cooler?	✓			Seal intact? (Yes) No
3	Chain of Custody documents included with shipment?	✓			
4	Samples requiring cold preservation within 0-6°C?	✓			Preservation Method: ice bags loose ice (blue ice) dry ice none other (describe) Temperature Blank present: Yes (No) 5.3° - 0.1 = 5.2°C
5	Aqueous samples found to have visible solids?	✓			Sample IDs, containers affected: Minimal solids (<1%), cloudy
5	Samples requiring chemical preservation at proper pH?		✓		Sample IDs, containers affected and pH observed: pH=7 on both If preservative added, Lot#:
7	Samples requiring preservation have no residual chlorine?	✓			Sample IDs, containers affected: If preservative added, Lot#:
8	Samples received within holding time?	✓			Sample IDs, tests affected:
9	Sample IDs on COC match IDs on containers?	✓			Sample IDs, containers affected:
10	Date & time of COC match date & time on containers?	✓			Sample IDs, containers affected:
11	Number of containers received match number indicated on COC?	✓			List type and number of containers / Sample IDs, containers affected: 2 - 1L WMA 6 bottles, 1 per sample
12	COC form is properly signed in relinquished/received sections?	✓			

Comments:

Checklist performed by: Initials: CF Date: 07OCT22

PCB Congeners Analysis

Case Narrative

PCBC Case Narrative
Hall Environmental Analysis Laboratory (HALL)
SDG 2210315
Work Order 20534

Method/Analysis Information

Product:	**PCB Congeners by EPA Method 1668A in Liquids**
Analytical Method:	EPA Method 1668A
Extraction Method:	SW846 3520C
Analytical Batch Number:	51323
Clean Up Batch Number:	51322
Extraction Batch Number:	51321

Sample Analysis

Samples were received within temperature requirements at 5.2°C (20534001, 20534002).
The following samples were analyzed using the analytical protocol as established in EPA Method 1668A:

Sample ID	Client ID
12033076	Method Blank (MB)
12033077	Laboratory Control Sample (LCS)
12033078	Laboratory Control Sample Duplicate (LCSD)
20534001	2210315-001J R6 North-20221005
20534002	2210315-002J R6 South-20221006

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by Cape Fear Analytical LLC (CFA) as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with CF-OA-E-003 REV# 10.

Raw data reports are processed and reviewed by the analyst using the TargetLynx software package.

Calibration Information

Initial Calibration
All initial calibration requirements have been met for this sample delivery group (SDG).

Continuing Calibration Verification (CCV) Requirements
All associated calibration verification standard(s) (ICV or CCV) met the acceptance criteria.

Quality Control (QC) Information

Certification Statement
The test results presented in this document are certified to meet all requirements of the 2009 TNI Standard.

Method Blank (MB) Statement
The MB(s) analyzed with this SDG met the acceptance criteria.

Surrogate Recoveries
All surrogate recoveries were within the established acceptance criteria for this SDG.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries met the acceptance limits.

Laboratory Control Sample Duplicate (LCSD) Recovery
The LCSD spike recoveries met the acceptance limits.

LCS/LCSD Relative Percent Difference (RPD) Statement
The RPD(s) between the LCS and LCSD met the acceptance limits.

QC Sample Designation
A matrix spike and matrix spike duplicate analysis was not required for this SDG.

Technical Information

Holding Time Specifications
CFA assigns holding times based on the associated methodology, which assigns the date and time from sample collection. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP.

Sample Dilutions
The samples in this SDG did not require dilutions.

Sample Re-extraction/Re-analysis
Re-extractions or re-analyses were not required in this SDG.

Miscellaneous Information

Manual Integrations
Manual integrations were required for data files in this SDG. Certain standards and QC samples required manual integrations to correctly position the baseline as set in the calibration standard

injections. Where manual integrations were performed, copies of all manual integration peak profiles are included in the raw data section of this fraction.

System Configuration

This analysis was performed on the following instrument configuration:

Instrument ID	Instrument	System Configuration	Column ID	Column Description
HRP875_1	PCB Analysis	PCB Analysis	SPB-Octyl	30m x 0.25mm, 0.25um

Sample Data Summary

Cape Fear Analytical, LLC
3306 Kitty Hawk Road Suite 120, Wilmington, NC 28405 - (910) 795-0421 - www.capefearanalytical.com

Certificate of Analysis Report
for

HALL001 Hall Environmental Analysis Laboratory

Client SDG: 2210315 CFA Work Order: 20534

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria
** Analyte is a surrogate compound
B The target analyte was detected in the associated blank.
C Congener has coeluters. When Cxxx, refer to congener number xxx for data
J Value is estimated
U Analyte was analyzed for, but not detected above the specified detection limit.

Review/Validation

Cape Fear Analytical requires all analytical data to be verified by a qualified data reviewer.

The following data validator verified the information presented in this case narrative:

Signature:  **Name: Alexis Finks**

Date: 23 NOV 2022 **Title: Data Validator**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2210315**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**20534001**	**Date Collected:**	**10/05/2022 12:15**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**10/07/2022 09:47**		
Client ID:	**2210315-001J R6 North-20221005**			**Prep Basis:**	**As Received**
Batch ID:	**51323**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/11/2022 21:11**	**Analyst:**	**MLL**	**Instrument:**	**HRP875**
Data File:	**d08nov22a_7-9**			**Dilution:**	**1**
Prep Batch:	**51321**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**02-NOV-22**	**Prep Aliquot:**	**876.4 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
2051-60-7	1-MoCB	U	ND	pg/L	6.00	114
2051-61-8	2-MoCB	U	ND	pg/L	7.44	114
2051-62-9	3-MoCB	U	ND	pg/L	4.95	114
13029-08-8	4-DiCB	U	ND	pg/L	14.3	114
16605-91-7	5-DiCB	U	ND	pg/L	11.3	114
25569-80-6	6-DiCB	U	ND	pg/L	8.42	114
33284-50-3	7-DiCB	U	ND	pg/L	8.40	114
34883-43-7	8-DiCB	U	ND	pg/L	7.33	114
34883-39-1	9-DiCB	U	ND	pg/L	10.8	114
33146-45-1	10-DiCB	U	ND	pg/L	7.01	114
2050-67-1	11-DiCB	J	33.7	pg/L	9.79	114
2974-92-7	12-DiCB	CU	ND	pg/L	9.11	228
2974-90-5	13-DiCB	C12				
34883-41-5	14-DiCB	U	ND	pg/L	9.15	114
2050-68-2	15-DiCB	U	ND	pg/L	12.1	114
38444-78-9	16-TrCB	U	ND	pg/L	3.99	114
37680-66-3	17-TrCB	U	ND	pg/L	4.79	114
37680-65-2	18-TrCB	CJ	6.39	pg/L	4.13	228
38444-73-4	19-TrCB	U	ND	pg/L	5.75	114
38444-84-7	20-TrCB	BCJ	11.3	pg/L	3.58	228
55702-46-0	21-TrCB	CU	ND	pg/L	3.13	228
38444-85-8	22-TrCB	J	4.47	pg/L	3.54	114
55720-44-0	23-TrCB	U	ND	pg/L	3.31	114
55702-45-9	24-TrCB	U	ND	pg/L	4.40	114
55712-37-3	25-TrCB	U	ND	pg/L	2.97	114
38444-81-4	26-TrCB	CU	ND	pg/L	3.45	228
38444-76-7	27-TrCB	U	ND	pg/L	3.72	114
7012-37-5	28-TrCB	C20				
15862-07-4	29-TrCB	C26				
35693-92-6	30-TrCB	C18				
16606-02-3	31-TrCB	U	ND	pg/L	6.60	114
38444-77-8	32-TrCB	U	ND	pg/L	3.29	114

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2210315**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**20534001**	**Date Collected:**	**10/05/2022 12:15**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**10/07/2022 09:47**		
Client ID:	**2210315-001J R6 North-20221005**			**Prep Basis:**	**As Received**
Batch ID:	**51323**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/11/2022 21:11**	**Analyst:**	**MLL**	**Instrument:**	**HRP875**
Data File:	**d08nov22a_7-9**			**Dilution:**	**1**
Prep Batch:	**51321**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**02-NOV-22**	**Prep Aliquot:**	**876.4 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
38444-86-9	33-TrCB	C21				
37680-68-5	34-TrCB	U	ND	pg/L	3.86	114
37680-69-6	35-TrCB	U	ND	pg/L	4.70	114
38444-87-0	36-TrCB	U	ND	pg/L	4.11	114
38444-90-5	37-TrCB	U	ND	pg/L	4.11	114
53555-66-1	38-TrCB	U	ND	pg/L	4.61	114
38444-88-1	39-TrCB	U	ND	pg/L	4.70	114
38444-93-8	40-TeCB	CU	ND	pg/L	5.59	228
52663-59-9	41-TeCB	U	ND	pg/L	9.04	114
36559-22-5	42-TeCB	U	ND	pg/L	5.80	114
70362-46-8	43-TeCB	U	ND	pg/L	7.17	114
41464-39-5	44-TeCB	CU	ND	pg/L	8.26	342
70362-45-7	45-TeCB	CJ	4.22	pg/L	2.65	228
41464-47-5	46-TeCB	U	ND	pg/L	2.58	114
2437-79-8	47-TeCB	C44				
70362-47-9	48-TeCB	U	ND	pg/L	6.16	114
41464-40-8	49-TeCB	CU	ND	pg/L	5.00	228
62796-65-0	50-TeCB	CU	ND	pg/L	2.51	228
68194-04-7	51-TeCB	C45				
35693-99-3	52-TeCB	BJ	8.44	pg/L	6.69	228
41464-41-9	53-TeCB	C50				
15968-05-5	54-TeCB	U	ND	pg/L	1.89	114
74338-24-2	55-TeCB	U	ND	pg/L	3.77	114
41464-43-1	56-TeCB	U	ND	pg/L	3.97	114
70424-67-8	57-TeCB	U	ND	pg/L	3.61	114
41464-49-7	58-TeCB	U	ND	pg/L	3.70	114
74472-33-6	59-TeCB	CU	ND	pg/L	4.61	342
33025-41-1	60-TeCB	U	ND	pg/L	3.81	114
33284-53-6	61-TeCB	CU	ND	pg/L	11.1	456
54230-22-7	62-TeCB	C59				
74472-34-7	63-TeCB	U	ND	pg/L	3.70	114
52663-58-8	64-TeCB	U	ND	pg/L	4.47	114

Comments:

B The target analyte was detected in the associated blank.
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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2210315**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**20534001**	**Date Collected:**	**10/05/2022 12:15**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**10/07/2022 09:47**		
Client ID:	**2210315-001J R6 North-20221005**			**Prep Basis:**	**As Received**
Batch ID:	**51323**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/11/2022 21:11**	**Analyst:**	**MLL**	**Instrument:**	**HRP875**
Data File:	**d08nov22a_7-9**			**Dilution:**	**1**
Prep Batch:	**51321**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**02-NOV-22**	**Prep Aliquot:**	**876.4 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
33284-54-7	65-TeCB	C44				
32598-10-0	66-TeCB	J	4.52	pg/L	3.95	114
73575-53-8	67-TeCB	U	ND	pg/L	3.08	114
73575-52-7	68-TeCB	U	ND	pg/L	3.35	114
60233-24-1	69-TeCB	C49				
32598-11-1	70-TeCB	C61				
41464-46-4	71-TeCB	C40				
41464-42-0	72-TeCB	U	ND	pg/L	3.63	114
74338-23-1	73-TeCB	U	ND	pg/L	4.27	114
32690-93-0	74-TeCB	C61				
32598-12-2	75-TeCB	C59				
70362-48-0	76-TeCB	C61				
32598-13-3	77-TeCB	U	ND	pg/L	3.72	114
70362-49-1	78-TeCB	U	ND	pg/L	4.56	114
41464-48-6	79-TeCB	U	ND	pg/L	3.51	114
33284-52-5	80-TeCB	U	ND	pg/L	3.31	114
70362-50-4	81-TeCB	U	ND	pg/L	3.47	114
52663-62-4	82-PeCB	U	ND	pg/L	5.04	114
60145-20-2	83-PeCB	U	ND	pg/L	5.77	114
52663-60-2	84-PeCB	U	ND	pg/L	4.27	114
65510-45-4	85-PeCB	CU	ND	pg/L	3.56	342
55312-69-1	86-PeCB	BCJ	7.80	pg/L	3.61	685
38380-02-8	87-PeCB	C86				
55215-17-3	88-PeCB	CU	ND	pg/L	4.31	228
73575-57-2	89-PeCB	U	ND	pg/L	4.95	114
68194-07-0	90-PeCB	CU	ND	pg/L	7.17	342
68194-05-8	91-PeCB	C88				
52663-61-3	92-PeCB	U	ND	pg/L	4.75	114
73575-56-1	93-PeCB	CU	ND	pg/L	3.95	228
73575-55-0	94-PeCB	U	ND	pg/L	4.02	114
38379-99-6	95-PeCB	U	ND	pg/L	4.47	114
73575-54-9	96-PeCB	U	ND	pg/L	2.53	114

Comments:

B The target analyte was detected in the associated blank.
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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2210315**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**20534001**	**Date Collected:**	**10/05/2022 12:15**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**10/07/2022 09:47**		
Client ID:	**2210315-001J R6 North-20221005**			**Prep Basis:**	**As Received**
Batch ID:	**51323**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/11/2022 21:11**	**Analyst:**	**MLL**	**Instrument:**	**HRP875**
Data File:	**d08nov22a_7-9**			**Dilution:**	**1**
Prep Batch:	**51321**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**02-NOV-22**	**Prep Aliquot:**	**876.4 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
41464-51-1	97-PeCB	C86				
60233-25-2	98-PeCB	CU	ND	pg/L	3.86	228
38380-01-7	99-PeCB	U	ND	pg/L	3.81	114
39485-83-1	100-PeCB	C93				
37680-73-2	101-PeCB	C90				
68194-06-9	102-PeCB	C98				
60145-21-3	103-PeCB	U	ND	pg/L	4.06	114
56558-16-8	104-PeCB	U	ND	pg/L	2.01	114
32598-14-4	105-PeCB	U	ND	pg/L	4.08	114
70424-69-0	106-PeCB	U	ND	pg/L	4.13	114
70424-68-9	107-PeCB	U	ND	pg/L	3.42	114
70362-41-3	108-PeCB	CU	ND	pg/L	4.20	228
74472-35-8	109-PeCB	C86				
38380-03-9	110-PeCB	CJ	6.91	pg/L	3.31	228
39635-32-0	111-PeCB	U	ND	pg/L	3.15	114
74472-36-9	112-PeCB	U	ND	pg/L	2.85	114
68194-10-5	113-PeCB	C90				
74472-37-0	114-PeCB	U	ND	pg/L	3.72	114
74472-38-1	115-PeCB	C110				
18259-05-7	116-PeCB	C85				
68194-11-6	117-PeCB	C85				
31508-00-6	118-PeCB	U	ND	pg/L	5.41	114
56558-17-9	119-PeCB	C86				
68194-12-7	120-PeCB	U	ND	pg/L	3.33	114
56558-18-0	121-PeCB	U	ND	pg/L	2.99	114
76842-07-4	122-PeCB	U	ND	pg/L	5.39	114
65510-44-3	123-PeCB	U	ND	pg/L	3.42	114
70424-70-3	124-PeCB	C108				
74472-39-2	125-PeCB	C86				
57465-28-8	126-PeCB	U	ND	pg/L	4.52	114
39635-33-1	127-PeCB	U	ND	pg/L	4.47	114
38380-07-3	128-HxCB	CU	ND	pg/L	3.93	228

Comments:

B The target analyte was detected in the associated blank.
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U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2210315**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**20534001**	**Date Collected:**	**10/05/2022 12:15**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**10/07/2022 09:47**		
Client ID:	**2210315-001J R6 North-20221005**			**Prep Basis:**	**As Received**
Batch ID:	**51323**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/11/2022 21:11**	**Analyst:**	**MLL**	**Instrument:**	**HRP875**
Data File:	**d08nov22a_7-9**			**Dilution:**	**1**
Prep Batch:	**51321**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**02-NOV-22**	**Prep Aliquot:**	**876.4 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
55215-18-4	129-HxCB	CJ	9.97	pg/L	4.27	342
52663-66-8	130-HxCB	U	ND	pg/L	4.95	114
61798-70-7	131-HxCB	U	ND	pg/L	4.88	114
38380-05-1	132-HxCB	U	ND	pg/L	4.59	114
35694-04-3	133-HxCB	U	ND	pg/L	4.70	114
52704-70-8	134-HxCB	U	ND	pg/L	5.16	114
52744-13-5	135-HxCB	CJ	5.18	pg/L	3.42	228
38411-22-2	136-HxCB	U	ND	pg/L	2.49	114
35694-06-5	137-HxCB	U	ND	pg/L	4.77	114
35065-28-2	138-HxCB	C129				
56030-56-9	139-HxCB	CU	ND	pg/L	3.99	228
59291-64-4	140-HxCB	C139				
52712-04-6	141-HxCB	U	ND	pg/L	4.04	114
41411-61-4	142-HxCB	U	ND	pg/L	4.86	114
68194-15-0	143-HxCB	U	ND	pg/L	4.56	114
68194-14-9	144-HxCB	U	ND	pg/L	3.38	114
74472-40-5	145-HxCB	U	ND	pg/L	2.35	114
51908-16-8	146-HxCB	U	ND	pg/L	3.90	114
68194-13-8	147-HxCB	CJ	5.73	pg/L	3.88	228
74472-41-6	148-HxCB	U	ND	pg/L	3.26	114
38380-04-0	149-HxCB	C147				
68194-08-1	150-HxCB	U	ND	pg/L	2.19	114
52663-63-5	151-HxCB	C135				
68194-09-2	152-HxCB	U	ND	pg/L	2.44	114
35065-27-1	153-HxCB	BCJ	6.71	pg/L	3.56	228
60145-22-4	154-HxCB	U	ND	pg/L	2.65	114
33979-03-2	155-HxCB	U	ND	pg/L	1.87	114
38380-08-4	156-HxCB	CU	ND	pg/L	3.40	228
69782-90-7	157-HxCB	C156				
74472-42-7	158-HxCB	U	ND	pg/L	2.97	114
39635-35-3	159-HxCB	U	ND	pg/L	2.81	114
41411-62-5	160-HxCB	U	ND	pg/L	3.63	114

Comments:

B The target analyte was detected in the associated blank.

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2210315**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**20534001**	**Date Collected:**	**10/05/2022 12:15**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**10/07/2022 09:47**		
Client ID:	**2210315-001J R6 North-20221005**			**Prep Basis:**	**As Received**
Batch ID:	**51323**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/11/2022 21:11**	**Analyst:**	**MLL**	**Instrument:**	**HRP875**
Data File:	**d08nov22a_7-9**			**Dilution:**	**1**
Prep Batch:	**51321**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**02-NOV-22**	**Prep Aliquot:**	**876.4 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
74472-43-8	161-HxCB	U	ND	pg/L	3.26	114
39635-34-2	162-HxCB	U	ND	pg/L	2.78	114
74472-44-9	163-HxCB	C129				
74472-45-0	164-HxCB	U	ND	pg/L	3.10	114
74472-46-1	165-HxCB	U	ND	pg/L	3.63	114
41411-63-6	166-HxCB	C128				
52663-72-6	167-HxCB	U	ND	pg/L	2.42	114
59291-65-5	168-HxCB	C153				
32774-16-6	169-HxCB	U	ND	pg/L	3.01	114
35065-30-6	170-HpCB	U	ND	pg/L	3.67	114
52663-71-5	171-HpCB	CU	ND	pg/L	3.56	228
52663-74-8	172-HpCB	U	ND	pg/L	3.65	114
68194-16-1	173-HpCB	C171				
38411-25-5	174-HpCB	U	ND	pg/L	3.95	114
40186-70-7	175-HpCB	U	ND	pg/L	3.19	114
52663-65-7	176-HpCB	U	ND	pg/L	2.46	114
52663-70-4	177-HpCB	U	ND	pg/L	3.61	114
52663-67-9	178-HpCB	U	ND	pg/L	3.51	114
52663-64-6	179-HpCB	U	ND	pg/L	2.37	114
35065-29-3	180-HpCB	CU	ND	pg/L	5.77	228
74472-47-2	181-HpCB	U	ND	pg/L	3.45	114
60145-23-5	182-HpCB	U	ND	pg/L	3.08	114
52663-69-1	183-HpCB	CJ	3.54	pg/L	3.26	228
74472-48-3	184-HpCB	U	ND	pg/L	2.33	114
52712-05-7	185-HpCB	C183				
74472-49-4	186-HpCB	U	ND	pg/L	2.49	114
52663-68-0	187-HpCB	J	3.13	pg/L	3.08	114
74487-85-7	188-HpCB	U	ND	pg/L	2.19	114
39635-31-9	189-HpCB	U	ND	pg/L	2.56	114
41411-64-7	190-HpCB	U	ND	pg/L	2.85	114
74472-50-7	191-HpCB	U	ND	pg/L	2.65	114
74472-51-8	192-HpCB	U	ND	pg/L	2.94	114

Comments:

B The target analyte was detected in the associated blank.
C Congener has coeluters. When Cxxx, refer to congener number xxx for data
J Value is estimated
U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2210315**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**20534001**	**Date Collected:**	**10/05/2022 12:15**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**10/07/2022 09:47**		
Client ID:	**2210315-001J R6 North-20221005**			**Prep Basis:**	**As Received**
Batch ID:	**51323**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/11/2022 21:11**	**Analyst:**	**MLL**	**Instrument:**	**HRP875**
Data File:	**d08nov22a_7-9**			**Dilution:**	**1**
Prep Batch:	**51321**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**02-NOV-22**	**Prep Aliquot:**	**876.4 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
69782-91-8	193-HpCB	C180				
35694-08-7	194-OcCB	U	ND	pg/L	4.06	114
52663-78-2	195-OcCB	U	ND	pg/L	2.74	114
42740-50-1	196-OcCB	U	ND	pg/L	3.04	114
33091-17-7	197-OcCB	CJ	3.10	pg/L	2.33	228
68194-17-2	198-OcCB	CJ	4.91	pg/L	3.26	228
52663-75-9	199-OcCB	C198				
52663-73-7	200-OcCB	C197				
40186-71-8	201-OcCB	U	ND	pg/L	2.17	114
2136-99-4	202-OcCB	U	ND	pg/L	2.35	114
52663-76-0	203-OcCB	U	ND	pg/L	3.10	114
74472-52-9	204-OcCB	U	ND	pg/L	2.24	114
74472-53-0	205-OcCB	U	ND	pg/L	1.94	114
40186-72-9	206-NoCB	U	ND	pg/L	4.06	114
52663-79-3	207-NoCB	U	ND	pg/L	2.81	114
52663-77-1	208-NoCB	U	ND	pg/L	2.42	114
2051-24-3	209-DeCB	U	ND	pg/L	3.01	114
1336-36-3	Total PCB Congeners	J	130	pg/L		114

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		896	2280	pg/L	39.3	(15%-150%)
13C-3-MoCB		1040	2280	pg/L	45.7	(15%-150%)
13C-4-DiCB		1100	2280	pg/L	48.0	(25%-150%)
13C-15-DiCB		1650	2280	pg/L	72.2	(25%-150%)
13C-19-TrCB		1390	2280	pg/L	61.0	(25%-150%)
13C-37-TrCB		1450	2280	pg/L	63.6	(25%-150%)
13C-54-TeCB		1430	2280	pg/L	62.6	(25%-150%)
13C-77-TeCB		1840	2280	pg/L	80.8	(25%-150%)
13C-81-TeCB		1900	2280	pg/L	83.2	(25%-150%)
13C-104-PeCB		1320	2280	pg/L	57.7	(25%-150%)
13C-105-PeCB		1480	2280	pg/L	64.7	(25%-150%)
13C-114-PeCB		1470	2280	pg/L	64.4	(25%-150%)
13C-118-PeCB		1370	2280	pg/L	60.1	(25%-150%)
13C-123-PeCB		1590	2280	pg/L	69.5	(25%-150%)
13C-126-PeCB		1530	2280	pg/L	66.9	(25%-150%)
13C-155-HxCB		1480	2280	pg/L	64.7	(25%-150%)
13C-156-HxCB	C	2990	4560	pg/L	65.5	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		1470	2280	pg/L	64.6	(25%-150%)
13C-169-HxCB		1480	2280	pg/L	64.7	(25%-150%)
13C-188-HpCB		1490	2280	pg/L	65.2	(25%-150%)
13C-189-HpCB		1480	2280	pg/L	64.9	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2210315**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**20534001**	**Date Collected:**	**10/05/2022 12:15**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**10/07/2022 09:47**		
Client ID:	**2210315-001J R6 North-20221005**			**Prep Basis:**	**As Received**
Batch ID:	**51323**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/11/2022 21:11**	**Analyst:**	**MLL**	**Instrument:**	**HRP875**
Data File:	**d08nov22a_7-9**			**Dilution:**	**1**
Prep Batch:	**51321**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**02-NOV-22**	**Prep Aliquot:**	**876.4 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-202-OcCB		1460	2280	pg/L	64.0	(25%-150%)
13C-205-OcCB		1780	2280	pg/L	78.1	(25%-150%)
13C-206-NoCB		1730	2280	pg/L	76.0	(25%-150%)
13C-208-NoCB		1670	2280	pg/L	73.1	(25%-150%)
13C-209-DeCB		1650	2280	pg/L	72.4	(25%-150%)
13C-28-TrCB		1610	2280	pg/L	70.7	(30%-135%)
13C-111-PeCB		1790	2280	pg/L	78.5	(30%-135%)
13C-178-HpCB		2090	2280	pg/L	91.6	(30%-135%)

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2210315**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**20534002**	**Date Collected:**	**10/06/2022 09:05**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**10/07/2022 09:47**		
Client ID:	**2210315-002J R6 South-20221006**			**Prep Basis:**	**As Received**
Batch ID:	**51323**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/11/2022 22:21**	**Analyst:**	**MLL**	**Instrument:**	**HRP875**
Data File:	**d08nov22a_7-10**			**Dilution:**	**1**
Prep Batch:	**51321**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**02-NOV-22**	**Prep Aliquot:**	**952.9 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
2051-60-7	1-MoCB	U	ND	pg/L	6.23	105
2051-61-8	2-MoCB	U	ND	pg/L	7.85	105
2051-62-9	3-MoCB	U	ND	pg/L	5.33	105
13029-08-8	4-DiCB	U	ND	pg/L	12.7	105
16605-91-7	5-DiCB	U	ND	pg/L	11.7	105
25569-80-6	6-DiCB	U	ND	pg/L	8.73	105
33284-50-3	7-DiCB	U	ND	pg/L	8.69	105
34883-43-7	8-DiCB	U	ND	pg/L	7.60	105
34883-39-1	9-DiCB	U	ND	pg/L	11.2	105
33146-45-1	10-DiCB	U	ND	pg/L	6.40	105
2050-67-1	11-DiCB	J	86.7	pg/L	10.1	105
2974-92-7	12-DiCB	CU	ND	pg/L	9.42	210
2974-90-5	13-DiCB	C12				
34883-41-5	14-DiCB	U	ND	pg/L	9.49	105
2050-68-2	15-DiCB	U	ND	pg/L	15.0	105
38444-78-9	16-TrCB	U	ND	pg/L	4.32	105
37680-66-3	17-TrCB	U	ND	pg/L	5.18	105
37680-65-2	18-TrCB	CU	ND	pg/L	7.68	210
38444-73-4	19-TrCB	U	ND	pg/L	6.02	105
38444-84-7	20-TrCB	BCJ	16.7	pg/L	3.88	210
55702-46-0	21-TrCB	CU	ND	pg/L	6.86	210
38444-85-8	22-TrCB	U	ND	pg/L	6.59	105
55720-44-0	23-TrCB	U	ND	pg/L	3.59	105
55702-45-9	24-TrCB	U	ND	pg/L	4.76	105
55712-37-3	25-TrCB	U	ND	pg/L	3.21	105
38444-81-4	26-TrCB	CU	ND	pg/L	3.71	210
38444-76-7	27-TrCB	U	ND	pg/L	4.03	105
7012-37-5	28-TrCB	C20				
15862-07-4	29-TrCB	C26				
35693-92-6	30-TrCB	C18				
16606-02-3	31-TrCB	U	ND	pg/L	11.3	105
38444-77-8	32-TrCB	U	ND	pg/L	3.76	105

Comments:

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2210315**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**20534002**	**Date Collected:**	**10/06/2022 09:05**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**10/07/2022 09:47**		
Client ID:	**2210315-002J R6 South-20221006**			**Prep Basis:**	**As Received**
Batch ID:	**51323**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/11/2022 22:21**	**Analyst:**	**MLL**	**Instrument:**	**HRP875**
Data File:	**d08nov22a_7-10**			**Dilution:**	**1**
Prep Batch:	**51321**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**02-NOV-22**	**Prep Aliquot:**	**952.9 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
38444-86-9	33-TrCB	C21				
37680-68-5	34-TrCB	U	ND	pg/L	4.18	105
37680-69-6	35-TrCB	U	ND	pg/L	6.57	105
38444-87-0	36-TrCB	U	ND	pg/L	5.71	105
38444-90-5	37-TrCB	J	7.98	pg/L	5.81	105
53555-66-1	38-TrCB	U	ND	pg/L	6.44	105
38444-88-1	39-TrCB	U	ND	pg/L	6.55	105
38444-93-8	40-TeCB	CU	ND	pg/L	5.79	210
52663-59-9	41-TeCB	U	ND	pg/L	9.78	105
36559-22-5	42-TeCB	U	ND	pg/L	6.28	105
70362-46-8	43-TeCB	U	ND	pg/L	7.77	105
41464-39-5	44-TeCB	CJ	18.1	pg/L	6.07	315
70362-45-7	45-TeCB	CJ	5.08	pg/L	3.25	210
41464-47-5	46-TeCB	U	ND	pg/L	3.17	105
2437-79-8	47-TeCB	C44				
70362-47-9	48-TeCB	U	ND	pg/L	6.67	105
41464-40-8	49-TeCB	CU	ND	pg/L	7.70	210
62796-65-0	50-TeCB	CU	ND	pg/L	3.30	210
68194-04-7	51-TeCB	C45				
35693-99-3	52-TeCB	BJ	25.7	pg/L	7.26	210
41464-41-9	53-TeCB	C50				
15968-05-5	54-TeCB	U	ND	pg/L	2.14	105
74338-24-2	55-TeCB	U	ND	pg/L	3.69	105
41464-43-1	56-TeCB	J	8.37	pg/L	3.92	105
70424-67-8	57-TeCB	U	ND	pg/L	3.57	105
41464-49-7	58-TeCB	U	ND	pg/L	3.65	105
74472-33-6	59-TeCB	CU	ND	pg/L	5.00	315
33025-41-1	60-TeCB	U	ND	pg/L	4.01	105
33284-53-6	61-TeCB	CU	ND	pg/L	33.6	420
54230-22-7	62-TeCB	C59				
74472-34-7	63-TeCB	U	ND	pg/L	3.63	105
52663-58-8	64-TeCB	J	8.08	pg/L	4.85	105

Comments:

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2210315**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**20534002**	**Date Collected:**	**10/06/2022 09:05**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**10/07/2022 09:47**		
Client ID:	**2210315-002J R6 South-20221006**			**Prep Basis:**	**As Received**
Batch ID:	**51323**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/11/2022 22:21**	**Analyst:**	**MLL**	**Instrument:**	**HRP875**
Data File:	**d08nov22a_7-10**			**Dilution:**	**1**
Prep Batch:	**51321**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**02-NOV-22**	**Prep Aliquot:**	**952.9 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
33284-54-7	65-TeCB	C44				
32598-10-0	66-TeCB	J	12.8	pg/L	3.88	105
73575-53-8	67-TeCB	U	ND	pg/L	3.04	105
73575-52-7	68-TeCB	U	ND	pg/L	3.32	105
60233-24-1	69-TeCB	C49				
32598-11-1	70-TeCB	C61				
41464-46-4	71-TeCB	C40				
41464-42-0	72-TeCB	U	ND	pg/L	3.59	105
74338-23-1	73-TeCB	U	ND	pg/L	4.62	105
32690-93-0	74-TeCB	C61				
32598-12-2	75-TeCB	C59				
70362-48-0	76-TeCB	C61				
32598-13-3	77-TeCB	J	4.11	pg/L	3.80	105
70362-49-1	78-TeCB	U	ND	pg/L	4.49	105
41464-48-6	79-TeCB	U	ND	pg/L	3.46	105
33284-52-5	80-TeCB	U	ND	pg/L	3.27	105
70362-50-4	81-TeCB	U	ND	pg/L	3.51	105
52663-62-4	82-PeCB	U	ND	pg/L	7.64	105
60145-20-2	83-PeCB	U	ND	pg/L	8.73	105
52663-60-2	84-PeCB	J	9.00	pg/L	6.46	105
65510-45-4	85-PeCB	CJ	8.56	pg/L	5.39	315
55312-69-1	86-PeCB	BCJ	35.2	pg/L	5.48	630
38380-02-8	87-PeCB	C86				
55215-17-3	88-PeCB	CU	ND	pg/L	6.53	210
73575-57-2	89-PeCB	U	ND	pg/L	7.49	105
68194-07-0	90-PeCB	CJ	48.3	pg/L	5.56	315
68194-05-8	91-PeCB	C88				
52663-61-3	92-PeCB	J	8.54	pg/L	7.20	105
73575-56-1	93-PeCB	CU	ND	pg/L	5.98	210
73575-55-0	94-PeCB	U	ND	pg/L	6.09	105
38379-99-6	95-PeCB	J	37.5	pg/L	6.76	105
73575-54-9	96-PeCB	U	ND	pg/L	2.92	105

Comments:

B The target analyte was detected in the associated blank.
C Congener has coeluters. When Cxxx, refer to congener number xxx for data
J Value is estimated
U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2210315**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**20534002**	**Date Collected:**	**10/06/2022 09:05**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**10/07/2022 09:47**		
Client ID:	**2210315-002J R6 South-20221006**			**Prep Basis:**	**As Received**
Batch ID:	**51323**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/11/2022 22:21**	**Analyst:**	**MLL**	**Instrument:**	**HRP875**
Data File:	**d08nov22a_7-10**			**Dilution:**	**1**
Prep Batch:	**51321**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**02-NOV-22**	**Prep Aliquot:**	**952.9 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
41464-51-1	97-PeCB	C86				
60233-25-2	98-PeCB	CU	ND	pg/L	5.83	210
38380-01-7	99-PeCB	J	14.9	pg/L	5.77	105
39485-83-1	100-PeCB	C93				
37680-73-2	101-PeCB	C90				
68194-06-9	102-PeCB	C98				
60145-21-3	103-PeCB	U	ND	pg/L	6.15	105
56558-16-8	104-PeCB	U	ND	pg/L	2.27	105
32598-14-4	105-PeCB	J	16.5	pg/L	4.47	105
70424-69-0	106-PeCB	U	ND	pg/L	4.83	105
70424-68-9	107-PeCB	U	ND	pg/L	4.30	105
70362-41-3	108-PeCB	CU	ND	pg/L	4.91	210
74472-35-8	109-PeCB	C86				
38380-03-9	110-PeCB	CJ	59.8	pg/L	5.02	210
39635-32-0	111-PeCB	U	ND	pg/L	4.76	105
74472-36-9	112-PeCB	U	ND	pg/L	4.32	105
68194-10-5	113-PeCB	C90				
74472-37-0	114-PeCB	U	ND	pg/L	4.37	105
74472-38-1	115-PeCB	C110				
18259-05-7	116-PeCB	C85				
68194-11-6	117-PeCB	C85				
31508-00-6	118-PeCB	BJ	43.2	pg/L	4.64	105
56558-17-9	119-PeCB	C86				
68194-12-7	120-PeCB	U	ND	pg/L	5.06	105
56558-18-0	121-PeCB	U	ND	pg/L	4.53	105
76842-07-4	122-PeCB	U	ND	pg/L	6.28	105
65510-44-3	123-PeCB	U	ND	pg/L	4.03	105
70424-70-3	124-PeCB	C108				
74472-39-2	125-PeCB	C86				
57465-28-8	126-PeCB	U	ND	pg/L	5.10	105
39635-33-1	127-PeCB	U	ND	pg/L	5.23	105
38380-07-3	128-HxCB	CJ	14.2	pg/L	7.35	210

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2210315**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**20534002**	**Date Collected:**	**10/06/2022 09:05**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**10/07/2022 09:47**		
Client ID:	**2210315-002J R6 South-20221006**			**Prep Basis:**	**As Received**
Batch ID:	**51323**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/11/2022 22:21**	**Analyst:**	**MLL**	**Instrument:**	**HRP875**
Data File:	**d08nov22a_7-10**			**Dilution:**	**1**
Prep Batch:	**51321**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**02-NOV-22**	**Prep Aliquot:**	**952.9 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
55215-18-4	129-HxCB	CJ	116	pg/L	8.00	315
52663-66-8	130-HxCB	U	ND	pg/L	9.23	105
61798-70-7	131-HxCB	U	ND	pg/L	9.15	105
38380-05-1	132-HxCB	J	30.4	pg/L	8.56	105
35694-04-3	133-HxCB	U	ND	pg/L	8.77	105
52704-70-8	134-HxCB	U	ND	pg/L	9.63	105
52744-13-5	135-HxCB	CJ	33.3	pg/L	4.64	210
38411-22-2	136-HxCB	J	10.7	pg/L	3.36	105
35694-06-5	137-HxCB	U	ND	pg/L	8.92	105
35065-28-2	138-HxCB	C129				
56030-56-9	139-HxCB	CU	ND	pg/L	7.49	210
59291-64-4	140-HxCB	C139				
52712-04-6	141-HxCB	J	20.9	pg/L	7.56	105
41411-61-4	142-HxCB	U	ND	pg/L	9.09	105
68194-15-0	143-HxCB	U	ND	pg/L	8.52	105
68194-14-9	144-HxCB	J	6.00	pg/L	4.55	105
74472-40-5	145-HxCB	U	ND	pg/L	3.19	105
51908-16-8	146-HxCB	U	ND	pg/L	13.1	105
68194-13-8	147-HxCB	CJ	68.6	pg/L	7.24	210
74472-41-6	148-HxCB	U	ND	pg/L	4.37	105
38380-04-0	149-HxCB	C147				
68194-08-1	150-HxCB	U	ND	pg/L	2.98	105
52663-63-5	151-HxCB	C135				
68194-09-2	152-HxCB	U	ND	pg/L	3.30	105
35065-27-1	153-HxCB	CJ	85.4	pg/L	6.67	210
60145-22-4	154-HxCB	U	ND	pg/L	3.61	105
33979-03-2	155-HxCB	U	ND	pg/L	2.67	105
38380-08-4	156-HxCB	CU	ND	pg/L	10.9	210
69782-90-7	157-HxCB	C156				
74472-42-7	158-HxCB	U	ND	pg/L	10.8	105
39635-35-3	159-HxCB	U	ND	pg/L	4.16	105
41411-62-5	160-HxCB	U	ND	pg/L	6.78	105

Comments:

B The target analyte was detected in the associated blank.
C Congener has coeluters. When Cxxx, refer to congener number xxx for data
J Value is estimated
U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2210315**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**20534002**	**Date Collected:**	**10/06/2022 09:05**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**10/07/2022 09:47**		
Client ID:	**2210315-002J R6 South-20221006**			**Prep Basis:**	**As Received**
Batch ID:	**51323**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/11/2022 22:21**	**Analyst:**	**MLL**	**Instrument:**	**HRP875**
Data File:	**d08nov22a_7-10**			**Dilution:**	**1**
Prep Batch:	**51321**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**02-NOV-22**	**Prep Aliquot:**	**952.9 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
74472-43-8	161-HxCB	U	ND	pg/L	6.11	105
39635-34-2	162-HxCB	U	ND	pg/L	4.13	105
74472-44-9	163-HxCB	C129				
74472-45-0	164-HxCB	U	ND	pg/L	6.00	105
74472-46-1	165-HxCB	U	ND	pg/L	6.78	105
41411-63-6	166-HxCB	C128				
52663-72-6	167-HxCB	J	4.22	pg/L	3.65	105
59291-65-5	168-HxCB	C153				
32774-16-6	169-HxCB	U	ND	pg/L	4.37	105
35065-30-6	170-HpCB	J	32.8	pg/L	3.86	105
52663-71-5	171-HpCB	CU	ND	pg/L	10.5	210
52663-74-8	172-HpCB	J	6.23	pg/L	3.84	105
68194-16-1	173-HpCB	C171				
38411-25-5	174-HpCB	J	27.2	pg/L	3.38	105
40186-70-7	175-HpCB	U	ND	pg/L	3.40	105
52663-65-7	176-HpCB	U	ND	pg/L	3.74	105
52663-70-4	177-HpCB	U	ND	pg/L	18.2	105
52663-67-9	178-HpCB	U	ND	pg/L	8.50	105
52663-64-6	179-HpCB	J	12.2	pg/L	2.52	105
35065-29-3	180-HpCB	CJ	63.2	pg/L	3.09	210
74472-47-2	181-HpCB	U	ND	pg/L	3.63	105
60145-23-5	182-HpCB	U	ND	pg/L	3.27	105
52663-69-1	183-HpCB	CJ	19.3	pg/L	3.44	210
74472-48-3	184-HpCB	U	ND	pg/L	2.48	105
52712-05-7	185-HpCB	C183				
74472-49-4	186-HpCB	U	ND	pg/L	2.64	105
52663-68-0	187-HpCB	J	33.5	pg/L	3.25	105
74487-85-7	188-HpCB	U	ND	pg/L	2.35	105
39635-31-9	189-HpCB	J	3.21	pg/L	3.04	105
41411-64-7	190-HpCB	J	6.07	pg/L	3.00	105
74472-50-7	191-HpCB	U	ND	pg/L	2.79	105
74472-51-8	192-HpCB	U	ND	pg/L	3.13	105

Comments:

B The target analyte was detected in the associated blank.
C Congener has coeluters. When Cxxx, refer to congener number xxx for data
J Value is estimated
U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2210315**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**20534002**	**Date Collected:**	**10/06/2022 09:05**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**10/07/2022 09:47**		
Client ID:	**2210315-002J R6 South-20221006**			**Prep Basis:**	**As Received**
Batch ID:	**51323**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/11/2022 22:21**	**Analyst:**	**MLL**	**Instrument:**	**HRP875**
Data File:	**d08nov22a_7-10**			**Dilution:**	**1**
Prep Batch:	**51321**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**02-NOV-22**	**Prep Aliquot:**	**952.9 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
69782-91-8	193-HpCB	C180				
35694-08-7	194-OcCB	J	16.7	pg/L	3.15	105
52663-78-2	195-OcCB	U	ND	pg/L	6.67	105
42740-50-1	196-OcCB	U	ND	pg/L	8.71	105
33091-17-7	197-OcCB	CU	ND	pg/L	3.97	210
68194-17-2	198-OcCB	CU	ND	pg/L	16.3	210
52663-75-9	199-OcCB	C198				
52663-73-7	200-OcCB	C197				
40186-71-8	201-OcCB	U	ND	pg/L	2.92	105
2136-99-4	202-OcCB	U	ND	pg/L	3.61	105
52663-76-0	203-OcCB	J	9.93	pg/L	4.20	105
74472-52-9	204-OcCB	U	ND	pg/L	3.00	105
74472-53-0	205-OcCB	U	ND	pg/L	2.22	105
40186-72-9	206-NoCB	J	8.02	pg/L	3.82	105
52663-79-3	207-NoCB	U	ND	pg/L	2.85	105
52663-77-1	208-NoCB	U	ND	pg/L	2.98	105
2051-24-3	209-DeCB	U	ND	pg/L	5.18	105
1336-36-3	Total PCB Congeners	J	1100	pg/L		105

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		886	2100	pg/L	42.2	(15%-150%)
13C-3-MoCB		1020	2100	pg/L	48.7	(15%-150%)
13C-4-DiCB		1130	2100	pg/L	53.8	(25%-150%)
13C-15-DiCB		1550	2100	pg/L	73.8	(25%-150%)
13C-19-TrCB		1330	2100	pg/L	63.5	(25%-150%)
13C-37-TrCB		1380	2100	pg/L	65.7	(25%-150%)
13C-54-TeCB		1390	2100	pg/L	66.4	(25%-150%)
13C-77-TeCB		1680	2100	pg/L	79.8	(25%-150%)
13C-81-TeCB		1770	2100	pg/L	84.2	(25%-150%)
13C-104-PeCB		1260	2100	pg/L	60.2	(25%-150%)
13C-105-PeCB		1460	2100	pg/L	69.7	(25%-150%)
13C-114-PeCB		1400	2100	pg/L	66.6	(25%-150%)
13C-118-PeCB		1310	2100	pg/L	62.5	(25%-150%)
13C-123-PeCB		1510	2100	pg/L	71.8	(25%-150%)
13C-126-PeCB		1520	2100	pg/L	72.5	(25%-150%)
13C-155-HxCB		1270	2100	pg/L	60.3	(25%-150%)
13C-156-HxCB	C	2670	4200	pg/L	63.5	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		1310	2100	pg/L	62.3	(25%-150%)
13C-169-HxCB		1300	2100	pg/L	62.1	(25%-150%)
13C-188-HpCB		1280	2100	pg/L	61.1	(25%-150%)
13C-189-HpCB		1330	2100	pg/L	63.3	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2210315**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**20534002**	**Date Collected:**	**10/06/2022 09:05**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**10/07/2022 09:47**		
Client ID:	**2210315-002J R6 South-20221006**			**Prep Basis:**	**As Received**
Batch ID:	**51323**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/11/2022 22:21**	**Analyst:**	**MLL**	**Instrument:**	**HRP875**
Data File:	**d08nov22a_7-10**			**Dilution:**	**1**
Prep Batch:	**51321**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**02-NOV-22**	**Prep Aliquot:**	**952.9 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-202-OcCB		1260	2100	pg/L	60.1	(25%-150%)
13C-205-OcCB		1590	2100	pg/L	75.6	(25%-150%)
13C-206-NoCB		1610	2100	pg/L	76.8	(25%-150%)
13C-208-NoCB		1420	2100	pg/L	67.8	(25%-150%)
13C-209-DeCB		1590	2100	pg/L	75.8	(25%-150%)
13C-28-TrCB		1570	2100	pg/L	75.0	(30%-135%)
13C-111-PeCB		1650	2100	pg/L	78.5	(30%-135%)
13C-178-HpCB		1800	2100	pg/L	85.9	(30%-135%)

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Quality Control Summary

PCB Congeners
Surrogate Recovery Report

SDG Number: 2210315

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12033077	LCS for batch 51321	13C-1-MoCB		37.9	(15%-140%)
		13C-3-MoCB		43.8	(15%-140%)
		13C-4-DiCB		43.3	(30%-140%)
		13C-15-DiCB		65.1	(30%-140%)
		13C-19-TrCB		53.6	(30%-140%)
		13C-37-TrCB		61.0	(30%-140%)
		13C-54-TeCB		51.6	(30%-140%)
		13C-77-TeCB		64.6	(30%-140%)
		13C-81-TeCB		66.8	(30%-140%)
		13C-104-PeCB		60.0	(30%-140%)
		13C-105-PeCB		57.4	(30%-140%)
		13C-114-PeCB		56.9	(30%-140%)
		13C-118-PeCB		50.5	(30%-140%)
		13C-123-PeCB		58.0	(30%-140%)
		13C-126-PeCB		65.6	(30%-140%)
		13C-155-HxCB		57.6	(30%-140%)
		13C-156-HxCB	C	65.3	(30%-140%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		65.4	(30%-140%)
		13C-169-HxCB		67.8	(30%-140%)
		13C-188-HpCB		56.5	(30%-140%)
		13C-189-HpCB		58.4	(30%-140%)
		13C-202-OcCB		61.1	(30%-140%)
		13C-205-OcCB		70.3	(30%-140%)
		13C-206-NoCB		69.1	(30%-140%)
		13C-208-NoCB		57.7	(30%-140%)
		13C-209-DeCB		68.4	(30%-140%)
		13C-28-TrCB		61.0	(40%-125%)
		13C-111-PeCB		64.1	(40%-125%)
		13C-178-HpCB		73.2	(40%-125%)
12033078	LCSD for batch 51321	13C-1-MoCB		27.2	(15%-140%)
		13C-3-MoCB		31.8	(15%-140%)
		13C-4-DiCB		32.8	(30%-140%)
		13C-15-DiCB		44.8	(30%-140%)
		13C-19-TrCB		41.9	(30%-140%)
		13C-37-TrCB		37.6	(30%-140%)
		13C-54-TeCB		37.5	(30%-140%)
		13C-77-TeCB		41.3	(30%-140%)
		13C-81-TeCB		43.7	(30%-140%)
		13C-104-PeCB		44.2	(30%-140%)
		13C-105-PeCB		43.2	(30%-140%)
		13C-114-PeCB		42.1	(30%-140%)
		13C-118-PeCB		38.2	(30%-140%)
		13C-123-PeCB		44.0	(30%-140%)
		13C-126-PeCB		42.9	(30%-140%)
		13C-155-HxCB		38.2	(30%-140%)
		13C-156-HxCB	C	41.2	(30%-140%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		41.8	(30%-140%)
		13C-169-HxCB		41.8	(30%-140%)
		13C-188-HpCB		39.7	(30%-140%)
		13C-189-HpCB		40.8	(30%-140%)

PCB Congeners
Surrogate Recovery Report

SDG Number: 2210315

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12033078	LCSD for batch 51321	13C-202-OcCB		39.0	(30%-140%)
		13C-205-OcCB		47.6	(30%-140%)
		13C-206-NoCB		46.5	(30%-140%)
		13C-208-NoCB		40.6	(30%-140%)
		13C-209-DeCB		46.0	(30%-140%)
		13C-28-TrCB		54.9	(40%-125%)
		13C-111-PeCB		61.1	(40%-125%)
		13C-178-HpCB		63.3	(40%-125%)
12033076	MB for batch 51321	13C-1-MoCB		33.3	(15%-150%)
		13C-3-MoCB		38.0	(15%-150%)
		13C-4-DiCB		38.1	(25%-150%)
		13C-15-DiCB		50.4	(25%-150%)
		13C-19-TrCB		45.8	(25%-150%)
		13C-37-TrCB		48.2	(25%-150%)
		13C-54-TeCB		43.6	(25%-150%)
		13C-77-TeCB		56.2	(25%-150%)
		13C-81-TeCB		60.0	(25%-150%)
		13C-104-PeCB		46.6	(25%-150%)
		13C-105-PeCB		48.6	(25%-150%)
		13C-114-PeCB		48.2	(25%-150%)
		13C-118-PeCB		44.1	(25%-150%)
		13C-123-PeCB		50.5	(25%-150%)
		13C-126-PeCB		50.6	(25%-150%)
		13C-155-HxCB		49.8	(25%-150%)
		13C-156-HxCB	C	56.2	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		55.7	(25%-150%)
		13C-169-HxCB		57.1	(25%-150%)
		13C-188-HpCB		49.5	(25%-150%)
		13C-189-HpCB		51.5	(25%-150%)
		13C-202-OcCB		51.8	(25%-150%)
		13C-205-OcCB		58.6	(25%-150%)
		13C-206-NoCB		57.5	(25%-150%)
		13C-208-NoCB		51.4	(25%-150%)
		13C-209-DeCB		57.7	(25%-150%)
		13C-28-TrCB		51.9	(30%-135%)
		13C-111-PeCB		55.2	(30%-135%)
		13C-178-HpCB		62.0	(30%-135%)
20534001	2210315-001J R6 North-20221005	13C-1-MoCB		39.3	(15%-150%)
		13C-3-MoCB		45.7	(15%-150%)
		13C-4-DiCB		48.0	(25%-150%)
		13C-15-DiCB		72.2	(25%-150%)
		13C-19-TrCB		61.0	(25%-150%)
		13C-37-TrCB		63.6	(25%-150%)
		13C-54-TeCB		62.6	(25%-150%)
		13C-77-TeCB		80.8	(25%-150%)
		13C-81-TeCB		83.2	(25%-150%)
		13C-104-PeCB		57.7	(25%-150%)
		13C-105-PeCB		64.7	(25%-150%)
		13C-114-PeCB		64.4	(25%-150%)
		13C-118-PeCB		60.1	(25%-150%)

PCB Congeners
Surrogate Recovery Report

SDG Number: 2210315

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
20534001	2210315-001J R6 North-20221005	13C-123-PeCB		69.5	(25%-150%)
		13C-126-PeCB		66.9	(25%-150%)
		13C-155-HxCB		64.7	(25%-150%)
		13C-156-HxCB	C	65.5	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		64.6	(25%-150%)
		13C-169-HxCB		64.7	(25%-150%)
		13C-188-HpCB		65.2	(25%-150%)
		13C-189-HpCB		64.9	(25%-150%)
		13C-202-OcCB		64.0	(25%-150%)
		13C-205-OcCB		78.1	(25%-150%)
		13C-206-NoCB		76.0	(25%-150%)
		13C-208-NoCB		73.1	(25%-150%)
		13C-209-DeCB		72.4	(25%-150%)
		13C-28-TrCB		70.7	(30%-135%)
		13C-111-PeCB		78.5	(30%-135%)
		13C-178-HpCB		91.6	(30%-135%)
20534002	2210315-002J R6 South-20221006	13C-1-MoCB		42.2	(15%-150%)
		13C-3-MoCB		48.7	(15%-150%)
		13C-4-DiCB		53.8	(25%-150%)
		13C-15-DiCB		73.8	(25%-150%)
		13C-19-TrCB		63.5	(25%-150%)
		13C-37-TrCB		65.7	(25%-150%)
		13C-54-TeCB		66.4	(25%-150%)
		13C-77-TeCB		79.8	(25%-150%)
		13C-81-TeCB		84.2	(25%-150%)
		13C-104-PeCB		60.2	(25%-150%)
		13C-105-PeCB		69.7	(25%-150%)
		13C-114-PeCB		66.6	(25%-150%)
		13C-118-PeCB		62.5	(25%-150%)
		13C-123-PeCB		71.8	(25%-150%)
		13C-126-PeCB		72.5	(25%-150%)
		13C-155-HxCB		60.3	(25%-150%)
		13C-156-HxCB	C	63.5	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		62.3	(25%-150%)
		13C-169-HxCB		62.1	(25%-150%)
		13C-188-HpCB		61.1	(25%-150%)
		13C-189-HpCB		63.3	(25%-150%)
		13C-202-OcCB		60.1	(25%-150%)
		13C-205-OcCB		75.6	(25%-150%)
		13C-206-NoCB		76.8	(25%-150%)
		13C-208-NoCB		67.8	(25%-150%)
		13C-209-DeCB		75.8	(25%-150%)
		13C-28-TrCB		75.0	(30%-135%)
		13C-111-PeCB		78.5	(30%-135%)
		13C-178-HpCB		85.9	(30%-135%)

* Recovery outside Acceptance Limits
# Column to be used to flag recovery values
D Sample Diluted

PCB Congeners

Quality Control Summary
Spike Recovery Report

SDG Number: 2210315 **Sample Type:** Laboratory Control Sample

Client ID: LCS for batch 51321 **Matrix:** WATER

Lab Sample ID: 12033077

Instrument: HRP875 **Analysis Date:** 11/10/2022 12:14 **Dilution:** 1

Analyst: MLL **Prep Batch ID:** 51321

Batch ID: 51323

CAS No.		Parmname	Amount Added pg/L		Spike Conc. pg/L	Recovery %	Acceptance Limits
2051-60-7	LCS	1-MoCB	500		490	98.1	50-150
2051-62-9	LCS	3-MoCB	500		498	99.6	50-150
13029-08-8	LCS	4-DiCB	500		462	92.3	50-150
2050-68-2	LCS	15-DiCB	500		513	103	50-150
38444-73-4	LCS	19-TrCB	500		513	103	50-150
38444-90-5	LCS	37-TrCB	500		483	96.6	50-150
15968-05-5	LCS	54-TeCB	1000		1020	102	50-150
32598-13-3	LCS	77-TeCB	1000		977	97.7	50-150
70362-50-4	LCS	81-TeCB	1000		826	82.6	50-150
56558-16-8	LCS	104-PeCB	1000		1010	101	50-150
32598-14-4	LCS	105-PeCB	1000		924	92.4	50-150
74472-37-0	LCS	114-PeCB	1000		1040	104	50-150
31508-00-6	LCS	118-PeCB	1000		1110	111	50-150
65510-44-3	LCS	123-PeCB	1000		926	92.6	50-150
57465-28-8	LCS	126-PeCB	1000		993	99.3	50-150
33979-03-2	LCS	155-HxCB	1000		1000	100	50-150
38380-08-4	LCS	156-HxCB	2000	C	1980	98.9	50-150
69782-90-7	LCS	157-HxCB		C156			
52663-72-6	LCS	167-HxCB	1000		1000	100	50-150
32774-16-6	LCS	169-HxCB	1000		967	96.7	50-150
74487-85-7	LCS	188-HpCB	1000		997	99.7	50-150
39635-31-9	LCS	189-HpCB	1000		1010	101	50-150
2136-99-4	LCS	202-OcCB	1500		1620	108	50-150
74472-53-0	LCS	205-OcCB	1500		1450	96.4	50-150
40186-72-9	LCS	206-NoCB	1500		1490	99.3	50-150
52663-77-1	LCS	208-NoCB	1500		1590	106	50-150
2051-24-3	LCS	209-DeCB	1500		1430	95.4	50-150

PCB Congeners

Quality Control Summary
Spike Recovery Report

SDG Number: 2210315 **Sample Type:** Laboratory Control Sample Duplicate

Client ID: LCSD for batch 51321 **Matrix:** WATER

Lab Sample ID: 12033078

Instrument: HRP875 **Analysis Date:** 11/10/2022 13:23 **Dilution:** 1

Analyst: MLL **Prep Batch ID:** 51321

Batch ID: 51323

CAS No.		Parmname	Amount Added pg/L		Spike Conc. pg/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
2051-60-7	LCSD	1-MoCB	500		443	88.5	50-150	10.2	0-20
2051-62-9	LCSD	3-MoCB	500		480	96	50-150	3.66	0-20
13029-08-8	LCSD	4-DiCB	500		425	85	50-150	8.22	0-20
2050-68-2	LCSD	15-DiCB	500		471	94.3	50-150	8.51	0-20
38444-73-4	LCSD	19-TrCB	500		473	94.5	50-150	8.26	0-20
38444-90-5	LCSD	37-TrCB	500		456	91.2	50-150	5.67	0-20
15968-05-5	LCSD	54-TeCB	1000		988	98.8	50-150	3.41	0-20
32598-13-3	LCSD	77-TeCB	1000		901	90.1	50-150	8.10	0-20
70362-50-4	LCSD	81-TeCB	1000		769	76.9	50-150	7.23	0-20
56558-16-8	LCSD	104-PeCB	1000		953	95.3	50-150	5.83	0-20
32598-14-4	LCSD	105-PeCB	1000		847	84.7	50-150	8.71	0-20
74472-37-0	LCSD	114-PeCB	1000		985	98.5	50-150	5.75	0-20
31508-00-6	LCSD	118-PeCB	1000		1010	101	50-150	9.72	0-20
65510-44-3	LCSD	123-PeCB	1000		818	81.8	50-150	12.3	0-20
57465-28-8	LCSD	126-PeCB	1000		947	94.7	50-150	4.74	0-20
33979-03-2	LCSD	155-HxCB	1000		941	94.1	50-150	6.09	0-20
38380-08-4	LCSD	156-HxCB	2000	C	1830	91.4	50-150	7.91	0-20
69782-90-7	LCSD	157-HxCB		C156					
52663-72-6	LCSD	167-HxCB	1000		933	93.3	50-150	7.24	0-20
32774-16-6	LCSD	169-HxCB	1000		907	90.7	50-150	6.37	0-20
74487-85-7	LCSD	188-HpCB	1000		909	90.9	50-150	9.26	0-20
39635-31-9	LCSD	189-HpCB	1000		895	89.5	50-150	12.1	0-20
2136-99-4	LCSD	202-OcCB	1500		1510	100	50-150	7.05	0-20
74472-53-0	LCSD	205-OcCB	1500		1340	89.4	50-150	7.52	0-20
40186-72-9	LCSD	206-NoCB	1500		1420	94.8	50-150	4.66	0-20
52663-77-1	LCSD	208-NoCB	1500		1530	102	50-150	4.20	0-20
2051-24-3	LCSD	209-DeCB	1500		1330	88.7	50-150	7.30	0-20

Method Blank Summary

SDG Number:	**2210315**	**Client:**	**HALL001**	**Matrix:**	**WATER**
Client ID:	**MB for batch 51321**	**Instrument ID:**	**HRP875**	**Data File:**	**d08nov22a_5-3**
Lab Sample ID:	**12033076**	**Prep Date:**	**02-NOV-22**	**Analyzed:**	**11/10/22 14:33**
Column:					

This method blank applies to the following samples and quality control samples:

	Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01	LCS for batch 51321	12033077	d08nov22a_5-1	11/10/22	1214
02	LCSD for batch 51321	12033078	d08nov22a_5-2	11/10/22	1323
03	2210315-001J R6 North-20221005	20534001	d08nov22a_7-9	11/11/22	2111
04	2210315-002J R6 South-20221006	20534002	d08nov22a_7-10	11/11/22	2221

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2210315**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**12033076**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 51321**				
Client ID:	**MB for batch 51321**			**Prep Basis:**	**As Received**
Batch ID:	**51323**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/10/2022 14:33**	**Analyst:**	**MLL**	**Instrument:**	**HRP875**
Data File:	**d08nov22a_5-3**			**Dilution:**	**1**
Prep Batch:	**51321**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**02-NOV-22**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
2051-60-7	1-MoCB	U	ND	pg/L	4.24	100
2051-61-8	2-MoCB	U	ND	pg/L	4.84	100
2051-62-9	3-MoCB	U	ND	pg/L	3.80	100
13029-08-8	4-DiCB	U	ND	pg/L	11.4	100
16605-91-7	5-DiCB	U	ND	pg/L	9.04	100
25569-80-6	6-DiCB	U	ND	pg/L	7.52	100
33284-50-3	7-DiCB	U	ND	pg/L	7.66	100
34883-43-7	8-DiCB	U	ND	pg/L	6.54	100
34883-39-1	9-DiCB	U	ND	pg/L	8.86	100
33146-45-1	10-DiCB	U	ND	pg/L	6.40	100
2050-67-1	11-DiCB	U	ND	pg/L	58.1	100
2974-92-7	12-DiCB	CU	ND	pg/L	7.68	200
2974-90-5	13-DiCB	C12				
34883-41-5	14-DiCB	U	ND	pg/L	7.86	100
2050-68-2	15-DiCB	U	ND	pg/L	6.96	100
38444-78-9	16-TrCB	U	ND	pg/L	5.24	100
37680-66-3	17-TrCB	U	ND	pg/L	5.26	100
37680-65-2	18-TrCB	CU	ND	pg/L	4.46	200
38444-73-4	19-TrCB	U	ND	pg/L	5.52	100
38444-84-7	20-TrCB	CJ	5.80	pg/L	3.66	200
55702-46-0	21-TrCB	CU	ND	pg/L	3.52	200
38444-85-8	22-TrCB	U	ND	pg/L	3.82	100
55720-44-0	23-TrCB	U	ND	pg/L	3.82	100
55702-45-9	24-TrCB	U	ND	pg/L	4.22	100
55712-37-3	25-TrCB	U	ND	pg/L	3.36	100
38444-81-4	26-TrCB	CU	ND	pg/L	3.82	200
38444-76-7	27-TrCB	U	ND	pg/L	4.04	100
7012-37-5	28-TrCB	C20				
15862-07-4	29-TrCB	C26				
35693-92-6	30-TrCB	C18				
16606-02-3	31-TrCB	U	ND	pg/L	3.52	100
38444-77-8	32-TrCB	U	ND	pg/L	3.68	100

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2210315**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**12033076**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 51321**				
Client ID:	**MB for batch 51321**			**Prep Basis:**	**As Received**
Batch ID:	**51323**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/10/2022 14:33**	**Analyst:**	**MLL**	**Instrument:**	**HRP875**
Data File:	**d08nov22a_5-3**			**Dilution:**	**1**
Prep Batch:	**51321**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**02-NOV-22**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
38444-86-9	33-TrCB	C21				
37680-68-5	34-TrCB	U	ND	pg/L	4.14	100
37680-69-6	35-TrCB	U	ND	pg/L	5.24	100
38444-87-0	36-TrCB	U	ND	pg/L	4.62	100
38444-90-5	37-TrCB	U	ND	pg/L	4.66	100
53555-66-1	38-TrCB	U	ND	pg/L	5.26	100
38444-88-1	39-TrCB	U	ND	pg/L	5.12	100
38444-93-8	40-TeCB	CU	ND	pg/L	4.88	200
52663-59-9	41-TeCB	U	ND	pg/L	6.64	100
36559-22-5	42-TeCB	U	ND	pg/L	5.40	100
70362-46-8	43-TeCB	U	ND	pg/L	6.46	100
41464-39-5	44-TeCB	CU	ND	pg/L	6.04	300
70362-45-7	45-TeCB	CU	ND	pg/L	3.42	200
41464-47-5	46-TeCB	U	ND	pg/L	3.54	100
2437-79-8	47-TeCB	C44				
70362-47-9	48-TeCB	U	ND	pg/L	5.38	100
41464-40-8	49-TeCB	CU	ND	pg/L	4.44	200
62796-65-0	50-TeCB	CU	ND	pg/L	3.34	200
68194-04-7	51-TeCB	C45				
35693-99-3	52-TeCB	J	8.28	pg/L	5.84	200
41464-41-9	53-TeCB	C50				
15968-05-5	54-TeCB	U	ND	pg/L	2.26	100
74338-24-2	55-TeCB	U	ND	pg/L	4.76	100
41464-43-1	56-TeCB	U	ND	pg/L	4.80	100
70424-67-8	57-TeCB	U	ND	pg/L	4.56	100
41464-49-7	58-TeCB	U	ND	pg/L	4.72	100
74472-33-6	59-TeCB	CU	ND	pg/L	4.12	300
33025-41-1	60-TeCB	U	ND	pg/L	4.66	100
33284-53-6	61-TeCB	CJ	7.58	pg/L	4.50	400
54230-22-7	62-TeCB	C59				
74472-34-7	63-TeCB	U	ND	pg/L	4.44	100
52663-58-8	64-TeCB	U	ND	pg/L	3.86	100

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2210315**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**12033076**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 51321**				
Client ID:	**MB for batch 51321**			**Prep Basis:**	**As Received**
Batch ID:	**51323**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/10/2022 14:33**	**Analyst:**	**MLL**	**Instrument:**	**HRP875**
Data File:	**d08nov22a_5-3**			**Dilution:**	**1**
Prep Batch:	**51321**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**02-NOV-22**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
33284-54-7	65-TeCB	C44				
32598-10-0	66-TeCB	U	ND	pg/L	4.66	100
73575-53-8	67-TeCB	U	ND	pg/L	3.66	100
73575-52-7	68-TeCB	U	ND	pg/L	4.02	100
60233-24-1	69-TeCB	C49				
32598-11-1	70-TeCB	C61				
41464-46-4	71-TeCB	C40				
41464-42-0	72-TeCB	U	ND	pg/L	4.34	100
74338-23-1	73-TeCB	U	ND	pg/L	3.84	100
32690-93-0	74-TeCB	C61				
32598-12-2	75-TeCB	C59				
70362-48-0	76-TeCB	C61				
32598-13-3	77-TeCB	U	ND	pg/L	4.76	100
70362-49-1	78-TeCB	U	ND	pg/L	5.30	100
41464-48-6	79-TeCB	U	ND	pg/L	4.20	100
33284-52-5	80-TeCB	U	ND	pg/L	4.04	100
70362-50-4	81-TeCB	U	ND	pg/L	4.04	100
52663-62-4	82-PeCB	U	ND	pg/L	6.86	100
60145-20-2	83-PeCB	U	ND	pg/L	7.94	100
52663-60-2	84-PeCB	U	ND	pg/L	5.86	100
65510-45-4	85-PeCB	CU	ND	pg/L	4.86	300
55312-69-1	86-PeCB	CJ	6.84	pg/L	4.90	600
38380-02-8	87-PeCB	C86				
55215-17-3	88-PeCB	CU	ND	pg/L	5.84	200
73575-57-2	89-PeCB	U	ND	pg/L	6.96	100
68194-07-0	90-PeCB	CU	ND	pg/L	7.70	300
68194-05-8	91-PeCB	C88				
52663-61-3	92-PeCB	U	ND	pg/L	6.42	100
73575-56-1	93-PeCB	CU	ND	pg/L	5.26	200
73575-55-0	94-PeCB	U	ND	pg/L	5.60	100
38379-99-6	95-PeCB	U	ND	pg/L	6.24	100
73575-54-9	96-PeCB	U	ND	pg/L	3.24	100

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2210315**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**12033076**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 51321**				
Client ID:	**MB for batch 51321**			**Prep Basis:**	**As Received**
Batch ID:	**51323**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/10/2022 14:33**	**Analyst:**	**MLL**	**Instrument:**	**HRP875**
Data File:	**d08nov22a_5-3**			**Dilution:**	**1**
Prep Batch:	**51321**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**02-NOV-22**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
41464-51-1	97-PeCB	C86				
60233-25-2	98-PeCB	CU	ND	pg/L	5.32	200
38380-01-7	99-PeCB	U	ND	pg/L	5.34	100
39485-83-1	100-PeCB	C93				
37680-73-2	101-PeCB	C90				
68194-06-9	102-PeCB	C98				
60145-21-3	103-PeCB	U	ND	pg/L	5.42	100
56558-16-8	104-PeCB	U	ND	pg/L	2.42	100
32598-14-4	105-PeCB	U	ND	pg/L	4.16	100
70424-69-0	106-PeCB	U	ND	pg/L	4.48	100
70424-68-9	107-PeCB	U	ND	pg/L	3.60	100
70362-41-3	108-PeCB	CU	ND	pg/L	4.32	200
74472-35-8	109-PeCB	C86				
38380-03-9	110-PeCB	CU	ND	pg/L	6.76	200
39635-32-0	111-PeCB	U	ND	pg/L	4.16	100
74472-36-9	112-PeCB	U	ND	pg/L	3.94	100
68194-10-5	113-PeCB	C90				
74472-37-0	114-PeCB	U	ND	pg/L	3.92	100
74472-38-1	115-PeCB	C110				
18259-05-7	116-PeCB	C85				
68194-11-6	117-PeCB	C85				
31508-00-6	118-PeCB	J	5.50	pg/L	4.02	100
56558-17-9	119-PeCB	C86				
68194-12-7	120-PeCB	U	ND	pg/L	4.38	100
56558-18-0	121-PeCB	U	ND	pg/L	4.12	100
76842-07-4	122-PeCB	U	ND	pg/L	5.68	100
65510-44-3	123-PeCB	U	ND	pg/L	3.70	100
70424-70-3	124-PeCB	C108				
74472-39-2	125-PeCB	C86				
57465-28-8	126-PeCB	U	ND	pg/L	4.76	100
39635-33-1	127-PeCB	U	ND	pg/L	4.44	100
38380-07-3	128-HxCB	CU	ND	pg/L	5.02	200

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2210315**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**12033076**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 51321**				
Client ID:	**MB for batch 51321**			**Prep Basis:**	**As Received**
Batch ID:	**51323**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/10/2022 14:33**	**Analyst:**	**MLL**	**Instrument:**	**HRP875**
Data File:	**d08nov22a_5-3**			**Dilution:**	**1**
Prep Batch:	**51321**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**02-NOV-22**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
55215-18-4	129-HxCB	CU	ND	pg/L	6.82	300
52663-66-8	130-HxCB	U	ND	pg/L	6.36	100
61798-70-7	131-HxCB	U	ND	pg/L	6.48	100
38380-05-1	132-HxCB	U	ND	pg/L	5.90	100
35694-04-3	133-HxCB	U	ND	pg/L	6.18	100
52704-70-8	134-HxCB	U	ND	pg/L	6.48	100
52744-13-5	135-HxCB	CU	ND	pg/L	4.58	200
38411-22-2	136-HxCB	U	ND	pg/L	3.48	100
35694-06-5	137-HxCB	U	ND	pg/L	5.58	100
35065-28-2	138-HxCB	C129				
56030-56-9	139-HxCB	CU	ND	pg/L	5.20	200
59291-64-4	140-HxCB	C139				
52712-04-6	141-HxCB	U	ND	pg/L	5.24	100
41411-61-4	142-HxCB	U	ND	pg/L	6.30	100
68194-15-0	143-HxCB	U	ND	pg/L	5.98	100
68194-14-9	144-HxCB	U	ND	pg/L	4.50	100
74472-40-5	145-HxCB	U	ND	pg/L	3.30	100
51908-16-8	146-HxCB	U	ND	pg/L	5.00	100
68194-13-8	147-HxCB	CU	ND	pg/L	5.08	200
74472-41-6	148-HxCB	U	ND	pg/L	4.38	100
38380-04-0	149-HxCB	C147				
68194-08-1	150-HxCB	U	ND	pg/L	3.16	100
52663-63-5	151-HxCB	C135				
68194-09-2	152-HxCB	U	ND	pg/L	3.38	100
35065-27-1	153-HxCB	CJ	4.94	pg/L	4.58	200
60145-22-4	154-HxCB	U	ND	pg/L	3.64	100
33979-03-2	155-HxCB	U	ND	pg/L	2.48	100
38380-08-4	156-HxCB	CU	ND	pg/L	4.10	200
69782-90-7	157-HxCB	C156				
74472-42-7	158-HxCB	U	ND	pg/L	3.68	100
39635-35-3	159-HxCB	U	ND	pg/L	3.54	100
41411-62-5	160-HxCB	U	ND	pg/L	4.46	100

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2210315**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**12033076**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 51321**				
Client ID:	**MB for batch 51321**			**Prep Basis:**	**As Received**
Batch ID:	**51323**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/10/2022 14:33**	**Analyst:**	**MLL**	**Instrument:**	**HRP875**
Data File:	**d08nov22a_5-3**			**Dilution:**	**1**
Prep Batch:	**51321**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**02-NOV-22**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
74472-43-8	161-HxCB	U	ND	pg/L	4.34	100
39635-34-2	162-HxCB	U	ND	pg/L	3.46	100
74472-44-9	163-HxCB	C129				
74472-45-0	164-HxCB	U	ND	pg/L	4.12	100
74472-46-1	165-HxCB	U	ND	pg/L	4.58	100
41411-63-6	166-HxCB	C128				
52663-72-6	167-HxCB	U	ND	pg/L	3.06	100
59291-65-5	168-HxCB	C153				
32774-16-6	169-HxCB	U	ND	pg/L	3.52	100
35065-30-6	170-HpCB	U	ND	pg/L	4.72	100
52663-71-5	171-HpCB	CU	ND	pg/L	4.98	200
52663-74-8	172-HpCB	U	ND	pg/L	4.90	100
68194-16-1	173-HpCB	C171				
38411-25-5	174-HpCB	U	ND	pg/L	4.64	100
40186-70-7	175-HpCB	U	ND	pg/L	4.20	100
52663-65-7	176-HpCB	U	ND	pg/L	3.24	100
52663-70-4	177-HpCB	U	ND	pg/L	5.02	100
52663-67-9	178-HpCB	U	ND	pg/L	4.46	100
52663-64-6	179-HpCB	U	ND	pg/L	3.16	100
35065-29-3	180-HpCB	CU	ND	pg/L	3.88	200
74472-47-2	181-HpCB	U	ND	pg/L	4.80	100
60145-23-5	182-HpCB	U	ND	pg/L	4.04	100
52663-69-1	183-HpCB	CU	ND	pg/L	4.64	200
74472-48-3	184-HpCB	U	ND	pg/L	3.10	100
52712-05-7	185-HpCB	C183				
74472-49-4	186-HpCB	U	ND	pg/L	3.22	100
52663-68-0	187-HpCB	U	ND	pg/L	4.08	100
74487-85-7	188-HpCB	U	ND	pg/L	2.70	100
39635-31-9	189-HpCB	U	ND	pg/L	4.02	100
41411-64-7	190-HpCB	U	ND	pg/L	3.48	100
74472-50-7	191-HpCB	U	ND	pg/L	3.44	100
74472-51-8	192-HpCB	U	ND	pg/L	4.00	100

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2210315**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**12033076**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 51321**				
Client ID:	**MB for batch 51321**			**Prep Basis:**	**As Received**
Batch ID:	**51323**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/10/2022 14:33**	**Analyst:**	**MLL**	**Instrument:**	**HRP875**
Data File:	**d08nov22a_5-3**			**Dilution:**	**1**
Prep Batch:	**51321**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**02-NOV-22**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
69782-91-8	193-HpCB	C180				
35694-08-7	194-OcCB	U	ND	pg/L	3.80	100
52663-78-2	195-OcCB	U	ND	pg/L	4.02	100
42740-50-1	196-OcCB	U	ND	pg/L	3.70	100
33091-17-7	197-OcCB	CU	ND	pg/L	2.94	200
68194-17-2	198-OcCB	CU	ND	pg/L	3.84	200
52663-75-9	199-OcCB	C198				
52663-73-7	200-OcCB	C197				
40186-71-8	201-OcCB	U	ND	pg/L	2.74	100
2136-99-4	202-OcCB	U	ND	pg/L	2.74	100
52663-76-0	203-OcCB	U	ND	pg/L	3.66	100
74472-52-9	204-OcCB	U	ND	pg/L	2.82	100
74472-53-0	205-OcCB	U	ND	pg/L	3.00	100
40186-72-9	206-NoCB	U	ND	pg/L	5.48	100
52663-79-3	207-NoCB	U	ND	pg/L	4.04	100
52663-77-1	208-NoCB	U	ND	pg/L	3.76	100
2051-24-3	209-DeCB	U	ND	pg/L	4.54	100
1336-36-3	Total PCB Congeners	J	38.9	pg/L		100

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		666	2000	pg/L	33.3	(15%-150%)
13C-3-MoCB		760	2000	pg/L	38.0	(15%-150%)
13C-4-DiCB		761	2000	pg/L	38.1	(25%-150%)
13C-15-DiCB		1010	2000	pg/L	50.4	(25%-150%)
13C-19-TrCB		915	2000	pg/L	45.8	(25%-150%)
13C-37-TrCB		963	2000	pg/L	48.2	(25%-150%)
13C-54-TeCB		872	2000	pg/L	43.6	(25%-150%)
13C-77-TeCB		1120	2000	pg/L	56.2	(25%-150%)
13C-81-TeCB		1200	2000	pg/L	60.0	(25%-150%)
13C-104-PeCB		932	2000	pg/L	46.6	(25%-150%)
13C-105-PeCB		971	2000	pg/L	48.6	(25%-150%)
13C-114-PeCB		964	2000	pg/L	48.2	(25%-150%)
13C-118-PeCB		882	2000	pg/L	44.1	(25%-150%)
13C-123-PeCB		1010	2000	pg/L	50.5	(25%-150%)
13C-126-PeCB		1010	2000	pg/L	50.6	(25%-150%)
13C-155-HxCB		996	2000	pg/L	49.8	(25%-150%)
13C-156-HxCB	C	2250	4000	pg/L	56.2	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		1110	2000	pg/L	55.7	(25%-150%)
13C-169-HxCB		1140	2000	pg/L	57.1	(25%-150%)
13C-188-HpCB		989	2000	pg/L	49.5	(25%-150%)
13C-189-HpCB		1030	2000	pg/L	51.5	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2210315**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**12033076**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 51321**				
Client ID:	**MB for batch 51321**			**Prep Basis:**	**As Received**
Batch ID:	**51323**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/10/2022 14:33**	**Analyst:**	**MLL**	**Instrument:**	**HRP875**
Data File:	**d08nov22a_5-3**			**Dilution:**	**1**
Prep Batch:	**51321**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**02-NOV-22**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-202-OcCB		1040	2000	pg/L	51.8	(25%-150%)
13C-205-OcCB		1170	2000	pg/L	58.6	(25%-150%)
13C-206-NoCB		1150	2000	pg/L	57.5	(25%-150%)
13C-208-NoCB		1030	2000	pg/L	51.4	(25%-150%)
13C-209-DeCB		1150	2000	pg/L	57.7	(25%-150%)
13C-28-TrCB		1040	2000	pg/L	51.9	(30%-135%)
13C-111-PeCB		1100	2000	pg/L	55.2	(30%-135%)
13C-178-HpCB		1240	2000	pg/L	62.0	(30%-135%)

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2210315**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**12033077**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 51321**				
Client ID:	**LCS for batch 51321**			**Prep Basis:**	**As Received**
Batch ID:	**51323**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/10/2022 12:14**	**Analyst:**	**MLL**	**Instrument:**	**HRP875**
Data File:	**d08nov22a_5-1**			**Dilution:**	**1**
Prep Batch:	**51321**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**02-NOV-22**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
2051-60-7	1-MoCB		490	pg/L	5.90	100
2051-62-9	3-MoCB		498	pg/L	5.40	100
13029-08-8	4-DiCB		462	pg/L	9.84	100
2050-68-2	15-DiCB		513	pg/L	8.46	100
38444-73-4	19-TrCB		513	pg/L	7.04	100
38444-90-5	37-TrCB		483	pg/L	12.0	100
15968-05-5	54-TeCB		1020	pg/L	3.78	100
32598-13-3	77-TeCB		977	pg/L	16.2	100
70362-50-4	81-TeCB		826	pg/L	15.1	100
56558-16-8	104-PeCB		1010	pg/L	2.54	100
32598-14-4	105-PeCB		924	pg/L	19.9	100
74472-37-0	114-PeCB		1040	pg/L	18.6	100
31508-00-6	118-PeCB		1110	pg/L	18.9	100
65510-44-3	123-PeCB		926	pg/L	17.8	100
57465-28-8	126-PeCB		993	pg/L	20.4	100
33979-03-2	155-HxCB		1000	pg/L	2.64	100
38380-08-4	156-HxCB	C	1980	pg/L	17.4	200
69782-90-7	157-HxCB	C156				
52663-72-6	167-HxCB		1000	pg/L	12.8	100
32774-16-6	169-HxCB		967	pg/L	14.7	100
74487-85-7	188-HpCB		997	pg/L	3.20	100
39635-31-9	189-HpCB		1010	pg/L	8.64	100
2136-99-4	202-OcCB		1620	pg/L	22.6	100
74472-53-0	205-OcCB		1450	pg/L	9.54	100
40186-72-9	206-NoCB		1490	pg/L	7.36	100
52663-77-1	208-NoCB		1590	pg/L	5.44	100
2051-24-3	209-DeCB		1430	pg/L	4.50	100

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		757	2000	pg/L	37.9	(15%-140%)
13C-3-MoCB		876	2000	pg/L	43.8	(15%-140%)
13C-4-DiCB		865	2000	pg/L	43.3	(30%-140%)
13C-15-DiCB		1300	2000	pg/L	65.1	(30%-140%)
13C-19-TrCB		1070	2000	pg/L	53.6	(30%-140%)
13C-37-TrCB		1220	2000	pg/L	61.0	(30%-140%)
13C-54-TeCB		1030	2000	pg/L	51.6	(30%-140%)
13C-77-TeCB		1290	2000	pg/L	64.6	(30%-140%)
13C-81-TeCB		1340	2000	pg/L	66.8	(30%-140%)
13C-104-PeCB		1200	2000	pg/L	60.0	(30%-140%)
13C-105-PeCB		1150	2000	pg/L	57.4	(30%-140%)
13C-114-PeCB		1140	2000	pg/L	56.9	(30%-140%)
13C-118-PeCB		1010	2000	pg/L	50.5	(30%-140%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2210315**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**12033077**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 51321**				
Client ID:	**LCS for batch 51321**			**Prep Basis:**	**As Received**
Batch ID:	**51323**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/10/2022 12:14**	**Analyst:**	**MLL**	**Instrument:**	**HRP875**
Data File:	**d08nov22a_5-1**			**Dilution:**	**1**
Prep Batch:	**51321**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**02-NOV-22**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-123-PeCB		1160	2000	pg/L	58.0	(30%-140%)
13C-126-PeCB		1310	2000	pg/L	65.6	(30%-140%)
13C-155-HxCB		1150	2000	pg/L	57.6	(30%-140%)
13C-156-HxCB	C	2610	4000	pg/L	65.3	(30%-140%)
13C-157-HxCB	C156L					
13C-167-HxCB		1310	2000	pg/L	65.4	(30%-140%)
13C-169-HxCB		1360	2000	pg/L	67.8	(30%-140%)
13C-188-HpCB		1130	2000	pg/L	56.5	(30%-140%)
13C-189-HpCB		1170	2000	pg/L	58.4	(30%-140%)
13C-202-OcCB		1220	2000	pg/L	61.1	(30%-140%)
13C-205-OcCB		1410	2000	pg/L	70.3	(30%-140%)
13C-206-NoCB		1380	2000	pg/L	69.1	(30%-140%)
13C-208-NoCB		1150	2000	pg/L	57.7	(30%-140%)
13C-209-DeCB		1370	2000	pg/L	68.4	(30%-140%)
13C-28-TrCB		1220	2000	pg/L	61.0	(40%-125%)
13C-111-PeCB		1280	2000	pg/L	64.1	(40%-125%)
13C-178-HpCB		1460	2000	pg/L	73.2	(40%-125%)

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2210315**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**12033078**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 51321**				
Client ID:	**LCSD for batch 51321**			**Prep Basis:**	**As Received**
Batch ID:	**51323**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/10/2022 13:23**	**Analyst:**	**MLL**	**Instrument:**	**HRP875**
Data File:	**d08nov22a_5-2**			**Dilution:**	**1**
Prep Batch:	**51321**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**02-NOV-22**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
2051-60-7	1-MoCB		443	pg/L	6.46	100
2051-62-9	3-MoCB		480	pg/L	7.18	100
13029-08-8	4-DiCB		425	pg/L	11.5	100
2050-68-2	15-DiCB		471	pg/L	12.7	100
38444-73-4	19-TrCB		473	pg/L	9.06	100
38444-90-5	37-TrCB		456	pg/L	16.4	100
15968-05-5	54-TeCB		988	pg/L	4.04	100
32598-13-3	77-TeCB		901	pg/L	27.0	100
70362-50-4	81-TeCB		769	pg/L	25.2	100
56558-16-8	104-PeCB		953	pg/L	3.18	100
32598-14-4	105-PeCB		847	pg/L	23.4	100
74472-37-0	114-PeCB		985	pg/L	20.8	100
31508-00-6	118-PeCB		1010	pg/L	23.3	100
65510-44-3	123-PeCB		818	pg/L	19.9	100
57465-28-8	126-PeCB		947	pg/L	26.0	100
33979-03-2	155-HxCB		941	pg/L	9.38	100
38380-08-4	156-HxCB	C	1830	pg/L	21.8	200
69782-90-7	157-HxCB	C156				
52663-72-6	167-HxCB		933	pg/L	16.1	100
32774-16-6	169-HxCB		907	pg/L	18.4	100
74487-85-7	188-HpCB		909	pg/L	3.64	100
39635-31-9	189-HpCB		895	pg/L	8.12	100
2136-99-4	202-OcCB		1510	pg/L	25.5	100
74472-53-0	205-OcCB		1340	pg/L	7.66	100
40186-72-9	206-NoCB		1420	pg/L	9.36	100
52663-77-1	208-NoCB		1530	pg/L	6.86	100
2051-24-3	209-DeCB		1330	pg/L	5.86	100

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		544	2000	pg/L	27.2	(15%-140%)
13C-3-MoCB		636	2000	pg/L	31.8	(15%-140%)
13C-4-DiCB		656	2000	pg/L	32.8	(30%-140%)
13C-15-DiCB		895	2000	pg/L	44.8	(30%-140%)
13C-19-TrCB		838	2000	pg/L	41.9	(30%-140%)
13C-37-TrCB		753	2000	pg/L	37.6	(30%-140%)
13C-54-TeCB		750	2000	pg/L	37.5	(30%-140%)
13C-77-TeCB		827	2000	pg/L	41.3	(30%-140%)
13C-81-TeCB		874	2000	pg/L	43.7	(30%-140%)
13C-104-PeCB		884	2000	pg/L	44.2	(30%-140%)
13C-105-PeCB		864	2000	pg/L	43.2	(30%-140%)
13C-114-PeCB		843	2000	pg/L	42.1	(30%-140%)
13C-118-PeCB		764	2000	pg/L	38.2	(30%-140%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2210315**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**12033078**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 51321**				
Client ID:	**LCSD for batch 51321**			**Prep Basis:**	**As Received**
Batch ID:	**51323**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/10/2022 13:23**	**Analyst:**	**MLL**	**Instrument:**	**HRP875**
Data File:	**d08nov22a_5-2**			**Dilution:**	**1**
Prep Batch:	**51321**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**02-NOV-22**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-123-PeCB		880	2000	pg/L	44.0	(30%-140%)
13C-126-PeCB		857	2000	pg/L	42.9	(30%-140%)
13C-155-HxCB		763	2000	pg/L	38.2	(30%-140%)
13C-156-HxCB	C	1650	4000	pg/L	41.2	(30%-140%)
13C-157-HxCB	C156L					
13C-167-HxCB		837	2000	pg/L	41.8	(30%-140%)
13C-169-HxCB		835	2000	pg/L	41.8	(30%-140%)
13C-188-HpCB		795	2000	pg/L	39.7	(30%-140%)
13C-189-HpCB		817	2000	pg/L	40.8	(30%-140%)
13C-202-OcCB		781	2000	pg/L	39.0	(30%-140%)
13C-205-OcCB		953	2000	pg/L	47.6	(30%-140%)
13C-206-NoCB		929	2000	pg/L	46.5	(30%-140%)
13C-208-NoCB		811	2000	pg/L	40.6	(30%-140%)
13C-209-DeCB		920	2000	pg/L	46.0	(30%-140%)
13C-28-TrCB		1100	2000	pg/L	54.9	(40%-125%)
13C-111-PeCB		1220	2000	pg/L	61.1	(40%-125%)
13C-178-HpCB		1270	2000	pg/L	63.3	(40%-125%)

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

U Analyte was analyzed for, but not detected above the specified detection limit.

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2210315**

23-Nov-22

Client: AMAFCA

Project: CMC Wet FY23

Sample ID: **MB-70825**	SampType: **MBLK**	TestCode: **EPA Method 1664B**
Client ID: **PBW**	Batch ID: **70825**	RunNo: **91919**
Prep Date: **10/14/2022**	Analysis Date: **10/18/2022**	SeqNo: **3297147** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
N-Hexane Extractable Material	ND	10.0								

Sample ID: **LCS-70825**	SampType: **LCS**	TestCode: **EPA Method 1664B**
Client ID: **LCSW**	Batch ID: **70825**	RunNo: **91919**
Prep Date: **10/14/2022**	Analysis Date: **10/18/2022**	SeqNo: **3297148** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
N-Hexane Extractable Material	37.8	10.0	40.00	0	94.5	78	114			

Sample ID: **LCSD-70825**	SampType: **LCSD**	TestCode: **EPA Method 1664B**
Client ID: **LCSS02**	Batch ID: **70825**	RunNo: **91919**
Prep Date: **10/14/2022**	Analysis Date: **10/18/2022**	SeqNo: **3297149** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
N-Hexane Extractable Material	37.4	10.0	40.00	0	93.5	78	114	1.06	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2210315**

23-Nov-22

Client: AMAFCA

Project: CMC Wet FY23

Sample ID: **MB-70811**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **70811**	RunNo: **91819**
Prep Date: **10/13/2022**	Analysis Date: **10/14/2022**	SeqNo: **3291906** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0								
Magnesium	ND	1.0								

Sample ID: **LCSLL-70811**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC**	Batch ID: **70811**	RunNo: **91819**
Prep Date: **10/13/2022**	Analysis Date: **10/14/2022**	SeqNo: **3291907** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0	0.5000	0	103	50	150			
Magnesium	ND	1.0	0.5000	0	104	50	150			

Sample ID: **LCS-70811**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **70811**	RunNo: **91819**
Prep Date: **10/13/2022**	Analysis Date: **10/14/2022**	SeqNo: **3291908** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	51	1.0	50.00	0	102	85	115			
Magnesium	52	1.0	50.00	0	104	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2210315**

23-Nov-22

Client: AMAFCA

Project: CMC Wet FY23

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A91883**	RunNo: **91883**
Prep Date:	Analysis Date: **10/18/2022**	SeqNo: **3295065** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	ND	0.0010								
Lead	ND	0.00050								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A91883**	RunNo: **91883**
Prep Date:	Analysis Date: **10/18/2022**	SeqNo: **3295066** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	0.0010	0.0010	0.001000	0	101	50	150			
Lead	0.00052	0.00050	0.0005000	0	105	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A91883**	RunNo: **91883**
Prep Date:	Analysis Date: **10/18/2022**	SeqNo: **3295067** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	0.025	0.0010	0.02500	0	98.9	85	115			
Lead	0.012	0.00050	0.01250	0	97.4	85	115			

Sample ID: **2210315-002NMSLL**	SampType: **MS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **R6 South-20221006**	Batch ID: **A91883**	RunNo: **91883**
Prep Date:	Analysis Date: **10/18/2022**	SeqNo: **3295096** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	0.026	0.0010	0.02500	0.0007151	102	70	130			
Lead	0.013	0.00050	0.01250	).00007696	107	70	130			

Sample ID: **2210315-002NMSDL**	SampType: **MSD**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **R6 South-20221006**	Batch ID: **A91883**	RunNo: **91883**
Prep Date:	Analysis Date: **10/18/2022**	SeqNo: **3295097** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	0.026	0.0010	0.02500	0.0007151	101	70	130	0.371	20	
Lead	0.013	0.00050	0.01250	).00007696	105	70	130	1.82	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2210315**

23-Nov-22

Client: AMAFCA

Project: CMC Wet FY23

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **A91618**	RunNo: **91618**
Prep Date:	Analysis Date: **10/6/2022**	SeqNo: **3282485** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Nitrite (As N)	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **A91618**	RunNo: **91618**
Prep Date:	Analysis Date: **10/6/2022**	SeqNo: **3282486** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Nitrite (As N)	0.94	0.10	1.000	0	93.8	90	110			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	98.8	90	110			

Sample ID: **2210315-001EMS**	SampType: **MS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **R6 North-20221005**	Batch ID: **A91618**	RunNo: **91618**
Prep Date:	Analysis Date: **10/7/2022**	SeqNo: **3282497** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Nitrite (As N)	4.7	0.50	5.000	0	94.4	83.4	110			
Nitrogen, Nitrate (As N)	13	0.50	12.50	0.1075	99.8	89.5	113			

Sample ID: **2210315-001EMSD**	SampType: **MSD**	TestCode: **EPA Method 300.0: Anions**
Client ID: **R6 North-20221005**	Batch ID: **A91618**	RunNo: **91618**
Prep Date:	Analysis Date: **10/7/2022**	SeqNo: **3282498** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Nitrite (As N)	4.7	0.50	5.000	0	93.8	83.4	110	0.691	20	
Nitrogen, Nitrate (As N)	12	0.50	12.50	0.1075	98.8	89.5	113	0.995	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2210315**

23-Nov-22

Client: AMAFCA

Project: CMC Wet FY23

Sample ID: **MB-70767**	SampType: **MBLK**	TestCode: **EPA Method 8081: PESTICIDES**
Client ID: **PBW**	Batch ID: **70767**	RunNo: **91851**
Prep Date: **10/12/2022**	Analysis Date: **10/17/2022**	SeqNo: **3294644** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Dieldrin	ND	0.10								
Surr: Decachlorobiphenyl	2.5		2.500		101	40.9	111			
Surr: Tetrachloro-m-xylene	2.0		2.500		79.4	15	107			

Sample ID: **MB-70767**	SampType: **MBLK**	TestCode: **EPA Method 8081: PESTICIDES**
Client ID: **PBW**	Batch ID: **70767**	RunNo: **91851**
Prep Date: **10/12/2022**	Analysis Date: **10/17/2022**	SeqNo: **3294646** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Dieldrin	ND	0.10								
Surr: Decachlorobiphenyl	2.5		2.500		102	40.9	111			
Surr: Tetrachloro-m-xylene	2.0		2.500		80.9	15	107			

Sample ID: **LCS-70767**	SampType: **LCS**	TestCode: **EPA Method 8081: PESTICIDES**
Client ID: **LCSW**	Batch ID: **70767**	RunNo: **91851**
Prep Date: **10/12/2022**	Analysis Date: **10/17/2022**	SeqNo: **3294647** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Dieldrin	0.43	0.10	0.5000	0	86.2	56.3	121			
Surr: Decachlorobiphenyl	2.4		2.500		95.2	40.9	111			
Surr: Tetrachloro-m-xylene	2.0		2.500		78.6	15	107			

Sample ID: **LCS-70767**	SampType: **LCS**	TestCode: **EPA Method 8081: PESTICIDES**
Client ID: **LCSW**	Batch ID: **70767**	RunNo: **91851**
Prep Date: **10/12/2022**	Analysis Date: **10/17/2022**	SeqNo: **3294648** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Dieldrin	0.44	0.10	0.5000	0	87.9	56.3	121			
Surr: Decachlorobiphenyl	2.4		2.500		95.7	40.9	111			
Surr: Tetrachloro-m-xylene	2.0		2.500		79.7	15	107			

Sample ID: **LCSD-70767**	SampType: **LCSD**	TestCode: **EPA Method 8081: PESTICIDES**
Client ID: **LCSS02**	Batch ID: **70767**	RunNo: **91851**
Prep Date: **10/12/2022**	Analysis Date: **10/17/2022**	SeqNo: **3294649** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Dieldrin	0.42	0.10	0.5000	0	84.6	56.3	121	1.91	20	
Surr: Decachlorobiphenyl	2.3		2.500		90.9	40.9	111	0	20	
Surr: Tetrachloro-m-xylene	1.8		2.500		73.5	15	107	0	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2210315**

23-Nov-22

Client: AMAFCA

Project: CMC Wet FY23

Sample ID: **LCSD-70767**	SampType: **LCSD**	TestCode: **EPA Method 8081: PESTICIDES**
Client ID: **LCSS02**	Batch ID: **70767**	RunNo: **91851**
Prep Date: **10/12/2022**	Analysis Date: **10/17/2022**	SeqNo: **3294650** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Dieldrin	0.43	0.10	0.5000	0	86.1	56.3	121	2.00	20	
Surr: Decachlorobiphenyl	2.3		2.500		91.5	40.9	111	0	20	
Surr: Tetrachloro-m-xylene	1.8		2.500		73.9	15	107	0	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2210315**

23-Nov-22

Client: AMAFCA

Project: CMC Wet FY23

Sample ID: **MB-70671**	SampType: **MBLK**	TestCode: **SM 9223B Fecal Indicator: E. coli MPN**
Client ID: **PBW**	Batch ID: **70671**	RunNo: **91638**
Prep Date: **10/6/2022**	Analysis Date: **10/7/2022**	SeqNo: **3283469** Units: **MPN/100mL**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
E. Coli	<1	1.000								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2210315**

23-Nov-22

Client: AMAFCA

Project: CMC Wet FY23

Sample ID: **MB**	SampType: **MBLK**	TestCode: **SM 4500 NH3: Ammonia**
Client ID: **PBW**	Batch ID: **R91993**	RunNo: **91993**
Prep Date:	Analysis Date: **10/21/2022**	SeqNo: **3300449** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	1.0								

Sample ID: **LCS**	SampType: **LCS**	TestCode: **SM 4500 NH3: Ammonia**
Client ID: **LCSW**	Batch ID: **R91993**	RunNo: **91993**
Prep Date:	Analysis Date: **10/21/2022**	SeqNo: **3300450** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	9.8	1.0	10.00	0	98.0	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2210315**

23-Nov-22

Client: AMAFCA

Project: CMC Wet FY23

Sample ID: **MB-71023**	SampType: **MBLK**	TestCode: **EPA Method 365.1: Total Phosphorous**
Client ID: **PBW**	Batch ID: **71023**	RunNo: **92060**
Prep Date: **10/24/2022**	Analysis Date: **10/25/2022**	SeqNo: **3303642** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	ND	0.050								

Sample ID: **LCS-71023**	SampType: **LCS**	TestCode: **EPA Method 365.1: Total Phosphorous**
Client ID: **LCSW**	Batch ID: **71023**	RunNo: **92060**
Prep Date: **10/24/2022**	Analysis Date: **10/25/2022**	SeqNo: **3303643** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.24	0.050	0.2500	0	96.9	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2210315**

23-Nov-22

Client: AMAFCA

Project: CMC Wet FY23

Sample ID: **MB-70696**	SampType: **MBLK**	TestCode: **SM2540C MOD: Total Dissolved Solids**
Client ID: **PBW**	Batch ID: **70696**	RunNo: **91714**
Prep Date: **10/10/2022**	Analysis Date: **10/12/2022**	SeqNo: **3286928** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID: **LCS-70696**	SampType: **LCS**	TestCode: **SM2540C MOD: Total Dissolved Solids**
Client ID: **LCSW**	Batch ID: **70696**	RunNo: **91714**
Prep Date: **10/10/2022**	Analysis Date: **10/12/2022**	SeqNo: **3286929** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1050	20.0	1000	0	105	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2210315**

23-Nov-22

Client: AMAFCA

Project: CMC Wet FY23

Sample ID: **MB-70981**	SampType: **MBLK**	TestCode: **SM 4500 Norg C: TKN**
Client ID: **PBW**	Batch ID: **70981**	RunNo: **92019**
Prep Date: **10/21/2022**	Analysis Date: **10/24/2022**	SeqNo: **3301880** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Kjeldahl, Total	ND	1.0								

Sample ID: **LCS-70981**	SampType: **LCS**	TestCode: **SM 4500 Norg C: TKN**
Client ID: **LCSW**	Batch ID: **70981**	RunNo: **92019**
Prep Date: **10/21/2022**	Analysis Date: **10/24/2022**	SeqNo: **3301881** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Kjeldahl, Total	10	1.0	10.00	0	101	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2210315**

23-Nov-22

Client: AMAFCA

Project: CMC Wet FY23

Sample ID: **MB-70679**	SampType: **MBLK**	TestCode: **SM 2540D: TSS**
Client ID: **PBW**	Batch ID: **70679**	RunNo: **91686**
Prep Date: **10/7/2022**	Analysis Date: **10/10/2022**	SeqNo: **3285851** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Suspended Solids	ND	4.0								

Sample ID: **LCS-70679**	SampType: **LCS**	TestCode: **SM 2540D: TSS**
Client ID: **LCSW**	Batch ID: **70679**	RunNo: **91686**
Prep Date: **10/7/2022**	Analysis Date: **10/10/2022**	SeqNo: **3285852** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Suspended Solids	89	4.0	91.90	0	96.8	83.89	119.7			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: AMAFCA | Work Order Number: 2210315 | RcptNo: 1

Received By: Joseph Alderette 10/6/2022 10:25:00 AM

Completed By: Sean Livingston 10/6/2022 11:10:53 AM

Reviewed By: JO 10/6/22

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Client		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☑	No ☐	NA ☐
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: 14 (<2 or >12 unless noted)

Adjusted? NO

Checked by: KPG 10.6.22

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:

By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

16. Additional remarks: NO BOD Bottles. NO E.coli bottle for RG North. JO 10.7.22

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	4.9	Good				

note - BOD bottles not provided to lab for these samples. E. coli for Rio Grande North sample and results provided in previous lab report.

Chain-of-Custody Record

Client: AMAFCA

Mailing Address:

Phone #:

email or Fax#: pchavez@AMAFCA.org

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☒ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: CMC Wet FY23

Project #:

Project Manager: Patrick Chavez

Sampler: Chad Johannesen

On Ice: ☒ Yes ☐ No

# of Coolers: 2

Cooler Temp (including CF): 4.8 +0.1 = 4.9 (°C)

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2210315	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)	See Attached Sheet		E.coli-enumerated			
10/5/22	1215	AQ	R6North-20221005			001											X					
10/6/22	0905	AQ	R6South-20221006			002											X					
			sac 10/6/22																X			

Analysis Request

Remarks: Second Cooler temp 13.3 +0.1 = 13.4°C 10.6.22

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
10/6/22	10:25	SAM FIRE		CDO	10.6.22	10:25
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Collaborative Monitoring Cooperative - Analyses List
Attach to Chain of Custody

Please refer to attached NPDES Permit No. NMR04A00 Appendix F. Methods and minimum quantification levels (MQL's) will be those approved under 40 CFR 136 and specified in the attached permit

Analyte (Bold Indicates WQS)	CAS #	Fraction	Method #	MDL (µg/L)
Hardness (Ca + Mg)	NA	Total	200.7	2.4
Lead	7439-92-1	Dissolved	200.8	0.09
Copper	7440-50-8	Dissolved	200.8	1.06
Ammonia + organic nitrogen	7664-41-7	Total	350.1	31.32
Total Kjehldal Nitrogen	17778-88-0	Total	351.2	58.78
Nitrate + Nitrite	14797-55-8	Total	353.2	10.17
Polychlorinated biphenyls (PCBs)	1336-36-3	Total	1668	0.014
Tetrahydrofuran (THF)	109-99-9	Total	8260C	7.9
bis(2-Ethylhexyl)phthalate	117-81-7	Total	8270D	0.2
Dibenzofuran	132-64-9	Total	8270D	0.2
Indeno(1,2,3-cd)pyrene	193-39-5	Total	8270D	0.2
Benzo(b)fluoranthene	205-99-2	Total	8270D	0.1
Benzo(k)fluoranthene	207-08-9	Total	8270D	0.1
Chrysene	218-01-9	Total	8270D	0.2
Benzo(a)pyrene	50-32-8	Total	8270D	0
Dibenzo(a,h)anthracene	53-70-3	Total	8270D	0.3
Benzo(a)anthracene	56-55-3	Total	8270D	0.2
Dieldrin	60-57-1	Total	8081	0.1
Pentachlorophenol	87-86-5	Total	8270D	0.2
Benzidine	92-87-5	Total	8270D	0.1
Chemical Oxygen Demand	E1641638[2]	Total	HACH	5100
Gross alpha (adjusted)	NA	Total	Method 900	0.1 pCi/L
Total Dissolved Solids	E1642222[2]	Total	SM 2540C	60.4
Total Suspended Solids	NA	Total	SM 2540D	3450
Biological Oxygen Demand	N/A	Total	Standard Methods	930
Oil and Grease		Total	1664A	5000
Ecoli-enumeration			SM 9223B	
pH			SM 4500	
Phosphorus		Dissolved	365.1	100
Phosphorus		Total	365.1	100
Chromium IV		Total	3500Cr C-2011	100

ATTACHMENT 2

FY 2023 WET SEASON COMPLETED DATA VERIFICATION AND VALIDATION (V&V) FORMS

Attachment 1.1 Water Quality Sample Data Verification and Validation Worksheet

Study Name: Compliance Monitoring Cooperative (CMC)
Year: FY 2023 (October 2022 – Wet Season Sample)
Project Coordinator: For Data Review and Reporting – SJG, BHI
V&V Reviewer: SJG
Data covered by this worksheet: Rio Grande North – 10/5/2022
Version of Verification/Validation Procedures: QAPP –AMAFCA SOP #5 (7/2022)

Step 1: Verify Field Data

A. Are all Field Data forms present and complete? ☒ Yes ☐ No

If yes, proceed; if no, attempt to locate missing forms, then indicate any remaining missing forms and action taken.

Missing Field Data Forms	Action Taken
_____	_____
_____	_____

Total number of occurrences: 0

B. Are station name and ID, and sampling date and time on forms consistent with database? ☒ Yes ☐ No
If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station and Parameter	Action Taken	Re-verified?
_____	_____	_____
_____	_____	_____

Total number of occurrences: 0

C. Are field data on forms consistent with database? ☒ Yes ☐ No
If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station	Sampling Date	Parameter(s) Corrected	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

D. Are RIDs correct and associated with the correct analytical suite, media subdivision (e.g. surface water, municipal waste, etc.) and activity type (e.g. Field observation, Routine sample, QA sample etc.)?
☒ Yes ☐ No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify

Station/RID	Sampling Date	RID Corrected	Re-verified?
______	______	______	_________
______	______	______	_________

Total number of occurrences: 0

☒ **Step 1 Completed** ***Initials:*** SJG ***Date:*** 12/14/22

- -

Step 2: Verify Data Deliverables
A. Have all data in question been delivered? ☒ Yes ☐ No

If yes, proceed; if no, indicate RIDs with missing data (samples or blanks) or attach report with applicable RIDs highlighted. Contact data source and indicate action taken. Complete this step upon receipt of all missing data.

RID	Submittal Date	Missing Data/Parameters	Date of Initial Verification	Date Missing Data Were Received
______	______	______	______	______

Total number of occurrences: 0

B. Do all of the analytical suites have the correct number and type of analytes. ☐ Yes ☒ No

If yes, proceed; if no, indicate RIDs with missing or incorrect analyte(s) or attach report with applicable RIDs highlighted. Contact data source and indicate action taken.

RID	Submittal Date	Missing or Incorrect Parameters	Action Taken	Re-verified?
	11/30/22 emailed AMAFCA on missing parameter; BOD	BOD		

	bottle not submitted for sample.			
______	______	______	______	______

*Note – HEAL Lab report order numbers 2210242 & 2210315.

☒ **Step 2 Completed** ***Initials:*** SJG ***Date:*** 12/14/22

- -

Step 3: Verify Flow Data

*Note – Not Applicable – no flow data provided with CMC sample collection

A. Identify incorrect or missing data on the flow calculation spreadsheet and correct errors.

Station	Sampling Date	Flow data missing or incorrect?
______	______	__________
______	______	__________

Total number of occurrences: 0

B. Identify incorrect or missing discharge measurements, correct errors in database and re-verify.

Station	Sampling Date	Flow data missing or incorrect?	Re-verified?
______	______	__________	__________
______	______	__________	__________

Total number of occurrences: 0

_Not Applicable

☐ **Step 3 Completed** ***Initials:*** SJG ***Date:*** 12/14/22

- -

Step 4: Verify Analytical Results for Missing Information or Questionable Results

Were any results with missing/questionable information identified? ☒ Yes ☐ No

If no, proceed; if yes, indicate results with missing information or questionable results or attach report. Contact data source and indicate action taken. Complete this step upon receipt of missing information or clarification of questionable results (clarify questionable results only, DO NOT change results without written approval (from lab or QA officer) and associated documentation).

RID	Sample Date	Missing or Questionable Information/Results	Action Taken
Rio Grande South	10/5/2022	Lab report lists Dissolved Phosphorous results as “Total Phosphorous” for “filtered sample”.	BHI added note to the lab report.

Total number of occurrences: 1

☒ **Step 4 Completed** ***Initials:*** SJG ***Date:*** 12/14/22

- -

Step 5: Validate Blanks Results
Were any analytes of concern detected in blank samples? ☐ Yes ☒ No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager, with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes have been added to database correctly.

RID	Sample Date	Parameter	[Blank]	[Sample]	Validation Code/Flag Applied	Code/Flag verified in database? *
____	_____	_____	_____	_____		________
_____	_____	_____	_____	_____		________

*See validation procedures to determine which associated data need to be flagged and include on *Validation Codes Form*.

Total number of occurrences: 0

☒ **Step 5 Completed** ***Initials:*** SJG ***Date:*** 12/14/22

- -

Step 6: Validate Holding Times Violations
Were any samples submitted that did not meet specified holding times? ☐ Yes ☒ No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes/flags have been added to database.

RID	Sample Date	Parameter	[Blank]	[Sample]	Validation Code/Flag Applied	Code/Flag verified in database to ALL associated data?*

______	______	______	______	______		_________

*See validation procedures to determine which associated data need to be flagged.
*Note – Lab reports lists pH with hold time flag. Database uses field data reported pH, so this is hold time is not applicable.
Total number of occurrences: 0

☒ **Step 6 Completed** ***Initials:*** SJG ***Date:*** 12/14/22

- -

Step 7: Validate Replicate/Duplicate Results (if applicable)
Were any replicate/duplicate pairs submitted outside of the established control limit of 20%?
☐ Yes ☒ No
If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes/flags have been added to database.

RID Pairs		Replicate or Duplicate?	Sample Date	Parameter	RPD	Validation Code/Flag Applied	Code/Flag verified in database applied?*
______	______	______	______	______	______		_________
______	______	______	______	______	______		_________

Total number of occurrences: 0

☒ **Step 7 Completed** ***Initials:*** SJG ***Date:*** 12/14/22

****

After all of the above steps have been completed, save and print the worksheet, attach all applicable supplemental information and sign below.

I acknowledge that the data verification and validation process has been completed for the data identified above in accordance with the procedures described in the CMC QAPP, SOP #2

12/14/22

Data Verifier/Validator Signature Date

COMPLETION OF DATA VERIFICATION AND VALIDATION PROCESS

Once the data verification and validation process has been completed for the entire study (note: if the worksheet is for a subset of the data from a study, be sure ALL the data for the entire study is included before final completion of the data verification and validation process), notify the NMSQUID administrator that the process is complete and request that “V V in STORET” be added to the project title.

Once all data have been verified and validated for a study provide copies of ALL *Data Verification and Validation Worksheets* and attachments associated with the study to the Quality Assurance Officer and retain originals in the project binder.

Attachment 1.2 SWQB Validation Codes

When deficiencies are identified through the data verification and validation process, AMAFCA documents or "flags" the deficiencies by assigning validation codes. All data collected from the last compliant QC sample and up to the next compliant QC sample are assigned validation codes. The validation code alerts the data user that the results are outside QA control limits and may require re-sampling or a separate, qualitative analysis based on professional judgment.

Validation Code	Definition	WQX Equivalent
A1	Sample not collected according to SOP	
B1	Chemical was detected in the field blank at a concentration less than 5% of the sample concentration.	
BN	Blanks NOT collected during sampling run	
BU	Detection in blank. Analyte was not detected in this sample above the method's sample detection limit.	BU
RB1	Chemical was detected in the field blank at a concentration greater than or equal to 5% of the sample concentration. Results for this sample are rejected because they may be the result of contamination; the results may not be reported or used for regulatory compliance purposes.	B
R1	Rejected due to incorrect sample preservation	R
R2	Rejected due to equipment failure in the field	R
R3	Rejected based on best professional judgment	R
D1	Spike recovery not within method acceptance limits	
F1	Sample filter time exceeded	
J1	Estimated: the analyte was positively identified and the associated value is an approximate concentration of the analyte in the sample	J
K1	Holding time violation	H
Ea	Estimated-Incubation temperature between 35.5 and 38.0° Celsius	
Er	Rejected-Incubation temperature < 34.5 or >38.0° Celsius	
PD1	Percent difference between duplicate samples excessive	
S1	Per SLD, uncertainties (sigmas) are expressed as one standard deviation, i.e. one standard error. Small negative or positive values that are less than two standard deviations should be interpreted as "less than the detection limit."	
S2	Data are suspect but deemed usable based on best professional judgment; documentation of justification is required and should be included in the Data Verification and Validation Packet and reported with results	
Z1	Macroinvertebrate data did not meet QC criteria specified in Section 2.5 of QAPP	
H1	Habitat data did not meet QC criteria specified in Section 2.5 of QAPP	

Attachment 1.1 Water Quality Sample Data Verification and Validation Worksheet

Study Name: Compliance Monitoring Cooperative (CMC)
Year: FY 2023 (October 2022 – Wet Season Sample)
Project Coordinator: For Data Review and Reporting – SJG, BHI
V&V Reviewer: SJG
Data covered by this worksheet: Alameda – 10/5/2022– E. coli Only Sample
Version of Verification/Validation Procedures: QAPP –AMAFCA SOP #5 (7/2022)

Step 1: Verify Field Data

A. Are all Field Data forms present and complete? ☒ Yes ☐ No

If yes, proceed; if no, attempt to locate missing forms, then indicate any remaining missing forms and action taken.

Missing Field Data Forms	Action Taken
_____	_____
_____	_____

Total number of occurrences: 0

B. Are station name and ID, and sampling date and time on forms consistent with database? ☒ Yes ☐ No
If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station and Parameter	Action Taken	Re-verified?
_____	_____	_____
_____	_____	_____

Total number of occurrences: 0

C. Are field data on forms consistent with database? ☒ Yes ☐ No
If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station	Sampling Date	Parameter(s) Corrected	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

D. Are RIDs correct and associated with the correct analytical suite, media subdivision (e.g. surface water, municipal waste, etc.) and activity type (e.g. Field observation, Routine sample, QA sample etc.)?
☒ Yes ☐ No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify

Station/RID	Sampling Date	RID Corrected	Re-verified?
______	______	______	_________
______	______	______	_________

Total number of occurrences: 0

☒ **Step 1 Completed** ***Initials:*** SJG ***Date:*** 12/7/22

- -

Step 2: Verify Data Deliverables

A. Have all data in question been delivered? ☒ Yes ☐ No

If yes, proceed; if no, indicate RIDs with missing data (samples or blanks) or attach report with applicable RIDs highlighted. Contact data source and indicate action taken. Complete this step upon receipt of all missing data.

RID	Submittal Date	Missing Data/Parameters	Date of Initial Verification	Date Missing Data Were Received
______	______	______	______	______

Total number of occurrences: 0

B. Do all of the analytical suites have the correct number and type of analytes. ☒ Yes ☐ No

If yes, proceed; if no, indicate RIDs with missing or incorrect analyte(s) or attach report with applicable RIDs highlighted. Contact data source and indicate action taken.

RID	Submittal Date	Missing or Incorrect Parameters	Action Taken	Re-verified?
______	______	______	______	______

☒ **Step 2 Completed** ***Initials:*** SJG ***Date:*** 12/7/22

- -

Step 3: Verify Flow Data
*Note – Not Applicable – no flow data provided with CMC sample collection
A. Identify incorrect or missing data on the flow calculation spreadsheet and correct errors.

Station	Sampling Date	Flow data missing or incorrect?
______	______	__________
______	______	__________

Total number of occurrences: 0

B. Identify incorrect or missing discharge measurements, correct errors in database and re-verify.

Station	Sampling Date	Flow data missing or incorrect?	Re-verified?
______	______	__________	_________
______	______	__________	_________

Total number of occurrences: 0

Not Applicable
☐ **Step 3 Completed** ***Initials:*** SJG ***Date:*** 12/7/22

- -

Step 4: Verify Analytical Results for Missing Information or Questionable Results

Were any results with missing/questionable information identified? ☐ Yes ☒ No

If no, proceed; if yes, indicate results with missing information or questionable results or attach report. Contact data source and indicate action taken. Complete this step upon receipt of missing information or clarification of questionable results (clarify questionable results only, DO NOT change results without written approval (from lab or QA officer) and associated documentation).

RID	Sample Date	Missing or Questionable Information/Results	Action Taken

Total number of occurrences: 0

☒ **Step 4 Completed** ***Initials:*** SJG ***Date:*** 12/7/22

- -

Step 5: Validate Blanks Results
Were any analytes of concern detected in blank samples? ☐ Yes ☒ No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager, with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes have been added to database correctly.

RID	Sample Date	Parameter	[Blank]	[Sample]	Validation Code/Flag Applied	Code/Flag verified in database? *

*See validation procedures to determine which associated data need to be flagged and include on *Validation Codes Form*.

Total number of occurrences: 0

☒ **Step 5 Completed** ***Initials:*** SJG ***Date:*** 12/7/22

Step 6: Validate Holding Times Violations
Were any samples submitted that did not meet specified holding times? ☐ Yes ☒ No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes/flags have been added to database.

RID	Sample Date	Parameter	[Blank]	[Sample]	Validation Code/Flag Applied	Code/Flag verified in database to ALL associated data?*

*See validation procedures to determine which associated data need to be flagged.
Total number of occurrences: 0

☒ **Step 6 Completed** ***Initials:*** SJG ***Date:*** 12/7/22

Step 7: Validate Replicate/Duplicate Results (if applicable)
Were any replicate/duplicate pairs submitted outside of the established control limit of 20%?
☐ Yes ☒ No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes/flags have been added to database.

RID Pairs		Replicate or Duplicate?	Sample Date	Parameter	RPD	Validation Code/Flag Applied	Code/Flag verified in database applied?*
_____	_____	_____	_____	_____	_____		_____
_____	_____	_____	_____	_____	_____		_____

Total number of occurrences: 0

☒ **Step 7 Completed** ***Initials:*** SJG ***Date:*** 12/7/22

****

After all of the above steps have been completed, save and print the worksheet, attach all applicable supplemental information and sign below.

I acknowledge that the data verification and validation process has been completed for the data identified above in accordance with the procedures described in the CMC QAPP, SOP #2

12/7/22

Data Verifier/Validator Signature Date

COMPLETION OF DATA VERIFICATION AND VALIDATION PROCESS

Once the data verification and validation process has been completed for the entire study (note: if the worksheet is for a subset of the data from a study, be sure ALL the data for the entire study is included before final completion of the data verification and validation process), notify the NMSQUID administrator that the process is complete and request that “V V in STORET” be added to the project title.

Once all data have been verified and validated for a study provide copies of ALL *Data Verification and Validation Worksheets* and attachments associated with the study to the Quality Assurance Officer and retain originals in the project binder.

Attachment 1.2 SWQB Validation Codes

When deficiencies are identified through the data verification and validation process, AMAFCA documents or "flags" the deficiencies by assigning validation codes. All data collected from the last compliant QC sample and up to the next compliant QC sample are assigned validation codes. The validation code alerts the data user that the results are outside QA control limits and may require re-sampling or a separate, qualitative analysis based on professional judgment.

Validation Code	Definition	WQX Equivalent
A1	Sample not collected according to SOP	
B1	Chemical was detected in the field blank at a concentration less than 5% of the sample concentration.	
BN	Blanks NOT collected during sampling run	
BU	Detection in blank. Analyte was not detected in this sample above the method's sample detection limit.	BU
RB1	Chemical was detected in the field blank at a concentration greater than or equal to 5% of the sample concentration. Results for this sample are rejected because they may be the result of contamination; the results may not be reported or used for regulatory compliance purposes.	B
R1	Rejected due to incorrect sample preservation	R
R2	Rejected due to equipment failure in the field	R
R3	Rejected based on best professional judgment	R
D1	Spike recovery not within method acceptance limits	
F1	Sample filter time exceeded	
J1	Estimated: the analyte was positively identified and the associated value is an approximate concentration of the analyte in the sample	J
K1	Holding time violation	H
Ea	Estimated-Incubation temperature between 35.5 and 38.0° Celsius	
Er	Rejected-Incubation temperature < 34.5 or >38.0° Celsius	
PD1	Percent difference between duplicate samples excessive	
S1	Per SLD, uncertainties (sigmas) are expressed as one standard deviation, i.e. one standard error. Small negative or positive values that are less than two standard deviations should be interpreted as "less than the detection limit."	
S2	Data are suspect but deemed usable based on best professional judgment; documentation of justification is required and should be included in the Data Verification and Validation Packet and reported with results	
Z1	Macroinvertebrate data did not meet QC criteria specified in Section 2.5 of QAPP	
H1	Habitat data did not meet QC criteria specified in Section 2.5 of QAPP	

Attachment 1.1 Water Quality Sample Data Verification and Validation Worksheet

Study Name: Compliance Monitoring Cooperative (CMC)
Year: : FY 2023 (October 2022 – Wet Season Sample)Project Coordinator: For Data Review and Reporting – SJG, BHI
V&V Reviewer: SJG
Data covered by this worksheet: Rio Grande South – 10/6/2022
Version of Verification/Validation Procedures: QAPP –AMAFCA SOP #5 (7/2022)

Step 1: Verify Field Data

A. Are all Field Data forms present and complete? ☒ Yes ☐ No

If yes, proceed; if no, attempt to locate missing forms, then indicate any remaining missing forms and action taken.

Missing Field Data Forms	Action Taken
_____	_____
_____	_____

Total number of occurrences: 0

B. Are station name and ID, and sampling date and time on forms consistent with database? ☒ Yes ☐ No
If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station and Parameter	Action Taken	Re-verified?
_____	_____	_____
_____	_____	_____

Total number of occurrences: 0

C. Are field data on forms consistent with database? ☒ Yes ☐ No
If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station	Sampling Date	Parameter(s) Corrected	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

D. Are RIDs correct and associated with the correct analytical suite, media subdivision (e.g. surface water, municipal waste, etc.) and activity type (e.g. Field observation, Routine sample, QA sample etc.)?

☒ Yes ☐ No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify

Station/RID	Sampling Date	RID Corrected	Re-verified?
______	______	______	_________
______	______	______	_________

Total number of occurrences: **0**

☒ **Step 1 Completed** ***Initials:*** SJG ***Date:*** 12/14/22

- -

Step 2: Verify Data Deliverables

A. Have all data in question been delivered? ☒ Yes ☐ No

If yes, proceed; if no, indicate RIDs with missing data (samples or blanks) or attach report with applicable RIDs highlighted. Contact data source and indicate action taken. Complete this step upon receipt of all missing data.

RID	Submittal Date	Missing Data/Parameters	Date of Initial Verification	Date Missing Data Were Received
______	______	______	______	______

Total number of occurrences: **0**

B. Do all of the analytical suites have the correct number and type of analytes. ☐ Yes ☒ No

If yes, proceed; if no, indicate RIDs with missing or incorrect analyte(s) or attach report with applicable RIDs highlighted. Contact data source and indicate action taken.

RID	Submittal Date	Missing or Incorrect Parameters	Action Taken	Re-verified?
	11/30/22 emailed AMAFCA on missing parameter; BOD bottle not	BOD		

	submitted for sample.			

*Note – HEAL Lab report order number 2210315.

☒ **Step 2 Completed** ***Initials:*** SJG ***Date:*** 12/14/22

- -

Step 3: Verify Flow Data
*Note – Not Applicable – no flow data provided with CMC sample collection
A. Identify incorrect or missing data on the flow calculation spreadsheet and correct errors.

Station	Sampling Date	Flow data missing or incorrect?
______	______	__________
______	______	__________

Total number of occurrences: 0

B. Identify incorrect or missing discharge measurements, correct errors in database and re-verify.

Station	Sampling Date	Flow data missing or incorrect?	Re-verified?
______	______	__________	__________
______	______	__________	__________

Total number of occurrences: 0

_Not Applicable
☐ **Step 3 Completed** ***Initials:*** SJG ***Date:*** 12/14/22

- -

Step 4: Verify Analytical Results for Missing Information or Questionable Results

Were any results with missing/questionable information identified? ☒ Yes ☐ No

If no, proceed; if yes, indicate results with missing information or questionable results or attach report. Contact data source and indicate action taken. Complete this step upon receipt of missing information or clarification of questionable results (clarify questionable results only, DO NOT change results without written approval (from lab or QA officer) and associated documentation).

RID	Sample Date	Missing or Questionable Information/Results	Action Taken
Rio Grande South	10/6/2022	Lab report lists Dissolved Phosphorous results as "Total Phosphorous" for "filtered sample".	BHI added note to the lab report.

*Note – HEAL Lab report order number 2210315.

Total number of occurrences: 1

☒ **Step 4 Completed** ***Initials:*** SJG ***Date:*** 12/14/22

- -

Step 5: Validate Blanks Results
Were any analytes of concern detected in blank samples? ☐ Yes ☒ No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager, with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes have been added to database correctly.

RID	Sample Date	Parameter	[Blank]	[Sample]	Validation Code/Flag Applied	Code/Flag verified in database? *
____	_____	_____	_____	_____		_____
_____	_____	_____	_____	_____		_____

*See validation procedures to determine which associated data need to be flagged and include on *Validation Codes Form*.

Total number of occurrences: 0

☒ **Step 5 Completed** ***Initials:*** SJG ***Date:*** 12/14/22

- -

Step 6: Validate Holding Times Violations
Were any samples submitted that did not meet specified holding times? ☐ Yes ☒ No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes/flags have been added to database.

RID	Sample Date	Parameter	[Blank]	[Sample]	Validation Code/Flag Applied	Code/Flag verified in database to ALL associated data?*

*See validation procedures to determine which associated data need to be flagged.
*Note – Lab reports lists pH with hold time flag. Database uses field data reported pH, so this is hold time is not applicable.
Total number of occurrences: 0

☒ **Step 6 Completed** ***Initials:*** SJG ***Date:*** 12/14/22

Step 7: Validate Replicate/Duplicate Results (if applicable)
Were any replicate/duplicate pairs submitted outside of the established control limit of 20%?
☐ Yes ☒ No
If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes/flags have been added to database.

RID Pairs		Replicate or Duplicate?	Sample Date	Parameter	RPD	Validation Code/Flag Applied	Code/Flag verified in database applied?*

Total number of occurrences: 0

☒ **Step 7 Completed** ***Initials:*** SJG ***Date:*** 12/14/22

****

After all of the above steps have been completed, save and print the worksheet, attach all applicable supplemental information and sign below.

I acknowledge that the data verification and validation process has been completed for the data identified above in accordance with the procedures described in the CMC QAPP, SOP #2

12/14/22

Data Verifier/Validator Signature Date

COMPLETION OF DATA VERIFICATION AND VALIDATION PROCESS

Once the data verification and validation process has been completed for the entire study (note: if the worksheet is for a subset of the data from a study, be sure ALL the data for the entire study is included before final completion of the data verification and validation process), notify the NMSQUID administrator that the process is complete and request that “V V in STORET” be added to the project title.

Once all data have been verified and validated for a study provide copies of ALL *Data Verification and Validation Worksheets* and attachments associated with the study to the Quality Assurance Officer and retain originals in the project binder.

Attachment 1.2 SWQB Validation Codes

When deficiencies are identified through the data verification and validation process, AMAFCA documents or "flags" the deficiencies by assigning validation codes. All data collected from the last compliant QC sample and up to the next compliant QC sample are assigned validation codes. The validation code alerts the data user that the results are outside QA control limits and may require re-sampling or a separate, qualitative analysis based on professional judgment.

Validation Code	Definition	WQX Equivalent
A1	Sample not collected according to SOP	
B1	Chemical was detected in the field blank at a concentration less than 5% of the sample concentration.	
BN	Blanks NOT collected during sampling run	
BU	Detection in blank. Analyte was not detected in this sample above the method's sample detection limit.	BU
RB1	Chemical was detected in the field blank at a concentration greater than or equal to 5% of the sample concentration. Results for this sample are rejected because they may be the result of contamination; the results may not be reported or used for regulatory compliance purposes.	B
R1	Rejected due to incorrect sample preservation	R
R2	Rejected due to equipment failure in the field	R
R3	Rejected based on best professional judgment	R
D1	Spike recovery not within method acceptance limits	
F1	Sample filter time exceeded	
J1	Estimated: the analyte was positively identified and the associated value is an approximate concentration of the analyte in the sample	J
K1	Holding time violation	H
Ea	Estimated-Incubation temperature between 35.5 and 38.0° Celsius	
Er	Rejected-Incubation temperature < 34.5 or >38.0° Celsius	
PD1	Percent difference between duplicate samples excessive	
S1	Per SLD, uncertainties (sigmas) are expressed as one standard deviation, i.e. one standard error. Small negative or positive values that are less than two standard deviations should be interpreted as "less than the detection limit."	
S2	Data are suspect but deemed usable based on best professional judgment; documentation of justification is required and should be included in the Data Verification and Validation Packet and reported with results	
Z1	Macroinvertebrate data did not meet QC criteria specified in Section 2.5 of QAPP	
H1	Habitat data did not meet QC criteria specified in Section 2.5 of QAPP	

Summary of AMAFCA's MS4 Discharges to Water Quality Impaired Water Bodies without an Approved TMDL Program FY 2023 (July 1, 2022 – June 30, 2023)

NPDES Permit No. NMR04A000

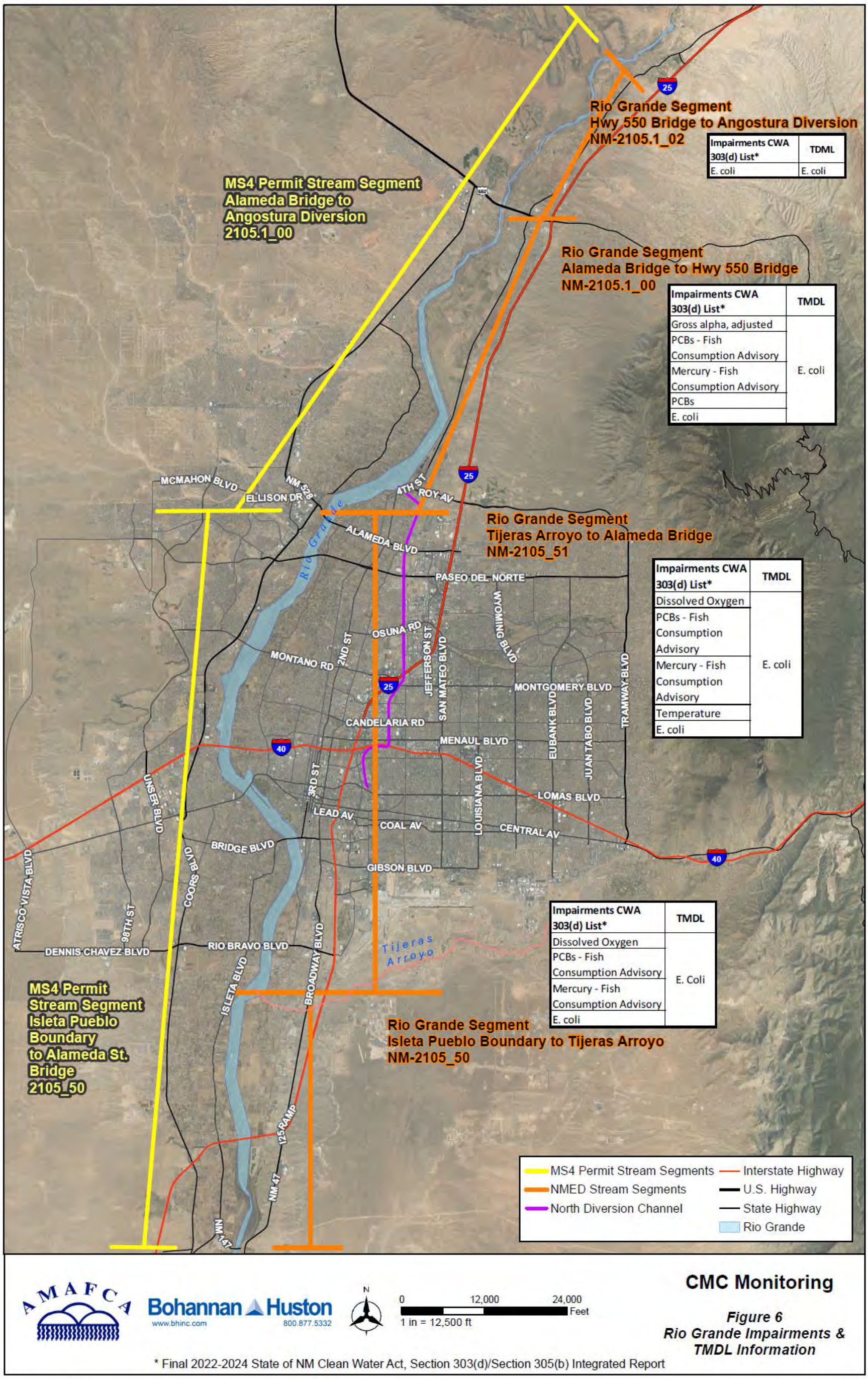
Part I.C.2.b.(ii) - Special Conditions, Compliance with Water Quality Standards

Impairments without Approved TMDLs

Impairments for the Rio Grande are documented in the Clean Water Act (CWA) 303(d)/305(b) Integrated Report (IR). The IR is updated every three years by a review process that is conducted by the New Mexico Environment Department (NMED). For AMAFCA and other Municipal Separate Storm Sewer System (MS4) permittees in the watershed, compliance sampling is done in the Rio Grande at upstream and downstream locations of the urbanized area for impairment parameters, as well as other parameters identified in the MS4 Permit.

AMAFCA and other MS4s covered under the MS4 Permit are required to comply with water quality standards that are comprised of designated uses for surface waters of the state, associated water quality criteria necessary to protect these uses, and an antidegradation policy. Designated uses in the Middle Rio Grande include aquatic life, fish culture, primary and secondary contact (including cultural, religious, or ceremonial purposes), public water supply, industrial water supply, domestic water supply, irrigation, livestock watering, and wildlife habitat. Impairments are identified when sampling results show that the water quality is not meeting the designated uses requirements. Once an impairment is identified; a Total Maximum Daily Load (TMDL) may be considered in the future if continued monitoring does not show improvement. AMAFCA's stormwater discharges protect these uses and fulfill the requirements set forth in the MS4 Permit. Coordinated water quality sample collection programs through AMAFCA, the Stormwater Quality Team, Compliance Monitoring Cooperative (CMC), and Bosque Ecosystem Monitoring Program (BEMP) have been developed and are annually funded to monitor, assess, protect, and restore surface water quality to the Middle Rio Grande watershed.

The current impairments for the Rio Grande stream segments are shown in the figure below.



Impairments in the Rio Grande Segments in the Middle Rio Grande Through Albuquerque

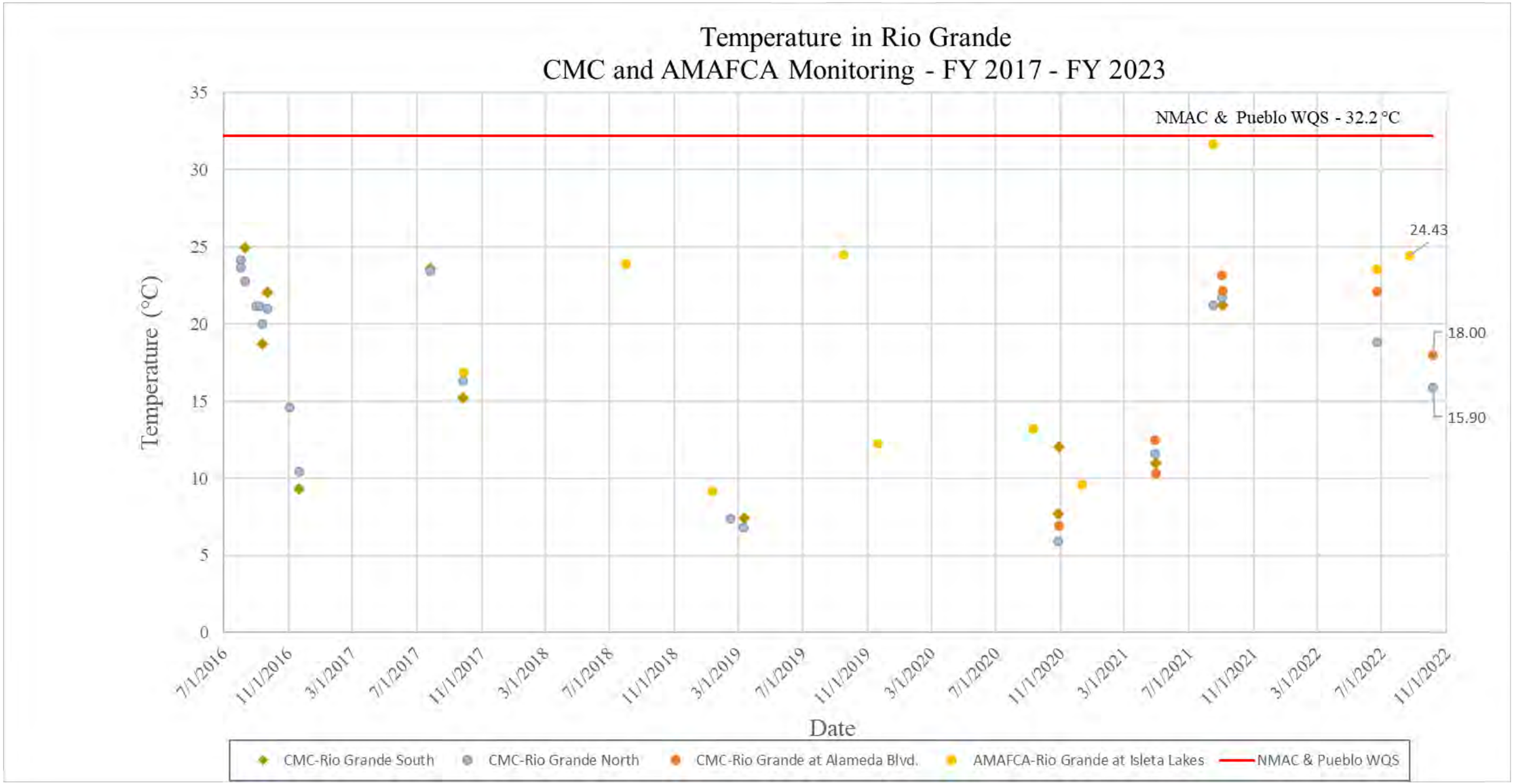
CMC and AMAFCA Water Quality Monitoring Program for Temperature, Gross Alpha, Mercury, and PCBs

Both AMAFCA and the Middle Rio Grande Compliance Monitoring Cooperative (CMC) collect grab samples within the Rio Grande during storm events. Parameters, including the identified impaired parameters, are tested for these in-stream samples. For MS4 Permit compliance, the Middle Rio Grande CMC has monitoring points north and south of the urbanized portion of the river. The AMAFCA monitoring program collects samples in the Rio Grande at the downstream (south) end of the watershed (Rio Grande at Isleta Lakes). The graphs below show the Temperature and Gross Alpha from AMAFCA and CMC samples collected from 2016 – 2023.

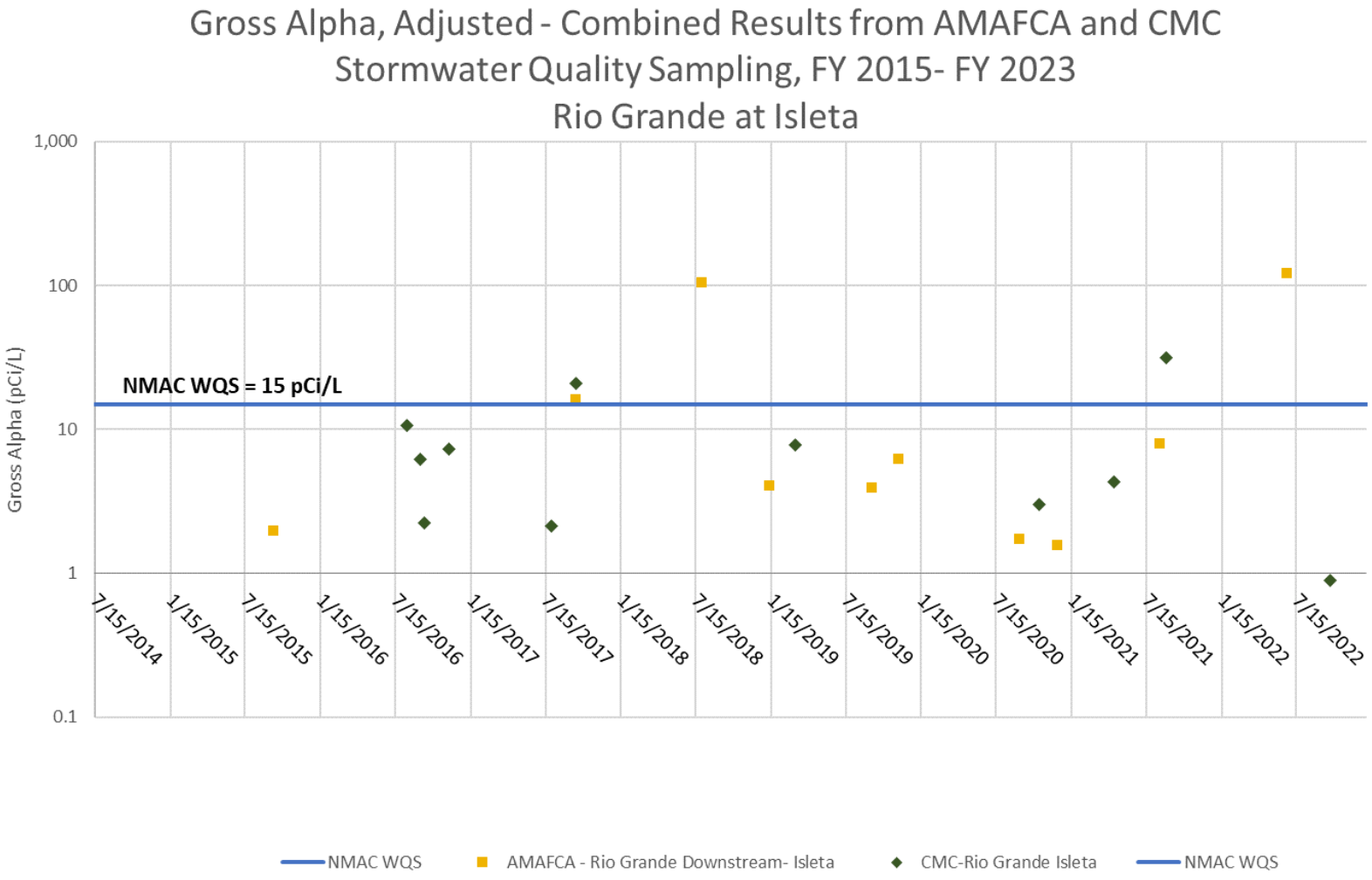
AMAFCA monitors and evaluates the potential effect of stormwater discharges related to temperature in the Rio Grande. AMAFCA and the original MS4 co-permittees (the City of Albuquerque, New Mexico Department of Transportation, and the University of New Mexico) assembled and analyzed temperature data from 1982 to 2012. This data analysis proved the assertion that the receiving waters of the Rio Grande are not adversely affected by the temperature of stormwater from the Albuquerque MS4. This data was presented in an initial report that was submitted to EPA on May 1, 2012.

Since 2012, the MS4 permittees have continued to collect and submit temperature data, with each Annual Report showing that the Rio Grande (receiving water for the Middle Rio Grande watershed) is not adversely affected by the temperature of stormwater from the Albuquerque MS4. AMAFCA has collected data from 2012 to 2023 using tidbit probes and sondes. In accordance with AMAFCA's Stormwater Management Program (SWMP), AMAFCA has assessed and will continue to assess the potential effect of stormwater discharges into the Rio Grande by collecting and evaluating additional temperature data. Additional information is available in the Dissolved Oxygen and Temperature Program summary documents.

In FY 2023, AMAFCA continued to follow the recently updated quality assurance project plan (QAPP), the field sampling plan (FSP), and related Standard Operating Procedures (SOPs) for AMAFCA's stormwater quality monitoring program. The format and contents of these documents are modeled after the NMED Surface Water Quality Bureau (SWQB) water quality management programs to facilitate sharing of data between the agencies. These documents provide a framework and detailed methods for the collection and analysis of environmental data as well as provide guidance for generating data with the precision, accuracy, and completeness necessary for AMAFCA's program.



Plot of Temperature Data Collected From Grab Samples in the Rio Grande Through the AMAFCA and CMC Monitoring Programs

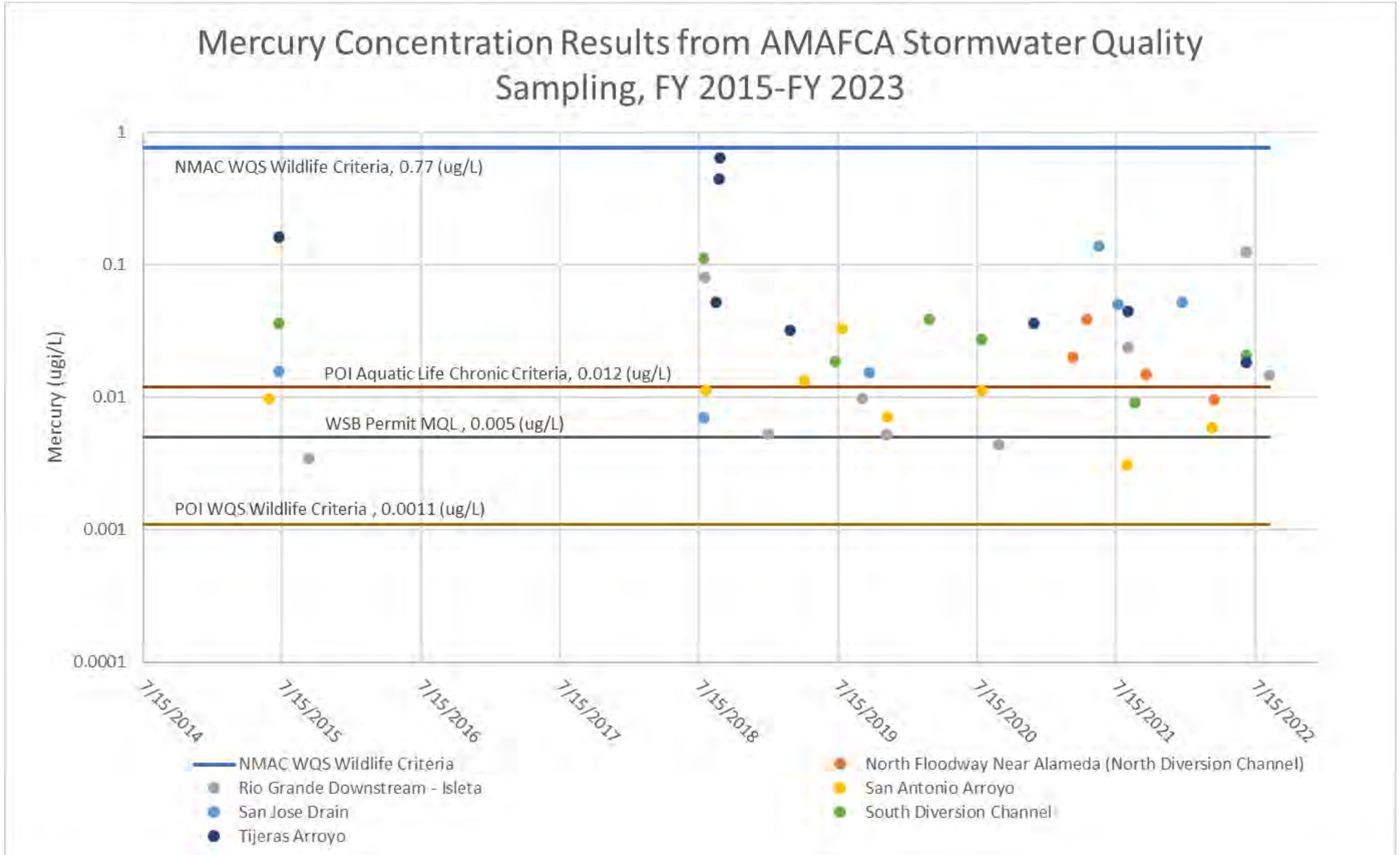


Gross Alpha Results From Grab Samples in the Rio Grande Through the AMAFCA and CMC Monitoring Programs

AMAFCA has been monitoring for mercury in stormwater samples and the graph on page 7 shows results obtained throughout the watershed. The CMC has not been monitoring for mercury, as it is not a required parameter in the MS4 Permit. Mercury levels reported as exceeding applicable in-stream water quality standard (WQS) values relate to 'Wildlife Usage' WQS for the Pueblo of Isleta; this WQS value is an order of magnitude lower than other mercury WQSs – refer to the table below. AMAFCA has discussed the concern about the magnitude difference and potential error of this WQS with the Pueblo of Isleta related to their Triennial Review.

Water Quality Standards for Mercury for the Middle Rio Grande

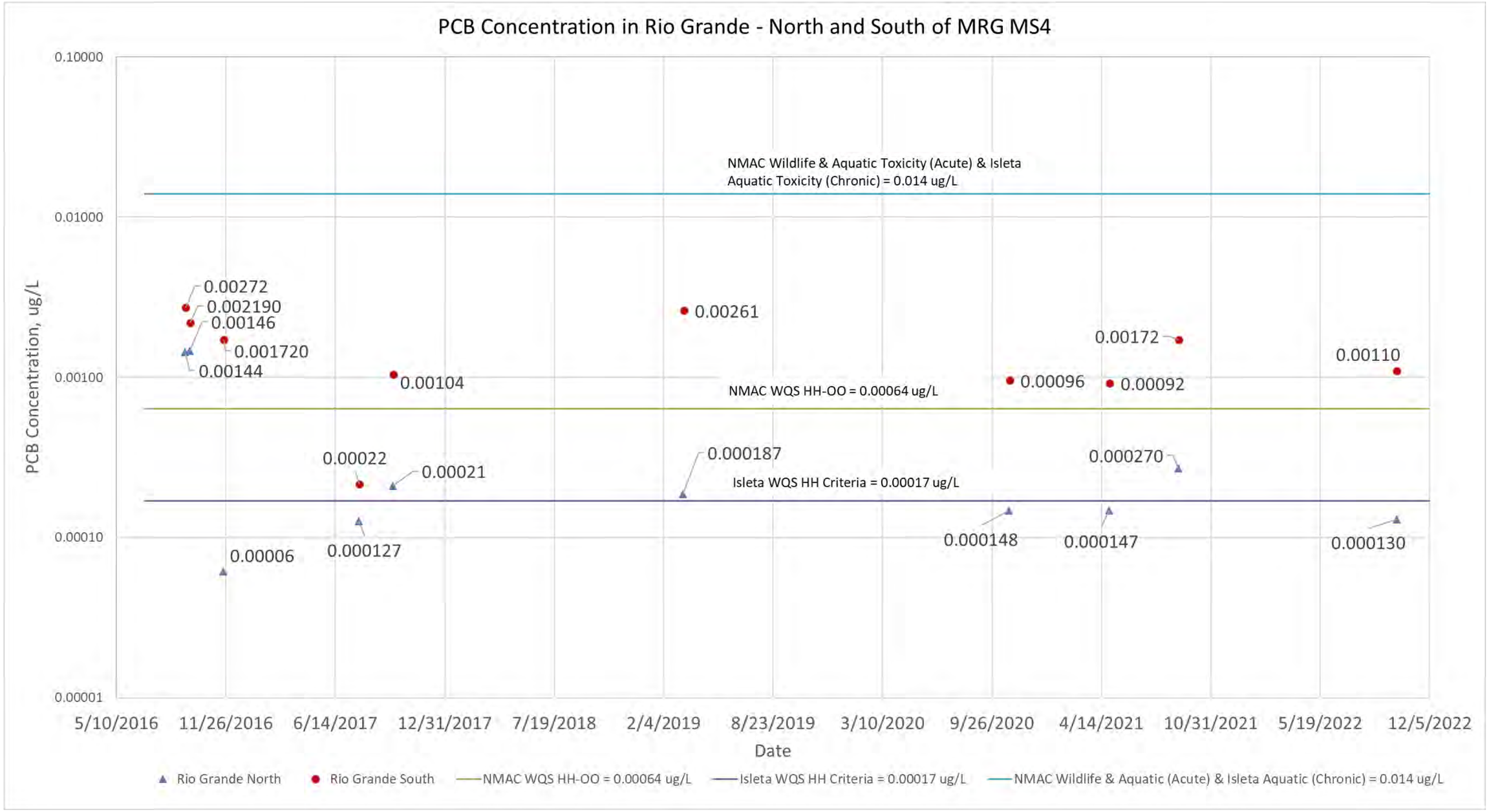
Mercury **Pueblo of Isleta** ***Wildlife Usage Criteria***	**Mercury** ***Pueblo of Isleta & Sandia, Fresh Water Aquatic Life Chronic Toxicity***	**Mercury** **State of NM NMAC 20.6.4** ***Wildlife Habitat***	**Mercury** **State of NM NMAC 20.6.4** ***Drinking Water Supply***	**Mercury** ***Pueblo of Isleta & Sandia, Fresh Water Aquatic Life Acute Toxicity***
WQS: 0.0011 ug/L	WQS: 0.012 ug/L	WQS: 0.77 ug/L	WQS: 2 ug/L	WQS: 2.4 ug/L



Mercury Results From Stormwater Samples Collected in the Watershed Through the AMAFCA Monitoring Program

AMAFCA and the CMC have been monitoring for PCBs in stormwater samples. The current AMAFCA watershed screening (also referred to as non-compliance sampling) is using Method 608 to test for PCBs. If results are detected with the screening method, AMAFCA would then sample and test with Method 1668. Method 608 tests for both PCBs and pesticides. All AMAFCA screening tests for PCBs have been non detect.

The CMC tests all samples for PCBs using Method 1668. This is the required PCB testing methodology for stormwater compliance permit requirements, as is stated in the MS4 Permit, p. 6 of Part III. There are multiple surface WQS values listed for PCBs in both the Pueblo of Isleta and the State of New Mexico standards for the various designated uses. PCBs measured in samples collected from the Rio Grande during the FY 2023 storm events were all below the minimum quantification level (MQL) established in EPA standards for the MS4 NPDES Permit (Appendix F, 0.2 ug/L for PCBs). The PCB results were also well below the New Mexico Surface WQSs and Pueblo of Isleta Surface WQSs for designated uses, including drinking water (0.5 ug/L) and wildlife habitat, acute aquatic life, and chronic aquatic life (0.014 ug/L). However, the CMC samples from the Rio Grande North (pre-storm) and South (post-storm) locations were above the Pueblo of Isleta human health criteria (based on fish consumption only) WQS for surface waters. The human health-organism only criterion is based upon human consumption of fish and other aquatic life that bioaccumulate contaminants over time. The PCB results from FY 2017 through FY 2023 are shown below relative to several of the WQSs for PCBs.



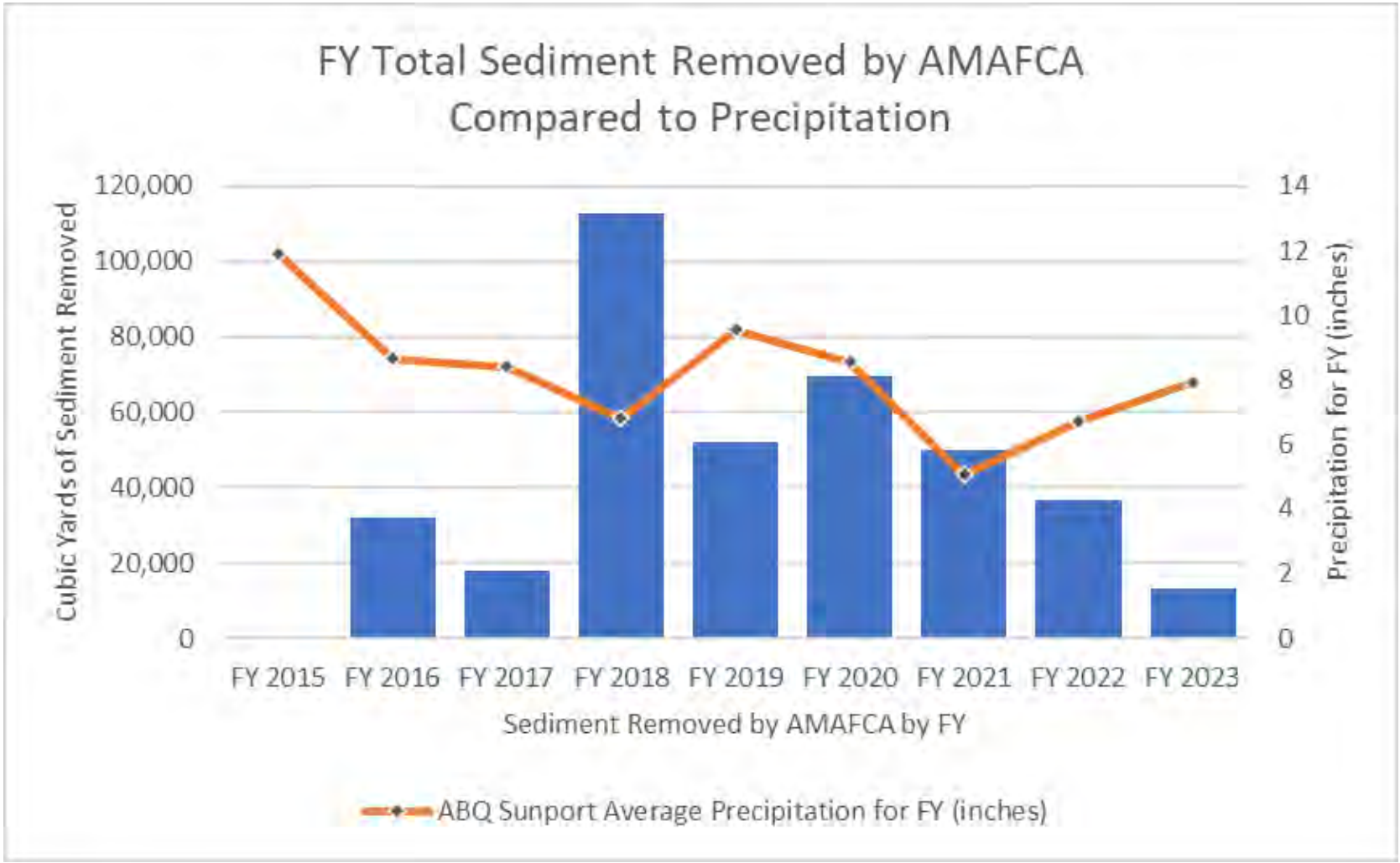
PCB Results From Stormwater Samples Collected in the Rio Grande Through the CMC

Summary of AMAFCA's MS4
Sediment Pollutant Load Reduction Program
FY 2023 (July 1, 2022 – June 30, 2023)

NPDES Permit No. NMR04A000
Part I.C.3.b - Endangered Species Act (ESA) Requirements –
Sediment Pollutant Load Reduction Strategy

The purpose of this program is to establish a procedure for AMAFCA to develop, implement, and evaluate a sediment pollutant load reduction strategy within the Municipal Separate Storm Sewer System (MS4). All AMAFCA projects are regional flood control or water quality projects. Stormwater runoff from other MS4s enter AMAFCA facilities, which function as both regional flood control facilities and Best Management Practices (BMPs) to remove sediment from stormwater before the stormwater continues to the Rio Grande. All of these facilities can be seen on the AMAFCA Maintenance Map which can be found on AMAFCA's website (at https://amafca.org/documents/Maintenance_Map.pdf).

In the Middle Rio Grande MS4 area, AMAFCA is not adversely contributing to the sediment pollutant load, but rather functioning to capture the sediment pollutant load generated throughout the watershed by MS4s contributing runoff to AMAFCA facilities. A large portion of AMAFCA's routine Operation and Maintenance (O&M) activities include sediment removal from its facilities. AMAFCA has implemented a crew tracking system to measure the sediment removal quantities at all of its facilities. This tracks sediment removal at each AMAFCA facility and within each defined watershed in the Albuquerque urban area.



Graph Highlighting the Watershed-Wide Sediment Removed by AMAFCA Operations

FY 2023 Sediment, Debris, and Vegetation Removal from AMAFCA Facilities

July 1, 2022 to June 30, 2023

AMAFCA Facility	Total Total Sediment Removed (CY)	Total Total Debris Removed (CY)*	Total Total Vegetation Removed (CY)
00089 - Zuni-Dallas Regional Pond	0	9	2
10000 - No Project	0	32	0
10001 - Shop	0	21	4
10002 - Misc. Projects	0	39	0
10005 - 98th Street Pond	0	0	0
10010 - Amole Dam, Channel. & WQ Ponds	398	110	6
10012 - AMAFCA Yard	0	0	0
10015 - Baca Channel	0	0	0
10020 - Bear Canyon Arroyo	0	52	11
10025 - Bear Canyon Training Dike	0	0	52
10030 - Bear Canyon Tributary Diversion	0	12	1
10035 - Black Arroyo Dam & Channel	1,836	6	1
10040 - Black Mesa Storm Drain	0	0	0
10045 - Boca Negra Dam & Atrisco Storm Drain	0	19	1
10050 - Borrega Dam & Channel	36	0	0
10055 - Cabezon Channel	0	0	0
10060 - Calabacillas Main Arroyo & Drop Structures	18	34	248
10065 - Corrales Main/Calabacillas/La Orilla	944	4	0
10070 - Camino Channel	0	0	0
10075 - Candelaria Inlet & WQ Pond	0	10	1
10085 - Don Felipe Dam & Pajarito Diversion	532	18	1
10086 - Domingo Baca WQ Structure	6	80	7
10090 - East Amole Surge Pond & Channels (Shamrock & Tempur)	0	0	0
10095 - El Camino Pond	0	0	0
10100 - Embudo Channel	6	117	47
10105 - Fountain Hills Pond	0	2	12
10110 - Grandmas Pond - Paseo del Norte & Coors	0	4	1
10115 - Grantline Inlet & WQ Pond	0	2	0
10120 - Hahn Channel	0	6	19
10125 - Hubbell Dam & Spillway	57	28	2
10130 - John B. Robert Dam	211	3	13
10135 - Kinney Dam	0	20	2
10140 - La Cueva System & WQ Features	6	29	2
10145 - La Cueva Training Dike	0	0	0
10160 - Ladera Channel @ 98th Street	245	0	69
10165 - Ladera System - Dams & Mirehaven	186	12	30
10171 - La Presa	0	54	3
10175 - Las Ventanas Dam & North Piedras Marcadas Channel	0	53	291
10180 - Los Indios Diversion Channel & Sediment Basin	0	2	42

Example of FY 2023 AMAFCA Sediment, Debris, and Vegetation Removal Tracking Spreadsheet

Photos of AMAFCA Sediment Removal & AMAFCA Maintenance Activities

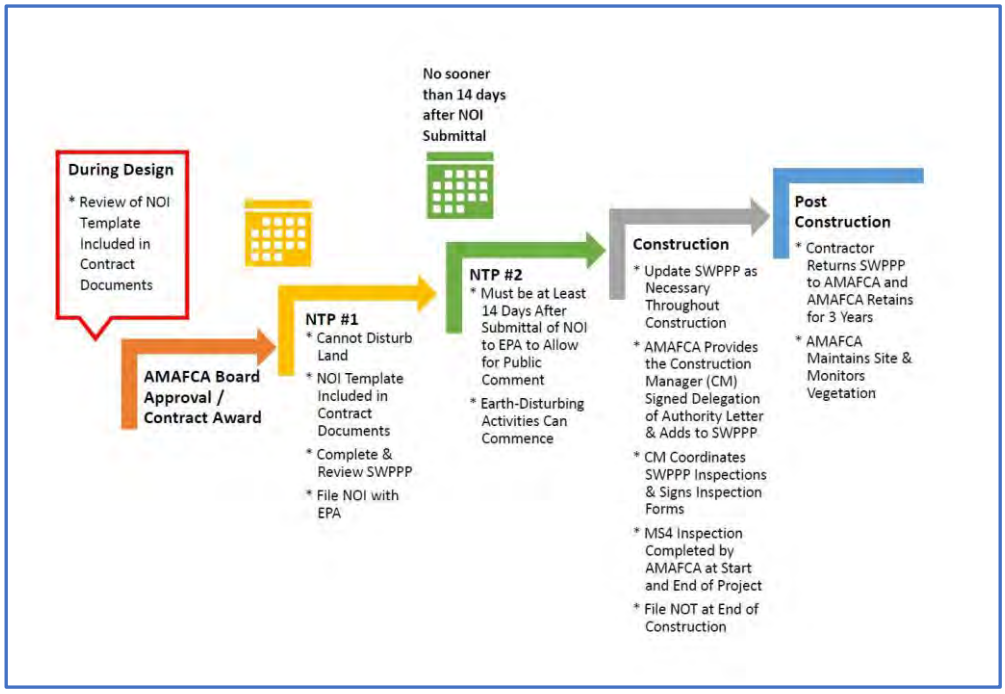
Summary of AMAFCA's MS4
Construction Site Stormwater Runoff Control Program
FY 2023 (July 1, 2022 – June 30, 2023)

NPDES Permit No. NMR04A000

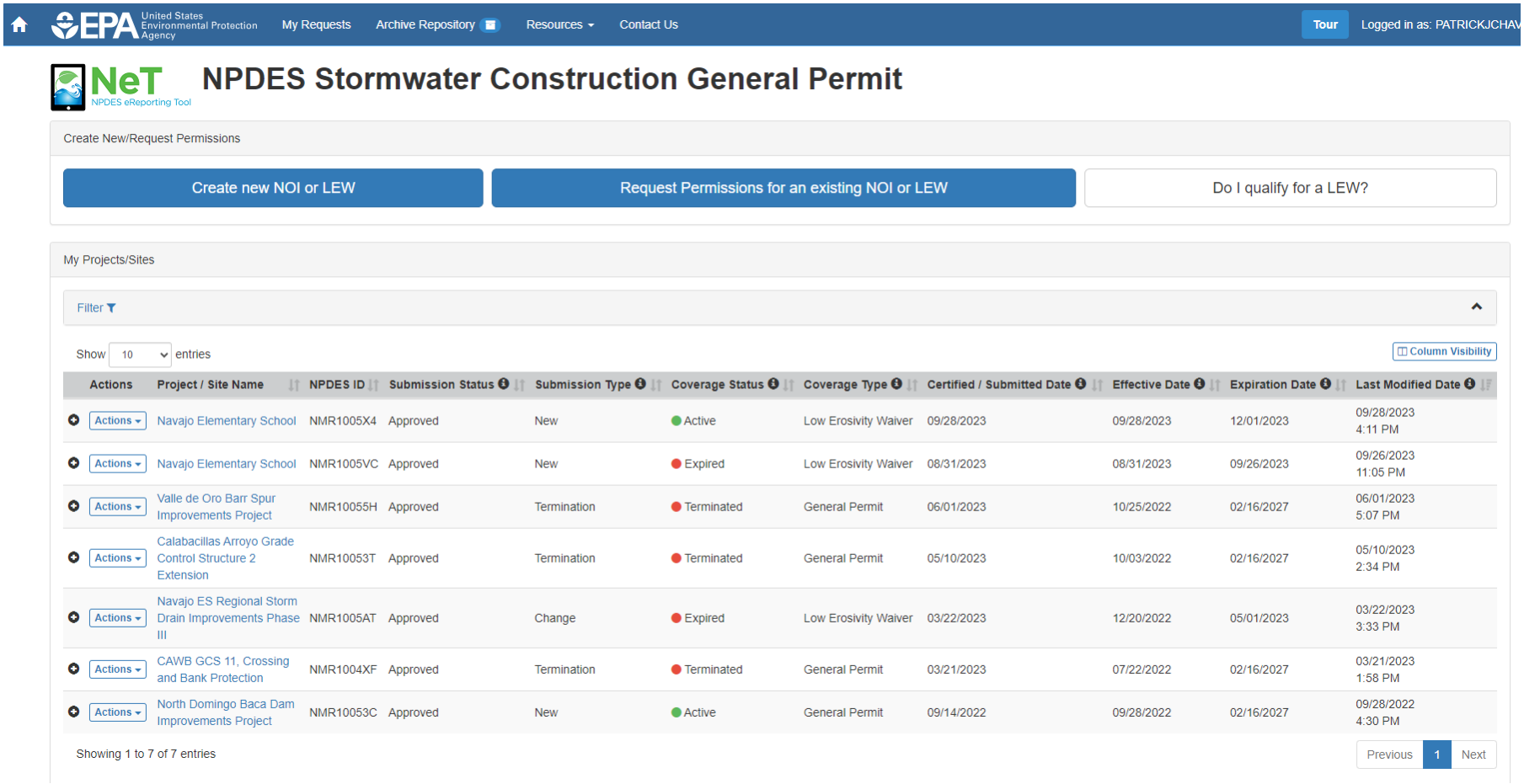
Part I.D.5.a - Construction Site Stormwater Runoff Control Program

Construction site stormwater runoff control is intended to control polluted stormwater runoff from a construction site to Municipal Separate Storm Sewer Systems (MS4s) that is ultimately discharged into local rivers and streams. Sediment is usually the main pollutant of concern for construction site stormwater runoff. Sediment runoff rates from construction sites are typically 10 to 20 times greater than those of agricultural lands, and 1,000 to 2,000 times greater than those of forest lands. During a short period of time, construction sites can contribute more sediment to streams than can be deposited naturally during several decades. In accordance with AMAFCA's Stormwater Management Program (SWMP), AMAFCA has continued and will continue to follow its program to control construction site stormwater runoff.

AMAFCA files Notice of Intent (NOI) documents for a Construction General Permit (CGP) for each of their construction sites that is greater than 1 acre in size. AMAFCA also requires contractors to file CGP NOI documents for any AMAFCA construction sites that are greater than 1 acre in size. AMAFCA reviews each contractor provided Stormwater Pollution Prevention Plan (SWPPP) document to determine their compliance with permit requirements. AMAFCA's timeline related to the CGP requirements, developed as part of the program to control construction site stormwater runoff, is shown below. The second image shows the active AMAFCA construction sites in FY 2023.



AMAFCA's Timeline Related to the CGP Requirements



Screen Shot From EPA's Net NPDES Tool Showing Active AMAFCA CGP NOIs

EPA published the final 2022 CGP in January 2022. AMAFCA worked closely with area MS4s to develop and submit comments on the draft 2022 CGP during FY 2021. AMAFCA attended an EPA webinar on February 24, 2022, as well as a New Mexico Environment Department (NMED) webinar on April 21, 2022, on the final 2022 CGP requirements. These webinars assisted with AMAFCA's training and knowledge of the new CGP requirements. During FY 2023, AMAFCA continued to refine and update their program to control construction site stormwater runoff to reflect the new 2022 CGP requirements. These efforts included an update of the Template & Instructions for Electronic CGP Notice of Intent (NOI) or Low Erosivity Waiver (LEW) Application for AMAFCA Projects, which AMAFCA provides with its construction contract documents to assist contractors and AMAFCA with meeting CGP requirements. AMAFCA's Notice of Intent (NOI) or Low Erosivity Waiver (LEW) Application for AMAFCA Projects template is included as an attachment to this Program Summary.

In the fall of 2022, EPA released a new Construction Inspection Training Course for CGP Operators. Construction site operators permitted under EPA's 2022 CGP are required to ensure that any individual conducting site inspections is a "qualified person". The 2022 CGP includes new requirements for qualified persons that apply to all sites that receive permit coverage on or after February 17, 2023. Patrick Chavez, AMAFCA's Storm Water Quality Engineer, completed the EPA course and passed the exam and is considered qualified to conduct inspections under Part 4 of the 2022 CGP. Documentation showing Mr. Chavez's successful completion of the EPA course is shown below.

CERTIFICATE
OF COMPLETION

presented to

Patrick J. Chavez, MSCE, PE,
LEED AP+

who has successfully completed EPA's Construction General Permit (CGP) Site Inspector Training Course
and passed the final exam

Chris Kloss, Water Permits Division Director

Date Certified: 9/22/2022

Expiration Date: May 17, 2027

By completing this course and passing the final exam, Patrick J. Chavez, MSCE, PE, LEED AP+ has complied with the CGP Part 6.3.a training requirements for conducting construction inspections under the 2022 CGP.

EPA
United States
Environmental Protection
Agency

Mr. Chavez successfully completed the EPA CPG Site Inspector Training Course

Template for Electronic Construction General Permit (CGP) Notice of Intent (NOI) or Low Erosivity Waiver (LEW) Application for AMAFCA Projects

Instructions:

This template is for informational purposes only and is intended to assist with completing the AMAFCA Electronic Construction General Permit (CGP) Notice of Intent (NOI) or Low Erosivity Waiver (LEW) Application for EPA. The Construction General Permit (CGP) Notice of Intent (NOI) or Low Erosivity Waiver (LEW) must be completed on the Environmental Protection Agency's (EPA's) NPDES eReporting Tool (NeT) - https://cdxnodengn.epa.gov/oeca-cgp-web/action/secured/home. **Before you can complete the NOI, a Stormwater Pollution Prevention Plan (SWPPP) must be completed**. The online application and this template include checking if the construction project qualifies for a LEW. This NOI/LEW Template will be completed by AMAFCA and/or their consultants and provided to the project contractor to assure that the project NOIs are completed in a consistent manner.

When completing this template, refer to the Instructions for Template for Electronic Construction General Permit (CGP) Notice of Intent (NOI) or Low Erosivity Waiver (LEW) Application for AMAFCA Projects for more information.

When starting an NOI or LEW application online: Choose the "Create New NOI or LEW" blue button in the top left of the NeT page. Then, type your information into the NeT CGP Project/Site search. Upon performing a search, the "Create New Project" button will activate, and you may then choose the "Create New Project/Site" blue button.

As a reminder, construction activities cannot begin at a site until the CGP authorization date – which is 14 days after EPA notifies the permittee that it has received a complete NOI.
If you are filing a LEW, there is not a waiting period and construction can begin immediately.

1 Permit Information

1. Select the state/territory to which your project/site is discharging:	New Mexico

2. Is your project/site located on federally recognized Indian Country lands?	

**Typically, "No". If "Yes", answer Question 2a below.*

2a. Select Indian Tribe associate with the area of Indian Country, as recognized by the Bureau of Indian Affairs.	*Choose appropriate Indian Tribe from drop-down list on online form.*

3. Are you a "Federal Operator" or a "Federal Facility" as defined in Appendix A of the CGP?	

**Typically, "No" - AMAFCA is not a Federal Operator or a Federal Facility.*

4. Is construction activity at the project site less than five (5) acres?	

**If "No", continue to Question 5. If "Yes", the online application will walk you through several questions to determine if you are eligible for a Low Erosivity Waiver (LEW).*

4a. Is your Rainfall Erosivity Factor (R-Factor) less than 5?	

**If "No" (R-Factor is greater than 5), continue to Question 5. If "Yes", follow the directions on the website to apply for a LEW. A LEW requires certification that construction activity at the project site specified shall disturb less than five (5) acres and shall take place during a period when the rainfall erosivity factor is less than 5.*

Rainfall Erosivity Factor, **R-Factor** link - https://lew.epa.gov/ - will help you determine the R-Factor. This link is also available in the EPA on-line NOI/LEW form.

The R-Factor Calculator for Small Construction Sites, accessed by the above link, requires that you enter:

1. *Project Start Date*
2. *Project End Date*
3. *Address or Latitude/Longitude or choose location from online map widget*

Refer to the Instructions for Template for Electronic Construction General Permit (CGP) Notice of Intent (NOI) or Low Erosivity Waiver (LEW) Application for AMAFCA Projects (referred to as Instructions for NOI/LEW Template) for additional information.

5. Have stormwater discharges from your current construction site been covered previously under an NPDES permit?	

**Typically, "No". If "Yes", answer Question 5a below.*

5a. Provide your most current NPDES ID if you had coverage under EPA's 2017 CGP or an individual NPDES permit.	

6. Will you use polymers, flocculants, or other treatment chemicals at your construction site?	

**Typically, "No" - continue to Question 7. If "Yes", continue to Question 6a below.*

6a. Will you use cationic treatment chemicals at your construction site?	

**If "No", continue to Question 7. If "Yes", continue to Question 6b below.*

6b. Have you been authorized to use cationic treatment chemicals by your applicable EPA Regional Office in advance of filing your NOI?	

***If "No", You Cannot Proceed with your NOI**. Please refer to the Instructions for NOI/LEW Template for additional information. If "Yes", at the end of the application process you will be required to provide documentation of the appropriate controls and implementation procedures designed to ensure that your use of cationic treatment chemicals will not lead to a violation of water quality standards; proceed to Question 7.*

7. Has a Stormwater Pollution Prevention Plan (SWPPP) been prepared in advance of filing this NOI, as required?	

If "Yes", proceed to Question 8. **If "No", you may not submit your NOI for coverage under the CGP. For information about what is required in your SWPPP, see Part 7 of the CGP.*

8. Are you able to demonstrate that you meet one (1) of the criteria listed in Appendix D with respect to protection of threatened or endangered species listed under the Endangered Species Act (ESA) and federally designated critical habitat?	

If "Yes", more information will be required on endangered species protection later in this NOI/LEW template; proceed to Question 9. **If "No", you may not submit your NOI for coverage under the CGP, you must meet one (1) of the criteria listed in Appendix D to be eligible to be covered by this CGP. See Section 6 of the Instructions for NOI/LEW Template for additional information.*

9. Have you completed the screening process in Appendix E relating to the protection of historic properties?	

If "Yes", you will be required to provide more information on historic properties screening later in this NOI/LEW template; proceed to the confirmation statement. **If "No", you may not submit your NOI for coverage under the CGP; you must complete the screening process as required in Appendix E to be eligible to be covered by this CGP.*

Confirmation Statement:

By indicating "Yes" below, I confirm that I understand that the CGP only authorized the allowable stormwater discharges in Part 1.2.1 of the CGP and the allowable non-stormwater discharges listed in Part 1.2.2 of the CGP. Any discharges not expressly authorized in this permit cannot become authorized or shielded from liability under the Clean Water Act (CWA) section 402(k) by disclosure to EPA, state or local authorities after issuance of this permit via any means, including the Notice of Intent (NOI) to be covered by the permit, the SWPPP, during an inspection, etc. If any discharges requiring NPDES permit coverage other than the allowable stormwater and non-stormwater discharges listed in Parts 1.2.1 and 1.2.2 will be discharged, they must be covered under another NPDES permit.

Yes

**"Yes" is required to continue. After you toggle "Yes" you will be asked to enter the legal name of the Operator and the Project/Site name.*

What is the legal name of the Operator as defined in Appendix A of the CGP?

Albuquerque Metropolitan Arroyo Flood Control Authority

**The input shown above is for AMAFCA. Contractor will enter their own legal name as an Operator.*

What is the name of your project/Site as defined in Appendix A of the CGP?

When you click NEXT you will see a pop-up box stating: “Warning: After clicking next, questions which have determined your eligibility for this form will be locked. If these responses must be changed, you may be required to create a new form.”

At the end of this Section, you will see a green pop-up box stating: “Draft Notice of Intent (NOI) Created” notification. You have created a draft Notice of Intent (NOI) for the construction project/site. **This form is not complete. The form must be filled in and certified in order to complete the submission process.** Select the Assign Manager button to assign a manager who can grant other users access to the project/site and the option to assign this to a manager, grant access to this form, or continue with filling out the form. To continue filling out the form select “Go to Form with No Manager”.

2 Operator Information

Operator Name

Albuquerque Metropolitan Arroyo Flood Control Authority

**The input shown above is for AMAFCA. Contractor will enter their own legal name as an Operator.*

Operator Mailing Address

Address Line 1

2600 Prospect Ave. NE

Address Line 2

City

Albuquerque

State

New Mexico

Zip Code

87107

County or Similar Division

BERNALILLO

**The input shown above is for AMAFCA. Contractor will enter their own information as an Operator.*

Operator Point of Contact Information

First Name	Middle Initial	Last Name
Patrick	*J*	*Chavez*

Title

Stormwater Quality Engineer

Phone	Ext:
505-884-2215	

Email

pchavez@amafca.org

**The input shown above is for AMAFCA. Contractor will enter their own information as an Operator.*

NOI Preparer Information

Make sure to check (toggle) the box that this NOI is being prepared by someone other than the certifier if someone else at your organization is the certifier. At AMAFCA, the AMAFCA Executive Engineer/Director is the certifier.

☑ *This NOI is being prepared by someone other than the certifier.*

Once you toggle this box, you will need to fill in your preparer information. You can click “Fill in my CDX Information” and it will populate the required text boxes with your registered information.

3 Project/Site Information

Project/Site Name

Project/Site Address

Address Line 1

Address Line 2

City

State

New Mexico

Zip Code

County or Similar Division

BERNALILLO

Latitude and Longitude

Please use the latitude and longitude entered on the AMAFCA NOI/LEW Template included as part of the project specifications and contract documents.

Latitude (°N)

Longitude (°W)

Latitude/Longitude Data Source

**Please use "Map", which uses the NOI map widget available in online NOI form.*

Map GPS Other

Other Data Source:

Horizontal Reference Datum

**NOI Map Widget uses WGS 84.*

NAD 27 NAD 83 WGS 84

Project Start Date	Estimated Project End Date	Estimated Area to be Disturbed

*To the nearest quarter acre

***Project Start Date**: The project start date must be at least 14 days after certifying and submitting your NOI for EPA review. If you are filing a LEW, there is not a waiting period and construction can begin immediately.*

The information entered on the AMAFCA NOI/LEW Template included as part of the project specifications and contract documents may not be applicable if the contracting process caused any delay in the construction start date. If unsure of the date to use, please ask the AMAFCA project manager. There is a drop-down calendar in the NOI online form to choose the start date.

***Estimated Project End Date**: Please use the information entered on the AMAFCA NOI/LEW Template included as part of the project specifications and contract documents. If unsure of the date to use, please ask the AMAFCA project manager. There is a drop-down calendar in the NOI online form to choose the end date.*

***Estimated Area to be Disturbed**: The unit for this is acres. Area must be reported to the nearest quarter acre.*

Type of Construction Site

- ○ Single-Family Residential
- ○ Multi-Family Residential
- ○ Commercial
- ○ Industrial
- ○ Institutional
- ○ Highway or Road
- ○ Utility
- ◉ Other

Typically, AMAFCA projects fall into the "Other" category. Please use the information entered on the AMAFCA NOI/LEW Template included as part of the project specifications and contract documents. If choosing "Other", use enough detail to describe the site, for example, Arroyo, Concrete Channel, Dam. or Vegetated Pond. The "Other" description is limited to 100 characters, with spaces counted.

1. Will there be demolition of any structure that was built or renovated before January 1, 1980?	

*If "Yes", answer Question 1a below; otherwise proceed to Question 2.

1a. Do any of the structures being demolished have at least 10,000 square feet of floor space?	

2. Will you be discharging dewatering water from your site?	

Please consider this question carefully.

**Dewatering in the CGP refers to both surface water dewatering for draining accumulated stormwater AND ground water dewatering for water discharged from well development, well pump tests, or pumping of ground water from a construction area. Please see the Instructions for NOI/LEW Template.*

****Answering "Yes" to this question may add turbidity testing requirements to your project.***

3. Was the pre-development land use used for agriculture?	

**For definition of "agricultural land", see Instructions for NOI/LEW Template.*

4. Are there other operators that are covered under this permit for the same project site?	

**This will typically be "Yes" – AMAFCA and the Contractor. Answer "No" if there are no other operators or if there are other operators but you do not have the other operators' NPDES ID(s) available yet (they still need to file their NOI). If "Yes", answer Question 4a below. If "No", proceed to Question 5.*

**All operators will need to inform each other of their NPDES ID number for the project, when it is available, and will need to go back into EPA's CDX system and modify the NOI answer to this question to "Yes" and add the other operators' NPDES ID(s).*

4a. If yes, provide the NPDES ID number for all other operators at the site who have coverage under this permit:	

**Other operators will receive an email with the subject line; "EPA NeT CGP Coverage Status: Active: Project Name" (refer to Instructions for NOI/LEW Template). This email is typically included in the SWPPP. Other operators will then use the NPDES number associated with this email to answer Question 4a.*

5. Have earth-disturbing activities commenced on the project/site?	

**If "Yes", answer Question 5a below. If "No", proceed to Question 6.*

****Reminder:** No earth disturbing activity should begin at a project site until a CGP NOI is obtained, unless it is related to an emergency project.*

5a. If yes, is your project an *"emergency-related project"*?	

**See Instructions for NOI/LEW Template for the definition of "emergency-related project".*

6. Is your project/site located on federally recognized Indian Country land:	

**If "Yes", answer Question 6a below. If "No", proceed to Question 7.*

6a. Select Indian Tribe associated with the area of Indian Country, as recognized by the Bureau of Indian Affairs.	*If selected previously in the Permit Information, this field will be filled out and unable to be edited.*

6b. Enter the name of the Indian reservation or other Indian Country land:	*Retype answer from Question 6a.*

7. Is your project/site located on a property of religious or cultural significance to an Indian tribe?	

**See Instructions for NOI/LEW Template for additional information.*
**If "Yes", answer 7a below and proceed to next section. If "No", proceed to next section.*

7a. Select Indian Tribe associated with the area of Indian Country, as recognized by the Bureau of Indian Affairs.	*Choose appropriate Indian Tribe from drop-down list on online form.*

4 Discharge Information

1. Does your project/site discharge stormwater into a Municipal Separate Storm Sewer System (MS4)?	*Yes*

**Your answer should be "Yes" – AMAFCA is an MS4, so all AMAFCA projects are within and discharge into a MS4.*

2. Are there any waters of the U.S. within 50 feet of your project's earth disturbances?	

**For assistance in determining the receiving water for your site, EPA has developed a discharge mapping tool that is available at* https://www.epa.gov/npdes/epas-stormwater-discharge-mapping-tools

3. Are any of the waters of the U.S. to which you discharge designated by the state or tribal authority under its antidegradation policy as a Tier 2 (Tier 2.5) water (water quality exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water) or as a Tier 3 water (Outstanding National Resource Water)?	

**See Resources, Tools and Templates, which will send you to this link*: List of Tier 2 and Tier 3 waters (epa.gov)

**Tier 1 if receiving water is listed on the CWA 303(d) list OR if it is ephemeral (flows only occur during and immediately after rain). The Rio Grande within AMAFCA's jurisdiction is considered Tier 1 since it is listed on the CWA 303(d) list.*

**Tier 2 if receiving water is intermittent or perennial AND it is not listed on the CWA 303(d) list.*

**There are no Tier 2.5 designations in New Mexico.*

**There are currently no Tier 3 waters in the Albuquerque area.*

Receiving Waters Information Section:

List all of the stormwater points of discharge from the project. *At least one (1) discharge point must be designated. For assistance in determining whether your site discharges to impaired waters, EPA has developed a discharge mapping tool that is available at* https://www.epa.gov/npdes/epas-stormwater-discharge-mapping-tools.

Click on the "New Discharge Point" blue button to add a discharge point. Each point of discharge must be identified by a unique 3-digit ID (e.g., 001, 002). This information does not need to be updated in the NOI if the points of discharge change during the project.

Point of Discharge ID **Online form automatically populates with 001. Can modify if needed.*	
Description (Optional):	
Latitude/Longitude **Please use the latitude and longitude entered on the AMAFCA NOI/LEW Template included as part of the project specifications and contract documents.*	
Receiving Water Name **Provide the name of the* receiving water *that receives stormwater directly from the point of discharge and/or from the MS4 that the point of discharge discharges to.*	
Is this receiving water impaired (on the CWA 303(d) list)? **Please use the following EPA tool available to determine the impairments:* https://www.epa.gov/npdes/epas-stormwater-discharge-mapping-tools. **Additional information on impairments can be found here:* https://www.env.nm.gov/surface-water-quality/303d-305b/.	
List of pollutants causing the impairment ***If "Yes" was answered above you will need to enter the list of pollutants. The EPA discharge mapping tool will provide this list of "causes of impairments". The electronic NOI form will search for and automatically enter the pollutants as you type them in.**	

Has a TMDL been completed for the receiving waterbody? ** The EPA discharge mapping tool will provide this list of TMDLs.* **If the receiving water is the Rio Grande, your answer will be "Yes".* • *TMDL ID: Enter 001.* • *TMDL Name: Enter E. coli. - E. coli is the only TMDL in the Albuquerque area and it applies to each segment of the Middle Rio Grande through Albuquerque.* • *Pollutants: For Albuquerque, E. coli is the only TMDL and it applies to each segment of the Middle Rio Grande through Albuquerque.*	
Tier Designation **Tier 1 if receiving water is listed on the CWA 303(d) list OR if it is ephemeral (flows only occur during and immediately after rain). The Rio Grande within AMAFCA's jurisdiction is considered Tier 1 since it is listed on the CWA 303(d) list.* **Tier 2 if receiving water is intermittent or perennial AND it is not listed on the CWA 303(d) list.* **There are no Tier 2.5 designations in New Mexico.* **There are currently no Tier 3 waters in the Albuquerque area.*	

5 Stormwater Pollution Prevention Plan

1. Will all required personnel, including those conducting inspections at your site, meet the training requirements in Part 6 of this permit?	*Yes*

*****Must be "Yes"*** *or cannot submit form.*

SWPPP Contact Information

First Name: *Patrick*

Middle Initial: *J*

Last Name: *Chavez*

Title: *Stormwater Quality Engineer*

Phone: *505-884-2215*

Ext.:

Email: *pchavez@amafca.org*

**The input shown above is for AMAFCA. Contractor will enter their own information as an Operator.*

6 Endangered Species Protection

Instructions:

Use the instructions and worksheet in Appendix D of the CGP to determine which criterion listed below you are eligible for coverage under this permit. You must consider Endangered Species Act listed threatened or endangered species (ESA-listed) and/or designated critical habitat(s) under the jurisdiction of both the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) and select the most conservative criterion that applies. More detailed instructions and a worksheet for this section can be found in the CGP Appendix D Link.

The recommended first step is to determine the project action area. The project action area will be determined using engineering judgement along with coordination with AMAFCA. The decision on the action area will be documented and provided to AMAFCA.

Action Area Definition: Action area refers to all areas to be affected directly or indirectly by the federal action and not merely the immediate project area. For the purposes of the CGP and for application of the Endangered Species Act requirements, the following areas are included in the definition of action area:

- The **areas on the construction site** where stormwater discharges originate and flow toward the point of discharge into the receiving waters - including areas where excavation, site development, or other ground disturbance activities occur. As an example, where a bald eagle nest is located in a tree that is on or bordering a construction site and could be disturbed by the construction activity. As a second example, where grading causes stormwater to flow into a small wetland or other habitat that is on the site and contains listed species.
- The areas where stormwater controls will be constructed and operated, including any areas where stormwater flows to and from the stormwater controls. As an example, the area where a stormwater retention pond would be built.
- The areas in the **vicinity of the construction site** where stormwater discharges flow from the construction site to one or more points of discharge into receiving waters. As an example, where stormwater flows into a ditch, swale, or gully that leads to receiving waters and where listed species (such as listed amphibians) are found in the ditch, swale, or gully.
- The **extent of the receiving water** potentially affected by stormwater discharges from your construction site through alteration of water chemistry, turbidity, temperature, or bank structure (i.e., erosive flow), regardless of whether the construction stie is adjacent to the receiving water.

The following questions will help you in selecting and documenting your eligibility criteria with respect to the protection of federally listed threatened or endangered species and federally designated "critical habitat" under the Endangered Species Act from discharges and discharge-related activities authorized under this permit. A reminder that you must consider Endangered Species Act (ESA) listed threatened or endangered species (ESA-listed) and/or designated critical habitat(s) under the jurisdiction of both the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) and select the most conservative criterion that applies. When evaluating the potential effects of your activities, you must consider effects to listed species or designated critical habitats within the "action area" of your construction activity as identified by the USFWS Information for Planning and Consultation (IPaC) - https://ipac.ecosphere.fws.gov/ and/or NOAA Species Directory - https://www.fisheries.noaa.gov/species-directory.

Determine ESA Eligibility Criterion

1. Are your discharges and discharge-related activities already addressed in another operator's valid certification of eligibility for your "action area" under the current 2022 CGP?	

**If "Yes", continue to Question 1a. If "No", proceed to Question 2.*

1a. I have confirmed that the other operator's certification of eligibility accounted for my action area and that the eligibility certification was valid.	

**If "True", continue to Question 1b. If "False", proceed to Question 2.*

1b. There has been no lapse of NPDES permit coverage in the other operator's certification.	

**If "True", continue to Question 1c. If "False", proceed to Question 2.*

1c. I will comply with all measures that formed the basis of the other operator's valid certification of eligibility.	

If "True", you are eligible under **Criterion B. Proceed to **Criterion B** below. If "False", continue to Question 2.*

2. Has consultation between you, a Federal Agency, and the USFWS and/or the NMFS under section 7 of the Endangered Species Act (ESA) concluded?	

*Note: Consultations can be either formal or informal, and would have occurred only as a result of a **separate federal action** (e.g., during application for an individual wastewater discharge permit or the issuance of a wetlands dredge and fill permit), and the consultation must have addressed the effects of your construction activity's discharges and discharge-related activities on ESA-listed species and/or designated critical habitat under the jurisdiction of USFWS and/or NMFS in your action area.*

**If "Yes", continue to Question 2a. If "No", proceed to Question 3.*

2a. The result of this consultation was:	○ **Option i:** A biological opinion currently in effect that determined that the action in question (taking into account the effects of your site's discharges and discharge-related activities) is likely to adversely affect, but is not likely to jeopardize, the continued existence of listed species or result in the destruction or adverse modification of critical habitat. The biological opinion must have included the effects of your site's discharges and discharge-related activities on all the listed species and designated critical habitat in your action area under the jurisdiction of each Service, as appropriate. To be eligible under this option, any reasonable and prudent measures specified in the incidental take statement must be implemented; ○ **Option ii:** Written concurrence (e.g., letter of concurrence) from the applicable Service(s) with a determination that your site's discharges and discharge-related activities are not likely to adversely affect ESA-listed species and/or designated critical habitat. The concurrence letter must have included the effects of your site's discharges and discharge-related activities on all the ESA-listed species and/or designated critical habitat on your species list(s) acquired from USFWS and/or NMFS as part of this worksheet. ◉ Neither

If choosing **Option i or **Option ii**, provide an answer to Question 2b. If "Neither", proceed to Question 3.*

2b. The consultation does not warrant reinitiation under 50 CFR 402.16; or, if reinitiation of consultation is required (e.g., due to new species listing, critical habitat designation, or new information), the federal action agency has reinitiated the consultation and the result of the consultation is consistent with the statements above. Include any reinitiation documentation from the Services or consulting federal agency with your NOI.	

If "True", you are eligible under **Criterion E. Proceed to **Criterion E** below. If "False", continue to Question 3.*

3. Are your construction activities the subject of a permit under section 10 of the ESA by the USFWS and/or NMFS, and this authorization addresses the effects of your site's discharges and discharge-related activities on ESA-listed species and/or designated critical habitat?	

If "Yes", continue to Question 3a. If "No", proceed to **Determine your Action Area section below.*

3a. A permit or permits have been issued under section 10 of the ESA. The permit authorization specifically addresses the effects of my site's discharges and discharge-related activities (if applicable) on all ESA-listed species and/or designated critical habitat in my action area.	

** If "True", you are eligible under **Criterion F**. Proceed to **Criterion F** below. If "False", continue to **Determine your Action Area**.*

Determine Your Action Area

You must determine whether species listed as either threatened or endangered, or their critical habitat(s), are located in your site's action area (i.e., all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action, including areas beyond the footprint of the site that are likely to be affected by stormwater discharges, discharge-related activities, and authorized non-stormwater discharges).

You must consider the following in determining the action area for your site, and confirm that all the following are **True**:

In determining my "action area", I have considered that discharges of pollutants into downstream areas can expand the action area well beyond the footprint of my site and the discharge point(s). I have taken into account the controls I will be implementing to minimize pollutants and the receiving waterbody characteristics (e.g., perennial, intermittent, ephemeral) in determining the extent of physical, chemical, and/or biotic effects of the discharges. I confirm that all receiving waterbodies that could receive pollutants from my site are included in my action area.	*True*

Must confirm this statement is **True before continuing forward and submitting form.*

In determining my "action area", I have considered that discharge-related activities must also be accounted for. I understand that discharge-related activities are any activities that cause, contribute to, or result in stormwater and authorized non-stormwater point source discharges, and measures such as the siting, construction timing, and operation of stormwater controls to control, reduce, or prevent pollutants from being discharged. I understand that any new or modified stormwater controls that will have noise or other similar effects, and any disturbances associated with construction of controls, are part of my action area.	*True*

Must confirm this statement is **True before continuing forward and submitting form. Continue to **Determine if ESA-listed species and/or designated critical habitat are in your site action area**.*

Determine if ESA-listed species and/or designated critical habitat are in your site action area.

ESA-listed species and designated critical habitat are under the purview of the NMFS and the USFWS, and in many cases, you will need to acquire species and critical habitat lists from both federal agencies.

National Marine Fisheries Service (NMFS)

https://www.epa.gov/npdes/construction-general-permit-threatened-and-endangered-species

I have checked the webpage listed above and confirmed that:	◉ There are no NMFS-protected species and/or designated critical habitat in my action area. ○ There are NMFS-protected species and/or designated critical habitat in my action area.

If "There are **no NMFS-protected species and/or designated critical habitat", continue to USFWS question. The National Marine Fisheries Service does not apply to Albuquerque, New Mexico.*

U.S. Fish and Wildlife Service (USFWS)

https://www.epa.gov/npdes/construction-general-permit-threatened-and-endangered-species

I have checked the webpage listed above and confirmed that:	◉ There are no USFWS-protected species and/or designated critical habitat in my action area. ○ There are USFWS-protected species and/or designated critical habitat in my action area.

If "There are **no USFWS-protected species and/or designated critical habitat", you are eligible under **Criterion A**. Proceed to **Criterion A** below. If "There **are** USFWS-protected species and/or designated critical habitat", you may be eligible under Criterion C and must upload the full printout from your IPaC query/Official Species List. Continue with the additional Criterion Eligibility questions.*

1. Discharges not likely to result in any short- or long-term adverse effects to ESA-listed and/or designated critical habitat.	

Note: ESA-listed species and/or designated critical habitat(s) under the jurisdiction of the USFWS and/or NMFS are likely to occur in or near your site's "action area", and you certify to EPA that your site's discharges and discharge-related activities are not likely to result in any short- or long-term adverse effects to ESA-listed threatened or endangered species and/or designated critical habitat. This certification may include consideration of any stormwater controls and/or management practices you will adopt to ensure that your site's discharges and discharge-related activities are not likely to result in any short- or long-term adverse effects to ESA-listed species and/or designated critical habitat.

If "True**", you are eligible under **Criterion C.** Proceed to **Criterion C** below. If "**False**", read the following:*

If you make a preliminary decision in that short- or long-term adverse effects from your construction activity's discharges or discharge-related activities are likely to occur, you can still receive coverage under eligibility Criterion C of the CGP if appropriate measures are undertaken to avoid or eliminate the likelihood of short- or long-term adverse effects prior to applying for CGP coverage.

These measures may involve relatively simple changes to construction activities such as re-routing a stormwater discharge to bypass an area where species are located, relocating stormwater controls, or by modifying the "footprint" of the construction activity. If you are unable to ascertain which measures to implement to avoid the likelihood of short- or long-term adverse effects, you must coordinate with USFWS and/or NMFS and should respond "False" to Question 2 below.

2. I am able to install and implement appropriate measures to avoid the likelihood of short- or long-term adverse effects.	

If "True", you are eligible under **Criterion C. Proceed to Questions 9 and 10 under **Criterion C** below. If "False", you may be eligible under **Criterion D**. Since you were unable to determine which measures to implement to avoid the likelihood of adverse effects, you must contact USFWS and/or NMFS. You may still be eligible for CGP coverage if likely adverse effects can be addressed. If you are not eligible for **Criterion D** you will need to contact your EPA Regional office to apply for an individual permit.*

3. Coordination with USFWS and/or NMFS has successfully concluded.	

Note: Coordination between you and the USFWS and/or NMFS has concluded if the coordination has addressed the effects of your site's discharges and discharge-related activities on ESA-listed species and/or designated critical habitat under the jurisdiction of USFWS and/or NMFS, and resulted in a written confirmation from USFWS and/or NMFS that the effects of your site's discharges and discharge-related activities are not likely to result in short- or long-term adverse effects for ESA-listed species and/or designated critical habitat in your action area. By certifying eligibility under this criterion, you agree to comply with any conditions you must meet for your site's discharges and discharge-related activities to not likely result in any short- or long-term adverse effects. You must include copies of the correspondence with the participating agencies in your SWPPP and your NOI.

If "True", you are eligible under **Criterion D. Proceed to **Criterion D** below. If "False", coordination with USFWS and/or NMFS must conclude before the NOI is submitted.*

Criterion A

1. Identify the USFWS information sources used (Note: state resources are not acceptable):	

Note: If your Official Species List from USFWS indicated no species or designated habitat were present in your action area, include the full consultation tracking code at the top of your Official Species List in your NOI in the basis statement for Criterion A. If an Official Species List was not available on IPaC, list the contact date and name of the Service staff with whom you corresponded to verify no USFWS species or designated critical habitat were present in your action area.

2. Identify the NMFS information sources used (Note: state resources are not acceptable):	

3. You must attach: O **Aerial image(s) of the site.** O **A printout of the species' list(s) showing no ESA-listed species or designated critical habitat in my action area.**	*Upload files up to 20 MB; total attachments per attachment location must be less than 60 MB.*

4. Have you attached aerial image(s) of the site?	*Yes*

Must answer "Yes**" to submit form.*

5. Have you attached a printout of the species' list(s) showing no ESA-listed species or designated critical habitat in my action area?	*Yes*

*****Must answer "**Yes**" to submit form.*

6. Have you provided documentation in your SWPPP supporting your eligibility under Criterion A?	*Yes*

For USFWS species, include the full printout from your IPaC query/Official Species List. You can include the map from your IPaC query. For NMFS species, include the full printout from the Species Directory with the correct Region selected. Must answer "Yes**" and provide documentation in your SWPPP before submitting the form.*

Criterion B

1. Provide the NPDES ID from the other CGP operator's NOI authorized under this permit:	

2. Identify the eligibility criterion of the other CGP NOI:	☐ Criterion A ☐ Criterion C ☐ Criterion D ☐ Criterion E ☐ Criterion F

**No additional information is required for A, D, E, and F.*

*If you choose **Criterion C,** answer the following questions:*

What federally listed species and/or designated critical habitat are located in your "action area"?	

What is the distance between your site and the listed species and/or designated critical habitat (in miles)?	

3. Provide the authorization date of the other CGP NOI:	

4. List any measures that formed the basis of the other operator's valid certification of eligibility that you will comply with (or enter "N/A" if none exist):	

5. Have you provided documentation in your SWPPP supporting your eligibility under Criterion B, including any of the terms and conditions, as well as the other operator's basis for establishing eligibility?	*Yes*

Must answer "Yes**" and provide documentation in your SWPPP before submitting the form.*

Criterion C

1. I confirm that both ESA-listed species and designated critical habitat under the jurisdiction of the USFWS and/or NMFS were considered in my evaluation.	*Yes*

Must answer "Yes**" before submitting the form.*

2. Provide the USFWS information resources and expertise used to arrive at this criterion selection:	

3. Provide the NMFS information resources and expertise used to arrive at this criterion selection:	

4. You must provide a list of all ESA-listed species and/or designated critical habitat that are located in your "action area".	*Select one of the options below and provide the required information.* ◯ Option 1: Enter ESA-listed species ◯ Option 2: Attach the species list(s)

5. What is the distance between your site and the ESA-listed species and/or designated critical habitat within the action area (in miles, state "on site" if the ESA-listed species and/or designated critical habitat is within the area to be disturbed)?	

**You must enter a value to submit form. Make sure the value entered is in miles.*

6. Provide the rationale describing specifically how adverse effects to ESA-listed species will be avoided from the discharge and discharge-related activities.	

7. Attach a copy of your site map showing the upland and in-water extent of your "action area".	*Upload files up to 20 MB; total attachments per attachment location must be less than 60 MB.*

Note: A copy of this site map must also be included with your SWPPP.

8. Have you provided documentation in your SWPPP supporting your eligibility under Criterion C?	*Yes*

Must answer "Yes**" to submit form.*

Questions 9 and 10 will be asked if you answered "**True**" to "**I am able to install and implement appropriate measures to avoid the likelihood of short- or long-term adverse effects."** in the 'Determine if ESA-listed species and/or designated critical habitat are in your site action area' section above.

9. I confirm that I have installed or will install and implement appropriate measures to avoid the likelihood of any short- or long-term adverse effects to ESA-listed threatened or endangered species or their designated critical habitat.	*Yes*

Must answer "Yes**" to submit form.*

10. Provide a description of the measures installed/to be installed and implemented to avoid likelihood of any short- or long-term adverse effects.	

Criterion D

1. Identify the federal action agency(ies) involved:	☐ U.S. Fish and Wildlife Service ☐ National Marine Fisheries Service

**At least one (1) agency is required.*

2. Identify the field and/or regional office(s) providing the coordination:	

3. Provide the date the coordination concluded:	

4. Attach copies of any letters or other correspondence with USFWS or NMFS documenting concurrence.	*Upload files up to 20 MB; total attachments per attachment location must be less than 60 MB.*

5. Have you provided documentation in your SWPPP supporting your eligibility under Criterion D?	*Yes*

Must answer "Yes**" and provide documentation in your SWPPP before submitting the form.*

Criterion E

1. Identify the federal action agency or agencies involved (i.e., the federal agencies seeking coverage):	

2. Identify the Service(s) field or regional offices providing the consultation:	

3. Identify any tracking numbers associated with the consultation (e.g., IPaC number, ECO number):	

4. Provide the date the consultation was granted:	

5. Attach correspondence with USFWS and/or NMFS documenting the Biological Opinion, conference opinion (IPaC and/or ECO tracking number) or concurrence.	*Upload files up to 20 MB; total attachments per attachment location must be less than 60 MB.*

6. Have you provided documentation in your SWPPP supporting your eligibility under Criterion E, including copies of the correspondence between yourself and the Services?	*Yes*

Must answer "Yes**" and provide documentation in your SWPPP before submitting the form.*

Criterion F

1. Which Service provided the section 10 permit? (check all that apply):	☐ U.S. Fish and Wildlife Service ☐ National Marine Fisheries Service
2. Identify the field or regional offices providing the permit(s):	
3. Identify any tracking numbers associated with the consultation (e.g., IPaC number, ECO number):	
4. Provide the date the permit was granted:	
5. Do you have a second permit data from a different agency?	

**If "Yes", add second Permit Date. If "No", continue to Question 6.*

6. Attach correspondence with USFWS and/or NMFS and a copy of the section 10 permit or relevant tracking number(s) (IPaC and/or ECO number).	*Upload files up to 20 MB; total attachments per attachment location must be less than 60 MB.*
7. Have you attached correspondence with USFWS and/or NMFS and a copy of the section 10 permit or relevant tracking number(s) (IPaC and/or ECO number)?	*Yes*

Must answer "Yes**" and provide correspondence and copy of permit before submitting the form.*

8. Have you provided documentation in your SWPPP supporting your eligibility under Criterion F, including a copy of the section 10 permit and copies of the correspondence between yourself and the Service(s)?	*Yes*

Must answer "Yes**" and provide documentation in your SWPPP before submitting the form.*

7 Historic Preservation

1. Are you installing any stormwater controls that require subsurface earth disturbance? *(CGP Appendix E, Step 1)*	

**If "Yes", answer Question 1a below; otherwise proceed to Section 8, Certification Information, in this NOI/LEW Template. For the following questions, more detailed instructions can be found in Appendix E of the CGP.*

1a. Have prior surveys or evaluations conducted on the site already determined historic properties do not exist, or that have prior disturbances precluded the existence of historic properties? *(CGP Appendix E, Step 2)*	

**If "No", answer Question 1b below. If "Yes", proceed to Section 8, Certification Information, in this NOI/LEW Template.*

1b. Have you determined that your installation of subsurface earth-disturbing stormwater controls will have no effect on historic properties? (*CGP Appendix E, Step 3)*	

**If "No", answer Question 1c below. If "Yes", proceed to Section 8, Certification Information, in this NOI/LEW Template.*

1c. Did the SHPO, THPO, or other tribal representative (whichever applies) respond to you within the 15 calendar days to indicate whether the subsurface earth disturbances caused by the installation of stormwater controls affect historic properties? *(CGP Appendix E, Step 4)*	

**If "Yes", answer Question 1d below. If "No", proceed to Section 8, Certification Information, in this NOI/LEW Template.*

1d. Describe the nature of their response:	○ Written indication that no historic properties will be affected by the installation of stormwater controls. ○ Written indication that adverse effects to historic properties from the installation of stormwater controls can be mitigated by agreed upon actions. ○ No agreement has been reached regarding measures to mitigate affects to historic properties from the installation of stormwater controls. ○ Other:

8 Certification Information

You have two (2) choices – Lock and Flag your form for certification, or take no action at this time, which keeps the document in draft form.

After locking and flagging for certification, AMAFCA's Certifier (AMAFCA Executive Engineer/Director) will be notified that this is ready for their action.

For the Contractor, this section will be completed using the Contractor's Certifier.

Prior to sending the NOI, the Certifier will have set up their own separate account on EPA's NPDES eReporting Website, and the information below is required to find and send the NOI to the contact person.

Certifier or Preparer Contact Information

First Name | Middle Initial | Last Name

Organization | Email

Address

This is the final step for the required information in the online NOI form. The next two items (Section 9 – Construction Dewatering Requirements and Section 10 – Sediment and Erosion Control Requirement) are not part of the EPA CDX NOI – they provide information needed for CGP compliance and SWPPP preparation.

9 Construction Dewatering Requirements

This section has information required in the CGP but is not specifically required in the NOI form. For any construction project that anticipates any dewatering activities, the current CGP requires detailed information to be documented in the SWPPP.

"Dewatering" is defined in Appendix A of the CGP as "the act of draining accumulated stormwater and/or groundwater from building foundations, vaults, and trenches, or other similar points of accumulation." The requirements in this section apply to any dewatering activity, including draining accumulated stormwater and/or groundwater from the site.

Is dewatering expected for your project area?	

**If "Yes", see Section 9 of the Instructions for NOI/LEW Template for more detailed information about how to proceed with dewatering activities.*

If there are dewatering activities anticipated with construction, please contact NMED Surface Water Bureau at (505) 827-0187 for more information on how to proceed with this requirement.

Per Section 9.6.1.b of the CGP, the State of New Mexico, except Indian country, must follow detailed steps if dewatering is anticipated at the project location.

These actions include referring to the NMED GWQB Mapper at https://gis.web.env.nm.gov/GWQB/ (to check for nearby Leaking Underground Storage Tanks, Voluntary Remediation Sites, Brownfield Sites, open Abatement Sites [currently referred to as State Cleanup Program Sites] and Superfund Sites), and the PSTB Mapper (Go Mapper) at https://www.epa.gov/cleanups/cleanups-my-community (to check for RCRA Corrective Action Sites – also has Leaking Underground Storage Tanks and Superfund Sites) to check if the list of sources in the CGP are located within the noted distance from the anticipated construction site groundwater dewatering activity.

Briefly describe the reasoning for your dewatering expectation:	

If dewatering activities occur but were not anticipated or originally identified in the NOI, please contact NMED Surface Water Bureau at (505) 827-0187 for more information on how to proceed with this requirement.

10 Sediment and Erosion Control Requirements

Per Section 9.6.1.c of the CGP, the State of New Mexico, except for Indian country, has information required but is not specifically required in the NOI form. For sites greater than five (5) acres in size, the BMP selection specified in the SWPPP must be made based on the use of appropriate soil loss prediction model, such as the RUSLE 2 program. Refer to Section 10 of the Instructions for NOI/LEW Template for more detailed information.

When AMAFCA reviews the Contractor SWPPP for sites greater than 5 acres, they should look for documentation in the SWPPP of the use of appropriate soil loss prediction model, such as the RUSLE 2 program.

Is the project area greater than 5 acres?	

**If "Yes", see Section 10 of the Instructions for NOI/LEW Template for more detailed information. An appropriate soil loss prediction model will need to be utilized and referenced in the SWPPP.*

Summary of AMAFCA's MS4
Post-Construction Stormwater Management Program
FY 2023 (July 1, 2022 – June 30, 2023)

NPDES Permit No. NMR04A000
Part I.D.5.b - Post-Construction Stormwater Management in
New Development and Re-development

Post-construction stormwater runoff is the stormwater that would flow from a project site to the Municipal Separate Storm Sewer System (MS4) after completion of a new development or redevelopment (not during the project construction). Controls for this type of runoff are necessary to maintain or restore stable hydrology in receiving waters by limiting surface runoff rates and volumes and reducing pollutant loadings from sites that undergo development or significant redevelopment.

Post-construction stormwater management in areas undergoing new development or redevelopment is necessary because runoff from these areas has been shown to significantly affect receiving water bodies. The intent of the Post-Construction Stormwater Management requirements in the MS4 Permit, according to EPA, are to:

- Prevent or reduce pollutants in stormwater discharges from reaching the Rio Grande;
- Mimic predevelopment hydrology; and
- Reduce impacts on natural channels and flow paths due to changes in hydrology.

AMAFCA, in conjunction with the area MS4 through the Mid Rio Grande (MRG) Stormwater Quality Team, completed a review and recommendations memo for post-construction stormwater quality design standards in the MRG Watershed in April 2021 (final memo is attached along with AMAFCA's May 14, 2021 Stormwater Quality Volume Calculation for Onsite Retention Board Memorandum). Currently, the MRG MS4 permittees approach the stormwater quality design standard slightly differently.

The Post-Construction Stormwater Quality Volume (SWQV) Comparison Tool was created as part of this task to assist the MRG MS4 permittees with comparing the stormwater quality design standards used within the MRG watershed related to post-construction stormwater management. It was recommended that developers be encouraged to include green stormwater infrastructure (GSI) and low impact development (LID) as well as increased landscape areas to reduce the total impervious area of a site, thereby reducing the required SWQV. It was also recommended that water quality and detention inspections include a review of the original impervious area used in the SWQV calculation to ensure that site modifications have not increased the impervious area of a site. The extent of the application and/or adoption of these recommendations for post-construction stormwater quality design standards and inspections will be determined and implemented by each MS4 permittee. Based on analysis from this document and discussions with New Mexico Environment Department (NMED) and EPA, Bernalillo County issued a

memorandum on May 12, 2021, that within 30 calendar days, all new development and redevelopment projects that disturb equal to or greater than 1 acre or are part of a larger common plan of development, will be required to use the rainfall depth to calculate the SWQV for impervious areas (including compacted areas) – this is available on the Bernalillo County website: https://www.bernco.gov/public-works/wp-content/uploads/sites/76/2021/05/SWQV_Calculation_memo_051221_encrypted.pdf

AMAFCA's Drainage Management Plans (DMPs) calculate flood protection and water quality volumes for a given subwatershed's facilities that can accommodate the SWQV independent of the rainfall/runoff numbers used to calculate required on-site retention. AMAFCA's planning documents comply with the MS4 Permit by limiting the discharge from within a subwatershed to the pre-development flow condition. AMAFCA's facilities are designed to attenuate the runoff from a storm event such that the river's flow conditions are essentially unaffected by new development and/or redevelopment.

AMAFCA's development engineer participates in area development reviews and often has the opportunity to comment on and request water quality components for projects. In addition, the AMAFCA Storm Water Quality Engineer participates in reviews subdivision reviews completed by Ciudad Soil and Water Conservation District, in accordance with their authority [47-6-11(F)(4) NMSA]. These reviews often cross-check with area terrain management plans and focus on post-construction runoff quantity, stormwater retention ponds, GSI/LID options, post-construction velocities, and maintenance requirements.

The AMAFCA Project schedule (https://amafca.org/downloadabledata/AMAFCA Project Schedule 2022 %5BReduced - Web%5D.pdf) identifies future planning efforts, joint funding initiatives, and design and construction projects that AMAFCA hopes to accomplish over the next six years. Planned stormwater quality projects are prioritized as required by the MS4 Permit. The prioritization assists AMAFCA and its Board of Directors in its mission to protect life and property. Projects subject to this scoring have a strong affinity towards water quality improvements, however, projects included in the Project Schedule which are not scored for water quality may still include water quality aspects as part of their scope. This figure below provides a summary of the scoring criteria used for water quality facilities.

Total project cost will ultimately determine the feasibility of a proposed project. As such, projects will be scored based on their total estimated project cost. The point scale below describes how points are assigned based on total project cost.

Total Cost	Points
Less than $500K	2
Greater than $500K but less than $1M	1
Greater than $1M	0

Location along a flow path to the Rio Grande is taken into consideration when assigning points to each project. Projects are scored higher if they are the only stormwater quality facility along the flow path to the Rio Grande, and lower if there is a facility(ies) above or below the proposed project. The point scale below describes points are assigned based on this location.

Flow path to the Rio Grande	Points
Project only WQ Facility	3
Project downstream of existing WQ Facility	1
Project Upstream of existing WQ Facility	1

If a stormwater quality facility is located within the Bosque - the forested area surrounding the riparian zone of the Rio Grande floodplain - the project was awarded a "bonus" for being the ultimate water quality control measure before stormwater reaches the Rio Grande. The point scale below describes how the bonus points were assigned based on the above criteria.

"Bosque Bonus"	Points
Within Bosque	2
Not Within Bosque	0

Total Points Scale: 1-7

AMAFCA Project Schedule Water Quality Facility Scoring Criteria

In addition, AMAFCA has been a supporter of the annual Land and Water Summit in the Albuquerque area. The Land and Water Summit was created in 1986 by the Xeriscape Council of New Mexico. Developed to bring together design professionals, construction and management companies, agencies, farmers, artists, teachers, hydrologists, ranchers, climatologists, wildlife advocates, homeowners, and policy makers to find sustainable ways to protect and share our state's water and resources, the event is now hosted by Ciudad Soil and Water Conservation District, which serves as the event's fiscal agent. The group's primary goal is to educate the public about resource conservation and best practices for improving and protecting local landscapes – which ties well with the MS4 Post-Construction Stormwater Management education requirements. AMAFCA has been a financial sponsor as well as an active member on the planning committee. For information on the 2023 Land and Water Summit, please visit the conference website: [The 2023 Land and Water Summit ‣ The Land and Water Summit (landandwatersummitnm.org)]

2023 Land and Water Summit Program Cover

Thanks for Your Support!

Land and Water Planning Committee:

Steve Glass, Chair • *Ciudad Soil and Water Conservation District*
Megan Marsee, Vice Chair • *Bernalillo County*
Astrid Hueglin, Treasurer • *Ciudad Soil and Water Conservation District*
Paulina Aguilera-Eaton • *Bernalillo County*
Kali Bronson • *Bernalillo County*
Patrick Chavez • *Albuquerque Metropolitan Arroyo Flood Control Authority*
Sarah Ganley • *Bohannan Huston, Inc.*
Jaren Peplinski • *Ciudad Soil and Water Conservation District*
Richard Perce • *Groundwork Studio*
George Radnovich • *Sites Southwest*
John Stomp • *Southern Sandoval County Arroyo Flood Control Authority*
Jeffrey Thornton
Phyllis Baker, Consultant • *Baker Creative*

2023 Land and Water Summit Planning Committee

Summary of AMAFCA's MS4
Pollution Prevention/Good Housekeeping Program
& Control of Floatables Program
FY 2023 (July 1, 2022 – June 30, 2023)

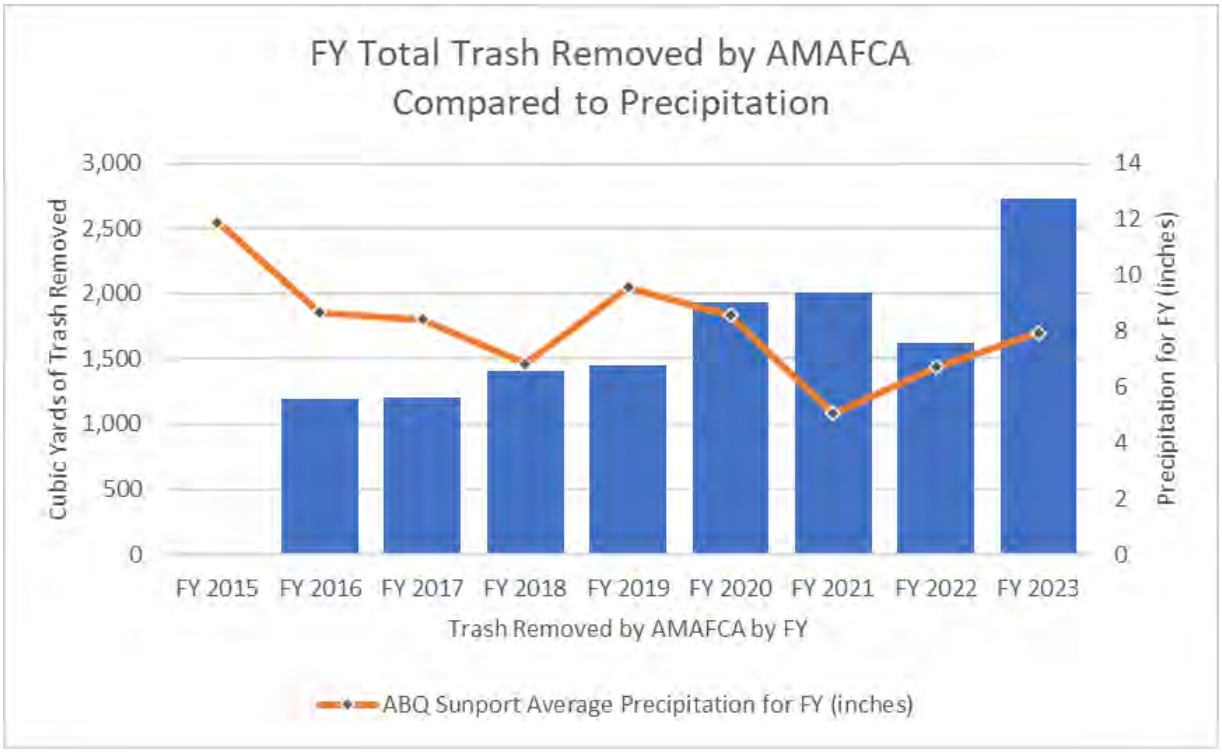
NPDES Permit No. NMR04A000
Part I.D.5.c - Pollution Prevention/Good Housekeeping for Municipal/Co-permittee Operations
and Part I.D.5.f - Control of Floatables Discharges

AMAFCA, from its elected Board to its Executive Director to its maintenance crew, prioritizes the maintenance, operations, and aesthetics of its facilities. As a result, pollution prevention, good housekeeping, and control of floatables are inherent to AMAFCA activities and are part of the AMAFCA culture. With AMAFCA being a non-traditional Municipal Separate Storm Sewer System (MS4), its pollution prevention and good housekeeping program differs from other MS4s in the community in that its program extends throughout the watershed rather than focusing primarily on industrial-type facilities. In accordance with AMAFCA's Stormwater Management Program (SWMP), AMAFCA has followed and will continue to follow its program practices. AMAFCA's pollution prevention, good housekeeping, and control of floatables practices pertain to all AMAFCA facilities.

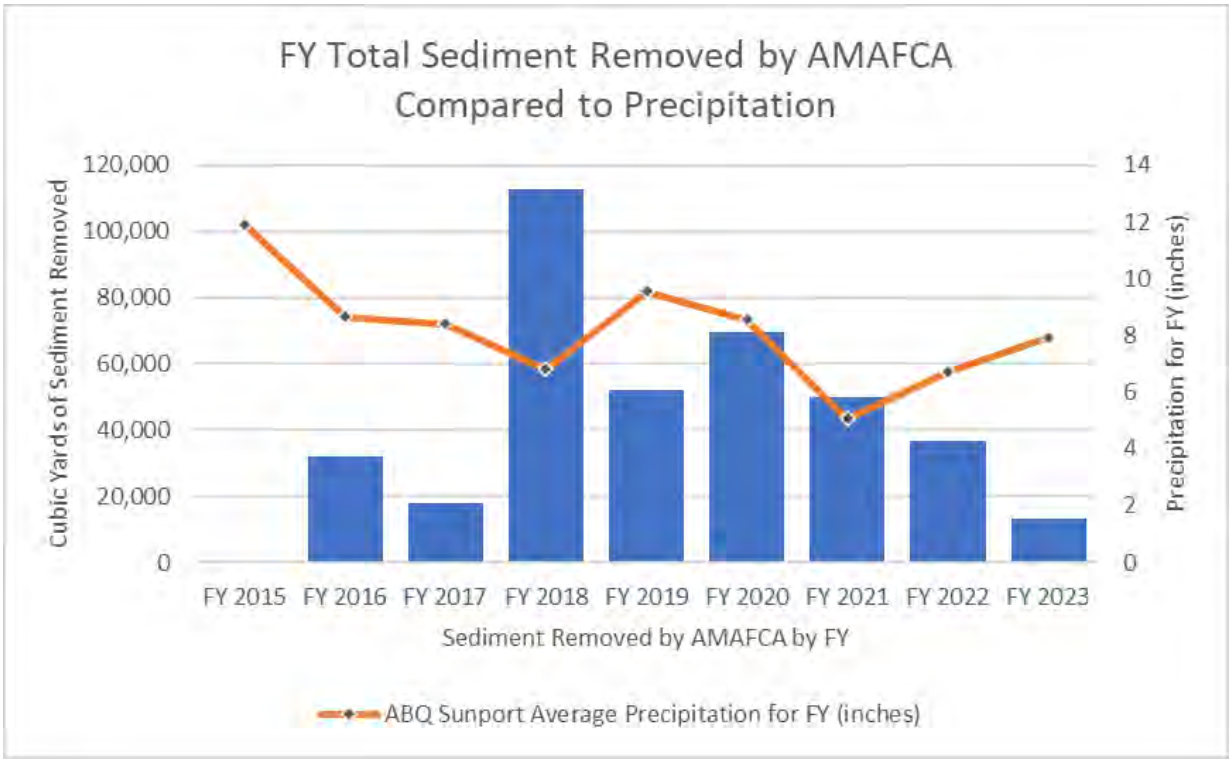
For example, as part of this MS4 Program and through regular business operations, AMAFCA conducts regular inspections and maintenance throughout the watershed for infrastructure that includes 22 flood control dams, 55 smaller flood- control ponds, 78 miles of arroyo channels, 130 water quality structures, 11 miles of underground conduit structures, and 12 miles of dikes and diversion structures. Related to infrastructure, AMAFCA has become a regional leader in integrating flood control infrastructure and stormwater quality facilities. AMAFCA stormwater quality and debris removal facilities annually collect an average of 48,000 cubic yards of sediment and 1,700 cubic yards of trash/floatables from stormwater before the runoff enters the Rio Grande. The Watershed Based MS4 Permit has an additional minimum control measure (MCM) from the typical six MCMs in MS4 Permits that focuses on the control of floatables. Control of floatables ties into pollution prevention and good housekeeping measures and is another area where AMAFCA programs have a widespread, positive impact to the watershed.

AMAFCA utilizes a detailed crew tracking system to document the AMAFCA crew maintenance and operations activities, many of which support these MS4 Program activities. The tracking includes a list of all AMAFCA facilities, organized by drainage basin. The photos and graphs below highlight the watershed-wide trash, debris, and sediment removed by AMAFCA operations.

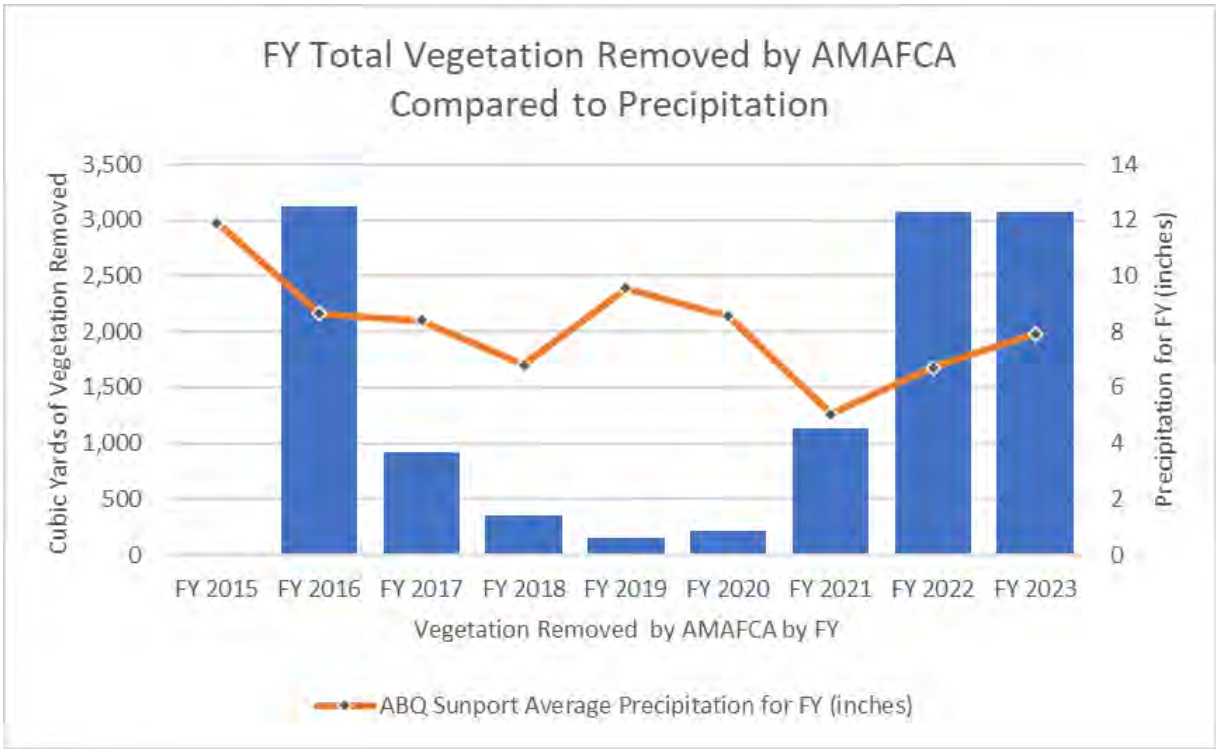
AMAFCA Maintenance Capturing Pollutants in AMAFCA Facilities Before They Enter the Rio Grande



Graph Highlighting the Watershed-Wide Trash Removed by AMAFCA Operations



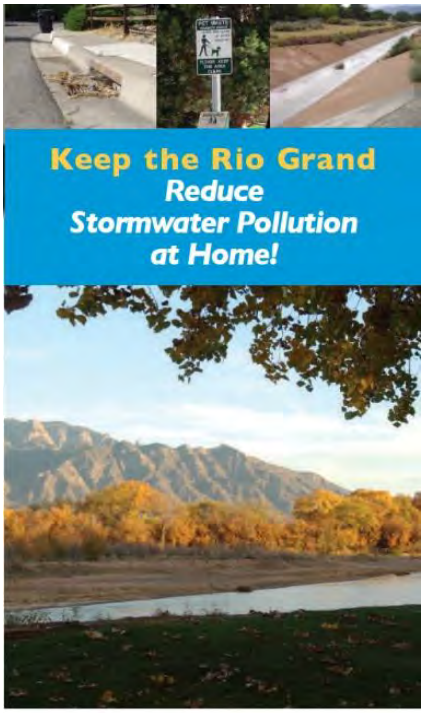
Graph Highlighting the Sediment Removed by AMAFCA Operations



Graph Highlighting the Vegetation Removed by AMAFCA Operations

AMAFCA Vegetation Removal Activities – Including Use of Local Tumbleweeds to Create the Famous Annual AMAFCA Snowman

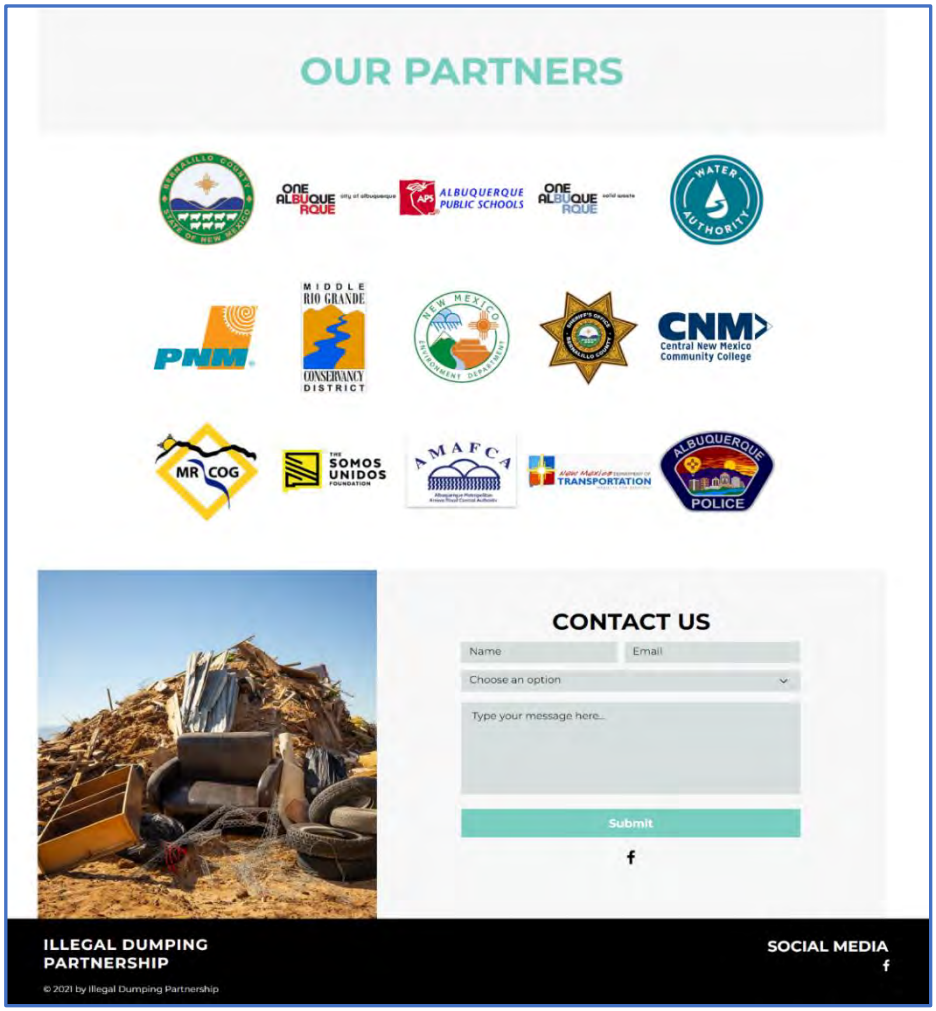
The Pollution Prevention/Good Housekeeping Program & Control of Floatables Program require a litter source control program, including a public awareness campaign and employee training. AMAFCA is a member of the Mid Rio Grande Stormwater Quality Team (MRGSQT – https://keeptheriogrand.org/), which has grown to 12 organizations who leverage their resources to ensure MS4 Permit public education and outreach requirements are met with the goal of preventing and reducing stormwater pollution throughout the watershed from reaching the Rio Grande. AMAFCA will continue to collaborate with the MRGSQT and MS4 permittees for the existing litter source control program, including a targeted public awareness campaign as well as coordinated training programs.



Mid Rio Grande
Stormwater Quality Team
www.keeptheriogrand.org

MRGSQT Outreach Examples – Kiosk and Brochure

AMAFCA is also a partner in the watershed's Illegal Dumping Partnership (IDP), a multi-agency task force founded to help combat illegal dumping (https://www.ihavetrash.com/ and https://www.bernco.gov/planning/let-s-talk-trash-.aspx).



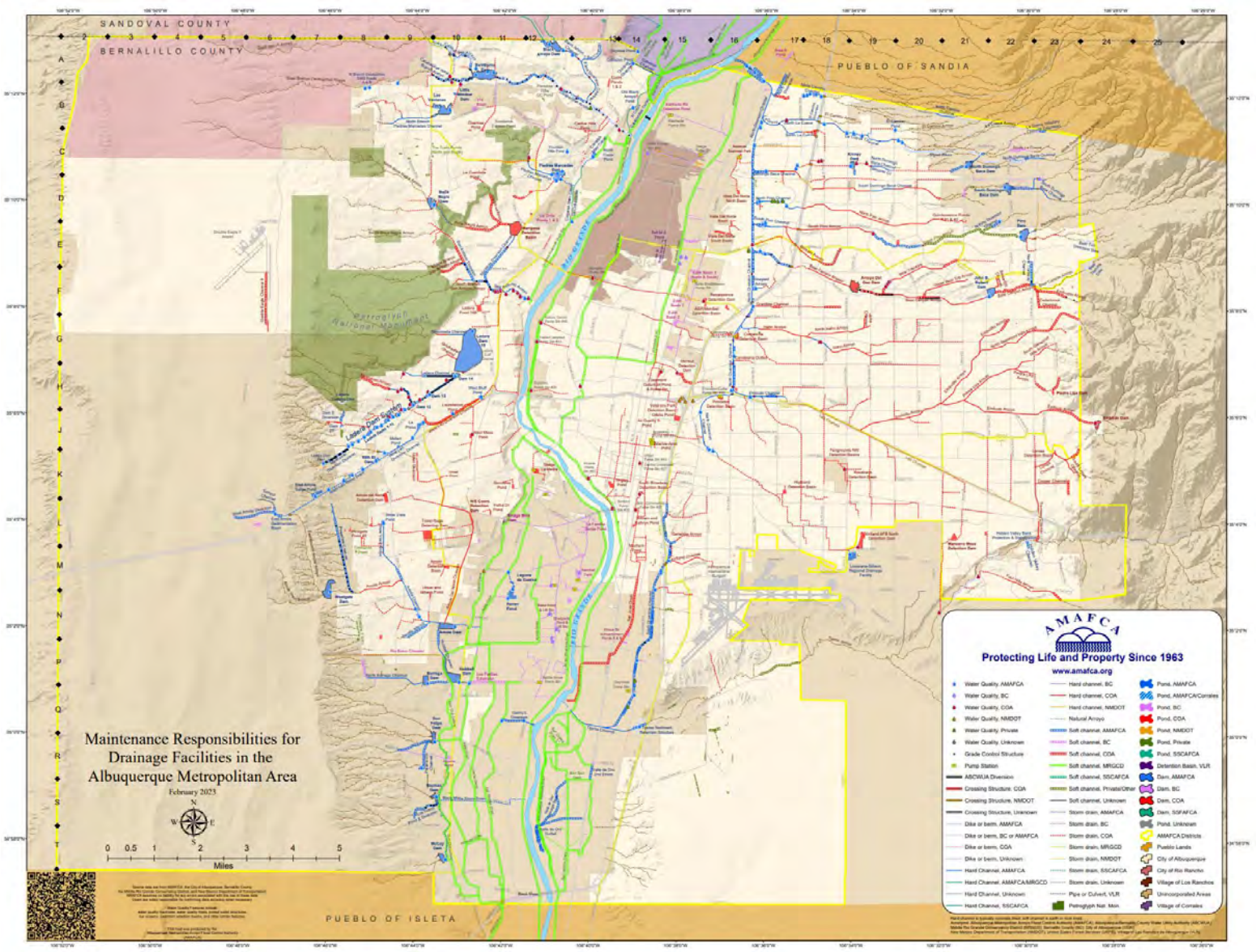
Screen Shots from IDP Website

Summary of AMAFCA's MS4
Illicit Discharges and Improper Disposal Program
FY 2023 (July 1, 2022 – June 30, 2023)

NPDES Permit No. NMR04A000
Part I.D.5.e - Illicit Discharge and Improper Disposal

AMAFCA's successful Illicit Discharge and Improper Disposal Control Program depends on strong collaborative programs and community relationships, as well as AMAFCA's commitment to addressing illicit discharges. AMAFCA has teamed with the City of Albuquerque on its 311 Community Contact Center hotline (includes website and phone app) for reporting illicit discharges. All AMAFCA staff are trained to address illicit discharge reports. AMAFCA has created forms and procedures for this program, as well as provided staff education. In accordance with AMAFCA's Stormwater Management Plan (SWMP), AMAFCA has and will continue to follow its procedures and practices to detect and eliminate illicit discharges.

This program uses GIS to track illicit discharge reports and identify areas of concern where additional public outreach and education may be needed. AMAFCA is the leader in the watershed for its Maintenance Responsibilities for Drainage Facilities in the Albuquerque Metropolitan Area. The AMAFCA map below represents facilities throughout the Albuquerque Metropolitan Area for multiple agencies and is essential for ensuring that proper organizations are contacted and involved in any illicit discharge reports, assessment, removal, and/or enforcement. This AMAFCA map meets MS4 Permit requirements in Section I.D.5.e.(i)(a).



AMAFCA's Maintenance Responsibilities for Drainage Facilities in the Albuquerque Metropolitan Area Map
https://amafca.org/documents/Maintenance_Map.pdf

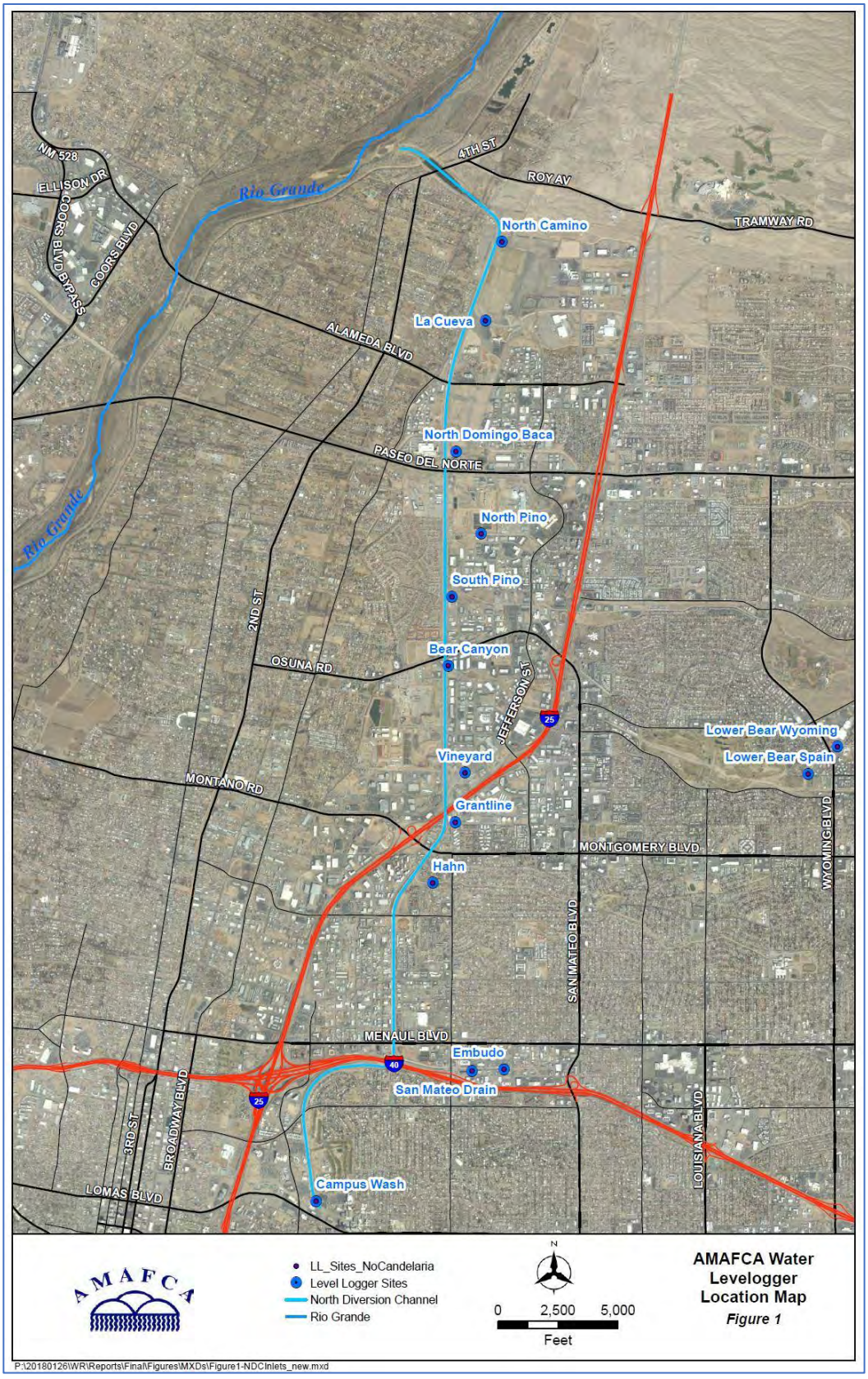
AMAFCA also continuously looks for opportunities to add dry weather screening to assist with identifying potential illicit discharges to its numerous projects, leveraging opportunities where staff or consultants are already out in the field. AMAFCA has the added benefit of professional on-staff maintenance crew members who are working throughout their jurisdiction and are equipped and educated to detect illicit discharges. The visual screening is important to ensure AMAFCA meets the MS4 Permit requirements in I.D.5.e.(i)(c)(A).

As an example, AMAFCA's Levelogger flow monitoring in arroyos contributing stormwater runoff to the North Diversion Channel (NDC) also includes an illicit discharge monthly screening component. The graphics below highlight the Levelogger locations and program visual screening tracking.

AMAFCA/City of Albuquerque Facility – Levelogger Data Location	Number of Visual Screenings July 2022 – July 2023													Cumulative Total of Visual Screenings Completed	Number of Potential Illicit Discharge Indicators Detected July 2022 – July 2023			Cumulative Total of Illicit Discharge Indicators Detected
	July 2022	August 2022	September 2022	October 2022	November 2022	December 2022	January 2023	February 2023	March 2023	April 2023	May 2023	June 2023	July 2023		Aug. – Nov. 2022	Dec. 2022 – March 2023	April – July 2023	
Black Arroyo	0	1	1	1	1	0	1	1	1	1	1	1	0	**10**	0	0	0	**0**
North Camino Arroyo	1	1	1	1	1	1	1	1	1	1	1	1	0	**12**	0	0	0	**0**
La Cueva	1	1	1	1	1	1	1	1	1	1	1	1	0	**12**	0	0	0	**0**
North Domingo Baca	1	1	1	1	1	1	1	1	1	1	1	1	0	**12**	0	0	0	**0**
North Pino Arroyo	1	1	1	1	1	1	1	1	1	1	1	1	0	**12**	0	0	0	**0**
South Pino Arroyo	1	1	1	1	1	1	1	1	1	1	1	1	0	**12**	0	0	0	**0**
Bear Canyon Arroyo	1	1	1	1	1	1	1	1	1	1	1	1	0	**12**	0	0	0	**0**
Vineyard Arroyo	1	1	1	1	1	1	1	1	1	1	1	1	0	**12**	0	0	0	**0**
Grantline Arroyo	1	1	1	1	1	1	1	0	0	0	0	0	0	**7**	0	0	0	**0**
Hahn Arroyo	1	1	1	1	1	1	1	1	1	1	1	1	0	**12**	0	0	0	**0**
Embudo Arroyo	1	1	1	1	1	1	1	1	1	1	1	1	0	**12**	0	0	0	**0**
San Mateo Drain	1	1	1	1	1	1	1	1	1	1	1	1	0	**12**	0	0	0	**0**
Campus Wash	1	1	1	1	1	1	1	1	1	1	1	1	0	**12**	0	0	0	**0**
Lower Bear – Upstream (Wyoming)	1	1	1	1	1	1	1	1	1	1	1	1	0	**12**	0	0	0	**0**
Lower Bear – Downstream (Spain)	1	1	1	1	1	1	1	1	1	1	1	1	0	**12**	0	0	0	**0**

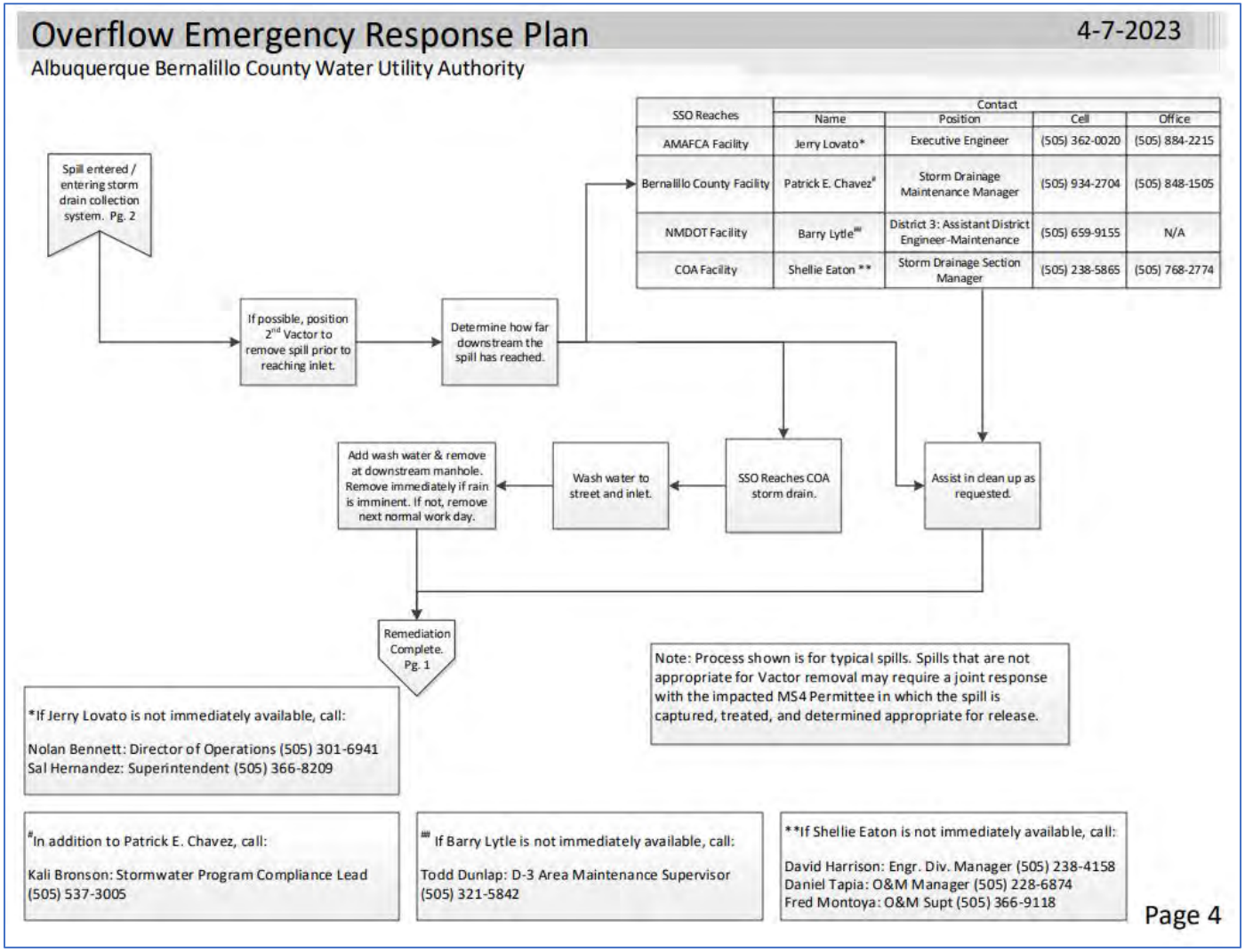
Months associated with site visits to collect the Levelogger data summarized in this report. Site visits retrieve data for the prior month – for example, the April 2023 site visit retrieved the March 2023 Levelogger data.

Levelogger Program Visual Screening Tracking Table for FY 2023



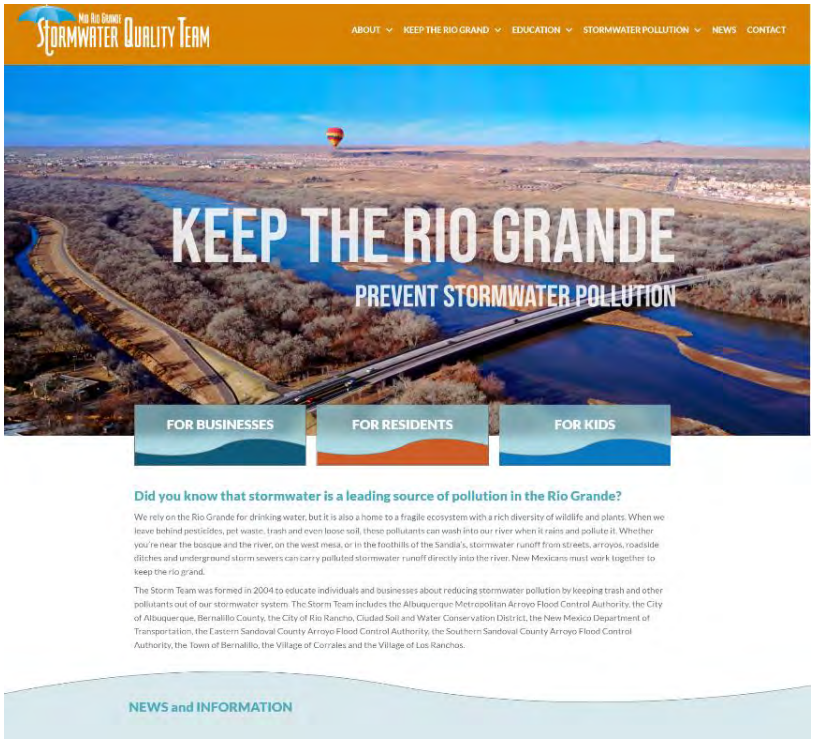
Levelogger Program – Locations of Leveloggers in NDC

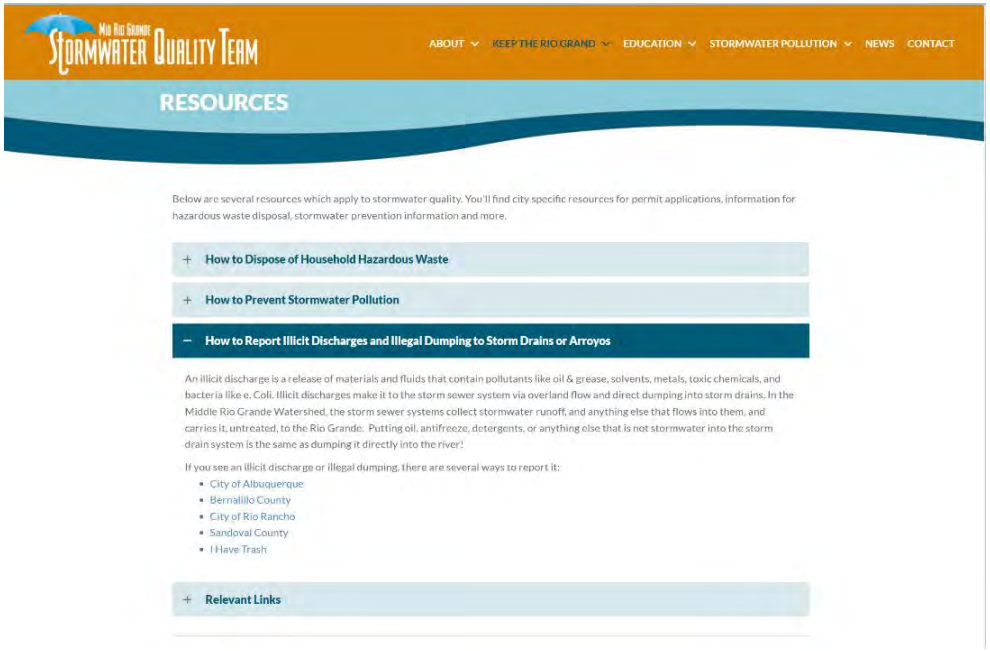
Related to collaborative programs and community relationships, AMAFCA coordinates closely with the Albuquerque Bernalillo County Water Utility Authority (ABCWUA) as well as other area agencies, as shown in the ABCWUA's Collection System Overflow Emergency Response Plan (one page included below – full plan available on-line: https://www.abcwua.org/wp-content/uploads/2023/04/OERP_2023_Final.pdf). This plan helps ensure that the community responds to and cleans up spills that enter the storm drain collection system.



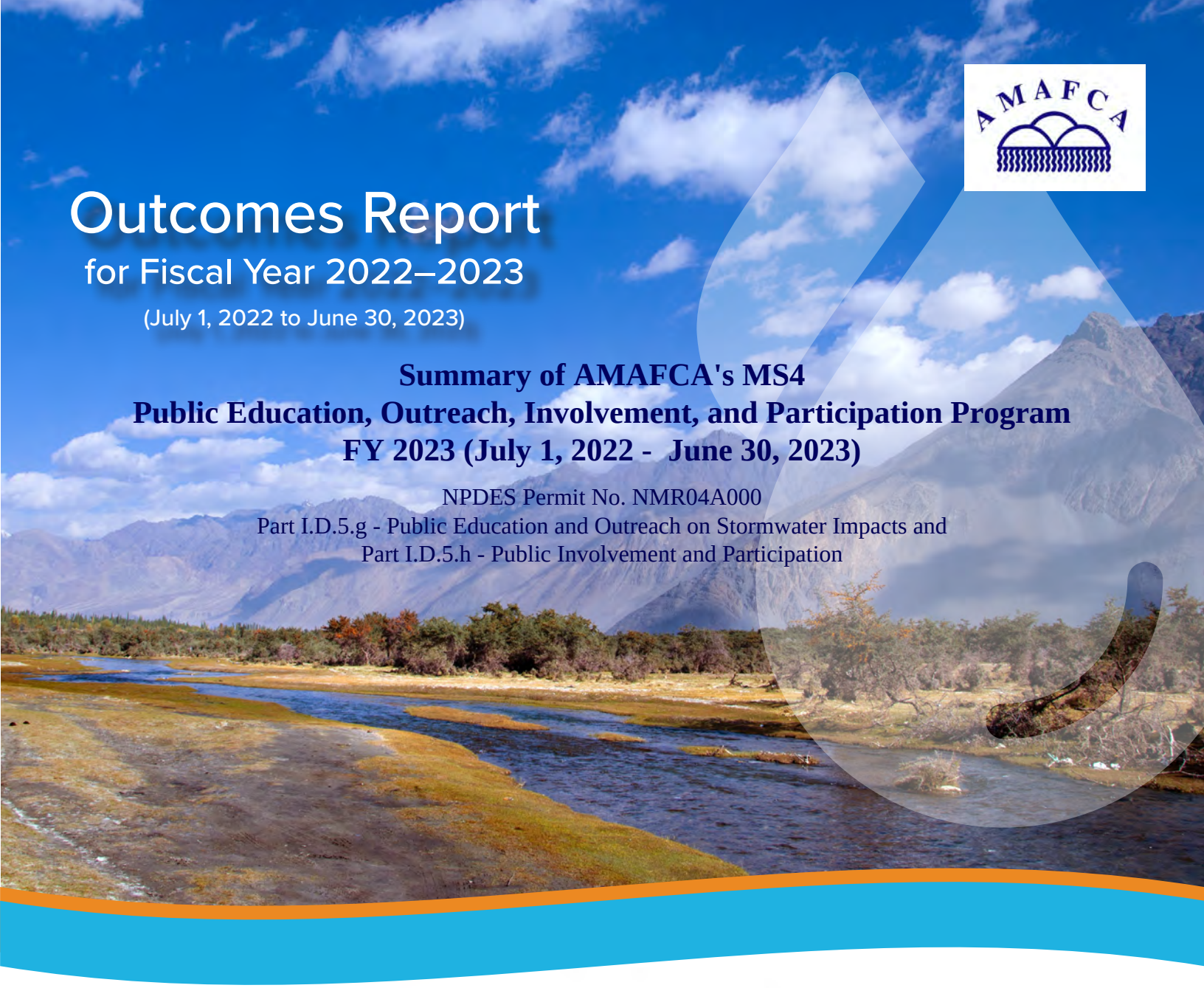
Page From ABCWUA's Overflow Emergency Response Program

In addition, AMAFCA is a member in the cooperative Municipal Separate Storm Sewer System (MS4) Technical Advisory Group (TAG), which facilitates cooperation and coordination with other MS4s in the Middle Rio Grande related to the illicit discharge and improper disposal control program. AMAFCA is also a member of the Mid Rio Grande Stormwater Quality Team (MRGSQT – https://keeptheriogrand.org/), which has grown to 12 organizations who leverage their resources to ensure MS4 Permit public education and outreach requirements are met with the goal of preventing and reducing stormwater pollution throughout the watershed from reaching the Rio Grande. The MRGSQT provides educational information regarding stormwater quality to the community, including information that facilitates public reporting of illicit connections or discharges and educational programs that inform the public of hazards associated with illicit discharges and improper waste disposal, as well as proper ways to dispose of hazardous wastes.





Web View of Links Related to Illicit Discharge and Improper Disposal on the MRGSQT's Keep The Rio Grande! Website



Outcomes Report

for Fiscal Year 2022–2023

(July 1, 2022 to June 30, 2023)

Summary of AMAFCA's MS4
Public Education, Outreach, Involvement, and Participation Program
FY 2023 (July 1, 2022 - June 30, 2023)

NPDES Permit No. NMR04A000
Part I.D.5.g - Public Education and Outreach on Stormwater Impacts and
Part I.D.5.h - Public Involvement and Participation

Mid Rio Grande Stormwater Quality Team

Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA) • City of Albuquerque • Bernalillo County • Town of Bernalillo • Village of Corrales • Ciudad Soil and Water Conservation District • Eastern Sandoval County Arroyo Flood Control Authority (ESCAFCA) • Village of Los Ranchos de Albuquerque • Department of Transportation (NMDOT) • City of Rio Rancho • Sandoval County • Southern Sandoval County Arroyo Flood Control Authority (SSCAFCA)

PRESENTED BY

SUNNY505

Introduction

The outcomes report is designed to illustrate the collective successes of the Middle Rio Grande Stormwater Quality team. In fiscal year 2022–2023, the Storm Team reached over 100,000 individuals in the Albuquerque Metro area through special events, educational efforts, as well as digital promotions via various social media and the website.

The Storm Team is a collaborative organization made of of the following: The Albuquerque Metropolitan Arroyo Flood Control Authority, the City of Albuquerque, Bernalillo County, the City of Rio Rancho, Ciudad Soil and Water Conservation District, the New Mexico Department of Transportation, the Southern Sandoval County Arroyo Flood Control Authority, the Town of Bernalillo, the Village of Corrales and the Village of Los Ranchos.

Mid Rio Grande Stormwater Quality Team

Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA) • City of Albuquerque • Bernalillo County • Town of Bernalillo • Village of Corrales • Ciudad Soil and Water Conservation District • Eastern Sandoval County Arroyo Flood Control Authority (ESCAFCA) • Village of Los Ranchos de Albuquerque • Department of Transportation (NMDOT) • City of Rio Rancho • Sandoval County • Southern Sandoval County Arroyo Flood Control Authority (SSCAFCA)

Table of Contents

Bernalillo County

Public Outreach and Education Tracking

FY2023: July 1, 2022 – June 30, 2023

Date	Location	Event Topic	Description of Education/Outreach Event Program/Materials	NRS Programs	Partner Organizations	Parti-cipants	Source for Participant Count
QI							
7/9, 7/30, 8/27, 9/10, 9/24/2022	Tijeras Creek Remediation Project	Volunteer work days, 3 hrs each	Working on watershed restoration by addressing erosion, removing invasive plants, addressing tree health (pruning dead/broken branches), had watering	Water Conservation, Stormwater	Ciudad SWCD, TCWC organization members	27	attendance
7/22/2022	ABCWUA water bill insert	Residential rainwater harvesting PSA	Water bill insert on residential rainwater harvesting that included benefits, steps you can take, and link to more resources.	Water Conservation, Stormwater	Arid LID Coalition	210,000	Total printed copies of insert
8/13/2022	Gutierrez Hubbell House (6029 Isleta Blvd SE, Albuquerque, NM 87105)	Drip Irrigation Repair for Homeowners Workshop	Hands-on workshop for homeowners on drip irrigation repair.	Water Conservation	ABCWUA	17	Headcount at event. 24 registered per Cervis.
9/14/2022	GovDelivery Email	News Bulletin	News Bulletin advertising Water Fair and Well Owner Workshop	Water Conservation, Hydrogeology, Review and Permitting		1,345	Unique recipients for Water Conservation, Hydrogeology, and Review and Permitting email lists
9/25/2022	Los Vecinos Community Center (478 NM-333, Tijeras, NM 87059)	East Mountain Celebration	Natural Resources Services table in Bernalillo County tent. Provided information to educate County residents on stormwater quality, water conservation methods and incentive programs, and groundwater monitoring program.	Water Conservation, Stormwater, Hydrogeology, Review and Permitting		2,300	BernCo Office of Community Engagement and Outreach
9/25/2022	Los Vecinos Community Center (478 NM-333, Tijeras, NM 87059)	Water Fair	Provided staff support for NMDOH/NMED Water Fair at East Mountain Celebration. Included mail out of flyer advertising water fair to 600 Carnuel residents.	Hydrogeology, Review and Permitting	NMDOH, NMED	51	NMDOH count of water samples analyzed

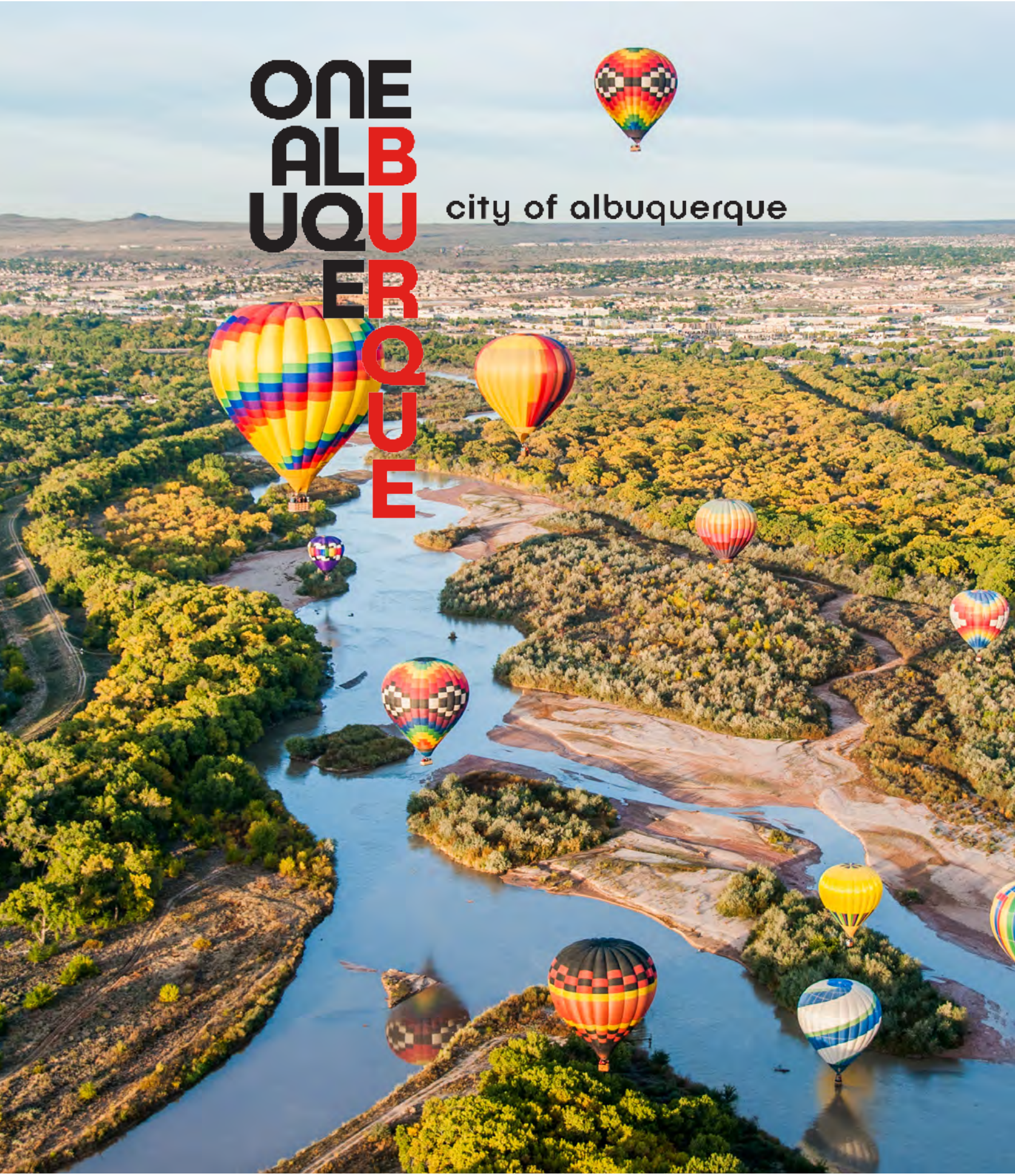
Q2							
10/8/2022	Polk Middle School (2220 Raymac Rd SW, Albuquerque NM 87105)	Household Hazardous Waste (HHW) Collection Event`	HHW weekend collection event	Stormwater, Review & Permitting		16	Count
10/15/2022	James McGrane Public Safety Complex (48 Public School Rd, Tijeras, NM 87059)	Well Owner Workshop	3 hour presentation on water quality testing, drinking water contaminants, water rights, well permiting and tagging, East Mountain groundwater resources, financial incentives for water conservation.	Water Conservation, Stormwater, Hydrogeology, Review and Permitting	NMDOH, NMED, OSE	29	NMDOH
11/16/2022	Albuquerque Open Space Visitors Center (6500 Coors Blvd NW, Albuquerque, NM 87120)	Green Stormwater Infrastructure Maintenance Training through ABCWUA WaterSmart Academy	Cofacilitated training with MRWM Landscape Architects on arid-adapted green stormwater infrastructure maintenance for an audience of landscape professionals.	Stormwater, Water Conservation	ABCWUA, MRWM Landscape Architects	8	attendance
11/18/2022	Expo New Mexico	STEAM Discovery Fair	6 hour event for middle school students highlighting Natural Resources as a STEAM career. Worked with the Enviroscapes model to disscuss hydrology, pollution prevention and water conservation.	Water Conservation, Stormwater, Hydrogeology, Review and Permitting	Big Brothers Big Sisters of Central New Mexico	1,506	attendance
12/10/2022	Tijeras Creek Remediation Project	Volunteer work days, 3 hrs each	Working on watershed restoration by addressing erosion, removing invasive plants, addressing tree health (pruning dead/broken branches), had watering	Water Conservation, Stormwater	Ciudad SWCD, TCWC organization members	5	attendance
12/14/2022	Bernco PROS	GSI/LID Standards Lunch & Learn	Lunch and a presentation about the new Bernalillo County Green Stormwater Infrastructure / Low Impact Development (GSI/LID) Standards for staff that work on Bernalillo County public and private development projects.	Stormwater / Review & Permitting		9	attendance
Q3							
2/1/2023	Albuquerque Open Space Visitors Center (6500 Coors Blvd NW, Albuquerque, NM 87120)	Green Stormwater Infrastructure Maintenance Training through ABCWUA WaterSmart Academy	Cofacilitated training with MRWM Landscape Architects on arid-adapted green stormwater infrastructure maintenance for an audience of landscape professionals.	Stormwater, Water Conservation	ABCWUA, MRWM Landscape Architects	16	attendance

3/1 – 3/3/2023	Hybrid conference (virtual and in-person at Indian Pueblo Cultural Center at 2401 12th St NW, Albuquerque, NM 87104)	Land and Water Summit	Professional conference that provides 2-days of presentations and 1-day tour of local Green Stormwater Infrastructure projects. 2023 conference theme: Communities, Collaboration, & Climate Change, higlighting local, collaborative responses to climate change. BernCo is a conference sponsor and BernCo staff sit on conference Planning Committee.	Water Conservation, Stormwater Quality, Hydrogeology	Ciudad Soil and Water Conservation District, Arid LID Coalition	378	Whova (virtual conference platform) report
3/11/2023	Tijeras Creek Remediation Project	Volunteer work days, 3 hrs each	Working on watershed restoration by addressing erosion, removing invasive plants, addressing tree health (pruning dead/broken branches), had watering	Water Conservation, Stormwater	Ciudad SWCD, TCWC organization members	5	attendance
3/18/2023	Valle de Oro Backyard Refuge (7851 2nd St SW, Albuquerque, NM 87105)	"Incorporating Passive Rainwater Harvesting into Your Backyard Refuge" presentation at Backyard Refuge Day	Presentation addressed steps to designing, constructing, and maintaining residential passive rainwater harvesting features, drawing contect from residential passive rainwater harvesting video series at bernco.gov/rainwater.	Water Conservation, Stormwater Quality	Friends of Valle de Oro Refuge	54	Friends of Valle de Oro Refuge count
3/20/2023	Gutierrez Hubbell House (6029 Isleta Blvd SE, Albuquerque, NM 87105)	Hands-on Training on Drip Irrigation Installation for Grow the Growers Farm Training Program	Hands-on instruction on installation of drip irrigation systems for 2023 Grow the Growers trainees. Workshop included installation of irrigation main lines in Gutierrez Hubbell House Medicinal Garden.	Water Conservation		5	Workshop headcount
3/14/2023, 3/17/2023, 4/7/2023	GovDelivery Email	News Bulletin	News Bulletins advertising Backyard Refuge Day, Irrigation Efficiency Exhibit and workshops	Water Conservation, Stormwater Quality, Hydrogeology		1,502	GovDelivery report
2/23/2023, 2/28/2023, 3/9/2023, 3/16/2023	Mountain View Community Center	GSI Maintenance Training for BernCo Land Management, Drainage Maintenance, and Clean Team staff	Education for landscape maintenance staff for understanding what Green Stormwater Infrastructure is, how to maintain GSI facilities, and how to maintain plants in and around these facilities.	Water Conservation, Stormwater Quality	Arid LID Coalition	60	headcount at training

Q4							
4/1/2023 – 5/27/2023	Gutierrez Hubbell House (6029 Isleta Blvd SE, Albuquerque, NM 87105)	Irrigation Efficiency Exhibit	Exhibit based on content from Water Authority's Irrigation Efficiency Guide. Addresses how to efficiently water different types of landscapes, using drip irrigation, spray irrigation, hose watering, flood irrigation, and rainwater harvesting. Includes hands-on elements to demystify irrigation systems. In English and Spanish.	Water Conservation, Stormwater Quality	Water Authority, Middle Rio Grande Conservancy District, Arid LID Coalition, Groundwork Studio	704	Individual and group visitor counts per Open Space (Dave Ottaviano)
4/8/2023	Gutierrez Hubbell House (6029 Isleta Blvd SE, Albuquerque, NM 87105)	Tree Irrigation Workshop	Hands-on workshop on how to install drip irrigation for trees. Workshop attendees installed new drip lines to trees in Gutierrez Hubbell House Medicinal Garden.	Water Conservation	Water Authority, Middle Rio Grande Conservancy District, Arid LID Coalition, Groundwork Studio	16	Workshop headcount
4/13/2023	TransCon, Las Cruces, NM	Panel: Why GSI? Green Stormwater Solutions for Transportation Insfrastructure	Panel presenation regarding GSI in transportation projects	Water Conservation/ Stormwater	BHI, NMDOT, PLAND Collaborative	40	Estimate
4/15/2023	Gutierrez Hubbell House (6029 Isleta Blvd SE, Albuquerque, NM 87105)	Perennial Irrigation Workshop	Hands-on workshop on how to install drip irrigation for perennials and grasses. Workshop attendees installed new drip lines to perennials in Gutierrez Hubbell House Medicinal Garden.	Water Conservation	Water Authority, Middle Rio Grande Conservancy District, Arid LID Coalition, Groundwork Studio	10	Workshop headcount
4/17/2023	Bernalillo County Alvarado Square	NRS Earth Day Lunch and Learn – Bioremediation in GSI Features	Presentation from this year's Land and Water Summit by Reese Baker of the RainCatcher. After hearing the talk you'll understand why we can't stop talking about GSI and that there are simple solutions all around us to improve water quality and the urban environment.	Water Conservation, Stormwater Quality	Reese Baker, RainCatcher	22	attendance
4/19/2023	Bernalillo County Alvarado Square	IDDE training	Training for Bernalillo County Zoning Enforcement staff for illicit discharge detection and elimination	Stormwater Quality		8	attendance
4/22/2023, 6/10/2023, 6/24/2023	Tijeras Creek Remediation Project	TCRP workday, 3 hrs each	Working on watershed restoration by addressing erosion, removing invasive plants, addressing tree health (pruning dead/broken branches), had watering	Water Conservation, Stormwater Quality	Ciudad SWCD, TCWC organization members	19	attendance

4/23/2023	Westside Community Center	South Valley Pride Day	Natural Resources Services table in Bernalillo County tent. Provided information to educate County residents on stormwater quality, water conservation methods and incentive programs, and groundwater monitoring program.	Water Conservation, Stormwater Quality		4,000	Estimate
4/26/2023	Albuquerque Open Space Visitors Center (6500 Coors Blvd NW, Albuquerque, NM 87120)	Green Stormwater Infrastructure Maintenance Training through ABCWUA WaterSmart Academy	Cofacilitated training with MRWM Landscape Architects on arid-adapted green stormwater infrastructure maintenance for an audience of landscape professionals.	Stormwater, Water Conservation	ABCWUA, MRWM Landscape Architects	4	attendance
4/29/2023	Gutierrez Hubbell House (6029 Isleta Blvd SE, Albuquerque, NM 87105)	Drip Irrigation Fundamentals Workshop	Hands-on workshop on how to build a drip irrigation system that attaches to a hose bib and how to make the most common repairs to a drip system.	Water Conservation	Water Authority, Middle Rio Grande Conservancy District, Arid LID Coalition, Groundwork Studio	16	Workshop headcount
5/13/2023	James McGrane Public Safety Complex (48 Public School Rd, Tijeras, NM 87059)	Tablazon Groundwater	Presentation to Tablazon Water Users Association on Updates to the Groundwater Program, Sandia Basin Closure update, East Mountain and Tablazon water level trends.	Hydrogeology		30	TWUA sign in sheet
5/18/2023	GovDelivery Email	News Bulletin	News Bulletin advertising new Passive Rainwater Harvesting Guide, Next Generation Water Summit, changes to Water Conservation Incentive Program	Water Conservation, Stormwater Quality		1,972	GovDelivery report
5/25/2023	Online	Tijeras Creek Natural Resources Cluster Meeting	Tijeras Creek Watershed Restoration Project discussion and solicitation of ideas for project; watershed planning for the Upper Tijeras Creek Watershed	Stormwater Quality	Ciudad Soil and Water Conservation District, Bernco OS, City OS	11	meeting headcount
6/3/2023	Paradise Hills Community Center	Day in Paradise community event	Evening in Paradise – District focused general community event	Water Conservation, Stormwater Quality		1,700	
6/8/2023	Los Vecinos Community Center (478 NM-333, Tijeras, NM 87059)	Comprehensive Plan Community Update – South Valle	Comprehensive Plan community meeting, Staff offered general support for Q&A for environmental issues	Stormwater/ Water Conservation / Hydrogeology / Review & Permitting		30	Estimate
6/13/2023	Westside Community Center	Comprehensive Plan Community Update - South Valley	Comprehensive Plan community meeting, Staff offered general support for Q&A for environmental issues	Stormwater/ Water Conservation / Hydrogeology / Review & Permitting		40	Estimate

6/17/2023	TCRP, Carlito Springs	Master Naturalist presentation re: stormwater and watershed restoration; geology and hydrogeology	Stormwater, watershed restoration, invasive plant species; geology and hydrogeology of the Sandia Mtns	Stormwater/ Hydrogeology	Ciudad SWCD, TCWC organization members	25	Estimate
6/22/2023	Raymond G. Sanchez Community Center	Comprehensive Plan Community Update – North Valley and District 4	Comprehensive Plan community meeting, Staff offered general support for Q&A for environmental issues	Stormwater/ Water Conservation / Hydrogeology / Review & Permitting		40	Estimate
6/23/2023	Alvarado Square	Comprehensive Plan Community Update – Business Community	Comprehensive Plan community meeting, Staff offered general support for Q&A for environmental issues	Stormwater/ Water Conservation / Hydrogeology / Review & Permitting		40	Estimate
6/27/2023	Online	Comprehensive Plan Community Update - All areas Hybrid Meeting	Comprehensive Plan community meeting, Staff offered general support for Q&A for environmental issues	Stormwater/ Water Conservation / Hydrogeology / Review & Permitting		40	Estimate


ONE ALBUQUERQUE
city of albuquerque

City of Albuquerque

Public Participation Numbers

The City of Albuquerque has provided the following in support of the MS4 permit in fiscal year 2023:

City of Albuquerque MS4 Training:

SWPPP: 148 employees
SPCC: 184 employees

COA Parks and Open Space

Planting Numbers for this fiscal year
Groups: 30
Estimated – 50 Classes that made up the groups
RiverXChange Numbers for this year:
Youth: 1,044
Pre-Lesson Students Served: 914
Classrooms: 45
Classrooms: 45
Adults: 271
Pole Planting Students Served: 886
Pole Planting Adults Served: 152
Pole Planting Trees: 482

Visitor Services Projects

(annual projects, Saturday volunteer days and scout groups)
156 youth and 567 adults = 723
Total hours = 3,615

Visitor Center

Total Volunteers: 881
Total Volunteer hours = 6,069 (does not include clean-up)

NMDA Conference – 1,060 attendees

Materials distributed:

- 150 Reduce Pollution at Home Brochures/Rack Cards
- 100 Fog Brochures
- 150 New Pet Brochures
- 60 Poop Fairy Rack Cards
- 100 Oval Poop Stickers
- 100 KeeptheRioGrand Bumper Stickers
- 20 Old Version Scoop the Poop Bumper Stickers
- 50 Dogs w Poop bags
- 100 City of ABQ water drops
- 75 Poop Emoji Masks

COA Solid Waste Department

Community Volunteer Events

- Fixit Clinic – 47 participants, 15 volunteers
- Company's Comin' – 662 participants (13.5 tons of trash collected)
- One Albuquerque Cleanup Day – 718 participants (18.02 tons of trash collected)
- Junk Jog – 75 participants, 9 volunteers (4.74 tons of trash collected)
- HHW Collection Event – 22,191 lbs. of HHW (and 4,691.66 lbs. of non-regulated solid waste) from 309 residents
- Treecycling – 48.5 tons or 6,461 trees
- Recyclothes – 4.2 tons of clothing collected

Social Media Outreach

(X, formerly Twitter)
178,434 impressions, 4,321 engagements

Facebook
126,786 impressions, 9,165 engagements

Instagram
124,871 impressions, 4,267 engagements

Planting Numbers for 2021–2022

Trees Planted

Date	School	Adults	Students	Trees
12.15.22	Bel Air	5	37	18
12.16.22	Mission Avenue	3	31	25
1.12.23	Zia	10	38	25
1.13.23	Puesta del Sol	3	32	8
1.19.23	North Valley Academy	6	29	14
1.20.23	Puesta/North Valley	7	44	17
1.24.23	Holy Ghost 5th and 6th grades	Cancelled–to be rescheduled		
1.25.23	Puesta del Sol	4	39	16
1.26.23	Seven Bar	6	41	16
1.27.23	Seven Bar	4	28	12
2.2.23	San Antonio	12	48	13
2.3.23	John Baker	11	42	10
2.9.23	San Antonio/ Chaparral	11	51	11
2.10.23	Monte Vista	12	45	19
2.11.23	UNM Peace Corps	23	4	29
2.15.23	Holy Ghost 7th and 8th grades	Cancelled–to be rescheduled		
2.16.23	Valle Vista	5	40	25
2.17.23	Chaparral	10	51	16
2.18.23	Sandia Civitans	18	4	38
2.22.23	Cottonwood Classic High	Cancelled–to be rescheduled		
2.23.23	Maggie Cordova Elementary	5	44	18
2.24.23	Maggie Cordova Elementary	5	45	16

Date	Group	Adults	Students	Trees
3.2.23	La Mesa	5	38	40
3.3.23	La Mesa	4	33	44
3.8.23	Holy Ghost 5th and 6th grades	3	33	17
3.9.23	Cochiti	15	35	43
3.10.23	Lavaland/Monte Vista	5	37	41
3.11.23	UNM/ Peace Corps	46	22	46
3.12.23	Jewish Community	15	8	14
3.14.23	John Baker Elementary	Cancelled–to be rescheduled		
3.16.23	Martin Luther Kink	4	58	35
3.17.23	Martin Luther Kink	Cancelled–to be rescheduled		
3.29.23	Cottonwood Classic High	3	20	14
3.30.23	Holy Ghost 7th and 8th grades	2	32	100
3.31.23	John Baker Elementary	9	35	14
TOTALS		-	-	-

Groups: 30 Estimated – 50 Classes that made up the groups
Youth 1,044, Adults 271

Trees 754 (Cottonwood and Black Willow)
Trees Remaining in troughs – 54

RiverXChange Numbers Specifically:
Pre-Lesson Students Served: 914
Classrooms: 45
Pole Planting Students Served: 886
Pole Planting Adults Served: 152
Pole Planting Trees: 482

Mid Rio Grande Stormwater Quality Team

Total Waste Diverted

FY22 Total HHW (lbs) Diverted from Landfill

Recycled Waste

Calendar Year	Month	Reuse Center	RC0014 Waste Oil	RC5056 Motor Fluids	RC0016 Lead Acid Batteries	RC6006 Mercury	ACT15687 Household Paint, xylene, tolulene etc	RC0011 Aerosols	RC7485 Alkaline Batteries	RC7486 Lithium Batteries	RC6254 NiCad Batteries	ACT46232 Compact Bulbs, CFL	ACT46233 HID Lamps	ACT46235 4 Foot Lamps	RC7658 8 Foot Lamps	ACT50491 Non PCB Ballast	ACT58121 Fire Extinguisher	ACT58246 Fertilizer
2021	Jul	2,250		26,721	2,100	26		2,932	1,128			321		54		300		
	Aug	1,530		15,085				1,414	322		164	120		116	30			
	Sep	1,134		11,197				1,775	200	245	450	120		155	71			
	Oct	1,530		24,741				1,189	455			240		120	46		100	
	Nov	1,290	180	12,866	2,000			1,980	1,100			180		62				
	Dec	798		11,210				550		300				40				
MID YEAR		8,532	180	101,820	4,100	26	0	9,840	3,205	545	614	981	0	547	147	300	100	0
2022	Jan	1,128		7,680				550	300			120		20				
	Feb	1,206		9,150					300	250				64	31			
	Mar	1,866		18,340	1,200			2,500	800	500		100		41	25	250	200	
	Apr	2,250		16,530			1,630	1,200			275	100		59			250	
	May	2,472		19,465	480		550	1,550				260					180	
	Jun	3,012		20,265			5,950	1,000								250	150	
TOTAL (lbs)		20,466	180	193,250	5,780	26	8,130	16,640	4,605	1,295	889	1,561	0	731	203	800	880	0

* Misc = Compact Bulbs, 4 ft lamps, Ballast, PCB Capacitors, Carbides, Phosphides, Fertilizers, CO2 Cylinders, etc...

TOTAL	345,540
TOTAL Recycled Waste	227,832
% Recycled	65.9%

PO Amount:	$1,000,500.00	~~PO# DSW0016901~~
Paid Amount:	$954,466.81	PO# DSW0022306
Amount left on PO:	$46,033.19	

* Information on this report is gathered from the Reuse forms sent by mail from ACT and the breakdown of items processed list sent by email monthly by Nicole Gwash

Sent for Destruction

RC0012 Acids	RC0013 Bases	RC0015 Flamables Toxics Incenerated	RC6002 Toxic-Solid (Poisons)	RC7129 Compressed Gas	RC7182 Oxidizers	ACT145226 Pesticides Liquid Toxic	Misc*	TOTAL
1,119	2,407	137	1,209			2,261		42,965
1,646	10,985		930	362		1,547		34,251
1,985	860		816	180		1,414		20,602
2,858	8,838		600	100		3,904		44,721
3,160	7,190		710	110		1,700		32,528
1,260	1,230					2,400		17,788
12,028	31,510	137	4,265		0		0	192,855
2,085	3,500					1,050		16,433
1,200	1,903		1,000	233		1,000		16,337
980	390		500	100		1,500		29,292
580	180		550			550		24,154
2,375	705		950			1,100		30,087
1,855	850		1,100			1,950		36,382
21,103	39,038	137	8,365		0		0	345,540

	Total Pounds Recycled	Tons Recycled	Total Destroyed	Amount Paid
July	35,832	17.92	3.57	$105,924.00
August	18,781	9.39	7.74	$91,903.31
September	15,347	7.67	2.63	$86,831.00
October	28,421	14.21	8.15	$85,161.75
November	19,658	9.83	6.44	$72,841.00
December	12,898	6.45	2.45	$59,653.00
January	9,798	4.90	3.32	$66,513.25
February	11,001	5.50	2.67	$47,311.00
March	25,822	12.91	1.74	$64,536.25
April	22,294	11.15	0.93	$83,559.75
May	24,957	12.48	2.57	$86,074.75
June	30,627	15.31	2.88	$104,157.75
	255,436	**127.72**	**34.32**	$954,466.81

City of Albuquerque and Bernalillo County: Public Participation Numbers

Household Hazardous Waste Collection Participation
July 2021- June 2022

Month	Participants w/Unknown Location or Not Enough Info to Geocode	Total	Orphaned waste at facility	City Participants (City + No Match or Not Enough Info)	County Participants	Out of County	Out of County Breakdown	County Percentage	Monthly Cost	Light Bulbs (add on to monthly cost)	Total Cummulative Cost
Jul-22	141	1465	0	1271	191	3	3-Sandoval County	13.0%	$95,225.00	$2,146.75	$97,371.75
Aug-22	128	1344	0	1162	178	4	4-Sandoval County	13.2%	$87,360.00	$2,537.75	$89,897.75
Sep-22	136	1248	0	1083	163	2	2-Sandoval County	13.1%	$81,120.00	$891.50	$82,011.50
Oct-22	143	1101	0	954	146	1	1-Sandoval County	13.3%	$71,565.00	$2,788.75	$74,353.75
Nov-22	90	865	0	751	110	4	4-Sandoval County	12.7%	$56,225.00	$503.25	$56,728.25
Dec-22	115	820	0	705	115	0	-	14.0%	$53,300.00	$1,469.50	$54,769.50
Jul-Dec 2022	**753**	6843	**0**	**5,926**	**903**	**14**		13.2%	**$444,795.00**	**$10,337.50**	$455,132.50
Jan-23	76	833	0	710	121	2	2-Sandoval County	14.5%	$54,145.00	$1,065	$55,210.00
Feb-23	169	718	0	624	94	0	-	13.1%	$46,670.00	$1,475	$48,145.25
Mar-23	288	1014	0	913	101	0	-	10.0%	$65,910.00	$6,000	$71,910.00
Apr-23	378	1232	0	1115	117	0	-	9.5%	$80,080.00	$1,286	$81,366.00
May-23	404	1359	0	1223	136	0	-	10.0%	$88,335.00	$1,158	$89,492.75
Jun-23	476	1532	0	1,371	161	0	-	10.5%	$99,580.00	$1,446	$101,026.00
Jan-Jun 2023	**1,791**	**6,688**	**0**	**5,956**	**730**	**2**		10.9%	**$434,720.00**	**$12,430**	$447,150.00
FY23 Total	**2,544**	**13,531**	**0**	**11,882**	**1,633**	**16**		**12.1%**	**$879,515.00**	**$22,768**	**$902,282.50**
				Participant Total (other than orphaned)			**13,531**			**$22,768**	

Monthly Average	**1128**

Participant Fee	$	65.00
FY23 Budget	$	1,000,000.00
Remaining Balance	$	97,717.50

	Participants	Percentage	Cost
BERNCO Participation to date	1,633	12.1%	$106,145
Unknown or Not Enough Info to Geocode (costs absorbed by COA)	2,544	18.80%	$165,360

All information in this report comes from ACT—Nichole Gwash (NGwash@ACTEnviro.com) by email. She will send an invoice, a list of residents (which must then be sent to Ben Sanborn for geocoding), a list of items processed, and any logs for drums and light bulbs & tubes.

Silt/Trash/Debris/Vegetation Removed from Arroyos & Catch Basins

Silt/Trash/Debris/Vegetation Removed from Arroyos & Catch Basins

Cerro Colorado Landfill

2022 ►	July	August	September	October	November	December	2023 ►	January	February	March	April	May	June					
	Trips	Trips	Trips	Trips	Trips	Trips		Trips	Trips	Trips	Trips	Trips	Trips		Trips		Qty.	
Tandem	13	7	15	7	6	7		9	4	26	14	8	16	TOTAL	132		1,320.0	cubic yards
Bobtail	0	15	1	0	0	0		0	0	4	5	0	2	TOTAL	27		162.0	cubic yards
																TOTAL	1,482.0	cubic yards
TOTALS	13	22	16	7	6	7		9	4	30	19	8	18	TOTAL	159			

One (1) Tandem Load is approximated to equal: 9.0 cubic yards

One (1) Bobtail Load is approximated to equal: 6.0 cubic yards

Southwest Landfill

2022 ►	July	August	September	October	November	December	2023 ►	January	February	March	April	May	June					
	Trips	Trips	Trips	Trips	Trips	Trips		Trips	Trips	Trips	Trips	Trips	Trips		Trips		Qty.	
Tandem	0	0	0	0	0	0		0	0	0	0	0	0	TOTAL	0		0.0	cubic yards
Bobtail	0	0	0	0	0	0		0	0	0	0	0	0	TOTAL	0		0.0	cubic yards
																TOTAL	0.0	cubic yards
TOTALS	0	0	0	0	0	0		0	0	0	0	0	0	TOTAL	0			

TOTAL For Fiscal Year 2023 Both Landfills: 1,482.0 cubic yards

FY-2022 Cubic Yardage Totals Reported: 3,712.0 cubic yards

City of Albuquerque Department of Municipal Development Street Maintenance Division

*** Began New Data Entry As Of CY2012 Report**

Fiscal Year 2023

Data Entered has been acquired from Supervisors' Section Spreadsheets which are based on Landfill Ticket Data

Reported In	Reporting	Reporting Section City East Side Sweeping		Reporting Section City West Side Sweeping		Reporting Section City Trouble Shooters		Reporting Section *Storms & Arroyos Sections	
Calendar Year	Month	Tons	Cubic Yards	Tons	Cubic Yards	Tons	Cubic Yards	Tons	Cubic Yards
2022	July	297.65	240.00	242.29	260.00	11.65	52.00	94.23	130.00
2022	August	177.61	180.00	286.41	270.00	17.51	58.00	98.28	160.00
2022	September	161.12	170.00	167.63	200.00	24.52	52.00	150.56	156.00
2022	October	209.20	220.00	168.18	190.00	9.89	48.00	63.02	70.00
2022	November	160.19	240.00	191.58	270.00	35.97	46.00	21.45	60.00
2022	December	264.59	370.00	223.55	330.00	20.80	50.00	45.68	70.00
2023	January	160.47	200.00	306.71	330.00	78.99	94.00	72.32	90.00
2023	February	150.00	180.00	121.94	190.00	6.39	70.00	9.22	40.00
2023	March	228.56	230.00	223.69	250.00	20.81	60.00	282.40	284.00
2023	April	184.11	200.00	153.66	210.00	4.83	36.00	113.84	170.00
2023	May	196.56	250.00	176.50	230.00	10.73	58.00	94.48	80.00
2023	June	204.82	220.00	103.76	156.00	34.68	98.00	94.72	172.00
Section's Totals For FY2023 ►		City East Side Sweeping		City West Side Sweeping		City Trouble Shooters		*Storms & Arroyos Sections	
		Tons	Cubic Yards	Tons	Cubic Yards	Tons	Cubic Yards	Tons	Cubic Yards
		2,394.88	2,700.00	2,365.90	2,886.00	276.77	722.00	1,140.20	1,482.00
		$71,846.40		**$70,977.00**		**$8,338.50**		**$34,206.00**	

			Cost Paid Per Ton	Total Paid FY-2023
COA / DMD / SMD Trouble Shooters & East & West Side Sweeper Section's				
Combined Total Tons Reported for Fiscal Year 2023:	5,037.55	Tons	$30.00	**$151,126.50**
COA / DMD / SMD Trouble Shooters & East & West Side Sweeper Section's				
Combined Total Cubic Yards Reported for Fiscal Year 2023:	6,308.00	Cubic Yards		

			Cost Paid Per Ton	Total Paid FY-2023
COA / DMD / SMD Storm & Arroyo Maintenance Section's				
Combined Total Tons Reported for Fiscal Year 2023:	1,140.20	Tons	$30.00	**$34,206.00**
COA / DMD / SMD Storm & Arroyo Maintenance Section's				
Combined Total Cubic Yards Reported for Fiscal Year 2023:	1,482.00	Cubic Yards		

			Cost Paid Per Ton	Total Paid FY-2023
All Four Reporting Sections				
Combined Total Tons Reported for Fiscal Year 2023:	**6,177.75**	**Tons**	$30.00	**$185,332.50**
All Four Reporting Sections				
Combined Total Cubic Yards Reported for Fiscal Year 2023:	**7,790.00**	**Cubic Yards**		

1. Household Hazardous Waste Program Background

Stormwater discharges in Bernalillo County are regulated under the Clean Water Act. Bernalillo County is authorized to discharge stormwater under the National Pollutant Discharge Elimination System (NPDES) Watershed-Based Municipal Separate Storm Sewer System (MS4) General Permit No. NMR04A00 (Permit) for the Middle Rio Grande Watershed (MRG), which was issued on December 22, 2014. The purpose of the permit is to protect and improve stormwater quality in the MRG. Under Part 1.D.5.e(iv) of the Permit, the permittee is required to develop, update, and implement a household hazardous waste collection program. In cooperation with the City of Albuquerque (COA), Bernalillo County and the COA established the Household Hazardous Waste (HHW) Collection Program, which meets this requirement. This report summarizes fiscal year 2023 (FY23) HHW collection events and the HHW overall program.

Each calendar year the County's zoning enforcement department identifies neighborhoods for clean ups and residential collection events based on field observations and records of complaints regarding trash and abandoned waste. As part of the residential waste collection event planning process, the Bernalillo County Solid Waste section drafts and distributes a proposed schedule of events to the Zoning, Solid Waste, and Natural Resource Services (NRS) sections. Approximately 20 events are scheduled for spring, summer, and fall each year.

The NRS section selects on average eight to ten residential waste collection events to provide HHW collection and disposal opportunities; in FY23 NRS was able to host six events. Once the HHW collection event schedule is finalized, the county coordinates logistics with the HHW contractor. Only residential HHW is accepted at these events, no commercial HHW is accepted. Sharps, biological waste, and tires are not accepted at these events. A list of accepted HHW items can be found on the county's website here: https://www.bernco.gov/public-works/public-works-services/trash-recycling/household-hazardous-waste. Selection of residential waste collection event locations including HHW collection and disposal are based on previous years data regarding the amount of waste, number of participants, and frequency of HHW events conducted in the area. Number and frequency of illicit discharge complaints by geographic area may also be used to determine location of an HHW event.

Bernalillo County has operated an HHW program since 1992, prior to issuance of the NPDES Stormwater Discharge Permit. In 2015 the NRS section took over management of the HHW collection event program. The annual budget for this program is $46,844. However, this budget is not fully allotted to the HHW collection program as it also includes costs to address abandoned or orphaned waste in unincorporated Bernalillo County.

The Bernalillo County NRS contract for a HHW contractor went out to bid during FY23 through a formal Request for Proposal (RFP) process. The HHW contract terms were amended during this RFP process to alleviate mobilization costs for the HHW contractor. The contract was updated to include a flat compensation of $1,950 per event, plus a $65 per customer charge after 20 customers have used the HHW services. The county received bids from two contractors – ACT Environmental (ACT) and Clean Harbors Inc. Clean Harbors was selected as the low bidder through the RFP evaluation process and awarded a four-year contract to serve as the contractor for HHW clean-up events as well as the on-call contractor to respond to incidents of illegal dumping and illicit discharge of potentially hazardous materials. Transition to the new contractor for these services occurred during FY23.

Prior to an HHW collection event, NRS staff coordinate with the HHW contractor. One to two county NRS employees are present at the event to collect information regarding HHW disposal and to provide educational materials to residents. Information collected prior to FY 2020 included resident address, general type and amount of waste, and screening for non-permissible or commercial waste. In FY 2021 the information collected changed to only include name, license plate number, and address. A copy of the educational materials provided to residents is included in **Appendix A**. Following the event, NRS staff provide the number of event participants to the HHW contractor staff for billing purposes. HHW

contractor staff sort and assemble the HHW material for proper disposal and provide a copy of the provisional waste manifest(s) to the County. Following disposal of the HHW, the contractor sends the final manifest to the County, including an adjusted invoice based on the mobilization fee and the number of participants. **Appendix B** provides a contact list for the NRS HHW collection program. **Appendix C** is a summary of clean-up events for FY23.

Outside of the HHW collection events, ACT Environmental provides a permanent drop-off site for hazardous waste year-round for both the City of Albuquerque and Bernalillo County residents. This facility is located at 6137 Edith Blvd NE, where ACT accepts waste on Mondays, Wednesdays, and Fridays from 8:30 am to 4:30 pm and Saturdays from 8 am to 3 pm. The City of Albuquerque maintains the contract with ACT, and through an Intergovernmental Service Agreement (ISA) with Bernalillo County, allows unincorporated County residents to utilize the ACT disposal and recycling facility. Via the ISA, the County contributes $90,000 per year for 2,000 county resident uses per year. Additional uses by residents of the unincorporated county, above this number, are charged to the County by the City at a pre-negotiated rate (typically $65 to $70 per use.) The number of allowed uses under the lump sum annual charge, and the per additional use costs, are subject to annual contract negotiations between the City and the County.

Resident address and zip code information collected at the ACT facility is used to determine the amount of the annual reimbursement requested by the COA. The weights of materials dropped off by residents of the unincorporated county is not explicitly tracked. For report purposes, the annual number of unincorporated County residents utilizing the facility as reported by ACT has been provided (**Appendix D**). The total weight of HHW materials disposed of at the ACT facility by unincorporated county residents is estimated by multiplying the total weight of all HHW materials for FY23 by the percentage of customers from the unincorporated county.

2. Summary of FY23 Household Hazardous Waste Collection Events

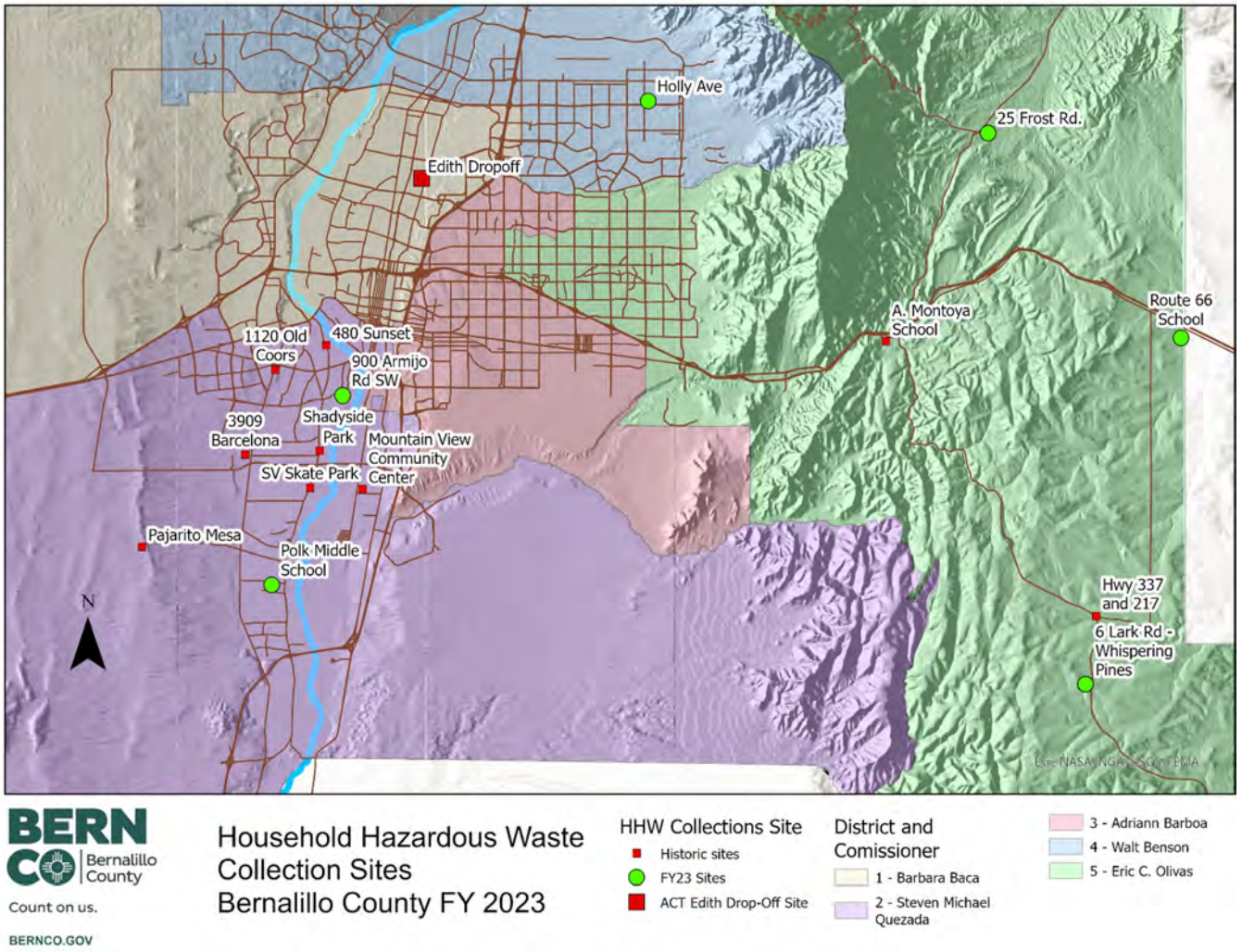
In FY23, Bernalillo County hosted six HHW weekend collection events in association with the general waste collection events. During the six events, 184 individuals participated and 10,289 pounds of HHW were collected (Table 1). FY23 HHW collection events consisted of two events held in the South Valley, one event in the North Albuquerque Acres area and three events in the East Mountains (Figure 1). Participation rates at these events ranged from 8 to 58 individuals and an average of 30.7 participants per event and 1,715 pounds of HHW materials per event. A sample NRS data collection sheet is included in **Appendix E.**

In FY23, ACT reported 13,531 residents using its services to dispose of HHW at their permanent facility at 6137 Edith Blvd NE. Of the total residents, 1,633 reported as living in the unincorporated county, making up 12.1% of all users, at a cost of $106,145 ($65/user). Total waste accepted at the ACT facility for FY23 was 345,540 pounds for all users. The estimated weight of HHW material contributed by county residents is 41,810 pounds (Figure 6).

Table 1. FY2022 Household Hazardous Waste Collection Event Summary

Event Location	Event Date	Number of Participants	NON RCRA Haz Waste (Bulbs)	NON DOT Regulated (CF Bulbs)	Corrosive liquids (HCL, H3PO4)	Corrosive liquids	Aerosols	Batteries (Wet Non spillable)	Mercury	Latex paint	NON DOT Regulated Material (Soap, Oil, Antifreeze)	Pesticides (liquid)	Paint Related Material	Oxidizing solid (Ca Hypochlorite)	Pesticides (Solid)	Batteries (Dry Sealed)	Flammable liquids	Lithium Batteries	Total HHW (pounds)
25 Frost Rd Sandia Park	7/9/22	58	15	--	15	35	140	65	--	800	1400	--	--	65	135	119	400	7	3196
6 Lark Rd. Tijeras	7/23/2022	17	7	--	25	--	65	--	--	--	750	35	--	9		75	400	5	1371
2220 Raymac Rd SW Albuquerque	10/8/2022	16	--	--	--	--	250	15	--	--	--	--	--	--	--	--	50	--	315
900 Armijo Rd. SW Albuquerque	4/22/2023	8	--	--	--	--	1	282	--	--	197	45	264	2	--	226	--	--	1017
10401 Holly Ave NE Albuquerque	5/20/2022	56	15	34	23	74	136	29	5	813	468	326	564	4	98	45	--	--	2634
805 Barton Rd. Edgewood	6/24/2023	29	33	--	8	--	15	261	--	--	917	185	337	--	--	--	--	--	1756
Total (pounds)		*184*	*70*	*34*	*71*	*109*	*607*	*652*	*5*	*1613*	*3732*	*591*	*1165*	80	233	465	850	12	10289

Figure 1 Location of HHW collection events. FY23 HHW event locations are represented by green circles; red circles indicate past HHW event locations. The permanent HHW collection site managed by ACT is shown by the red square.



3. HHW Historical Trend Analysis

Data analysis for fiscal years 2013-2023 is provided in **Figures 2-5**. Collection data prior to 2013 is not available. **Figures 2** and **3** present HHW total weight and participation for events conducted at East Mountain locations and North Albuquerque Acres. **Figures 4 and 5** present HHW total weight and participation for events held in the South Valley.

Events conducted in the East Mountains area and North Albuquerque Acres generally have greater participation rates and volume of waste collected, justifying focus of collection efforts in these areas. Events in the South Valley generally are not as well attended. Additional outreach and education efforts in the South Valley may be needed to increase participation rates.

Figure 2. HHW Total Weight Collected
East Mountains and North Albuquerque Acres Collection Events

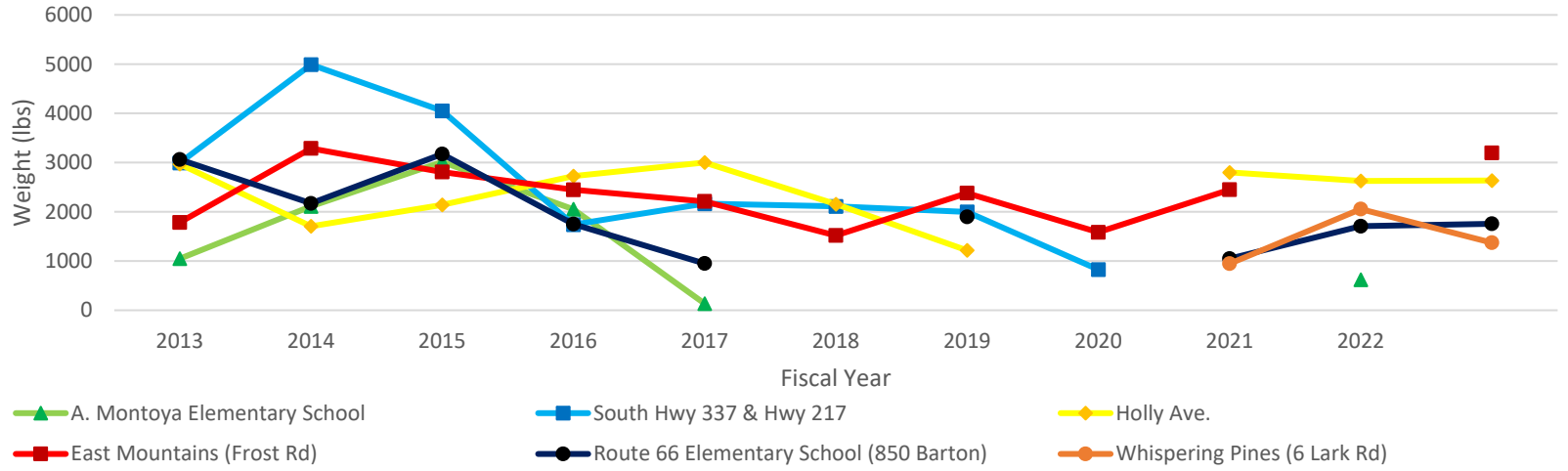


Figure 3. HHW Event Participation

East Mountains and North Albuquerque Acres Collection Events

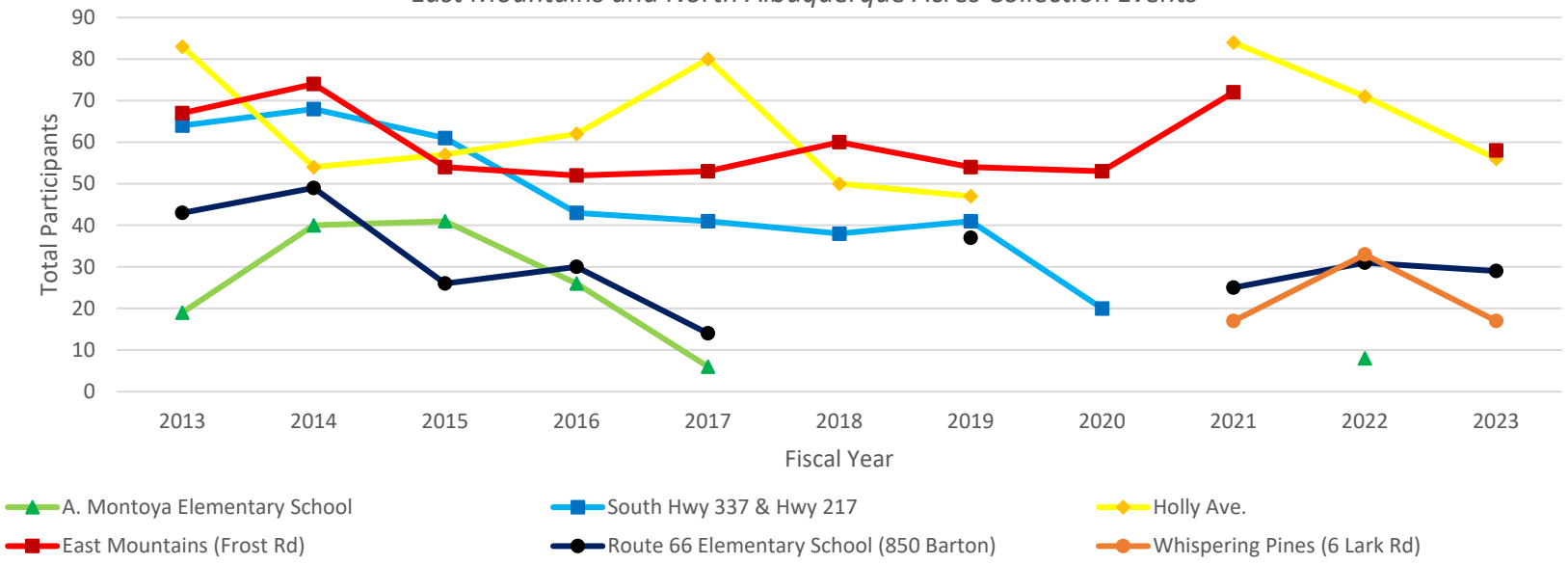


Figure 4. HHW Total Weight
South Valley Collection Events

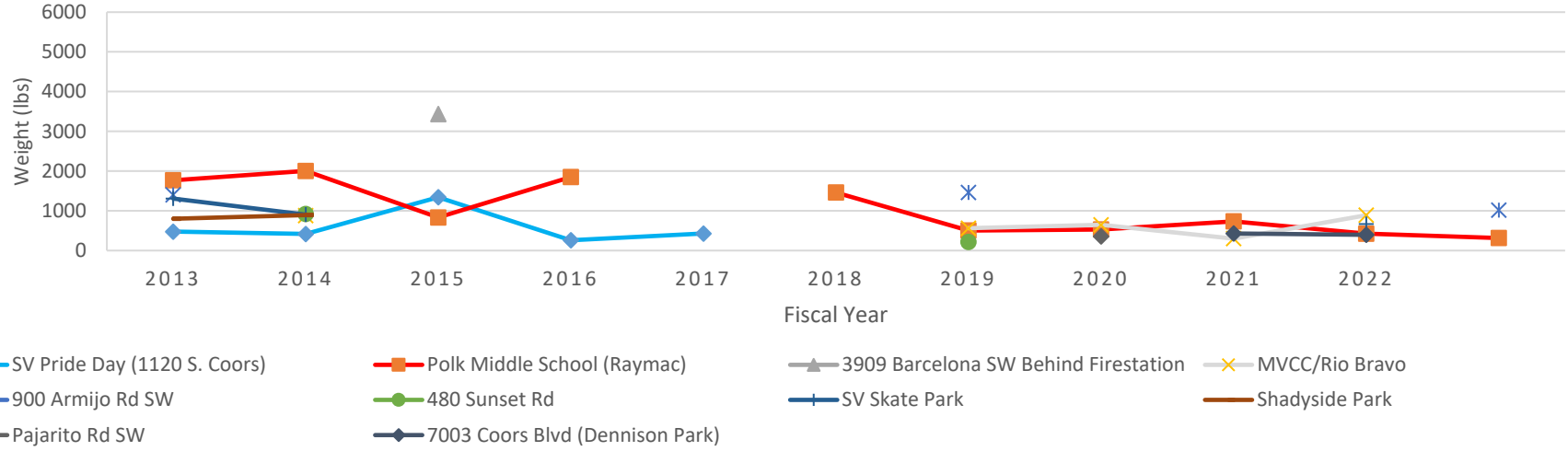
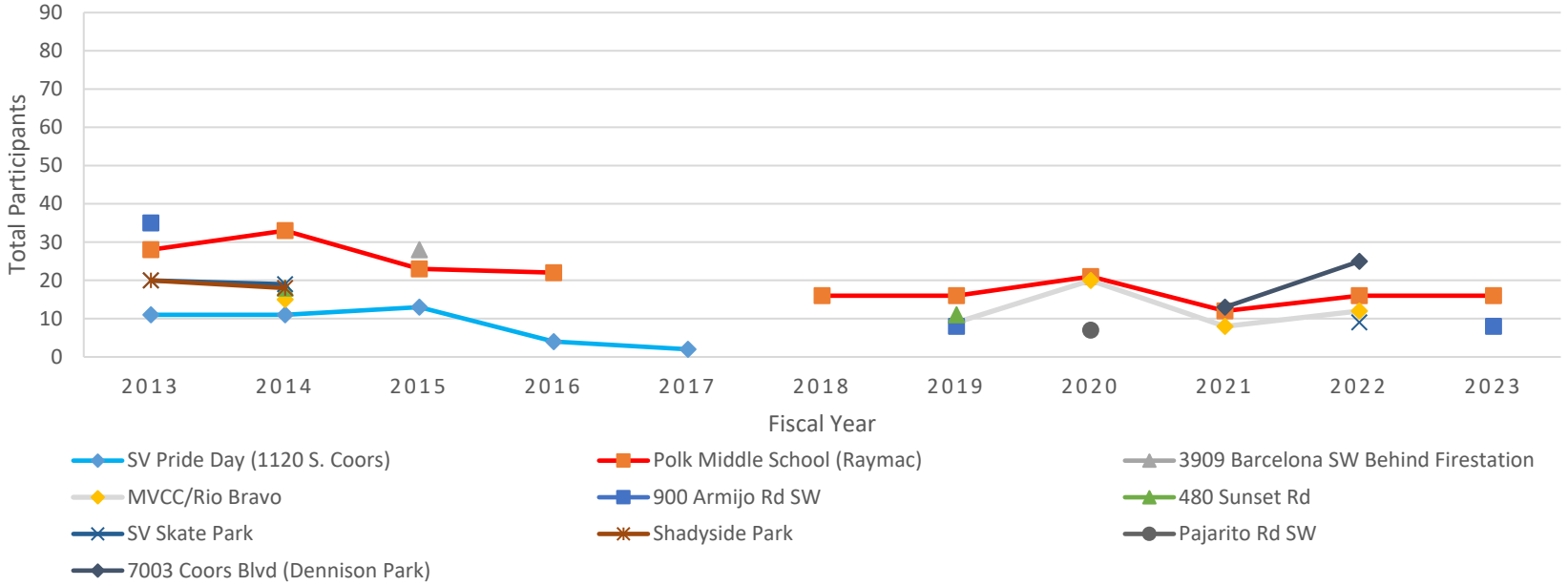
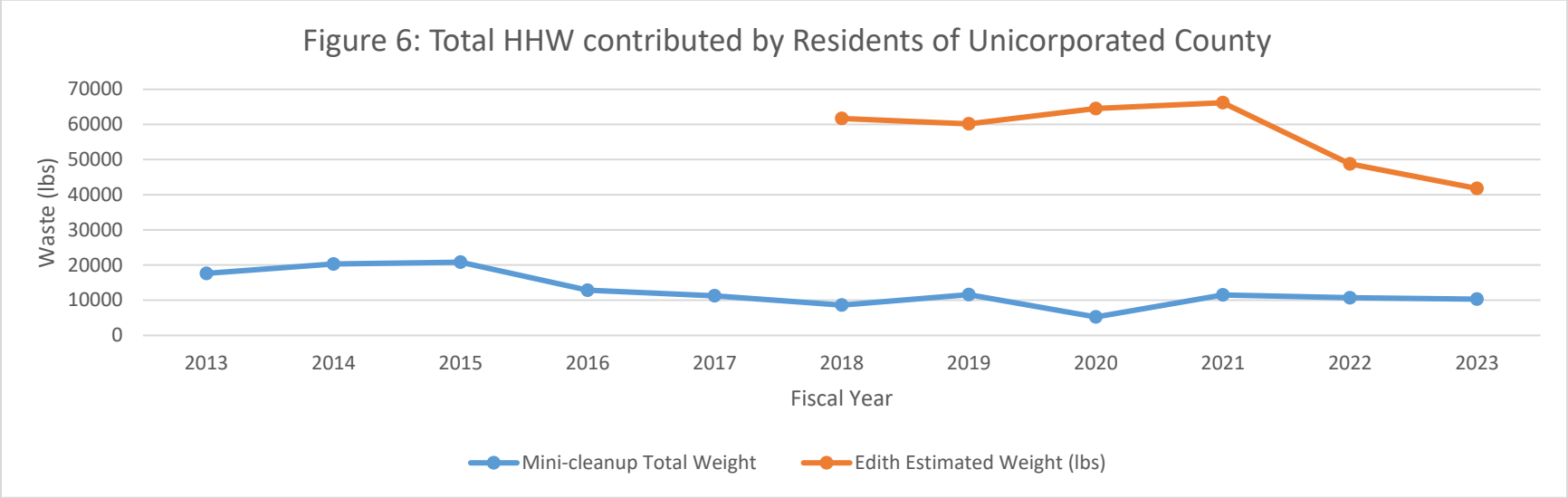


Figure 5. HHW Event Participation
South Valley Collection Events



Figures 6 and **7** present total collection weight and participation data for all the HHW mini collection events since 2013 and from the permanent ACT HHW drop-off site since 2014.



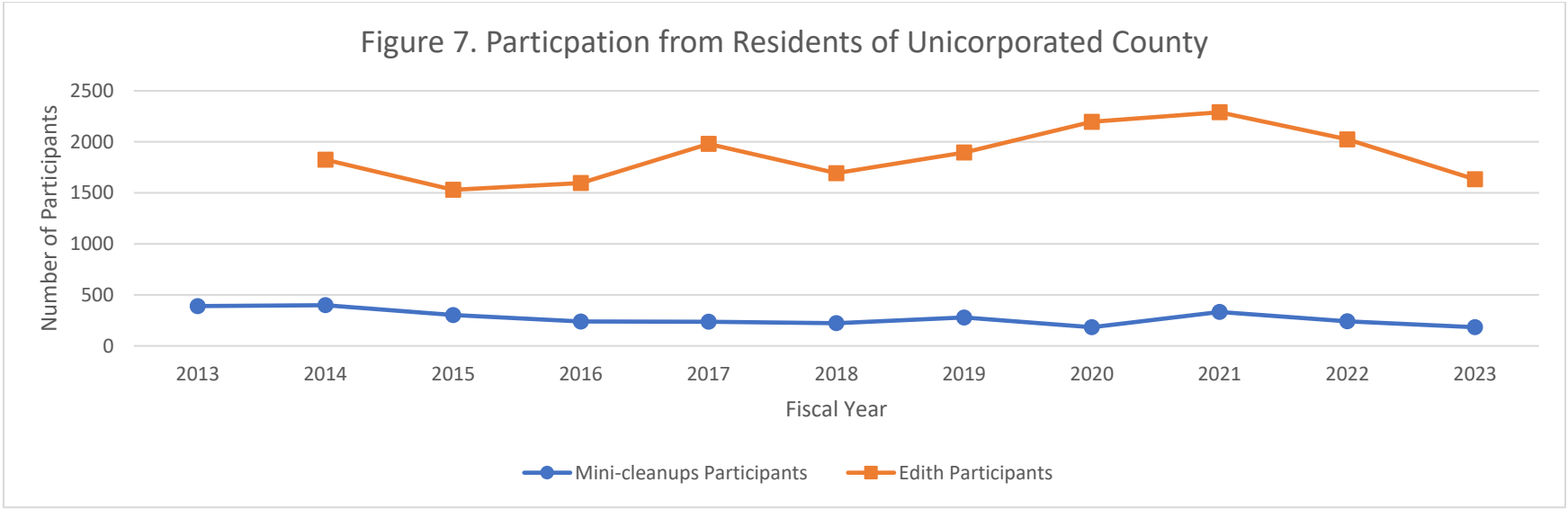
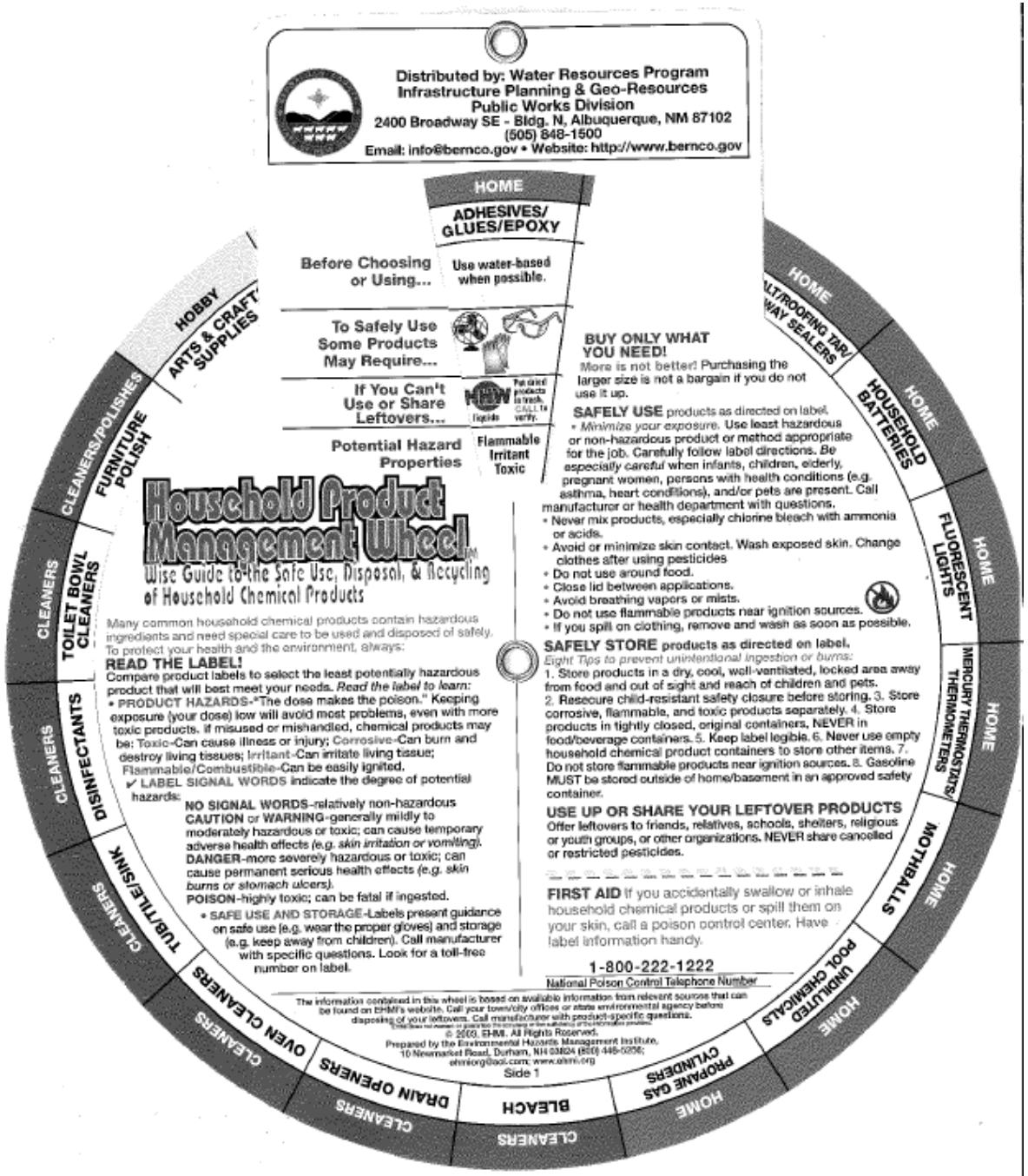


Figure 7. Particpation from Residents of Unicorporated County
Number of Participants
2500
2000
1500
1000
500
0
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
Fiscal Year
Mini-cleanups Participants
Edith Participants

Appendix A

Educational Materials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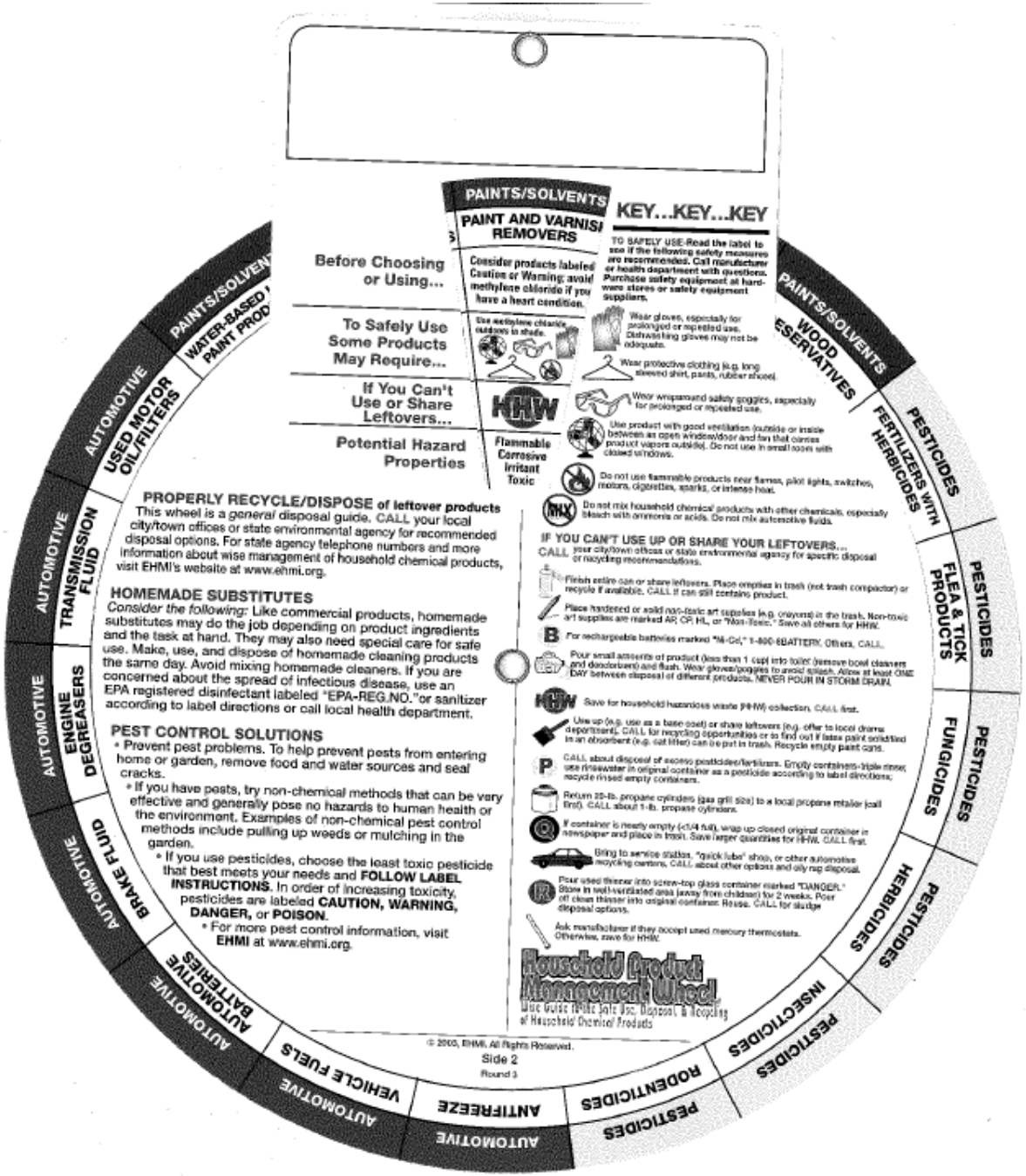
(505) 848-1500
Email: info@bernco.gov • Website: http://www.bernco.gov
HOME
ADHESIVES/ GLUES/EPOXY
Before Choosing or Using...
Use water-based when possible.
To Safely Use Some Products May Require...
If You Can't Use or Share Leftovers...
HOW
Potential Hazard Properties
Flammable
Irritant
Toxic
Household Product Management Wheel™
Wise Guide to the Safe Use, Disposal, & Recycling of Household Chemical Products
Many common household chemical products contain hazardous ingredients and need special care to be used and disposed of safely. To protect your health and the environment, always:
READ THE LABEL!
Compare product labels to select the least potentially hazardous product that will best meet your needs. Read the label to learn:
• PRODUCT HAZARDS-"The dose makes the poison." Keeping exposure (your dose) low will avoid most problems, even with more toxic products. If misused or mishandled, chemical products may be: Toxic-Can cause illness or injury; Corrosive-Can burn and destroy living tissues; Irritant-Can irritate living tissue; Flammable/Combustible-Can be easily ignited.
✔ LABEL SIGNAL WORDS indicate the degree of potential hazards:
NO SIGNAL WORDS-relatively non-hazardous
CAUTION or WARNING-generally mildly to moderately hazardous or toxic; can cause temporary adverse health effects (e.g. skin irritation or vomiting).
DANGER-more severely hazardous or toxic; can cause permanent serious health effects (e.g. skin burns or stomach ulcers).
POISON-highly toxic; can be fatal if ingested.
• SAFE USE AND STORAGE-Labels present guidance on safe use (e.g. wear the proper gloves) and storage (e.g. keep away from children). Call manufacturer with specific questions. Look for a toll-free number on label.
BUY ONLY WHAT YOU NEED!
More is not better! Purchasing the larger size is not a bargain if you do not use it up.
SAFELY USE products as directed on label.
• Minimize your exposure. Use least hazardous or non-hazardous product or method appropriate for the job. Carefully follow label directions. Be especially careful when infants, children, elderly, pregnant women, persons with health conditions (e.g. asthma, heart conditions), and/or pets are present. Call manufacturer or health department with questions.
• Never mix products, especially chlorine bleach with ammonia or acids.
• Avoid or minimize skin contact. Wash exposed skin. Change clothes after using pesticides
• Do not use around food.
• Close lid between applications.
• Avoid breathing vapors or mists.
• Do not use flammable products near ignition sources.
• If you spill on clothing, remove and wash as soon as possible.
SAFELY STORE products as directed on label.
Eight Tips to prevent unintentional ingestion or burns:
1. Store products in a dry, cool, well-ventilated, locked area away from food and out of sight and reach of children and pets. 2. Reseure child-resistant safety closure before storing. 3. Store corrosive, flammable, and toxic products separately. 4. Store products in tightly closed, original containers, NEVER in food/beverage containers. 5. Keep label legible. 6. Never use empty household chemical product containers to store other items. 7. Do not store flammable products near ignition sources. 8. Gasoline MUST be stored outside of home/basement in an approved safety container.
USE UP OR SHARE YOUR LEFTOVER PRODUCTS
Offer leftovers to friends, relatives, schools, shelters, religious or youth groups, or other organizations. NEVER share cancelled or restricted pesticides.
FIRST AID If you accidentally swallow or inhale household chemical products or spill them on your skin, call a poison control center. Have label information handy.
1-800-222-1222
National Poison Control Telephone Number
The information contained in this wheel is based on available information from relevant sources that can be found on EHMI's website. Call your town/city offices or state environmental agency before disposing of your leftovers. Call manufacturer with product-specific questions.
© 2000, EHMI. All Rights Reserved.
Prepared by the Environmental Hazards Management Institute,
10 Newmarket Road, Durham, NH 03824 (800) 446-0256;
ehmiorg@aol.com; www.ehmi.org
Side 1
HOBBY
ARTS & CRAFT SUPPLIES
CLEANERS/POLISHES
FURNITURE POLISH
CLEANERS
TOILET BOWL CLEANERS
CLEANERS
DISINFECTANTS
CLEANERS
TUB/TILE/SINK
CLEANERS
OVEN CLEANERS
CLEANERS
DRAIN OPENERS
CLEANERS
BLEACH
CLEANERS
PROPANE GAS CYLINDERS
HOME
UNUSED POOL CHEMICALS
HOME
MOTHBALLS
HOME
MERCURY THERMOSTATS/ THERMOMETERS
HOME
FLUORESCENT LIGHTS
HOME
HOUSEHOLD BATTERIES
HOME
ALT/ROOFING TAR/ WAY SEALERS
HOME


PAINTS/SOLVENTS
PAINT AND VARNISH REMOVERS
KEY...KEY...KEY
TO SAFELY USE-Read the label to see if the following safety measures are recommended. Call manufacturer or health department with questions. Purchase safety equipment at hardware stores or safety equipment suppliers.
Before Choosing or Using...
To Safely Use Some Products May Require...
If You Can't Use or Share Leftovers...
Potential Hazard Properties
Consider products labeled Caution or Warning; avoid methylene chloride if you have a heart condition.
Use methylene chloride outdoors in shade.
HHW
Flammable Corrosive Irritant Toxic
Wear gloves, especially for prolonged or repeated use. Dishwashing gloves may not be adequate.
Wear protective clothing (e.g. long sleeved shirt, pants, rubber shoes).
Wear wraparound safety goggles, especially for prolonged or repeated use.
Use product with good ventilation (outside or inside between an open window/door and fan that carries product vapors outside). Do not use in small room with closed windows.
Do not use flammable products near flames, pilot lights, switches, motors, cigarettes, sparks, or intense heat.
Do not mix household chemical products with other chemicals, especially bleach with ammonia or acids. Do not mix automotive fluids.
PROPERLY RECYCLE/DISPOSE of leftover products
This wheel is a general disposal guide. CALL your local city/town offices or state environmental agency for recommended disposal options. For state agency telephone numbers and more information about wise management of household chemical products, visit EHMI's website at www.ehmi.org.
HOMEMADE SUBSTITUTES
Consider the following: Like commercial products, homemade substitutes may do the job depending on product ingredients and the task at hand. They may also need special care for safe use. Make, use, and dispose of homemade cleaning products the same day. Avoid mixing homemade cleaners. If you are concerned about the spread of infectious disease, use an EPA registered disinfectant labeled "EPA-REG.NO."or sanitizer according to label directions or call local health department.
PEST CONTROL SOLUTIONS
• Prevent pest problems. To help prevent pests from entering home or garden, remove food and water sources and seal cracks.
• If you have pests, try non-chemical methods that can be very effective and generally pose no hazards to human health or the environment. Examples of non-chemical pest control methods include pulling up weeds or mulching in the garden.
• If you use pesticides, choose the least toxic pesticide that best meets your needs and FOLLOW LABEL INSTRUCTIONS. In order of increasing toxicity, pesticides are labeled CAUTION, WARNING, DANGER, or POISON.
• For more pest control information, visit EHMI at www.ehmi.org.
IF YOU CAN'T USE UP OR SHARE YOUR LEFTOVERS...
CALL your city/town offices or state environmental agency for specific disposal or recycling recommendations.
Finish entire can or share leftovers. Place empties in trash (not trash compactor) or recycle if available. CALL if can still contains product.
Place hardened or solid non-toxic art supplies (e.g. crayons) in the trash. Non-toxic art supplies are marked AP, CP, HL, or "Non-Toxic." Save all others for HHW.
For rechargeable batteries marked "Ni-Cd," 1-800-8BATTERY. Others, CALL.
Pour small amounts of product (less than 1 cup) into toilet (remove bowl cleaners and deodorizers) and flush. Wear gloves/goggles to avoid splash. Allow at least ONE DAY between disposal of different products. NEVER POUR IN STORM DRAIN.
HHW
Save for household hazardous waste (HHW) collection. CALL first.
Use up (e.g. use as a base coat) or share leftovers (e.g. offer to local drama department). CALL for recycling opportunities or to find out if latex paint solidified in an absorbent (e.g. cat litter) can be put in trash. Recycle empty paint cans.
P
CALL about disposal of excess pesticides/fertilizers. Empty containers-triple rinse; use rinsewater in original container as a pesticide according to label directions; recycle rinsed empty containers.
Return 20-lb. propane cylinders (gas grill size) to a local propane retailer (call first). CALL about 1-lb. propane cylinders.
If container is nearly empty (<1/4 full), wrap up closed original container in newspaper and place in trash. Save larger quantities for HHW. CALL first.
Bring to service station, "quick lube" shop, or other automotive recycling centers. CALL about other options and oily rag disposal.
Pour used thinner into screw-top glass container marked "DANGER." Store in well-ventilated area (away from children) for 2 weeks. Pour off clean thinner into original container. Reuse. CALL for sludge disposal options.
Ask manufacturer if they accept used mercury thermostats. Otherwise, save for HHW.
Household Product Management Wheel
Basic Guide to Safe Use, Disposal, & Recycling of Household Chemical Products
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Side 2
Round 3
PAINTS/SOLVENTS
WOOD PRESERVATIVES
PESTICIDES
FERTILIZERS WITH HERBICIDES
PESTICIDES
FLEA & TICK PRODUCTS
PESTICIDES
FUNGICIDES
PESTICIDES
HERBICIDES
PESTICIDES
INSECTICIDES
PESTICIDES
RODENTICIDES
PESTICIDES
ANTIFREEZE
AUTOMOTIVE
VEHICLE FUELS
AUTOMOTIVE
AUTOMOTIVE BATTERIES
AUTOMOTIVE
BRAKE FLUID
AUTOMOTIVE
ENGINE DEGREASERS
AUTOMOTIVE
TRANSMISSION FLUID
AUTOMOTIVE
USED MOTOR OIL/FILTERS
AUTOMOTIVE
WATER-BASED PAINT PROD

As stormwater flows over driveways, lawns, and sidewalks, it picks up debris, chemicals, dirt, and other pollutants. Stormwater can flow into a storm sewer system or directly to a lake, stream, river, wetland, or coastal water. Anything that enters a storm sewer system is discharged untreated into the waterbodies we use for swimming, fishing, and providing drinking water. Polluted runoff is the nation's greatest threat to clean water.

By practicing healthy household habits, homeowners can keep common pollutants like pesticides, pet waste, grass clippings, and automotive fluids off the ground and out of stormwater. Adopt these healthy household habits and help protect lakes, streams, rivers, wetlands, and coastal waters. Remember to share the habits with your neighbors!

Healthy Household Habits for Clean Water

Vehicle and Garage

- Use a commercial car wash or wash your car on a lawn or other unpaved surface to **minimize** the amount of dirty, soapy water flowing into the storm drain and eventually into your local waterbody.

- Check your car, boat, motorcycle, and other machinery and equipment for leaks and spills. Make repairs as soon as possible. Clean up **spilled fluids** with an absorbent material like kitty litter or sand, and don't rinse the spills into a nearby storm drain. Remember to properly dispose of the absorbent material.
- **Recycle** used oil and other automotive fluids at participating service stations. Don't dump these chemicals down the storm drain or dispose of them in your trash.

Lawn and Garden

- Use pesticides and fertilizers **sparingly**. When use is necessary, use these chemicals in the recommended amounts. Avoid application if the forecast calls for rain; otherwise, chemicals will be washed into your local stream.
- Select **native** plants and grasses that are drought- and pest-resistant. Native plants require less water, fertilizer, and pesticides.
- **Sweep up** yard debris, rather than hosing down areas. Compost or recycle yard waste when possible.
- Don't overwater your lawn. Water during the **cool** times of the day, and don't let water run off into the storm drain.
- Cover piles of dirt and mulch being used in landscaping projects to prevent these pollutants from blowing or washing off your yard and into local waterbodies. **Vegetate** bare spots in your yard to prevent soil erosion.

Home Repair and Improvement

- Before beginning an outdoor project, locate the nearest storm drains and **protect** them from debris and other materials.
- **Sweep up** and properly dispose of construction debris such as concrete and mortar.
- Use hazardous substances like paints, solvents, and cleaners in the **smallest amounts possible**, and follow the directions on the label. Clean up spills immediately, and dispose of the waste safely. Store substances properly to avoid leaks and spills.
- Purchase and use **nontoxic, biodegradable, recycled,** and **recyclable** products whenever possible.
- **Clean** paint brushes in a sink, not outdoors. Filter and reuse paint thinner when using oil-based paints. Properly dispose of excess paints through a household hazardous waste collection program, or donate unused paint to local organizations.
- **Reduce** the amount of paved area and increase the amount of vegetated area in your yard. Use native plants in your landscaping to reduce the need for watering during dry periods. Consider directing downspouts away from paved surfaces onto lawns and other measures to increase infiltration and reduce polluted runoff.

Household Stormwater
Pollution Prevention

Pet Waste
- **ALWAYS** pick up and properly dispose of pet waste
- Bacteria from pet waste, specifically E. coli, can be transported to the river via stormwater. It is one of the biggest concerns in the Rio Grande.

Vehicle and Garage
- Inspect vehicles and repair leaks **IMMEDIATELY**
- Clean up spilled fluids with an absorbent and sweeping – not hosing
- Recycle automotive fluids – **NEVER** pour down storm drains*

Lawn and Garden
- Only use fertilizers and pesticides as needed – **NEVER** exceed manufacturer application rates – sweep up spills
- Select native plants to reduce water, fertilizer, and pesticide/herbicide use
- Yard waste and applied chemicals should **NEVER** enter ditches, streets, or storm drains*

Home Activities
- **NEVER** pour grease down drains – it can cause clogged lines, septic system issues, and surfacing sewage
- Septic systems should be inspected every 3 years, and pumped every 3-5 years
- Use nontoxic, biodegradable, and recycled/recyclable products
- Properly dispose of used paint, solvents, cleaners, fertilizers, pesticides, etc.*

*See Back of Pamphlet

Recycling and Disposal of Household Waste

Household Hazardous Waste Collection Center
6137 Edith Blvd NE / (505) 349 – 5220
Most household hazardous waste is accepted, including:

- **Used Oil**
- **Antifreeze**
- **Fuel**
- **Degreasers**
- **Batteries**
- **Paint**
- **Fertilizers**
- **Pesticides**
- **Herbicides**
- **Fluorescent Bulbs**

Solid Waste Disposal Centers
Don Reservoir Convenience Center – 117 114th SW / (505) 836 – 8757 (No trailers)

Eagle Rock Convenience Center – 6301 Eagle Rock NE / (505) 857 – 8318

East Mountain Transfer Station – 711 NM-333 / (505) 281-9110

Montessa Park Convenience Center – 3512 Los Picaros SE / (505) 873 – 6607

Southwest Landfill – 6201 Escarpment Rd SW / (505) 242-2020

For a minimal fee (call for details) will accept most:

- **Yard Waste**
- **Excess Trash**
- **Large Trash Items**

Appendix B

HHW Contacts

Name	Agency	Role	Number	Email
Bobby Mullin	BernCo NRS	Coordinator	(505) 468-1357	rmullin@bernco.gov
Kali Bronson	BernCo NRS	Manager	(505) 364-3532	kbronson@bernco.gov
Melanie Thornton	ACT	Manager	(505) 445-9400	MThornton@ACTEnviro.com
Gabriel Villescas	BernCo O&M	Coordinator	(505) 220-4475	gvillescas@bernco.gov
Chris Miller	Clean Harbors	Manager	(602) 462-2309	Miller.Christopher3@cleanharbors.com

Appendix C

FY23 Mini Cleanup Event Schedule

FY 2023 Bernalillo County Community Clean-up Events	
Date	**Location**
July 9, 2022	25 Frost Rd. Sandia Park, NM – Bernalillo County Fire Station 46
July 23, 2022	6 Lark Rd. Tijeras, NM – Whispering Pines Senior Meal Center
Oct 8, 2022	2220 Raymac Rd SW. – Polk Middle School
April 22, 2023	900 Armijo Rd SW Albuquerque
May 20, 2023	10401 Holly Ave. NE, Albuquerque
June 24, 2023	805 Barton Rd. Edgewood - Rt. 66 Elementary

Appendix D

Participation Rates at ACT HHW Drop-Off Facility at 6137 Edith NE Albuquerque, NM

Household Hazardous Waste Collection Participation

July 2022- June 2023

Month	Participants w/Unknown Location or Not Enough Info to Geocode	Total	Orphaned waste at facility	City Participants (City + No Match or Not Enough Info)	County Participants	Out of County	Out of County Breakdown	County Percentage	Monthly Cost	Light Bulbs (add on to monthly cost)	Total Cummulative Cost
Jul-22	141	1465	0	1271	191	3	3-Sandoval County	13.0%	$95,225.00	$2,146.75	$97,371.75
Aug-22	128	1344	0	1162	178	4	4-Sandoval County	13.2%	$87,360.00	$2,537.75	$89,897.75
Sep-22	136	1248	0	1083	163	2	2-Sandoval County	13.1%	$81,120.00	$891.50	$82,011.50
Oct-22	143	1101	0	954	146	1	1-Sandoval County	13.3%	$71,565.00	$2,788.75	$74,353.75
Nov-22	90	865	0	751	110	4	4-Sandoval County	12.7%	$56,225.00	$503.25	$56,728.25
Dec-22	115	820	0	705	115	0	-	14.0%	$53,300.00	$1,469.50	$54,769.50
Jul-Dec 2022	**753**	6843	**0**	**5,926**	**903**	**14**		13.2%	**$ 444,795.00**	**$10,337.50**	$444,795.00
Jan-23	76	833	0	710	121	2	2-Sandoval County	14.5%	$54,145.00	$1,065	$55,210.00
Feb-23	169	718	0	624	94	0	-	13.1%	$46,670.00	$1,475	$48,145.25
Mar-23	288	1014	0	913	101	0	-	10.0%	$65,910.00	$6,000	$71,910.00
Apr-23	378	1232	0	1115	117	0	-	9.5%	$80,080.00	$1,286	$81,366.00
May-23	404	1359	0	1223	136	0	-	10.0%	$88,335.00	$1,158	$89,492.75
Jun-23	476	1532	0	1,371	161	0	-	10.5%	$99,580.00	$1,446	$101,026.00
Jan-Jun 2023	**1,791**	**6,688**	**0**	**5,956**	**730**	**2**		10.9%	**$434,720.00**	**$12,430**	**$434,720.00**
FY23 Total	**2,544**	**13,531**	**0**	**11,882**	**1,633**	**16**		**12.1%**	**$879,515.00**	**$22,768**	**$902,282.50**
				Participant Total (other than orphaned)			**13,531**			**$22,768**	

Monthly Average	**1127.583333**
Participant Fee	$ 65.00
FY23 Budget	**$ 1,000,000.00**
Remaining Balance	**$ 97,717.50**

	Participants	Percentage	Cost
BERNCO Participation to date	1,633	12.1%	$106,145
Unknown or Not Enough Info to Geocode (costs absorbed by COA)	2,544	18.80%	$165,360

Appendix E

NRS Data Collection Forms

HHW – Event Name: _____ Date:_____

NAME	LICENSE #	ADDRESS

Appendix F

Bernalillo County Solid Waste Outreach

- Eleven (11) community area cleanups were hosted throughout the county, with 307.06 tons of trash collected.
- There were 312 illegal dumpsites reported and cleaned up by County Solid Waste staff

Bernallilo County conducted outreach at the following community events, reaching an estimated 8,500 county residents:

- East Mountain Celebration September 25, 2022
- South Valley Pride Day April 23, 2022
- Evening in Paradise June 3, 2023

Handouts included but were not limited to:

- 2,000 Carlos Coyote Books, teaching local youth on importance of preventing illegal dumping, recycling and littering
- 500 Keep BernCo Beautiful coloring books and Pecils
- 500 re-usable tote bags.

The County continues it's outreach marketing campaigns through the following actions:

Marketing Campaigns				
Dates of Campaign	Type of Media (Radio, Print, Digital, Television)	Call to Action	Estimated Audience	Cost
September 3-18 and October 8-23, 2022	KRQE Brand Builder	Illegal Dumping	450,000	$ 3,390
March 1-14 and April 16-30, 2023	KRQE Brand Builder	Illegal Dumping	450,000	$ 4,940
April 1 -May 28, 2023	Digital Billboards, TV advertising, & Digital advertising	Illegal dumping, large item pick-up	1,632,000	$ 30,654.88
April 15 - June 11, 2023	Digital Billboards, TV advertising, & Digital advertising	Scrap tire recycling	1,632,000	$ 30,180.78
May 29-July 9, 2023	Digital Billboards, Movie Theater Advertising, & Digital advertisng	Illegal dumping, large item pick-up, and scrap tire recycling	4,689,702	$ 32,440.29
May 12-June 30, 2023	Broadcast TV	Recycle by numbers	992,000	$ 4,315.39
May 12-June 30, 2023	Hulu and YouTube video ads	Recycle by numbers	272,000	$ 4,999
			Total	**Total**
			9,667,702	**$107,530.34**

Mid Rio Grande Stormwater Quality Team

In fiscal year 2023, the Stormwater Quality Team attended the annual Corrales Harvest Festival, a rural community just north of Albuquerque, the Doggie Dash and Dawdle, an event that fundraises on behalf of the local Animal Humane.

Additionally, the group attended a number of community events in Albuquerque's South Valley and West Side. During each event educational rack cards and various promotional products were distributed.

The team also produced a Spanish section of the KeepTheRioGrand.com website.

And finally, the team created custom content and posts on Facebook.

Village of Corrales

The Village of Corrales has no municipal storm sewer system. To handle stormwater flows from development, engineered grading and drainage (G & D) plans are required prior to any residential construction that will disturb more than 1,000 square feet. Engineers may design berms, swales, retention ponds and other aspects to keep new impervious surface (roofed or paved) stormwater flows on the subject property and not running into streets or adjacent properties.

Within the Commercial zone, stormwater retention areas must be built into Site Development Plan drawings before those applications can be heard by the Planning and Zoning Commission.

In FY23, the Village saw 21 residential grading and drainage plans prior to issuing building permits. There were four Commercial Site Plans that incorporated drainage (primarily retention ponding) into their designs. One was the Village of Corrales administration complex, which added a new swale on the north side of the property along with the two existing retention areas.

This fiscal year, the Corrales Bosque Advisory Commission in conjunction with the Corrales Fire Department continued their efforts to encourage dog waste pick-up along popular pedestrian areas into the Bosque and elsewhere in the Village. There are nine waste bag stations and trash receptacles located at Bosque access gates, Camino de la Tierra (entrance to popular Sand Dunes walking area) and at Quirks Lane. CBAC provided approximately 8,500 dog poop bags in/near the Bosque, and an additional 500 bags at the other location, greatly reducing the amount of dog waste otherwise in danger of polluting the acequias, canals or Rio Grande.

The glass recycling area continues to be amazingly successful. From April of 2022 through August 14, 2023, the Village has recycled 93.63 TONS of glass.

The Village is continuing the twice-a-year (spring and fall) community “Clean-Up” days, accepting non-hazardous and yard waste. Approximately 200 households per year participate. Our Code Enforcement Officer works with citizens throughout the year to have them remove trash, non-functional vehicles and other items that could leak fluids into the groundwater. There is no municipal water system; all structures are serviced by wells.

Every year during the Corrales Harvest Festival, which is attended by folks from throughout the metro, a Stormwater Team booth educates the public on the importance of keeping waste, oils, floatables and other items out of the river.

This year it was reported to the Village that a vehicle had leaked a significant amount of fluid along a public right-of-way, Tierra Encantada. Public Works used absorbents to clean up as much as possible.

Village of Los Ranchos

Los Ranchos does not have a municipal storm sewer system. Grading and drainage plans are required for most residential and commercial construction within the Village, and Site Development Plans are additionally required for major subdivisions and new commercial construction. Permeable pavement elements have been incorporated throughout the Fourth Street redevelopment area in Los Ranchos, which provide multiple benefits such as reducing flooding and erosion and enhancing groundwater recharge. The next phase of the Fourth Street Project, from Pueblo Solano Rd NW to Ortega Rd NW, will include elements that address stormwater and drainage concerns within that phase. Our Code Enforcement Officer regularly works with citizens throughout the year to address trash removal and inoperable vehicle issues, which helps reduce harmful fluid runoff entering the groundwater. This year, staff participated in educational outreach activities as part of the Stormwater Quality Team, including distributing materials at the Pueblo of Isleta Safety Fair. Educational materials are available year-round at Village Hall.

San Isidro Day Blessing of the Waters, Los Ranchos

Rio Rancho

Drainage Facility Clean-up Schedule

Cleanup takes place during December, January, and February every year.
Schedule is based on a 5 day work week (Monday thru Friday), schedule also accounts for City Observed Holidays.

ID	District	Name	Location	Current Condition	Date of Last Inspection	Compliance Resolution	Actual Start	Actual Completion
73	6	Fire Station 7 Channel	641 Rockaway Blvd NE	Fair; Less than 1 large garbage bag of trash; lots of tree's, 5 bunches together; approx. 12-18in depth of sediment buildup, partially submerged with sediment.	6/14/2022	Remove Trees and trash	12/1/2022	12/5/2022
630	6	U17, Blk 153, Lot 9 Pond	924 Saratoga DR NE	Good; Trace amounts of trash; excessive weeds; 0-6in depth of sediment buildup.	6/27/2022	Remove weeds, trash and debris	12/8/2022	12/9/2022
629	6	U17, Blk 67, Lot 9 Pond	917 Saratoga DR	Good; Traces amounts of trash; a few trees; 0-6in depth of sediment buildup.	6/27/2022	Remove Trees, trash and debris	12/8/2022	12/9/2022
54	2	NH14, Blk 6, PAR B east Pond	9999 Cherry Rd NE	Fair; Trace amounts of trash; approx. 12-18in depth of sediment buildup, fully submerged with sediment.	6/13/2022	Remove accumulated sediment	12/12/2022	12/16/2022
631	3	U17, Blk 63, Lot 13 Libra	5153 Libra Rd NE	Good; Trace amounts of trash; approx. 3 large mature trees; approx. 0-6in depth of sediment buildup.	6/27/2022	Remove Trees and trash	12/19/2022	12/19/2022
624	1	WAPR, Blk B, PAR A Wallen Park	109 Landing Trail NE	Good; Less than 1 large garbage bag of trash; A few mature trees; approx. 0-6in depth of sediment buildup.	6/27/2022	Remove Trees, trash and debris	12/20/2022	12/21/2022
611	4	LM, Blk 8, PAR C1 Park Pond	400 Colorado Mountain Rd NE	Good; Less than 1 large garbage bag of trash; +10 mature trees; More than 50% full(water); approx. 0-6in depth of sediment buildup, fully submerged in water.	6/27/2022	Remove Trees, trash and debris	12/21/2022	1/18/2023
596	3	2501 King Blvd Det Pond	2501 King Blvd NE	Fair; Trace amounts of trash; a couple mature trees, and a few juvenile trees; approx. 0-6in depth of sediment buildup.	6/24/2022	Remove Trees	1/19/2023	1/19/2023
177	4	CG, Blk 2, TR B1 Pond	3397 St. Andrews DR SE	Good; Trace amounts of trash; A few trees and bushes; approx. 6-12in depth of sediment buildup.	6/23/2022	Remove Trees and Bushes, trash and debris	1/20/2023	1/20/2023

Rio Rancho

ID	District	Name	Location	Current Condition	Date of Last Inspection	Compliance Resolution	Actual Start	Actual Completion
85	3	CR, Blk 1, PAR B Ret Pond	4900 Chaco Loop NE	Less than 1 large garbage bag of trash; minor juvenile trees in bottom; Washed-out.	6/7/2022	Remove Trees and trash; Back-fill wash-out.	1/20/2023	1/20/2023
81	3	CCCEH, Blk E, PAR D Pres	3791 NM Highway 528 NE	Poor; More than 3cu of trash; excessive trees; approx. 6-12in depth of sediment buildup; partially submerged with sediment.	6/14/2022	Remove Trees, trash and debris	1/27/2023	2/1/2023
1098	3	HAWK, PAR 5A1 Main Pond	4601 Patriot Rd NE	Fair; Less than 1 large garbage bag of trash; excessive trees; partially submerged with sediment.	6/24/2022	Remove Trees, trash and debris	1/31/2023	2/9/2023
620	3	HGHR, Blk 5, PAR B Corner	3973 Rancher Loop NE	Fair; Less than 1 large garbage bag of trash; excessive brushes.	6/24/2022	Remove Bushes, trash and debris	1/23/2023	1/24/2023
186	2	U21, Blk 12 PAR BB Pond	1501 Wilpet Ave NE	Good; Trace amounts of trash; partially submerged with sediment; erosion; approx. 6-12in depth of sediment buildup. Partially submerged with sediment.	6/24/2022	Slope Erosion.	1/24/2023	1/24/2023
29	4	CHR, Blk 1, PAR C1 Pond	3501 High Resort Blvd SE	Good; Approx. 0-6in depth of sediment buildup.	6/9/2022	Remove Trash and debris.	1/24/2023	1/25/2023
140	2	NMED16, Blk 7, PAR C Pond	9999 King Blvd NE	Fair; Trace amounts of trash; approx. 0-6in depth of sediment buildup; partially submerged with sediment.	6/16/2022	Remove Trash and debris.	1/24/2023	1/24/2023
155	3	ECD, PAR PD4 Encantado Channel	5905 Kennard Rd NE	Fair; Trace amounts of trash; excessive bushes; approx. 6-12in depth of sediment buildup; partially submerged with sediment.	6/21/2022	Remove Trash and debris.	2/22/2023	2/24/2023
36	1	SPW, Blk 1, PAR A Pond	9999 Wexford Rd SE	Fair; Less than 1 large garbage bag; trees blocking inlet/outlets; erosion by inlet ;0-6in depth of sediment buildup; partially submerged with sediment.	6/9/2022	Remove Trees, trash and debris, backfill.	12/5/2022	12/15/2022

Rio Rancho

Litter Control and Recycling Activities												
Date	Activity Name	Location of Area Cleaned: Roadside, Waterway, Green Space, Mainstreet, Community-wide (Green Space = parks, natural areas, hiking areas, etc)	# of Miles Cleaned	Lbs of Trash Collected (to Landfill)	Lbs of Recycling Diverted	Lbs of Glass Diverted	Lbs of Electronics Diverted	Lbs of Compost Diverted	Lbs of Cigarette Butts Diverted	Lbs of Additional Waste Diverted	Detail Additional Waste Diverted	Entity which Diverted Waste
7/1-6/15/23	Staff Illegal Dumpsite Cleanup	Multiple Mesa/Open Space spots roadways - 11 acres	7	3316000	0	0	0	0	0	0		
7/1-6/15/23	City facility recycling	City Hall and Fire stations 1-6	0	0	11,400	0	0	0	0	0		Waste Management to MRF
7/1 - 5/30/23	WM At Your Door Collection	Multiple Residences/ residential waste	0	0	0	0	31908	0	0	27943	Residential Hazardous Waste	Waste Management
7/1-5/30/23	Monthly WM Free Res Landfill	NA	0	2371240	0	0	0	0	0	0		
7/16/2022	HP Illegal Dumpsite Cleanup	Multiple Mesa/Open Space spots roadways - 3 acres	3	32000	0	0	0	0	0	0		
9/24/2022	Rally in the Desert Cleanup	Multiple Mesa/Open Space spots roadways - 12	4	78000	0	0	0	0	0	0		
12/26-1/9/23	Tree Cycling	NA	0	0	0	0	0	0	0	14,300	mulched Christmas trees	PNM mulched/Citizens took mulch
Mar-Apr/2023	Clean Campus Contest	Puesta del Sol Elementary School - 22 acres	0	320	0	0	0	0	0	0		
4/18-4/19/23	HP Earth Week Cleanup	Areas and road around City Center - 5 acres	2.5	960	0	0	0	0	0	0		
5/13/2023	Great American Cleanup	Multiple roadways (14)	14	8000	0	0	0	0	0	0		

Total Number of Miles Cleaned	Total Single Stream Diverted	Total Glass Diverted	Total Electronics Diverted	Total Compost Diverted	Total Cigarettes Diverted	Total Additional Waste Diverted		
30.5	11400	0	31908	0	0	42243		

Total Waste Collected (lbs)	
5892071	
Total Waste to Landfill (lbs)	**Total Waste Diverted from the Landfill (lbs)**
5806520	85551

Litter Control and Recycling Infrastructure						
# of Trash Receptacles	# of Recycling Receptacles	# of Cigarette Ash Receptacles	# of Pet Waste Receptacles	# of Sharps Disposal Receptacles	# of Additional Receptacles	Detail Additional Receptacles
0	16	0	0	0	0	

Total # of Receptacles
16

Illegal Dumping		
# of Illegal Dumping Sites Reported	# of Illegal Dumping Sites Cleared	# of Tires Collected
82	69	42

Children's Water Festival

Rio Rancho, 2022

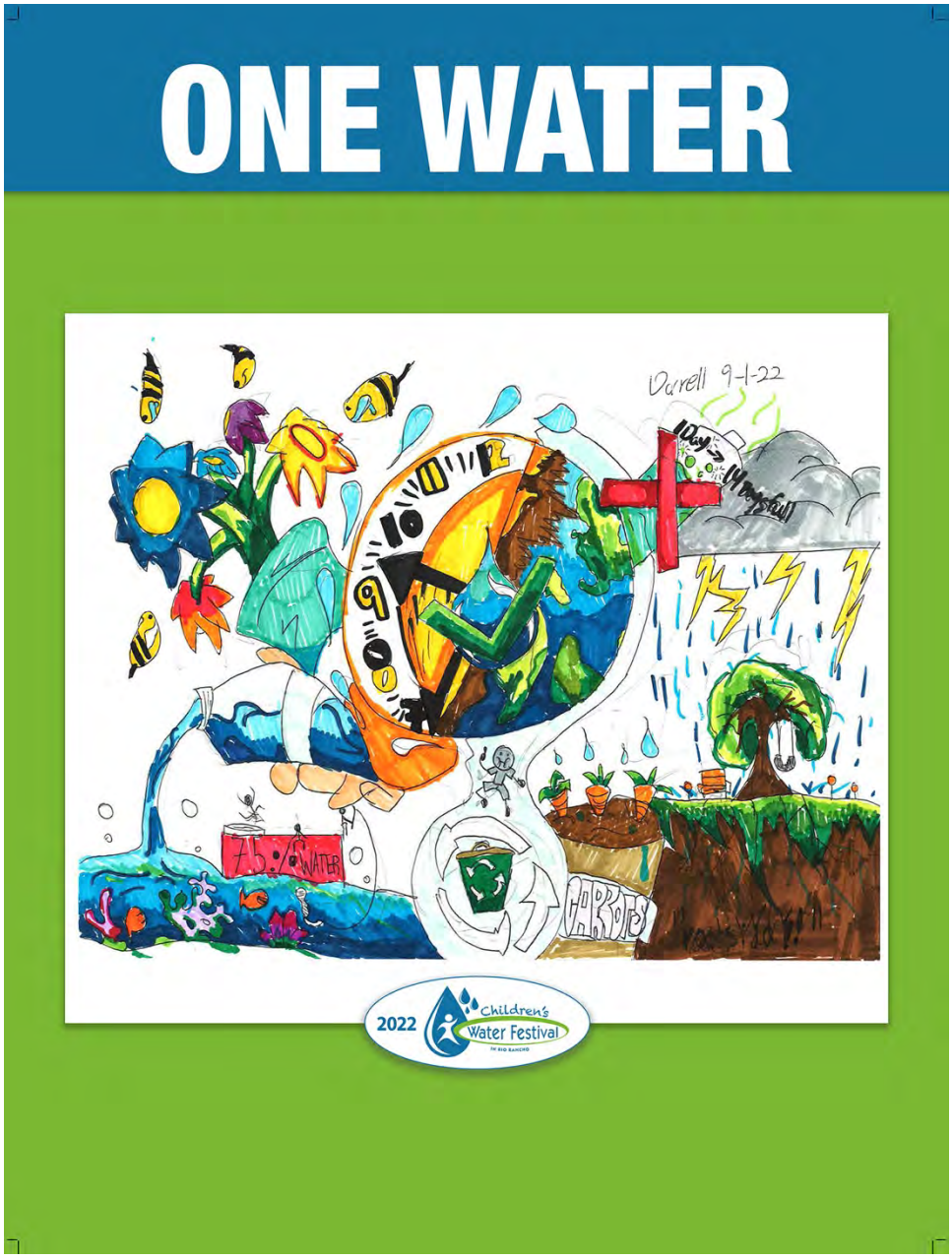


Table of Contents

Executive Summary

The 2022 Children's Water Festival (Festival) was held on Monday, October 24th and Tuesday, October 25th at the Rio Rancho Events Center in Rio Rancho. Due to the pandemic, this was the first time that the Festival had been held since 2019. Changes were made to the size and structure of the Festival to better accommodate the students and to give them a better all-around experience. Historically, fourth grade students attended the Festival. This year, a decision was made to invite fifth grade students as the Festival curriculum better fit into the schools' science learning objectives. Additionally, students from one-half of the Rio Rancho elementary schools students attended, and the other half of the Rio Rancho elementary schools will attend in 2023. Over 505 students from 21 classrooms, from Maggie Cordova, Martin Luther King, Puesta del Sol, Rio Rancho and Joe Harris elementary schools participated. Each class attend three 30-minute presentations. Twelve hands-on presentations taught water-related ideas and concepts to the students.

The Festival had 49 presenters/associates and 16 volunteers to guide the classes to the assigned activity.

The twelve presentations represented sixteen professional organizations that ranged from federal, state, regional governments, and private industry. The organizations all have water interests and focused on subjects such as the water cycle, water quantity and conservation, water distribution, and water quality/pollution.

Students were evaluated on basic water knowledge after the Festival. There were eight questions asked of the students and they averaged 61% to 88% correct on the questions. A more detailed breakdown is found in Student Post-test Scores section.

The Festival costs an estimated $23,000 each year. The City of Rio Rancho contributed $10,000 to the Festival and additional funding was raised through Ciudad Soil & Water Conservation District. Festival sponsors include: Jacobs, Waste Management, Southern Sandoval County Arroyo Flood Control Authority, Carollo, Resource Wise, Bohannon Huston, AUI, and RMCI.

Introduction

The Children's Water Festival (Festival) has been held in Rio Rancho since 2007. The 2010 Festival was the first event hosted by the City of Rio Rancho's Water Conservation Office. This report is for the 2022 Festival; the eleventh event hosted by the Water Conservation Office. There was a two-year hiatus because of the Covid-19 Pandemic. As in years past, the Festival was held at the Rio Rancho Event Center and about 505 students attended from 21 fifth grade classrooms from Rio Rancho Public Schools. The event was held on Monday, October 24th and Tuesday, October 25th.

Purpose and Intent

The principal focus of the Festival is to educate fifth grade school children about water and its relationship to humans, animals and other natural resources in a fun and interactive atmosphere. The Festival's vision is to:

- Introduce students and teachers to new ideas, options, and solutions so they will conserve and protect water for the future,
- Lay the foundation for further learning, and
- Reach as many students and teachers as possible.

Public participation is essential to successful water conservation, and educating the public promotes better water conservation planning and implementation. Early education influences the future acceptance of water conservation concepts. This early education experience also has shown that training efforts affected behavioral changes and improved water use practices. Water conservation goals are only as effective as water users' willingness to adopt and implement appropriate water conservation measures. Through special training activities, water users are taught proper water use practices and techniques. Efficient use of water supplies decreases waste and prevents degradation of water quality leading to healthier ecosystems for fish and wildlife, including locally listed endangered species, such as, the Rio Grande Silvery Minnow (*Hybognathus amarus)* and the Southwestern Willow Flycatcher (*Empidonax traillii extimus*).

The Festival was designed specifically to introduce and explain new and unfamiliar water management tools to present and future water users and managers. Research concerning water conservation education indicates the targeted group of the Festival, fifth grade students, is ideal for achieving long-term goals. Through sharing water conservation and water quality tools at home and with extended family, the estimated 505 participants (students, teachers, and chaperones) represent a potential audience of 10,000 to 15,000 people for the Festival program.

A series of activities that cover a wide range of core curriculum areas were presented at the Festival. These activities included language arts, mathematics, science, social studies, visual arts, and health/wellness; all of which are tied to water conservation, water quality, and water quantity in the arid Southwest desert.

The 2020 update to the Water Resources Management Plan (Plan), details water efficiencies and water conservation measures to be taken by the City to better manage the existing water supplies. Policy E.4 of the Plan sets forth this initiative: "Continue consulting with and improving the partnership with Rio Rancho Public Schools to implement a robust water resources educational curriculum."

Additionally, the City of Rio Rancho Strategic Plan was formally adopted by the City of Rio Rancho Governing Body on March 25, 2009, updated August 2017, and amended October 2019. One important element of the Infrastructure Strategies section of the Strategic Plan pertains to water sustainability and conservation to support growth and development of the City.

Funding

Festival Cost

The Festival costs are listed in the table below. Please note that the cost for the Rio Rancho Events Center is only for the personnel time, including two police officers per day for security. The pipe and drape for the booth setup was bought by the Festival so there is no pipe and drape

rental. A new bus company was used this year because there has been issues in the past with buses not arriving at the schools on time to pick up the students and deliver them to the Festival.

Cost Description	Amount
Rio Rancho Events Center	$3,080.25
Catering for volunteers & presenters	$3,435.70
Buses (Herrera Coaches)	$9,659.30
T-shirts with art/logos (550 shirts)	$4,990.00
Thank you cards	168.00
Fiscal Administration	$1,000.00
Committee members thank you gifts	$200.00
Total	**$22,533.25**

Sponsorships

Through its fiscal partner, Ciudad Soil & Water Conservation District, the City of Rio Rancho was able to secure several sponsors to fund the Festival. Additionally, the City sponsored $10,000 for the Festival.

A heartfelt "thank you" to these valuable Festival partners!

Steering Committee

The Festival was directed by a diverse steering committee. The core group contained members from:

- City of Rio Rancho's Water Conservation Office
- City of Rio Rancho's Parks Department
- Sandoval County Master Gardeners
- New Mexico Environment Department – Surface Water Quality Bureau
- Citizen volunteers

Design of Festival

Students attended four presentations at the Water Festival.

Pre-Festival Activities

- Each school provides a lead fifth grade teacher who confirms their commitment to participate, provides the number and names of the teacher/classes and the number of anticipated students for each.
- Elementary schools are provided the information on how to participate in the student T-shirt artwork project; student art work is submitted to the Water Conservation Office and a winner is selected.
- Teachers received resource kit materials that included the T-shirts and miscellaneous items donated by our sponsors (e.g., pens, rulers.).

Rio Rancho Children's Water Festival Event

Students at the "Rio Grande Bosque Water Cycle" activity.

- The Water Festival was held from 9:45 a.m. through 11:55 a.m.
- Students attending the Festival boarded buses at 9:15 a.m. at their school.

- Each class was met by a guide/timekeeper who escorted them to each of their four assigned presentations.
- Presentations lasted 30 minutes and topics included: water quality, water conservation, water cycle, wastewater, ecosystems, and built water infrastructure.
- All students received a Festival T-shirt. Darell Montoya from Mr. Bales's class at Rio Rancho Elementary, was the winner of the T-shirt student artwork contest. His design was displayed on the front of the T-shirt and Festival sponsor logos were on the back.

Darell Montoya– T-shirt artwork winner from Mr. Bales's
Rio Rancho Elementary class

Post-Festival Activities

- Teachers will receive a copy of this report.

All aspects of the Festival planning and implementation were created with the *Big Water Questions* in mind. Each presentation addressed at least one of the *Big Water Questions*, as well as the Festival's mission and objectives. The long-term outcome goal is that all elementary school students will be able to provide reasonable answers to these questions by the time they reach middle school.

Big Water Questions

- Why is water so important to life?
- How do all living things depend on each other?
- What is the water cycle?
- What is a watershed?
- Where does my drinking water come from?
- What makes water dirty?
- How much water does my family use?
- Who are the other water users in our society?
- How can *I* protect our water?
- Where does my wastewater go?

Schools Attending the Festival

The following table outlines which schools attended.

Elementary School	**Number of Classes**
Maggie Cordova Elementary	4
Martin Luther King Elementary	4
Puesta del Sol Elementary	5
Rio Rancho Elementary	4
Joe Harris Elementary	4
Totals	**21**

Festival Presentations

"Leaky Faucet" activity. Students learn about how much water can be wasted due to unrepaired leaks.

Each year the Festival relies on numerous professionals who volunteer their expertise and presentation time. These professionals represent federal, state and regional government entities, local engineering firms, and the school district. They choose presentations that represent their missions or specialties. A description of all the presentations, the presenters and their contact information has been provided in Appendix A.

Volunteers

The Festival could not be held without the assistance of a number of volunteers, presenters, and steering committee members. Volunteers were required to use the City's on-line application process to have their background checked prior to interaction with the students.

Lessons Learned

Steering Committee Comments from the Festival

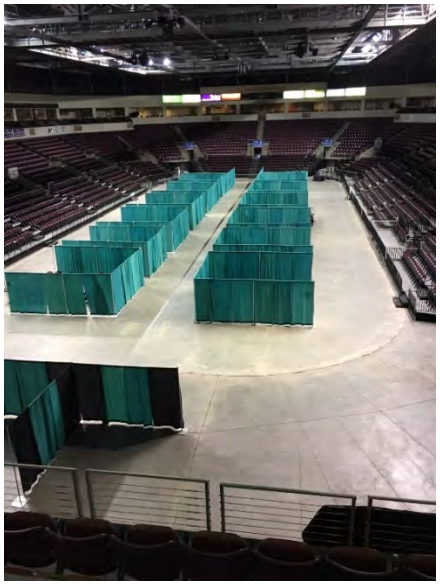
There were only a few comments from the steering committee including:

Event Aspect	Overall Performance	Areas of Improvement
Communication/coordinating with schools	Could have been better	Need to prioritize meetings with the teachers to give them an overview of the Festival.
Transportation	Went great	Need to know right away if any child needs ADA access.
Presentations	Presenters were enthusiastic	Make sure presenters are aware of the time commitment. Go over the key words/concepts. Give presenters the schedule ahead of time. Presenters should have enough material (or filler) to engage the students so they don't finish too early. Think about a "treasure map" for the kids.
Transition between presentations	Average – could have been better	More detailed trainings for guides. The guides need to stand out (maybe dress more festive or wear vests). Kids should stay at current stations until end of allotted time.
Food	Good overall	Fewer breakfast burritos on Monday and more on Tuesday.
Logistics (Public safety, RREC)	Good overall	Need sign in sheets for Master Gardeners. Utilize the facility more and make it more festive (colors/lights/sound-system). Have more water stations.
Break (20 minutes)	Good idea but a little confusing to guides	Maybe get one more presenter next time so we can stagger the breaks. Maybe shorten the break to 10 minutes.
T-shirts	Above average	Order more mediums and fewer smalls next year. Get logos to the printer early next year.

Training of guides/teachers, etc.	Could be better	No students should be by themselves. They need to be accompanied by teachers.
General		Clean up the VIP list ahead of next year's Festival. Have a media person help with medial release. Have a Water Festival webpage (need to discuss with city management). Need a "thank you" banner for the sponsors.

Action Items:

- Do a teacher survey
- Administer post-test (GoogleDocs)
- Need to replenish the supply of SWAG – bags, fans, etc.



Festival layout.

Festival Event

The two days of the Festival ran very smoothly. A new bus company was used because of the issues with RRPS buses the past several years.

We did not have a dedicated photographer this year and there was a low return of the photo release forms from the parents. Because of this, we did not take very many photos. Many of the photographs of students in Appendix C are from prior years.

Appendix A - Working Timeline

The following was used to ensure that steps of the Festival preparation were completed in a timely manner.

- June 30 - Ask for sponsors
- July 30 - Update VIP list
- July 30 – Design poster with the theme
- July 30 – Reach out to presenters
- August 1 – PO for RR Sponsorship
- August 1 – PO for Buses
- August 8 – RR schools starts
- August 20 - Email teachers about CWF date and artwork delivery
- August 22 – Drop off artwork paperwork, poster, photo release forms
- September 6 – Email volunteers
- September 6 - Email reminder to teachers including schedule
- September 6 – Pick up artwork, photo release forms
- September 13 – Meeting to select the winner
- September 13 – Artwork to Rio Rancho T Shirts
- September 15 - Update VIP list and mail invitations
- September 20 - Meet with RREC about food, etc.
- October 11 – Pick up T Shirts
- October 15 - Email layout to RREC
- October 18 – Meeting to pack bags
- October 18 – Drop off bags this week
- October 24th and 25th – Water Festival
- October 28 – Remind teachers about post-test pickup
- November 30 - Pick up post-tests

Appendix B – Festival Presentations

This appendix lists all of the Festival presentations and contacts. For each section, there is the name of the presentation, a brief description of the activity, the correlation of the presentation with the Next Generation Science Standards (NGSS), the contact information of the presenter and if available, where the teacher can locate a similar presentation if they would like to teach it in the classroom.

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Basic Surface Water Treatment

Students learn about processes used to clean water in a contemporary water treatment facility through an interactive process. This activity teaches children about the importance of water quality for drinking water.

Carollo Engineers
Rob Buss rbuss@carollo.com

****

Flash Flooding

For the 2022 water festival our activity was to demonstrate several ways flash flooding can occur utilizing our flood model. We allowed the kids to use a pitcher of water to demonstrate rainfall and how rain-rate affects flash flooding. The model used sponges to show how the ground can soak up a lot of that rainwater but eventually it runs off into the streams, arroyos and eventually rivers. If the ground or sponge is saturated, then all the rainfall runs off into the drainage areas. We had toy houses to show what happens to houses in flood prone areas and how to build levees to protect structures. We could change out the sponges or ground for a flat plexiglass surface to represent concrete. We could show how the "concrete" does not catch any rainfall and it immediately runs off causing flooding. We also demonstrated by moving our rain catcher how flooding changes with moving storms or how it changes with the speed of storms. These

demonstrations let us have conversations with the kids and teachers about flood safety and preparedness.

National Oceanic & Atmospheric Administration, National Weather Service
Kerry Jones (505) 243-0702 kerry.jones@noaa.gov

****

Incredible Journey
During this activity, students become water molecules and move through the water cycle. They learn about the movement and distribution of water – as well as pollution – on the earth.

NM Environment Department, Surface Water Quality Bureau
Heidi Henderson heidi.henderson@state.nm.us

A similar activity found on web: Incredible Journey, Project WET
http://files.dnr.state.mn.us/education_safety/education/project_wet/sample_activity.pdf

****

Keep the Rio Grande
Keep the Rio Grande Activity is an interactive game where the students become an arroyo supplying stormwater to the Rio Grande. The stormwater picks up a variety of items as the flow increases creating a flood of raindrops, trash, pet waste, bacteria, and plastics as the students pass the items down to the river. The students learn about stormwater quality and the impact we have on water in our neighborhoods and town. After the rain has stopped, students discuss the water and debris on the ground around them and at the end of the line the river. Then they are tasked with sorting all of the items to bins labeled: trash, compost, recycle and rain.

Middle Rio Grande Stormwater Quality Team
Xavier Pettes (505) 891-5045 xpettes@rrnm.gov

****

Leaky Faucet

Students create a water leak and scientifically measure the leak using graduated cylinders over three tests. The students then compute the average milliliters of water leaked over one minute to the number of gallons of water leaked and wasted over one year.

Rio Rancho Public Schools
Lou Cusimano (505) 975-0326 lou.cusimano@rrps.net

A similar activity found on web: Leaky Faucet, Utah Education Network http://www.uen.org/Lessonplan/preview.cgi?LPid=27247

****

Let's Settle This Outside

Students become wastewater operators and learn how the wastewater treatment plant cleans dirty water. They then create wastewater using everyday materials and clean the wastewater by sorting it into three stations: water, sludge, and trash.

Jacobs

Bill Jaquez	(505) 891-5024	billy.jaquez@jacobs.com
Wendell McCall	(505) 891-5017	wmccall@rrnm.gov

A similar activity found on web:
Wastewater: We Treat it Right, City of Boise
http://bee.cityofboise.org/media/216580/43385_Wastewater.pdf

****

New Mexico Past and Present

Students learn where water comes from (the water cycle), where water is today in New Mexico, and what they can do to protect and conserve water. The students then become detectives using fossils to discover where water occurred in the past in New Mexico.

New Mexico Museum of Natural History and Science

Mike Sanchez	(505) 841-2583	michael.sanchez1@state.nm.us

****

Rio Grande Bosque Water Cycle

In the semi-arid climate of New Mexico, our scarce precipitation limits the quantity of water available for use by plants, animals and humans. Students become water molecules traveling through a water cycle. The presentation emphases, with evidence and cause and effect, why we need to consider all water users when making water-use decisions.

Rio Grande Nature Center
Tanja George (505) 344-7240 Tanja.George@state.nm.us

A similar activity found on web: Incredible Journey, Project WET
http://files.dnr.state.mn.us/education_safety/education/project_wet/sample_activity.pdf

****

Stormwater and Watersheds

Students learn about watersheds by examining and manipulating watershed models. They learn that a watershed is the land area that drains to a water body such as a river or lake. They see for themselves how watersheds can influence water quality.

Sandia National Laboratories
John Kay (505) 344-7240 jtkay@sandia.gov

A similar activity found on web: Protecting Our Water Resources, Midwest Research Institute (See Level 2) http://www.stormwater.ucf.edu/toolkit/vol3/Contents/pdfs/Student%20Activities/student_activities.pdf

****

Sustainable Tomorrow

WM of New Mexico hosted a giant pong game designed to help students learn how to Reduce, Reuse and Recycle as ways to help conserve water and other natural resources. Following a short interactive presentation, students stepped up to a collection of mini basketballs labeled with different materials such as Plastic Water Bottle, Cardboard Box, Blue Jeans, etc. The object of the game was to get the material (noted on the basketball) into the correct bucket – either Recycle, Reuse or Reduce. In action, the game offered the dual challenge of learning what the greenest option for different materials was and then getting the bouncing ball into the right 3-gallon bucket.

Waste Management
Laila Amerman lamerman@wm.com

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Water Jeopardy

Students learn basic concepts and differences about groundwater vs. surface water supply for potable drinking water. The concepts are reinforced by participation in a Jeopardy game where students compete to determine the correct water "question" for a series of given "answers" (like the TV show).

Bohannon Huston, Inc.
Nathan Roberts (505) 823-1000

nroberts@bhinc.com

A similar activity found on web: The Water Cycle Jeopardy, Super Teacher Tools (online Flash game for up to 5 teams) http://www.superteachertools.com/jeopardy/usergames/Jan201205/game1327973751.php

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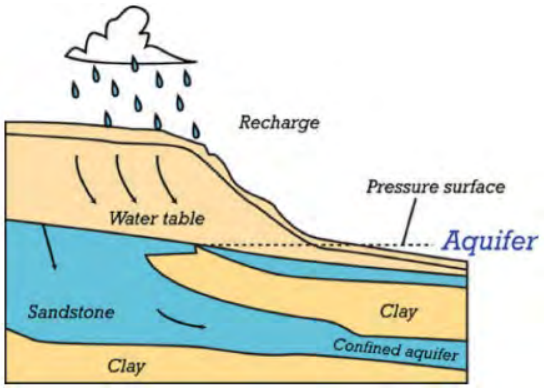
Appendix C - Post Test

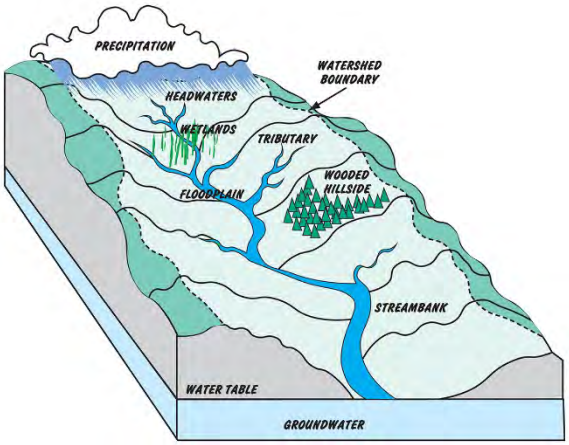
The Festival steering committee rewrote the student test in 2017; diagrams and pictures were added to help the students visualize the concepts. In 2019, Google Forms was used with the Rio Rancho students to take the tests. These tests were without diagrams and pictures.

Unfortunately, with staff changes, we were unable to access the Google Forms test so paper Post tests were sent to the schools. The tests were written in Google Forms to be used next year and diagrams and pictures were added.

1. Many substances and objects can make river water dirty. Which of the following items can make the Rio Grande dirty?
   a) Trash
   b) Dog poop
   c) Leaky cars
   d) All the above

2. An **aquifer** is a layer of water-saturated porous rock. It lies below the water table. Most people who live in New Mexico get drinking water from a well drilled into an aquifer. If you live in Rio Rancho, is the water coming from your faucet from an aquifer?
   a) True
   b) False



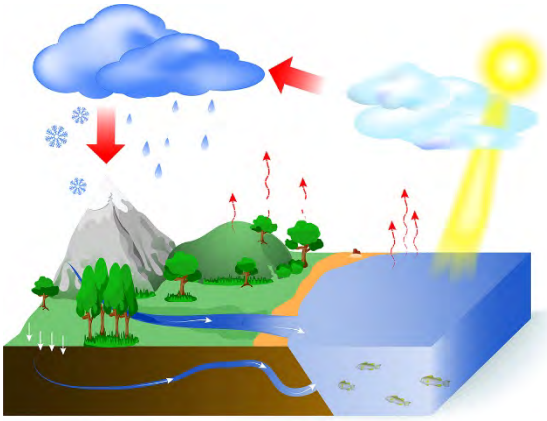


3. A **watershed** is an area of land that drains all the streams and rainfall to a common outlet such as the outflow of a reservoir, mouth of a bay, or any point along a stream channel. Is the following statement true or false: We all live in a watershed?
   a) False
   b) True

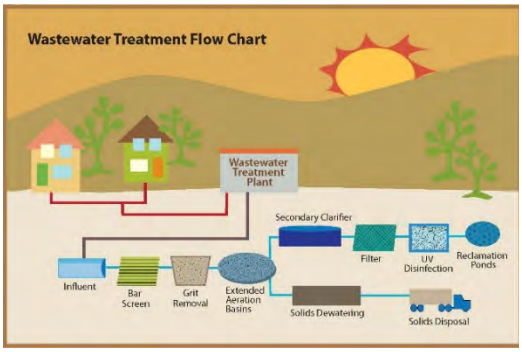
4. Everyone in Rio Rancho uses, on average, about 65 gallons of water per person per day. If you have four people in your home, what is your family's daily average water use?
   a) 260 gallons of water per day
   b) 200 gallons of water per day
   c) 2,600 gallons of water per day

5. Water users in our state include plants, animals, and people. Why is water so important to life?
   a) People need it to survive
   b) Plants need it to survive
   c) The river needs it to support nature
   d) All the above

6. The **water cycle** happens as the earth is warmed by the sun and water circulates between the earth's oceans, atmosphere, and land. Which of the following are terms associated with the water cycle?
   a) Pumping, Treatment, Delivery
   b) Evaporation, Condensation, Precipitation
   c) River, stream, aquifer



7. How can we protect our water?
   a) Litter
   b) Tell your parents when you see a leak
   c) Pour chemicals on the ground



8. **Wastewater** (or sewer water) is the used water from toilets, showers, and clothes washers and it is too dirty to go straight into the river or into the ground. Septic tanks and wastewater treatment plants clean the water before it goes to the river or into the ground.
   a) True
   b) False

Appendix D – Student Post-Tests Scores

The following table shows the percentage of correct answers on both the pre and post-test. Because most of the answers were provided using Google Forms, there was no way to distinguish answers by class or school. Not every teacher from every school provided pre and post-tests. The questions are in the same order as in Appendix C.

Question	Elementary School Name					
	Cordova	Puesta del Sol	ML King	Joe Harris	Rio Rancho	Average
Makes river dirty	73	74	61	74	84	73
Where DW comes from	75	77	71	78	77	76
Watershed	69	68	86	65	48	67
How much water	77	68	75	83	87	78
Water important to life	87	75	82	83	85	82
Water cycle	47	48	71	78	60	61
Protect water	95	84	93	83	86	88
Wastewater	78	78	68	87	78	78

As in year's past, the students do not have a good understanding of what a watershed is or the fact that we all live in a watershed. They also had problems with what is the water cycle.

Ciudad Soil & Water Conservation District

Non RX Stormwater Presentations 2022

Date	Times	RR or ES	Event	Presenter(s)	Visitors
4.23.2022	9:00am–12:00pm	RR	RiverXchange Community Day	Erin, Steve, Salema	10
6.4.2022	9:00am–12:00pm	RR	BernCo Master Naturalist Presentation	Steve, Erin	25
6.11.2022	9:00am–12:00pm	RR	GHH	BernCo OSD	12
6.13.2022	9:00am–12:00pm	RR	Shady Lakes	Erin, Steve, Jaren (Nature Niños)	45
6.18.2022	9:00am–12:00pm	RR	Phil Chacon Park	COA OSD – Nature in Your Neighborhood	did not attend
6.13.2022	10:00am–1:00pm	RR	Shady Lakes: Nature Niños Summer Camp	Steve, Jaren, Saleema (Nature Niños)	40
6.23&25.2022	6:00–7:30pm 9:00–11:00am		Residential Rainwater Harvesting 2.0 (Online & In-person at GHH)	Jim	45
6.30.2022	10:00am–1:00pm	RR	Shady Lakes: Nature Niños Summer Camp	Steve, Jaren, Saleema	75
7.16.2022	9:00am–12:00pm	RR	Alamosa Community Center	Erin, Steve (COA OSD – Nature in Your Neighborhood)	35
7.25.2022	10:00am–1:00pm	RR	Shady Lakes: Nature Niños Summer Camp	Erin, Steve	75
7.30.2022	9:00am–2:00pm	RR	Isleta Environmental Fair	Steve Glass, Tom Allen Jaren Peplinski	75
8.22 & 24.2022	10:00am–2:00pm & 9:00am–11:00pm	RR	UNM Welcome Back Days	Kolt, Thomas, Steve, Erin	100
8.27.2022	9:00am–12:00pm	ES	TBD	COA OSD- Nature in Your Neighborhood	
8.27.2022	9:00am–1:00pm	RR	Santa Ana Environmental Fair	Jaren, Theresa	
9.24.2022	9:00am–12:00pm	RR	TBD	Erin, Steve (COA OSD – Nature in Your Neighborhood)	

RIVERXchange®

3rd Quarter Report 2022-2023
January- March
Submitted by: Education Manager
Erin Blaz

The RiverXchange Team: Erin Blaz, Theresa Aragon, Astrid Mooney

Participating Schools:

FUNDER	MRGSQT		SSCAFCA	
	SCHOOL - Number of classes	Number of Students	SCHOOL - Number of classes	Number of Students
*Title 1 school	La Mesa* - 4	58	MLK* - 4	113
	Valle Vista* - 2	43	Maggie Cordova* - 4	100
	Seven Bar* - 3	45		
	John Baker- 2	41		
	Zia*- 2	40	**OUTDOOR EQUITY FUND**	
	Monte Vista - 3	48	Puesta del Sol* - 5	105
	Cochiti* - 2	47		
	North Valley Academy - 3	50		
	Mission Ave*- 2	54		
	Bel-Air* - 2	46		
	Lavaland* - 1	20		
	San Antonito - 3	71		
	Chaparral* - 3	87		
TOTALS	**32**	**650**	**13**	**318**
RX Total Classes	**45**	**RX Total Students**	**968**	

Summary:

3rd Quarter: January- March are typically very active months for RiverXchange participants and staff. Pole planting with CABQ OSD occurs weekly, presentations are in full swing and this year, teachers were provided with a six week-long action project support campaign via weekly emails that contained summaries of each stage of the Earth Force process and resources. Theresa Aragon also developed and taught a new Agriculture lesson for APS classes since RiverXchange still has not found a partner with the capacity to serve the number of APS classes enrolled. The lesson focused on food waste, virtual water, and water conservation and was very much enjoyed by the classes. By the end of March, all but 2 RRPS classes had completed all the field trips. These field trips are rescheduled for May in partnership with Talking Talons Youth Leadership EPA field trips at the Tijeras Bio-Zone Education Center, along with Backyard Refuge and includes a stewardship component to help restore the Tijeras Creek riparian zone.

Mid-year: The 2nd quarter activities focused on scheduling and confirming presentations and the field trips; tracking presentations and scheduling reminder emails; and organizing the Earth Force *environmental action civics* process into an online classroom format on Canvas for teachers.

RiverXchange® remains focused on building meaningful watershed experiences for New Mexico students this year and has returned to a fully in person program for 2022-2023.

The agreement with the Middle Rio Grande Stormwater Quality Team (MRGSQT), including the contributions from Southern Sandoval County Arroyo Flood Control Authority (SSCAFCA), provides funding for 38 classes this year. At the suggestion by SSCAFCA, Ciudad Soil and Water Conservation District (SWCD) applied for additional funds to support RiverXchange this year through the Outdoor Equity Fund Grant, and Ciudad SWCD was

www.ciudadswcd.org

RIVERXchange®

Mid Rio Grande Stormwater Quality Team

Mid-year: Staff are working on guidance and criteria for awards to be released in January.

Task 12: Collect and analyze teacher feedback.

Complete by May 2023. **Status:** approaching

Staff will revise the teacher feedback form and offer it to teachers by the end of April.

Task 13: Create, print and mail thank you cards to in-kind partners and certificates of recognition to teachers.

Complete during June 2023. **Status:** approaching

We will maintain correspondence with our in-kind partners throughout the school year and send thank you notes as needed.

Task 14: Reporting to sponsors.

3rd quarter report by April 2023. Final report by June 2023.

RIVERXchange

www.ciudadswcd.org
505-225-7487

Additionally, the Outdoor Equity Grant experienced some hold-ups in the procedure around securing the agreement for the grant, so one school - Puesta del Sol, only came on just at the end of September once we were able to confirm the grant. Around late September most schools had fully confirmed their participating classrooms in RiverXchange, with two schools confirming classes that still did not have a teacher. The other teachers at these schools desired for those students to participate in the program and offered to support those classes until they were assigned a teacher.

Of the 16 schools participating this year, 6 are completely new schools to RiverXchange - Bel Air, Mission Ave., Lavaland, San Antonito, Chaparral and Puesta del Sol.

Task 2: Review and revise curriculum.

Complete by September 2022. **Status: completed.**

RiverXchange staff are proud of this program's continued ability to meet the unique needs of 5th grade teachers in our region. Many elementary teachers suggest that they are the least comfortable teaching science subjects and others reflect that the district purchased science curriculum doesn't provide the same quality of experiences as RiverXchange. One of our most long-standing RiverXchange teachers shared with us that their school consistently scored higher than average on science testing scores and accounts that to their participation in RiverXchange.

This year the RiverXchange website was significantly updated in effort to improve participating teachers familiarity with, understanding of, and successful use of the RiverXchange curriculum, which is unlike many standard curricula as it blends outside presenters and field experiences with project-based learning. The RiverXchange website now reflects how the curriculum is broken down into 3 areas of study (and the comparative activities and associated leaders of those activities): Understanding a Watershed (Teacher-led, ensures the foundation of

understanding a watershed with a Shower Curtain Watershed lesson or similar activity), Water in Our Society (Presentations with various agencies and presenters) and The River Ecosystem (Pre-lesson and field trip hosted by City of Albuquerque Open Space). These study areas have been defined in RiverXchange for many years through the Big Water Questions, which are suggested reflection prompts for students throughout the program. Using these three areas of study proved to be helpful in introducing RiverXchange to new teachers and refreshing experienced ones.

Most importantly, linking these 3 areas of study together is the Action Project. Using Project-based learning as a means to support student engagement in meaningful action in their watershed, the Action Project is a critical element of the RiverXchange curriculum. In its second year of delivery, previously called the capstone project, The Action Project aims to become a significant professional development opportunity for teachers as a means to deliver high quality STEM and civic engagement through project-based learning in their classroom. Students will benefit from the Action Project by acquiring a multitude of skills that are required to take meaningful action for watershed health. From interviewing stakeholders, collecting data, researching history, policy and practices around an issue, to reporting on and advocating for change through action, the Action Project will build on the core content of RiverXchange and help students understand what it takes to inspire, demand or be a leader for effective change.

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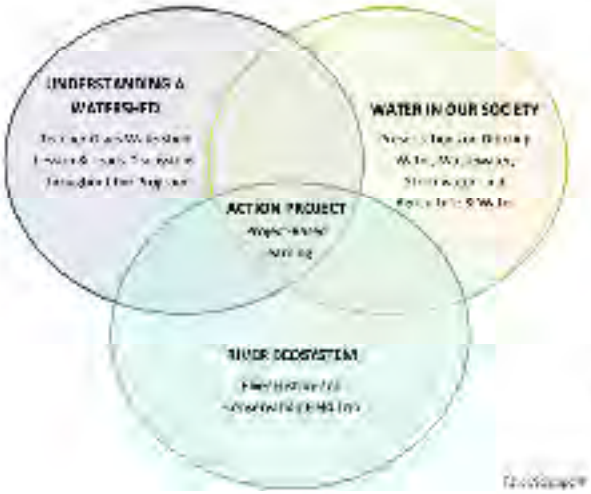

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Complete by October 2022. **Status: completed.**

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it demonstrated the need for even more clear and direct guidance on the framework, which was helpful for staff to understand so we can find a way to meet that need.

Task 4: Review Action Project format and reporting system.

Goal: Complete by September 2022. **Status:** in process

3rd quarter: With around half of the teachers present on the CANVAS platform to explore and utilize the Earth Force process, it was decided to do a six week email campaign to encourage teacher participation in the Action Project, continuing to use the Earth Force process as the guide. These emails also served as a reminder for the deadline to submit summaries of the action projects, along with guiding questions for submissions, and the award prizes (pizza party gift certificates for the first 10 classes to submit). Submissions were due March 17 before spring break and 10 teachers submitted videos or recordings of their students answering questions about their projects.

Mid-year: In October, Erin Blaz attended the North American Association of Environmental Education's national conference in Tucson, AZ. At this conference, Ms. Blaz was introduced to Earth Force and their "Environmental Action Civics" process. This process is a fully developed framework for completing an action project and aligns with the RiverXchange Action Project Framework that was in development on our end. Earth Force freely shares its process for educational purposes and the integration of this process into RiverXchange has been discussed with their team. While our original framework for the Action Project included 5 steps and guiding questions, the Earth Force process has 6 steps with adjoining lesson plans, videos, activity templates, and helpful tips for each step. An overview of the Earth Force Resources can be found here.

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The project reporting system is in development. We are using a free online learning management system called Canvas to post the Earth Force Learning Process, much like an online class for teachers to follow and implement the process. Canvas allows teachers to upload content such as media files, which we are hoping to obtain for the Children's Radio Hour show which will feature RiverXchange classes for their Earth Day segment.

Task 5: Review, update and distribute pre-survey to all classes before presentations begin and track completion.

Begin August 2022. On-going through Dec 2023. **Status: completed.**

This year's survey was updated slightly with a change to the possible answers being narrowed to mostly True, False or I haven't learned this yet. Rather than allowing students to only show a scaled response that either shows correct or incorrect knowledge, we are attempting to offer "I haven't learned this yet" as a strategy to show authentic learning in post-survey.

The Pre-Survey can be viewed from : www.riverxchange.com/Survey

Task 6: Monitor, coordinate and provide support to teachers for Action Projects.

Begin December 2022. On-going through May 2023. **Status: approaching.**

3rd Quarter: As stated above, a six week email campaign was delivered to all teachers; each week focused on one of the six stages of the Earth Force process with supporting resources. As the Earth Force process is new to RiverXchange, we wanted to present the resources in a few different ways to increase access, while also being cautious of overwhelming teachers with emails and information. Additionally, RiverXchange staff meet with Earth Force representatives to discuss best practices for delivering Earth Force and getting action project reports or

summaries by students and teachers. RiverXchange staff was also invited to participate in the Earth Force Train the Trainer program in June, which offers a $500 stipend for participation and demonstration of Earth Force implementation.

Mid year: Staff is making every effort to ensure teachers have easy access to the Earth Force materials as guidance for the Action Project. On November 30, staff hosted an Action Project Discussion on Zoom to review the Earth Force process, orient teachers to the Canvas classroom and show how to upload recordings of students reporting on their projects. Sixteen teachers attended this discussion and 19 teachers have joined the Canvas classroom.

Task 7: Coordinate field trips.

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Field trip coordination is in progress with our main point person, Ellie Althoff, from CABQ-OSD. Ellie will continue to offer a field trip pre-lesson this year, focused on the River of Change from the Bosque Education Guide. Ellie is coordinating the field trips so that she will offer the pre-lesson the same week as the pole planting field trip. This is an exciting addition to the program as students will be taking immediate action by pole planting native trees after they learn about the impacts of flood control measures on the Bosque and riparian ecosystem of the Rio Grande. Field trips will begin in December and run through March on Thursdays and Fridays.

3rd Quarter: This year the pole planting took place in two locations. For January and February we planted at the Shining River Open Space, just south of Paseo del Norte on the east side of the

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Rio Grande. For March we moved to Gabaldon, just north of the 1-40 and east of the river. This location change was unique, and reflected new staffing at CABQ-OSD, however the desire to ensure a positive experience for everyone was consistent with prior years. The Shining River planting location was extremely challenging for students, adults and staff. The holes were extremely sandy, which meant they were hard to dig out with the hand augers and collapsed often. Most students struggled to get one tree in over the course of the field trip. Although it was challenging, it was possibly even more rewarding once they finished that one, hard-earned tree. Classes that planted in March still voiced an equal number of complaints over the hard work, even though they were able to get up to 4 trees in the ground per group! It goes to show that it is less about the number of trees they get and more about teaching perseverance with the students. It was also noticeable that many classes came to the pole planting with increased understanding of the flood control and management strategies that impact the Bosque ecosystem which informed why they were there, due to the pre-field trip lesson with CABQ-OSD.

Mid-year: Two field trips took place in December in the Bosque off of Paseo del Norte and Rio Grande. 68 students attended and 43 cottonwoods were planted. This site has been confirmed for January plantings, but Open Space is still evaluating the best location for Feb and March plantings. This is unique as most years OSD confirms all pole planting locations at once. Bus costs have increased significantly and staff is working on finding the best vendors to service the field trips.

Task 8: Coordinate classroom guest speakers.

Begin September 2022. On-going through May 2023. **Status: in process.**

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With the program moving to in-person presentations this year, coordinating and getting presenters back on board took a little extra effort as some had not presented for the last two years as they offered a video recording of the presentation instead (i.e. Rio Rancho Utilities, Sandia Labs). Additionally, both APS and RRPS required different levels of background checks. Ample notice was given to those presenters in order to complete those requirements.

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3rd quarter: As is common with such a busy time of presentations, coordination of reschedules between presenters and classes probably happens the most during the 3rd quarter. Theresa Aragon managed these communications smoothly, while also designing a new agriculture + water lesson and teaching it to every APS class in RiverXchange. This was possible due to field

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trip leader funds that weren't utilized now that all pole planting field trips are for two classes at a time, rather than some being for one class only, which reduces the number of total field trips.

Mid-year: All presentations, except Agriculture for APS have been scheduled and confirmed with presenters and classrooms. RiverXchange staff are exploring options to present the Agriculture themselves, as it may be more efficient time and budget wise than seeking new partnerships with little time left to schedule.

Task 9: Review and track Action Project progress

Begin December 2022. On-going through May 2023. **Status:** in process.

3rd quarter: While the initial CANVAS participation by teachers in the 2nd quarter was encouraging, staff have only had one teacher upload any action project recording information on this platform. With Theresa visiting many classes in APS for the Agriculture Presentation and supporting the Pre-Lesson in RRPS, she was able to talk to teachers directly to encourage submissions and take videos herself to submit to the Children's Radio Hour. We were able to gather videos and voice recordings from 10 classes. This is definitely an area that needs evaluation and improvement, as it is difficult to retrieve details about each classroom's project as we are not really there to capture their work.

Mid-year: Staff have shared with teachers the importance of documenting the action projects along the process and have designated a place to upload recordings, documents or pictures to the Canvas classroom. The Canvas platform became accessible to teachers at the end of November and with December being a busy month, we expect to see more to report on in the 3rd quarter.

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Task 10: Distribute post-survey to classes after they complete presentations and field trip, complete metrics evaluation and review.

Begin February 2023. On-going through April 2023. **Status:** approaching.

3rd quarter: A few classes have completed their presentations and post-surveys are being distributed.

Task 11: Review Action Projects for RiverXchange Excellence and award winners.

April 2023. **Status:** approaching.

3rd quarter: This year, in collaboration with the Children's Radio Hour, we are featuring students discussing their Action Projects on the Earth Day show in April. Our initial intention was to incentivize the classes with a feature on the Children's Radio Hour as an award for teachers to submit their projects. However, as a result of few audio and video submissions received, we separated the pizza party awards and radio feature to boost overall project submissions by the deadline. In addition to the awards incentive, teachers were given the opportunity to submit their progress gradually and were encouraged to seek assistance from RiverXchange staff throughout each step of the Earth Force process. The weekly Earth Force email campaign was key in reinvigorating participation in sharing class's Action Projects and delivering specific criteria to the teachers with the flexibility of incorporating their own process.

While presentations in the classroom began, students started making connections to the big water questions and how it relates to problems they were noticing in their own community. Many students jumped into action and started brainstorming their Action Projects by interviewing staff and students about the environmental issues they are trying to solve.

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Mid-year: Staff are working on guidance and criteria for awards to be released in January.

Task 12: Collect and analyze teacher feedback.

Complete by May 2023. **Status:** approaching

Staff will revise the teacher feedback form and offer it to teachers by the end of April.

Task 13: Create, print and mail thank you cards to in-kind partners and certificates of recognition to teachers.

Complete during June 2023. **Status:** approaching

We will maintain correspondence with our in-kind partners throughout the school year and send thank you notes as needed.

Task 14: Reporting to sponsors.

3rd quarter report by April 2023. Final report by June 2023.

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Mid-year Report 2022-2023
October-December
Submitted by: Education Manager
Erin Blaz

The RiverXchange Team: Erin Blaz, Theresa Aragon, Astrid Mooney

Participating Schools:

FUNDER	MRGSQT		SSCAFCA	
	SCHOOL - Number of classes	Number of Students	SCHOOL - Number of classes	Number of Students
*Title 1 school	La Mesa* - 4	58	MLK* - 4	113
	Valle Vista* - 2	43	Maggie Cordova* - 4	100
	Seven Bar* - 3	45		
	John Baker- 2	41		
	Zia*- 2	40	**OUTDOOR EQUITY FUND**	
	Monte Vista - 3	48	Puesta del Sol* - 5	105
	Cochiti* - 2	47		
	North Valley Academy - 3	50		
	Mission Ave*- 2	54		
	Bel-Air* - 2	46		
	Lavaland* - 1	20		
	San Antonito - 3	71		
	Chaparral* - 3	87		
TOTALS	**32**	**650**	**13**	**318**
RX Total Classes	**45**	**RX Total Students**	**968**	

Summary:

Mid-year: The 2nd quarter activities focused on scheduling and confirming presentations and the field trips; tracking presentations and scheduling reminder emails; and organizing the Earth Force *environmental action civics* process into an online classroom format on Canvas for teachers.

RiverXchange® remains focused on building meaningful watershed experiences for New Mexico students this year and has returned to a fully in person program for 2022-2023.

The agreement with the Middle Rio Grande Stormwater Quality Team (MRGSQT), including the contributions from Southern Sandoval County Arroyo Flood Control Authority (SSCAFCA), provides funding for 38 classes this year. At the suggestion by SSCAFCA, Ciudad Soil and Water Conservation District (SWCD) applied for additional funds to support RiverXchange this year through the Outdoor Equity Fund Grant, and Ciudad SWCD was successfully awarded the full request of $9,650.00 to support additional classes. The Outdoor Equity Funding also supports a review of practices for equity and inclusion in our program as well as the strengthening of those practices. In total, by the end of September the final numbers are 45 classes, with 968 students participating. Twelve out of the sixteen schools are designated Title I.

Additionally, during the 1st quarter Ciudad SWCD employed Jessica "Saleema" Robinson as an Education Assistant to support our education programs. During the first quarter Saleema supported curriculum development for RiverXchange. Due to other opportunities, Saleema's time with Ciudad was short lived. However we were able to hire Theresa Aragon, a biologist and educator, to fulfill a role as Education Coordinator. Theresa has provided direct

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coordination and planning support for RiverXchange and remains employed with Ciudad SWCD.

Task 1: Recruit and select NM classes.

Complete by September 2022. **Status: completed.**

This year's recruitment for RiverXchange was met with a few obstacles. We found this year that many teachers' positions were changed at the beginning of the semester and in some schools all members of the prior 5th grade teaching cohort were in new positions. This made it difficult to predict how many classes from some schools would be joining RiverXchange, and if some schools would return at all. Colinas del Norte and Sandia Vista, both of whom have been with RiverXchange for at least 4 or more years and had significant teacher turnover, did not respond to our invitations to the program. As a result of the teacher scramble that ensued at the beginning of the year, RiverXchange staff reached out to presenters to see if they had contacts with schools that would be good candidates for RiverXchange. This proved to be a worthy effort because we were met with great interest, and only had to put two schools on the waitlist. Additionally, the Outdoor Equity Grant experienced some hold-ups in the procedure around securing the agreement for the grant, so one school - Puesta del Sol, only came on just at the end of September once we were able to confirm the grant. Around late September most schools had fully confirmed their participating classrooms in RiverXchange, with two schools confirming classes that still did not have a teacher. The other teachers at these schools desired for those students to participate in the program and offered to support those classes until they were assigned a teacher.

Of the 16 schools participating this year, 6 are completely new schools to RiverXchange - Bel Air, Mission Ave., Lavaland, San Antonito, Chaparral and Puesta del Sol.

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Task 2: Review and revise curriculum.

Complete by September 2022. **Status: completed.**

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Most importantly, linking these 3 areas of study together is the Action Project. Using Project-based learning as a means to support student engagement in meaningful action in their watershed, the Action Project is a critical element of the RiverXchange curriculum. In its second year of delivery, previously called the capstone project, The Action Project aims to become a significant professional development opportunity for teachers as a means to deliver high quality STEM and civic engagement through project-based learning in their classroom. Students will benefit from the Action Project by acquiring a multitude of skills that are required to take meaningful action for watershed health. From interviewing stakeholders, collecting data, researching history, policy and practices around an issue, to reporting on and advocating for change through action, the Action Project will build on the core content of RiverXchange and help students understand what it takes to inspire, demand or be a leader for effective change.

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Task 4: Review Action Project format and reporting system.

Goal: Complete by September 2022. **Status:** in process

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Tracking and reporting will begin in December.

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Begin February 2023. On-going through April 2023. **Status:** approaching.

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Midyear report by January 31, 2023. Final report by June 1, 2023.

Meaningful Watershed Education
5th grade

2023 Report

Presented by:
Ciudad Soil & Water Conservation District
Erin Blaz, Education Manager
Theresa Aragon, Education Coordinator

July 2022-June 2023

CONTENTS

SUMMARY

This year, funding enabled 45 NM classes in 16 schools (1012 students and 49 teachers) to participate in the *completely in-person* RiverXchange® program. 38 classes were funded by MRSGSQT and SSCAFCA for the program and 5 classes were funded by the Outdoor Equity Fund. Twelve of the sixteen schools we served were Title 1. All program costs and coordination are provided free of charge to teachers. The program required a total of $65,622 in cash ($57,950 from MRGSQT in cash and $7,672 from Outdoor Equity Fund in cash) and generated a total match valued at $140,673.00 in the form of in-kind contributions including teacher workshop attendance, presenter time and travel, as well as volunteer time from students and adults on the field trips to plant 473 trees in the bosque. Student Action Projects reached a total of 6,239 (last year was 3,090) community members about stormwater and watershed health related topics. Since 2007, we have served over 20,166 students!

MS4 Permit Compliance

The RiverXchange program meets a number of education and public engagement requirements set forth in the EPA Municipal Separate Storm Sewer System Permit No. NMR04A000.

Summary of Education and Outreach requirements met:

- Proper Disposal of Oil, Household Hazardous Waste ✓
- Proper Disposal of Pesticides, Herbicides, and Fertilizers ✓
- Impaired Waters in the city/state ✓
- Pet Waste Management ✓
- Watershed Management ✓

Classroom Education on Stormwater

- Distributes educational materials to schools. ✓
- Provides classes, seminars, and workshops for schools to participate in municipal-sponsored storm water educational training. ✓
- Sponsors stormwater workshops for teachers. ✓
- Awards certificates and give other types of recognition to schools that participate in municipal-sponsored stormwater workshops or events. ✓

- Earth Day Event ✓
    - Children's Radio Hour Earth Day show featuring RiverXchange students

2022-2023 PROGRAM OVERVIEW

I. Program Management and Financial Support

The program timeframe was July 1, 2022 through June 30, 2023. All components including fundraising, design, planning, implementation, and analysis were carried out by employees and contractors of Ciudad Soil & Water Conservation District, including:

Erin Blaz
Jenny Lloyd-Strovas
Astrid Hueglin
Saleema Robinson
Theresa Aragon

SPONSORS

- Southern Sandoval County Arroyo and Flood Control Authority (SSCAFCA)
- Middle Rio Grande Stormwater Quality Team (MRGSQT)
- Outdoor Equity Fund, New Mexico Outdoor Recreation Division

Sponsors provided a total of $65,622.61.00 in cash.
MRGSQT - $39,650.00 | SSCAFCA - $18,300.00 | Outdoor Equity Fund - $7,672.61

Program expenses included:

- Technology services
- Office and educational supplies
- Teacher workshop materials and food
- Coordination services (planning, implementing and assessing all program components)
- Bus funding
- Substitute funding

This year, the program featured the following components:

- Optional standards-based curriculum including hands on science, math, and social studies lessons, as well as writing assignments
- Teacher training on curriculum and Action Project implementation
- Ongoing Action Project implementation support and Action Project monitoring
- End of year teacher survey

- Pre and post student surveys
- Coordination of at least four guest speakers into the classroom
- Coordination of an in person field trip to the local river or important watershed feature
- Field trip leadership and activity planning with City of Albuquerque Open Space

IN-KIND PARTNERS

- Albuquerque Water Utility Authority
- City of Albuquerque – Open Space Division
- Sandia Labs
- Sandoval County Cooperative Extension
- SSCAFCA

In-Kind contributions totaled $140,673.00

In-kind contributions included teacher attendance at the teacher training, guest speaker travel, prep and presentation times. The City of Albuquerque continued offering a pre- field trip lesson presentation to classrooms. Additionally, in-kind match was able to return to a pre-2020 range due to the allowance of pole planting field trips, where student and adult time and trees are counted as match through volunteer time and materials.

PARTICIPANT SELECTION

All 45 participating NM classes were fifth grade classes, distributed as follows:

FUNDER	**MRGSQT**		**SSCAFCA**	
	SCHOOL - Number of classes	**Number of Students**	**SCHOOL - Number of classes**	**Number of Students**
*Title 1 school	La Mesa* - 4	77	MLK* - 4	115
	Valle Vista* - 2	43	Maggie Cordova* - 4	100
	Seven Bar* - 3	45		
	John Baker- 2	41		

	Zia*- 2	40	**OUTDOOR EQUITY FUND**	
	Monte Vista - 3	71	Puesta del Sol* - 5	105
	Cochiti* - 2	47		
	North Valley Academy - 3	50		
	Mission Ave*- 2	54		
	Bel-Air* - 2	46		
	Lavaland* - 1	20		
	San Antonito - 3	71		
	Chaparral* - 3	87		
TOTALS	**32**	**692**	**13**	**320**
RX Total Classes	**45**	**RX Total Students**	**1012**	

II. Program Components

Mission

The mission of RiverXchange is to deepen students' and teachers' understanding and appreciation for their local river ecosystem and watershed, motivate participants to protect local water resources by conserving water and keeping their source water clean, and to provide a high quality, high impact outreach opportunity for funders and in-kind contributors.

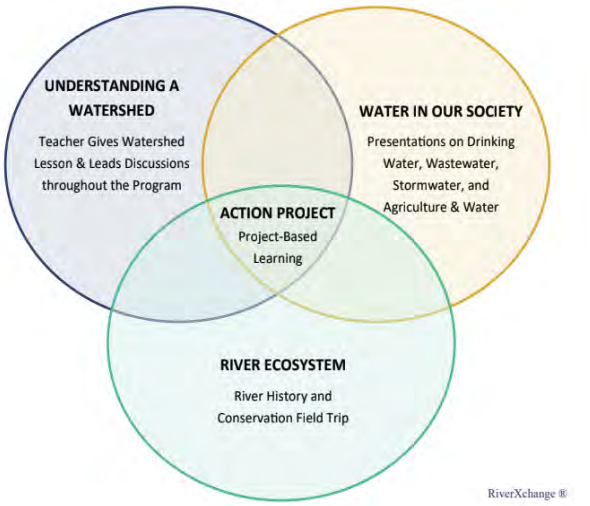
Curriculum

The core curriculum of RiverXchange® is delivered through a series of in-class presentations provided by our partner agencies that are guided by the "Big Water Questions" that aim to build an understanding of watershed health. Additionally the field trip, in partnership with City of Albuquerque Open Space, has remained a core component of our program by offering students the opportunity to participate directly in a restoration project to understand the value of action and stewardship as a community effort. The conservation field trip also offers an opportunity for participating students, who

come from diverse backgrounds and have varied relationships with the outdoors, a chance to connect with an important, local watershed feature and build a connection to their local river. Furthermore, beyond the core components of RiverXchange®, the program also supports a more robust understanding of watershed health through teacher facilitation of the Action Projects and other additional lessons that are demonstrated at the teacher workshop.

In the summer of 2022, the RiverXchange website was updated to reflect the current program framework, teacher resources and expectations, and the Action Project guidelines. The framework is aligned with the Big Water Questions and is broken down as such:

(1) Understanding a Watershed: Teacher-led lesson introduces the concept of a watershed; a lesson is provided for teachers to implement on their own in their classroom ideally before any presentations start.



(2) Water in Our Society: The in-class presentations on drinking water, wastewater, stormwater and agriculture and water provide a foundation for understanding water use, resources concerns and conservation practices in our society.

(3) River Ecosystem: The field trip pre-lesson and conservation field trip help students build a relationship to the Rio Grande as a riparian ecosystem that has been disrupted by flood control management and understand local actions to remediate those impacts.

The Big Water Questions

The Big Water Questions help students to meet the RiverXchange® learning objectives and demonstrate competency in the science standards, but ultimately they are the foundation for becoming critical thinkers, problem solvers and water protectors!

Understanding a Watershed

- Is every place in the world part of a watershed?
- Where does your community's stormwater go?
- How can surface water become polluted?
- How does the water cycle relate to weather?
- How are groundwater and surface water connected?
- How can groundwater become polluted?
- What actions can all of us take to keep water clean?

Water in Our Society

- In what ways does our society use water?
- Where does your community's drinking water come from?
- Does everyone have the right to use as much water as they want?
- Where does your community's wastewater go?
- What actions can all of us take to conserve water?

River Ecosystem

- How does water affect living things in an ecosystem?
- What role do forests play in a watershed?
- What role do wetlands play in a watershed?
- What are some of the ways scientists can determine the health of a river, lake, bay or ocean?
- What actions can all of us take to improve the health of our ecosystem?

III. Deliverables

A review of this year's program delivery follows.

A. TEACHER WORKSHOP

Two teacher workshops were held this year on September 23 and September 30 at the Open Space Visitor Center, with a total of 31 teachers in attendance. Teachers from Chaparral, San Antonito and Puesta del Sol were unable to attend due to late registration to the program, however staff met with these teachers outside of the workshop to train them on the program and schedule their presentations.

This year's workshops featured BEMP educators Laura Pages and Annie Montes, who facilitated an activity called "Dabbling in Data." In this activity, groundwater table data is recorded on graphs for multiple years to see seasonal trends and observe periods of drought or heavier than normal snowmelt or precipitation as a means to discuss the relationship between weather patterns, groundwater and ecosystem health. Highlighting BEMP as a collaborative partner with Ciudad SWCD and RiverXchange was helpful for teachers to see how our program fits into the larger landscape of watershed education in our community and how students will eventually build on RiverXchange in future outdoor and environmental education experiences.

The workshop also focused on the framework for The Action Project with teachers, with discussion in small groups on how to implement the project in the classroom. Reflections from that discussion was shared in the larger group, and while feedback was positive and enthusiastic, it demonstrated the need for even more clear and direct guidance on the framework, which was helpful for staff to understand.

B. CORE PROGRAM

PARTNER AGENCY PRESENTATIONS

Drinking Water, Wastewater, Stormwater, and Agriculture & Water

APS

Rhea Trotman and Ellie Garcia from the Albuquerque Bernalillo County Water Utility Authority provided the drinking water (leaky faucet) and wastewater (what scientists do with #1 and #2) presentations. A team of Sandia Labs employees provided the stormwater presentation (non-point source enviroscape). Bernalillo County Cooperative Extension was unable to serve the total number of APS classes this year for the agriculture presentation. Although they offered to do up to 8, it was determined that RiverXchange staff would be the best to fill in this year and cover all the classes to reduce the logistics and provide cohesive lessons. This year the agriculture presentation focused on food waste and water conservation and was very well-received by students and teachers alike (lesson plan in Appendix XX).

RRPS

Rhea Trotman and Ellie Garcia from the Albuquerque Bernalillo County Water Utility Authority also provided the drinking water (leaky faucet) and wastewater (what scientists do with #1 and #2) presentations for RRPS. John Stomp and Andy Edmondson from SSCAFCA provided the stormwater presentation (non-point source enviroscape). Steve Lucero, Nicole Lujan and Rachel Zweig of Sandoval County Cooperative Extension provided the agriculture presentation.

FIELD TRIP

Field Trip Pre-lesson

City of Albuquerque Open Space Division Educator Ellie Althoff provided significant support to students understanding the "why" behind planting cottonwoods and willows in the Bosque by offering the Bosque Education Guide's River of Change presentation. This lesson explores a storyline of the Rio Grande History by discussing the pre-settlement ecology of the Middle Rio Grande; flood control impacts due to colonization and non-native settlement of the Middle Rio Grande Valley; and finally restoration and mitigation strategies for flood control impacts on the ecosystem.

Pole Planting

A total of 886 students and 152 adults attended pole planting field trips from APS and RRPS. With the support of Albuquerque Open Space, 473 total trees were planted in an area of the Bosque at two locations in the Bosque- Shining River and Gabaldon Trailhead. Images of students pole planting are in Appendix XXXX. The Shining River location was extremely sandy and students had a very difficult time digging out the pre-drilled holes with the hand augers, as the holes frequently collapsed with sand. As a result, some student groups only planted one tree a day. The general standard is 2-4 trees per day per student group. Regardless, it was an extremely successful year with all classes participating in a field trip on, and only 2 being rescheduled to a non-pole planting event.

Tijeras Bio-Zone Education Center (TBEC)

Our last pole planting field trip was scheduled with MLK for March 17, but due to a spring snow storm school was canceled for MLK. Since there were no longer any pole planting dates available, MLK was offered to participate in another field trip experience Ciudad SWCD was taking part in with Talking Talons Youth Leadership's EPA Watershed Stewards grant. This event was in May and students took part in learning about the Albuquerque Backyard Refuge Program, doing a habitat study on site, a rolling river presentation, reptile presentation and nature hike.

PRESENTATION TOTALS

Program presentations were completed as follows:

Agriculture: 45/45
Stormwater: 45/45
Wastewater: 45/45
Drinking Water: 45/45
Pre-field Trip Lesson: 45/45

Field Trips by class
Pole Planting: 43/43
Tijeras Bio-Zone Education Center: 2/2

C. ACTION PROJECT

This concludes the second year the RiverXchange has implemented the Action Project component to support meaningful connections between RiverXchange students, their greater community and watershed health. The Action Projects continue to provide a fun and engaging opportunity for students to learn about and advocate for their watershed. To reach this goal, students and teachers work together to create a project that includes aspects of conservation and stewardship in their local community. Building off of last year's "Capstone Project" framework, RiverXchange staff created a 5 step framework for taking action, with each step having specific guidance on how to accomplish each step. The steps were (1) Identify a Problem, (2) Develop a Plan, (3) Take Action, (4) Reflect and (5) Celebrate.

The Action Project Framework was introduced at the teacher workshop, with time for teachers to work in groups to determine an initial plan of how they would accomplish each step. During their group presentations on planning for the action project, it was clear to RiverXchange staff their were going to be diverse methods and approaches, varying from the depth of the process (minimal to extensive), engagement of students in the design process (none to extensive), and level of impact (classroom only to school wide). This was valuable information and was especially pertinent to Erin Blaz at the NAAEE (North American Association of Environmental Education) National Conference in October 2022 when she was introduced to EarthForce, a national program that support "Environmental Action Civics (EAC)" through an action project framework similar to what RiverXchange staff were newly implementing. Earth Force is a highly-regarded

nation-wide program and as recently as 2016 Albuquerque hosted an Earth Force representative. The program's civic process for taking environmental action has been implemented, updated and practiced since 1989. The Earth Force mission is also to support educators like RiverXchange staff in reaching more teachers and providing effective training. Since December of 2022, RiverXchange staff have met with Earth Force program managers bi-monthly to discuss how to best implement the Earth Force process into RiverXchange. In June 2023, RiverXchange staff took an Earth Force training and will work with a cohort of similar educators and programs to work on bringing best practices in environmental action civics to participating teachers.

The Earth Force process (6 Steps) is very similar to the Action Project Guidelines (5 Steps) RiverXchange teachers were trained on at the teacher workshop. RiverXchange staff introduced the Earth Force EAC process to teachers in November, and used a variety of methods to share Earth Force resources and engage teachers with EarthForce throughout the school year. We provided a (1) short 30 minute online live training session over zoom that was recorded and shared (16 teachers attended), (2) we created a Canvas (a learning management system) classroom with RiverXchange specific documents for each step of the Earth Force EAC process that paired with our core curriculum, and (3) we sent weekly emails across six weeks starting in January with these resources as well. The Canvas website was intended to be a place where teachers could upload progress on their action projects and connect with other teachers, and ultimately a place where RiverXchange staff could track progress and completed action projects. To entice classrooms to take part in the action project in a timely manner, RiverXchange staff created an awards system for projects with the first 10 classes who met the criteria for submissions to receive a pizza party.

In January, RiverXchange staff developed and shared Action Project Awards criteria, listed below, to encourage submissions of Action Project document:

- Submissions must be received by MARCH 17 to be considered for the pizza party (we will still allow for submission past this date and encourage everyone to share no matter when they are turned in)
- Submissions should at minimum describe the project and have some reflection on the process.Please use the questions on the next page to prompt student reflection on their action project.
- At least one audio or video recording is submitted.

CHILDREN'S RADIO HOUR

An unique opportunity was presented to teachers this year to have their classes featured on our locally produced Children's Radio Hour, which is broadcasted on 140 stations worldwide. The goal was to have students featured discussing their action projects. Approximately 6 classes were featured on the and the broadcasting was aired on Earth Day 2022 with a focus on rivers. A recording of the broadcast can be found at: https://www.childrenshour.org/earth-day-rivers/. Student recordings were sourced from teachers and taken by RiverXchange staff when in contact with the classes at field trips or presentations. RiverXchange staff will continue to find ways to acknowledge students' work on the action projects through local publications and media.

D. Justice, Equity, Diversity and Inclusion

The Outdoor Equity Funding received this year included support to implement best equity practices into the program, with the goal to better understand and value individual and cultural relationships to nature and the outdoors as a means to improve our program's pedagogy. RiverXchange takes a scientific and factual approach to discussing water resource topics, but the field of environmental education continues to emphasize the importance of cultural and relational values in outdoor learning. In other words, our work isn't just about getting students outside, but how we relate to them in the program and relate them to the outdoors. Two approaches were taken to meet our goal of implementing best practices for equity in the outdoors - the implementation of the Earth Force process and staff professional development in a Justice Equity, Diversity and Inclusion (JEDI) 101 course offered by the SouthEast Environmental Education Association. Cultural responsiveness and environmental justice is built throughout the Earth Force's Process of 'Environmental Action Civics.' From the start students and teachers are prompted to take a community inventory and discuss strengths and areas of concern in their community relating to watershed health. As students progress, they work in committees based on their interests and skills, meet with stakeholders and/or potential collaborators and are pushed to reflect deeply to determine the best course of action before they even begin to take action or make a request for change. These are skills that are critical for making informed decisions to solve problems of today and tomorrow, as they are rooted in community knowledge and resources. We look forward to seeing how the integration of the Earth Force process improves the depth to which students can take meaningful action within the RiverXchange program.

The JEDI 101 course that staff participated in was a series of six zoom sessions with a cohort from across the US paired with homework assignments. The course was aimed at building a foundation for justice, equity, diversity and inclusion within an organization and challenged participants to see and define the way current forms of oppression (i.e. ideological, institutional, interpersonal, internal) are present in everyday systems all around us and how we can disrupt these systems in the field of environmental education in order to improve. It concluded with an action step, which for our staff was to discuss creating definitions with our board of supervisors for important terms related to JEDI in order to create future policies and guidelines for our education, outreach and programs.

EVALUATION

I. TEACHER FEEDBACK

Teacher feedback is an invaluable resource for program evaluation and it continues to help us understand how RiverXchange® helps teachers reach their goals and provide feedback on ways to better support their classroom objectives. This year's feedback continues to reinforce that RiverXchange® remains relevant and impactful in curriculum and content. Feedback demonstrates the RiverXchange

program is highly valued by teachers for its ability to provide hands-on and experiential activities that introduce students to local watershed issues, reconnect them to the natural world, and demonstrate career opportunities in the science and conservation fields. RiverXchange® continues to be an evolving and beneficial curriculum that teachers use to stimulate the personal and collective growth of their students by encouraging them to use teamwork, adaptability, and communication skills to engage in and build an understanding in complex and new topics.

In addition, the Action Project has provided an additional opportunity for teachers and students to engage their greater school community in environmental civic action to improve learning that occurs in the program through education, research, and community service. Feedback also demonstrates the RiverXchange® continues to be valued for its ability to bring community science in the classroom and teach about water resources issues, while addressing specific changes in environmental problems students wish to improve.

Additionally, when asked to share what successes teachers and the students had with integrating the Action Project, teachers reported that students really enjoyed creating deeper connections to water issues through direct action. Teachers described how their students used the action project to educate others about environmental issues, organize campus-wide clean-ups, and build interactive models to demonstrate key watershed science concepts. Some teachers noted they used the Action Project to assess if students achieved the NM Stem Ready/Next Generation Science Standards and 62% of teachers say RiverXchange is very effective in helping students achieve these standards.

Lastly, when asked how RiverXchange® could be improved to support teachers in future years, some teachers reported difficulty implementing the Earth Force process as an additional objective in their curriculum. Teachers also indicated that they would benefit from more direct education on how the pole planting field trip ties into their water conservation efforts prior to the trip.

Below are a few highlights from the teachers:

What are the greatest learning outcomes for your class as participants in RiverXchange®?

Students understood that they have a part in our planet's future. They feel empowered to make changes when they see injustice.- Ryan, Lavaland ES

My students were able to write letters to politicians explaining why our water resources were so important in Albuquerque, and they were able to share ideas for solving these problems. - Wicks, Bel-Air ES

The successes we had in completing our action project was honoring student voices. Students were able to be active participants/leaders in creating the project. - Martinez, Valle Vista ES

Our entire school felt the impact of our trash pick up project. Our class was recognized on a nearly weekly basis for our contribution to our school's overall environment. - Rogers, North Valley Academy ES

It was very beneficial and all the presentations were informative and engaging! - Agena, Puesta del Sol ES

Students and staff really enjoy learning about where we live and how what we choose to do or not do can affect our environment. - Beer, Cochiti ES

This was an outstanding experience and my class and I loved every minute of it. Erin and her helpers were all amazing leaders and patient with all of the requirements our large classes put on them. Loved the field experience, loved the push-in lessons, and loved all the supplemental lessons we were provided. Well-done Xchange peeps!!!!! - Cordova, Chaparral ES

This was a great program and one of the few times my students worked together. - Deschenie, Monte Vista ES

Please share any feedback you have concerning your experience with the program this year.

It was great this year--the presentations were engaging and fun! - Harness, Monte Vista ES

I really enjoyed how easy it was to follow. - Gallegos, Maggie Cordova ES

I really feel that everyone at RiverXchange went above and beyond to provide us with a quality environmental education. I know this may be asking a lot, but I feel that regular check-ins would be beneficial to build a stronger connection between students and their environmental gurus at RiverXchange. - Rogers, North Valley Academy ES

I think it is great that there are programs that help students be advocates for their environment. - Ryan, Lavaland ES

I think the first year is challenging to keep up with all the presentations and project. I believe now that I know what to expect, next year will be easier. - Lopez, Chaparral ES

Overall RiverXchange is helpful in engaging ways for students to learn valuable lessons. - Martinez, Valle Vista ES

I do not have any suggestions at this time :) y'all are awesome! - Butler, Zia ES

II. ACTION PROJECT ENGAGEMENT

In RiverXchange, our goal is that students not only understand their local watershed but that they use their voice to advocate for conservation and proper management of watershed health in their community.

However documenting and evaluating teacher and students success in this process has its challenges since staff are not working alongside the classes throughout their action project. Therefore we rely on teachers to provide us updates and documentation (pictures, audio, and videos) of this process in their classroom. To improve documentation of action projects staff created what we hoped to be a manageable set of criteria and guidance for providing that documentation to our team. Staff communicated to teachers that there were multiple ways to share this documentation: (1) via the Canvas site online (2) through our email communication (3) thumb drives and (4) through project descriptions on the teacher feedback form. As the school year progressed, we found that teachers were not very active on Canvas. However the weekly Earth Force email campaign in January helped reinvigorate participation in the Action project and deliver specific guidance to the teachers with the flexibility of incorporating their own process into their curriculum.

During the month of March 10 teachers submitted documentation of their action projects and met the criteria for a RiverXchange Excellence award and pizza party. These projects all identified a need for change and addressed this issue with considerations of the community inventory (step 1 of Earth Force) and involved some collaboration outside of their classroom (i.e. school admin, other grades, whole school). The submissions demonstrated various kinds of participation in the process based on teacher and student interest and capacity. The method of asking for change ranged from delivering presentations to other classes, informational posters, announcements, letters to local businesses and campus-wide, grade-level or weekly campus clean ups.

Beyond the impact to the students, the projects engaged the local community. When asked who in the community the class Action Project reached, teachers shared that often entire grade levels, students' families, and in some cases the whole school were reached during the course of the project. Students also expressed wanting to increase their reach to the greater public outside the school community. In total, teachers reported reaching 6,239 additional community members with their projects.

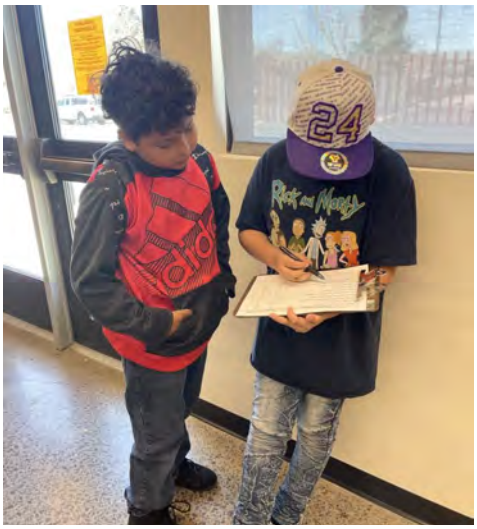
The challenging circumstances of obtaining consistent participation in the action project process, especially from teachers new to RiverXchange, has allowed us a valuable opportunity to adjust our teacher workshop materials next year. Many teachers found it difficult to incorporate the new Earth Force process after they already planned out their yearly curriculum and viewed the Action Project as an addition to their lesson plans. Next year, we will focus on helping teachers integrate the Earth Force Action Projects into their lessons to make more meaningful connections while exceeding national standards in all school subjects.

Overall, the majority of teachers appreciated the hands-on and outdoor education focus of the Action Project criteria and felt their students gained meaningful experiences in the process.

Action Project Images

Campus Clean Up & Poster Campaign- La Mesa Elementary

Food Waste study with all grade levels- Lavaland Elementary



III. STUDENT SURVEYS

A key component of RiverXchange is its measurable goals relating to student performance. We collected quantitative data on student performance by way of a pre and post survey and qualitative data by observing the work submitted via the Action Projects. The survey includes questions that relate to environmental attitudes and behaviors as well as knowledge gained relating to our learning objectives.

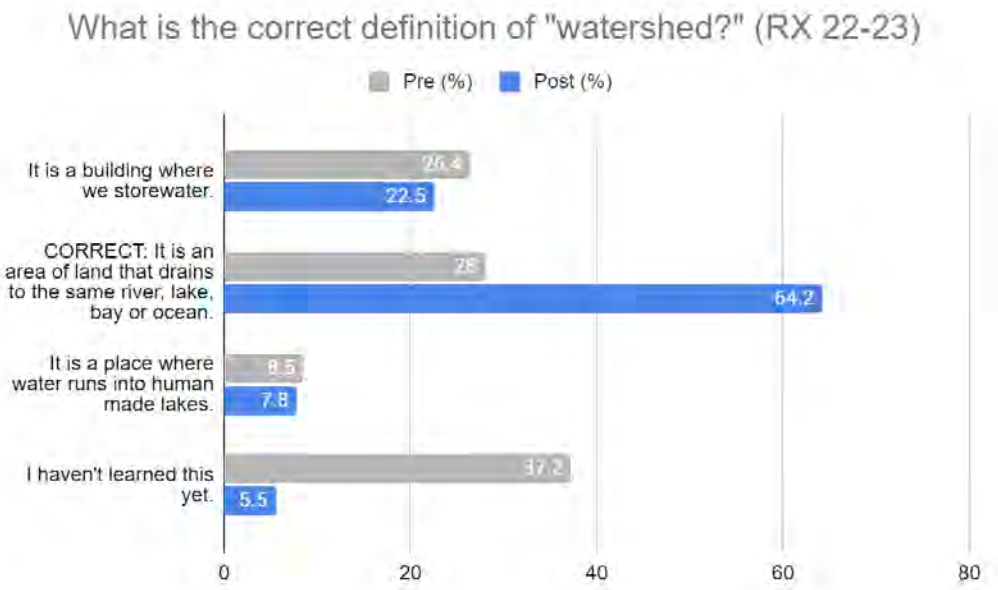
Pre/Post Program Survey

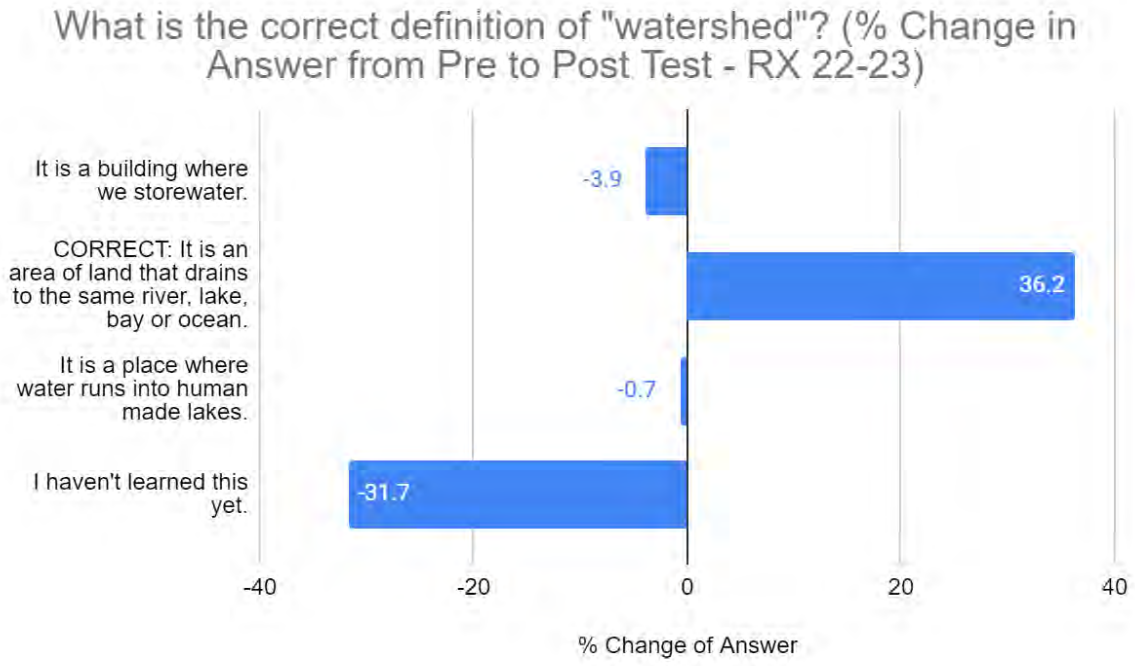
This year, 826 students completed the pre-survey and 587 completed the post-survey. We continue to refine the survey and our programming year after year based on teacher feedback and metrics gathered from these surveys.

This year's metrics demonstrate an improvement in student understanding of watershed health topics post the RiverXchange program; specifically:

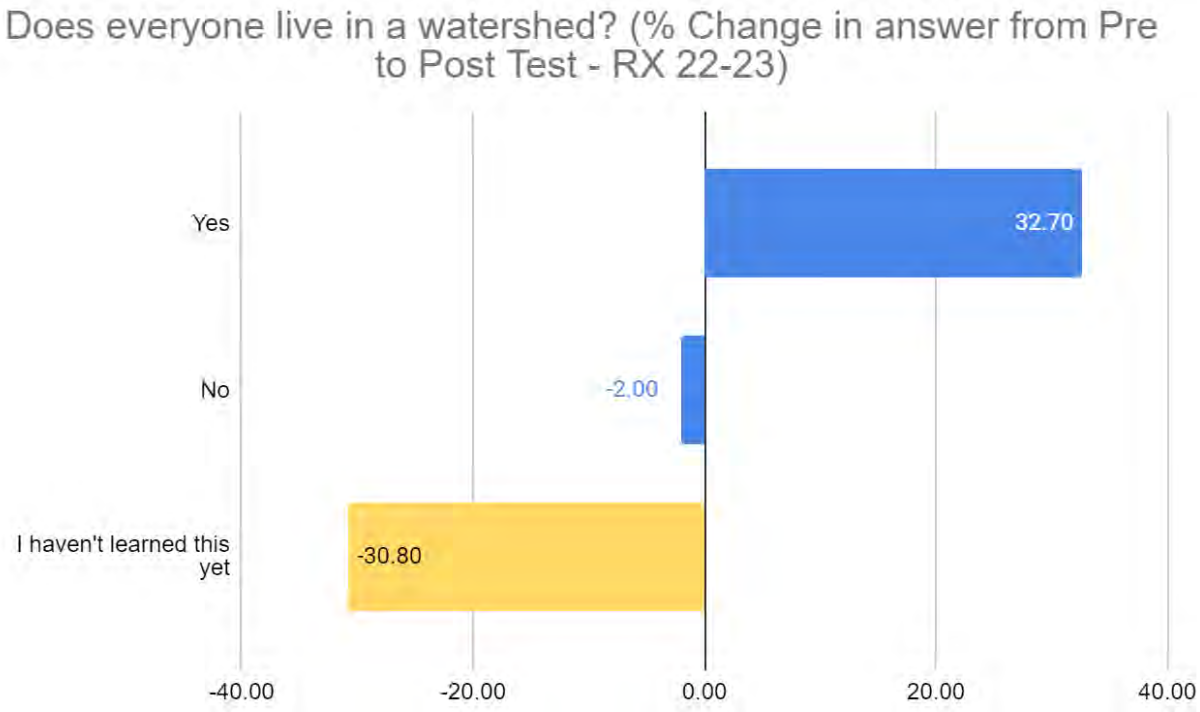
- **36.2%** more students can correctly define a watershed, with a total of 64% of students correctly defining a watershed after the program.
- **32%** more students know that "everyone lives in a watershed" after the program.
- **19%** more students understand that stormwater is polluted by human activities; a total of 75% of students agree that stormwater is polluted by human activities after the program.
- **28.8%** of students can correctly define stormwater after the program.
- **63%** of all students identify picking up dog poop as highly impactful for improving watershed health.
- **24%** more students correctly identify that pesticides, herbicides, and fertilizers are a concern in stormwater.

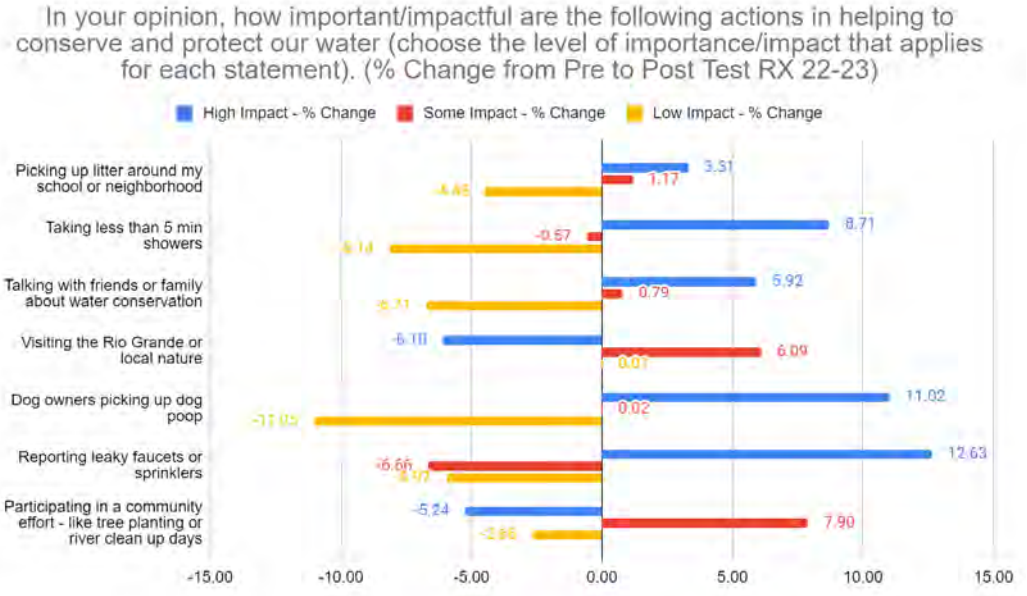
2022-2023 Evaluation / Metrics Results & Percent Change Graphs

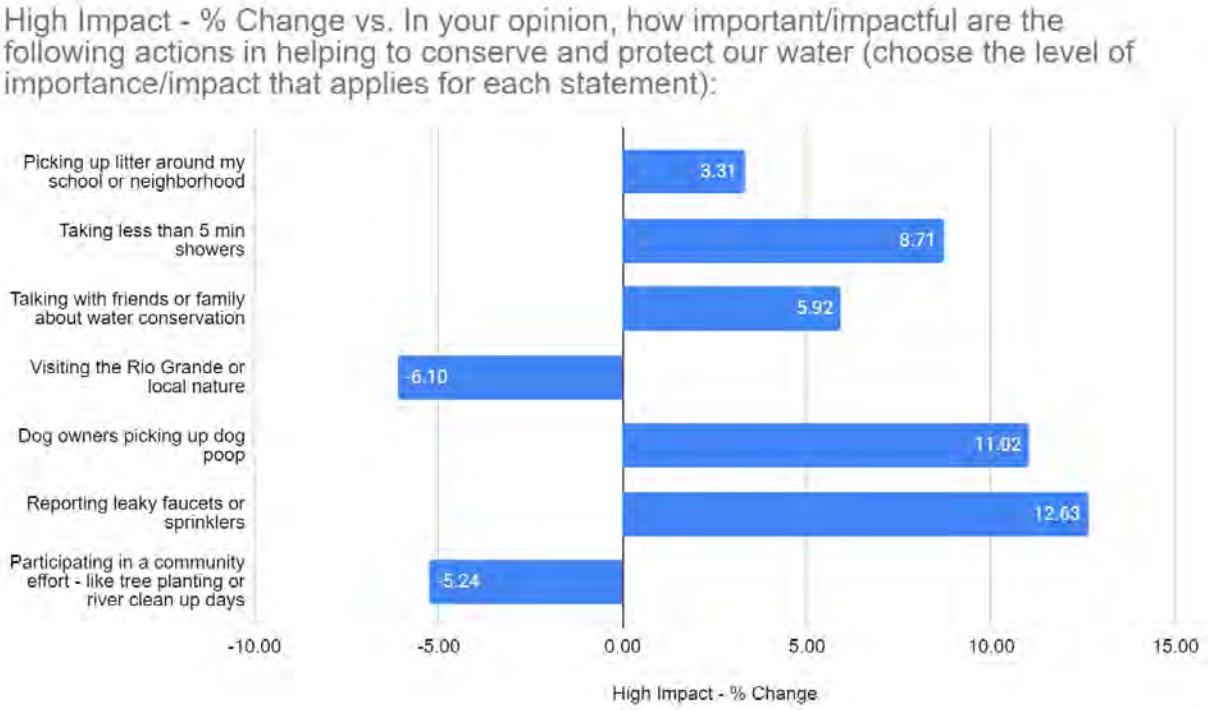


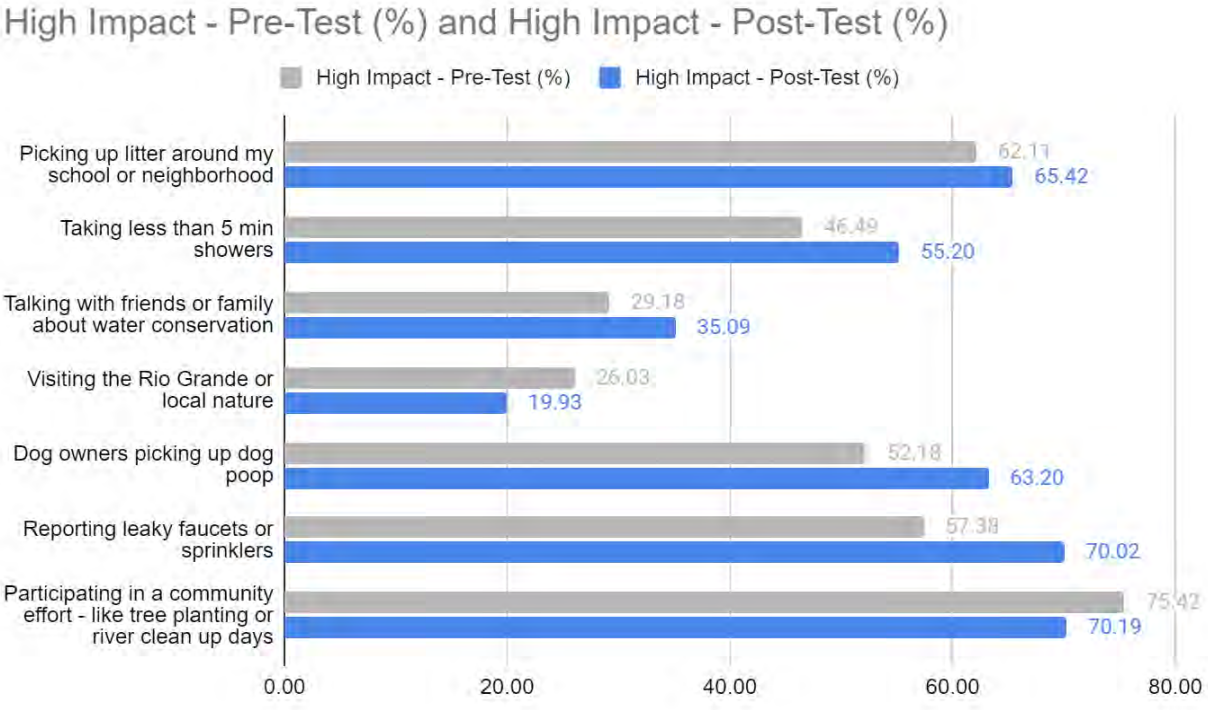


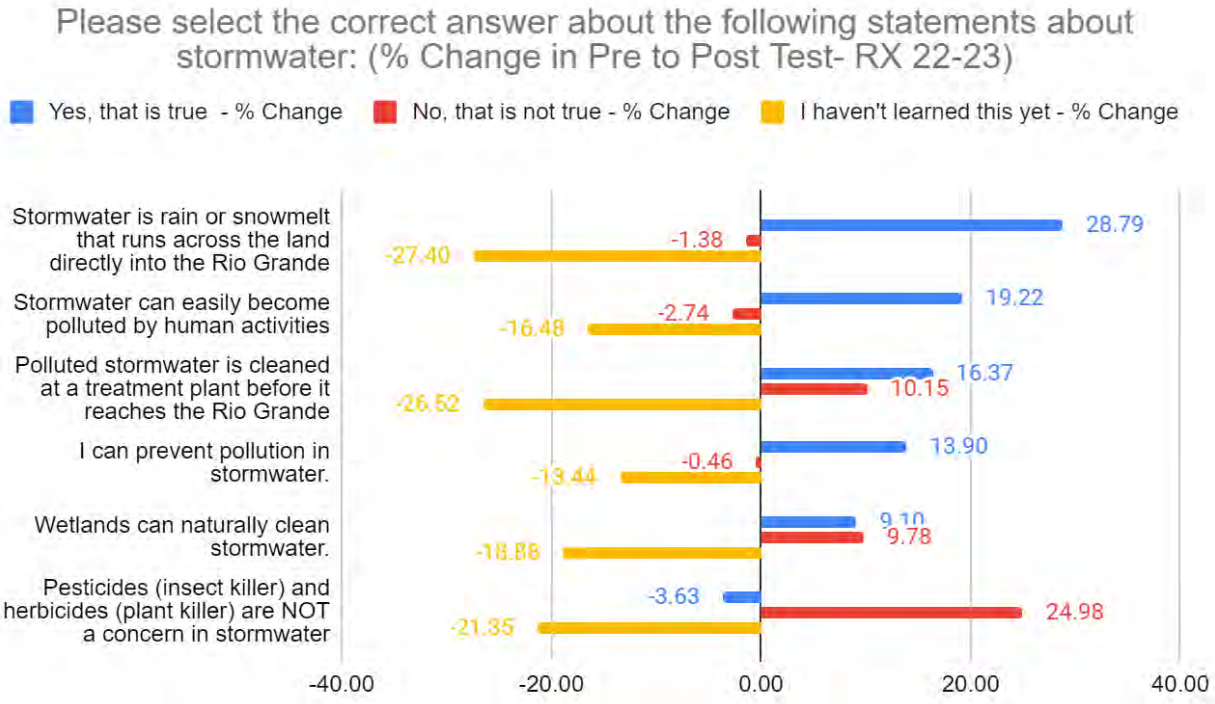
Teachers were given a shower curtain lesson to make a watershed. It was noted on the website and broken down in the curriculum description so the teachers understood that it was a requirement. 51% of teachers who responded on the teacher feedback survey said they did an introductory watershed lesson, 40% said they used the shower curtain lesson provided by RiverXchange.

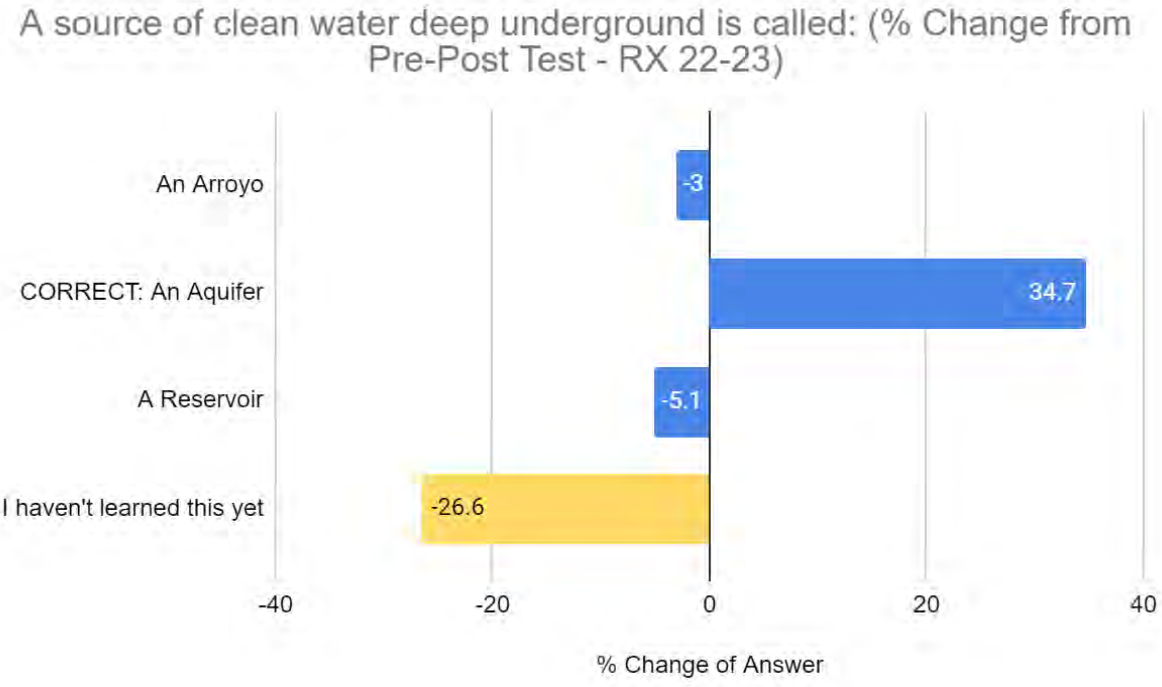

Does everyone live in a watershed? (% Change in answer from Pre to Post Test - RX 22-23)
Yes
No
I haven't learned this yet
32.70
-2.00
-30.80
-40.00
-20.00
0.00
20.00
40.00

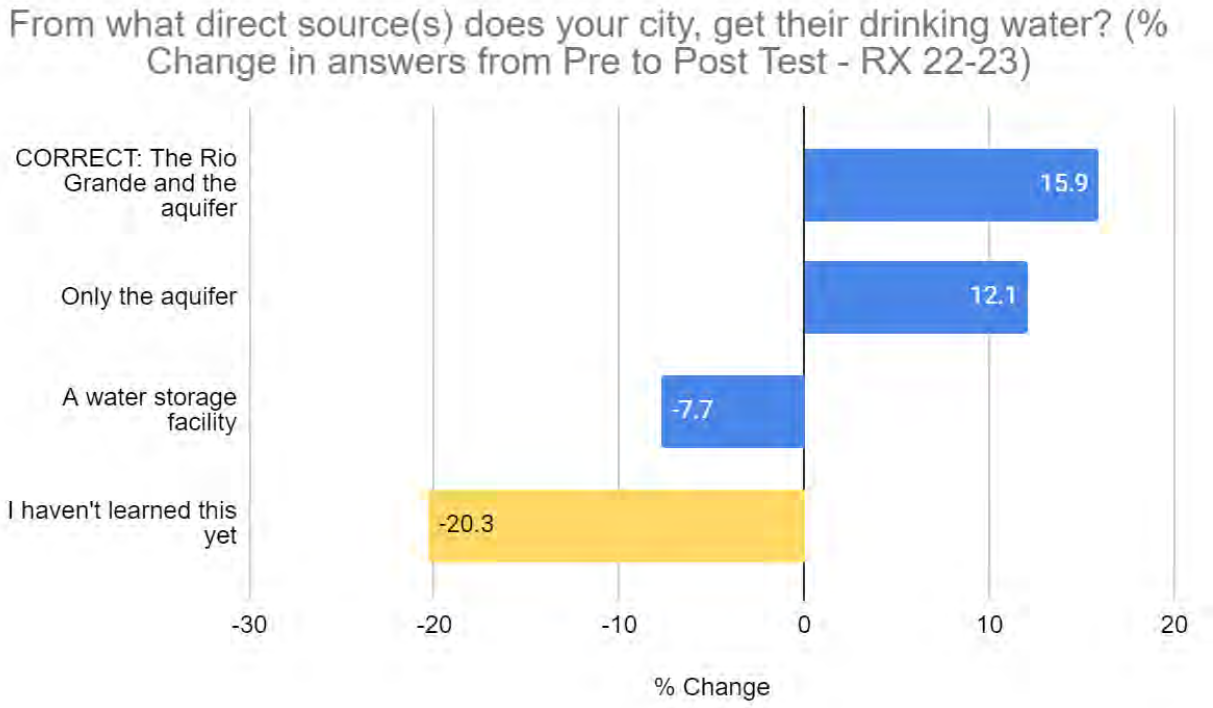

In your opinion, how important/impactful are the following actions in helping to conserve and protect our water (choose the level of importance/impact that applies for each statement). (% Change from Pre to Post Test RX 22-23)
High Impact - % Change
Some Impact - % Change
Low Impact - % Change
Picking up litter around my school or neighborhood
Taking less than 5 min showers
Talking with friends or family about water conservation
Visiting the Rio Grande or local nature
Dog owners picking up dog poop
Reporting leaky faucets or sprinklers
Participating in a community effort - like tree planting or river clean up days
3.31
1.17
8.71
-0.57
5.92
0.79
6.09
0.02
11.02
12.63
7.90
-5.24
-15.00
-10.00
-5.00
0.00
5.00
10.00
15.00

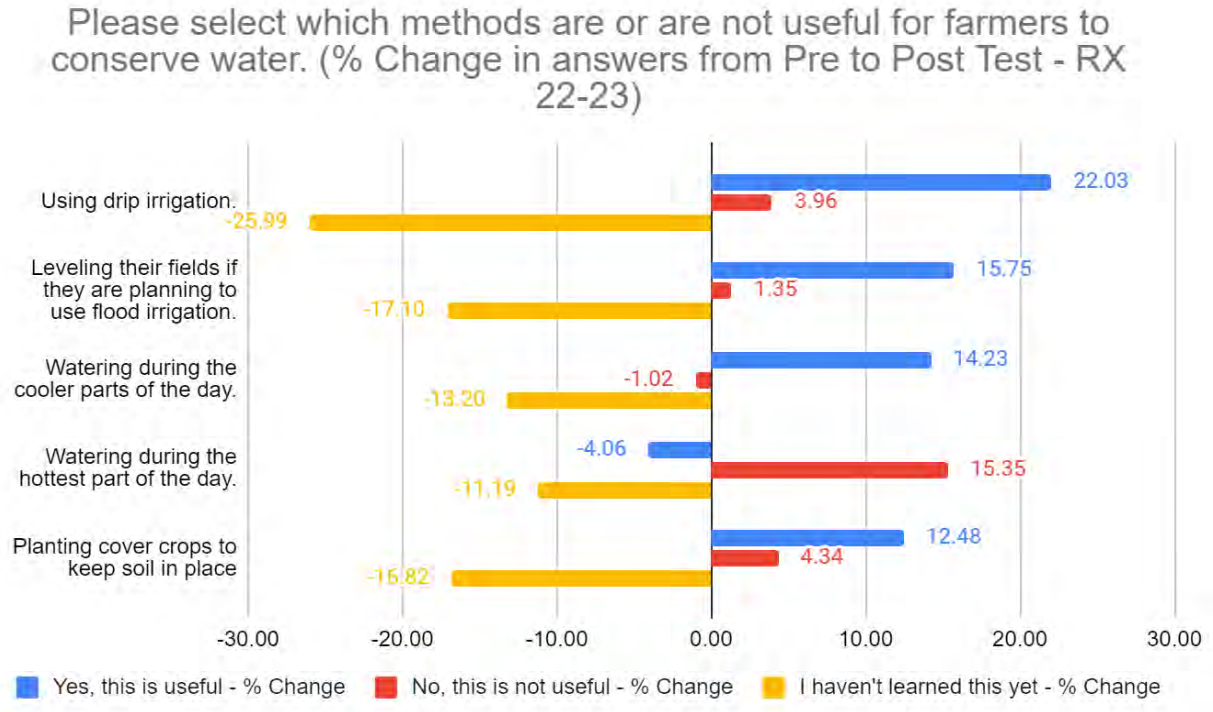

High Impact - % Change vs. In your opinion, how important/impactful are the following actions in helping to conserve and protect our water (choose the level of importance/impact that applies for each statement):
Picking up litter around my school or neighborhood
Taking less than 5 min showers
Talking with friends or family about water conservation
Visiting the Rio Grande or local nature
Dog owners picking up dog poop
Reporting leaky faucets or sprinklers
Participating in a community effort - like tree planting or river clean up days
3.31
8.71
5.92
-6.10
11.02
12.63
-5.24
-10.00
-5.00
0.00
5.00
10.00
15.00
High Impact - % Change

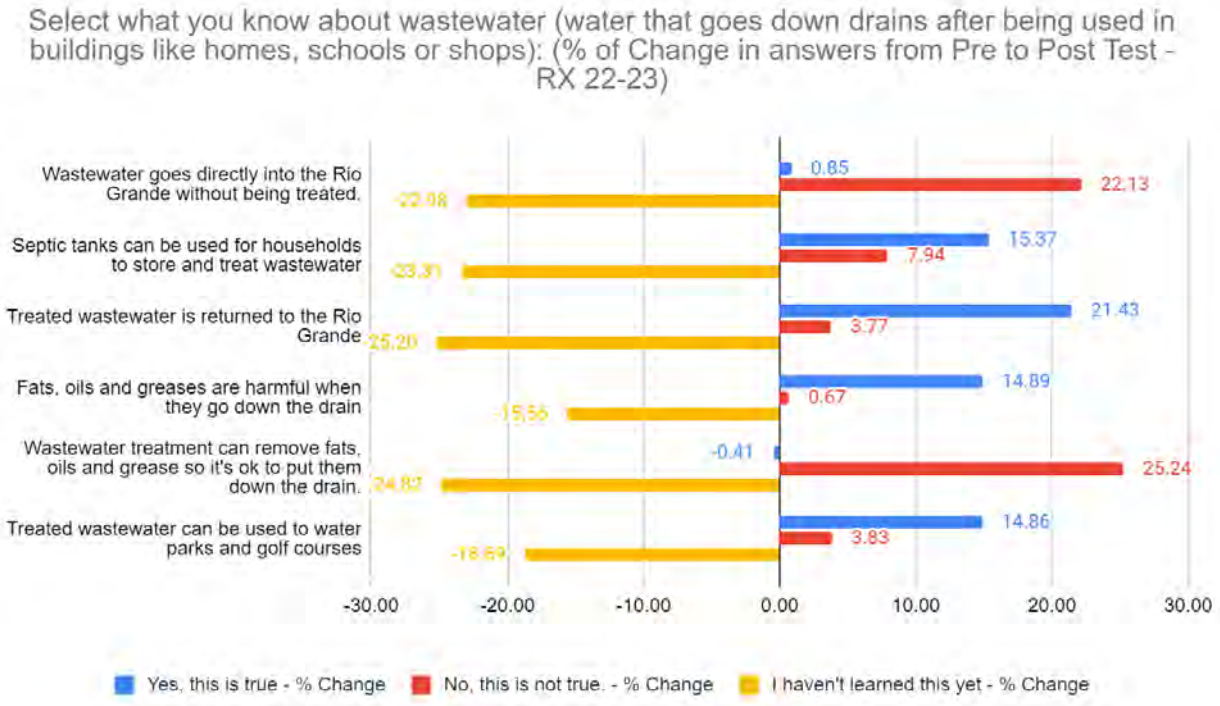

High Impact - Pre-Test (%) and High Impact - Post-Test (%)
High Impact - Pre-Test (%)
High Impact - Post-Test (%)
Picking up litter around my school or neighborhood
62.11
65.42
Taking less than 5 min showers
46.49
55.20
Talking with friends or family about water conservation
29.18
35.09
Visiting the Rio Grande or local nature
26.03
19.93
Dog owners picking up dog poop
52.18
63.20
Reporting leaky faucets or sprinklers
57.38
70.02
Participating in a community effort - like tree planting or river clean up days
75.42
70.19
0.00
20.00
40.00
60.00
80.00

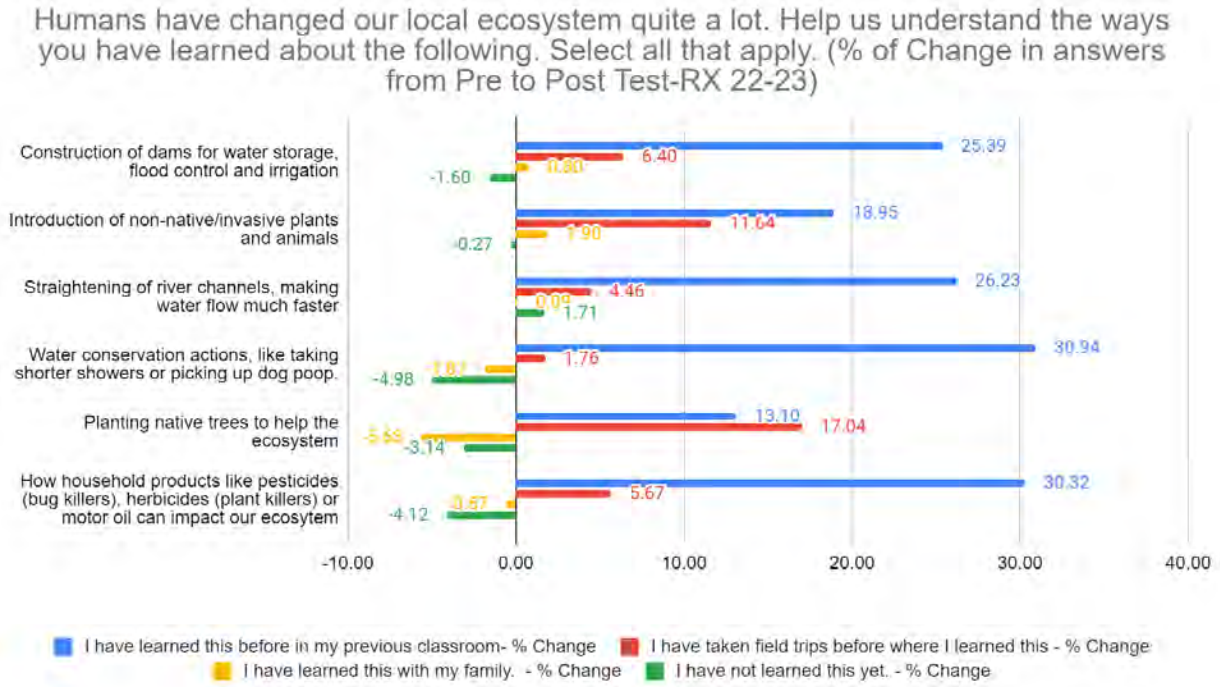

Please select the correct answer about the following statements about stormwater: (% Change in Pre to Post Test- RX 22-23)
Yes, that is true - % Change
No, that is not true - % Change
I haven't learned this yet - % Change
Stormwater is rain or snowmelt that runs across the land directly into the Rio Grande
28.79
-1.38
-27.40
Stormwater can easily become polluted by human activities
19.22
-2.74
-16.48
Polluted stormwater is cleaned at a treatment plant before it reaches the Rio Grande
16.37
10.15
-26.52
I can prevent pollution in stormwater.
13.90
-0.46
-13.44
Wetlands can naturally clean stormwater.
9.10
9.78
-18.88
Pesticides (insect killer) and herbicides (plant killer) are NOT a concern in stormwater
-3.63
24.98
-21.35
-40.00
-20.00
0.00
20.00
40.00

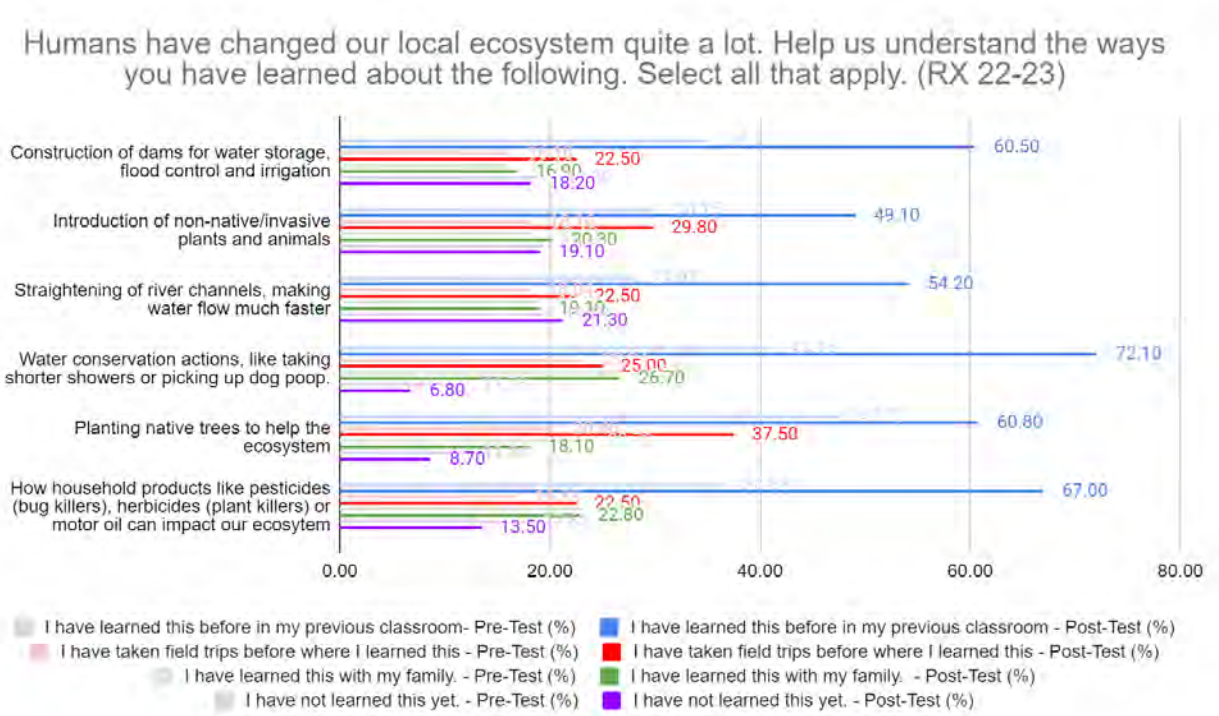

A source of clean water deep underground is called: (% Change from Pre-Post Test - RX 22-23)
An Arroyo
-3
CORRECT: An Aquifer
34.7
A Reservoir
-5.1
I haven't learned this yet
-26.6
-40
-20
0
20
40
% Change of Answer

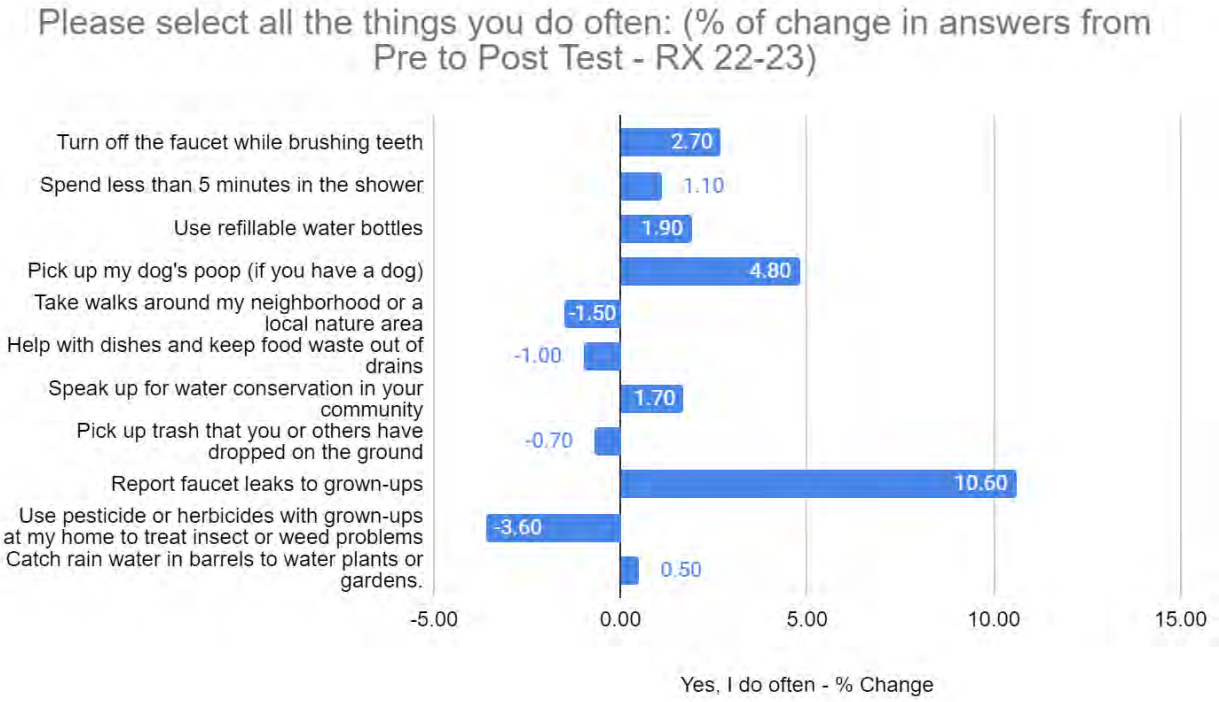

From what direct source(s) does your city, get their drinking water? (% Change in answers from Pre to Post Test - RX 22-23)
CORRECT: The Rio Grande and the aquifer
Only the aquifer
A water storage facility
I haven't learned this yet
15.9
12.1
-7.7
-20.3
-30
-20
-10
0
10
20
% Change

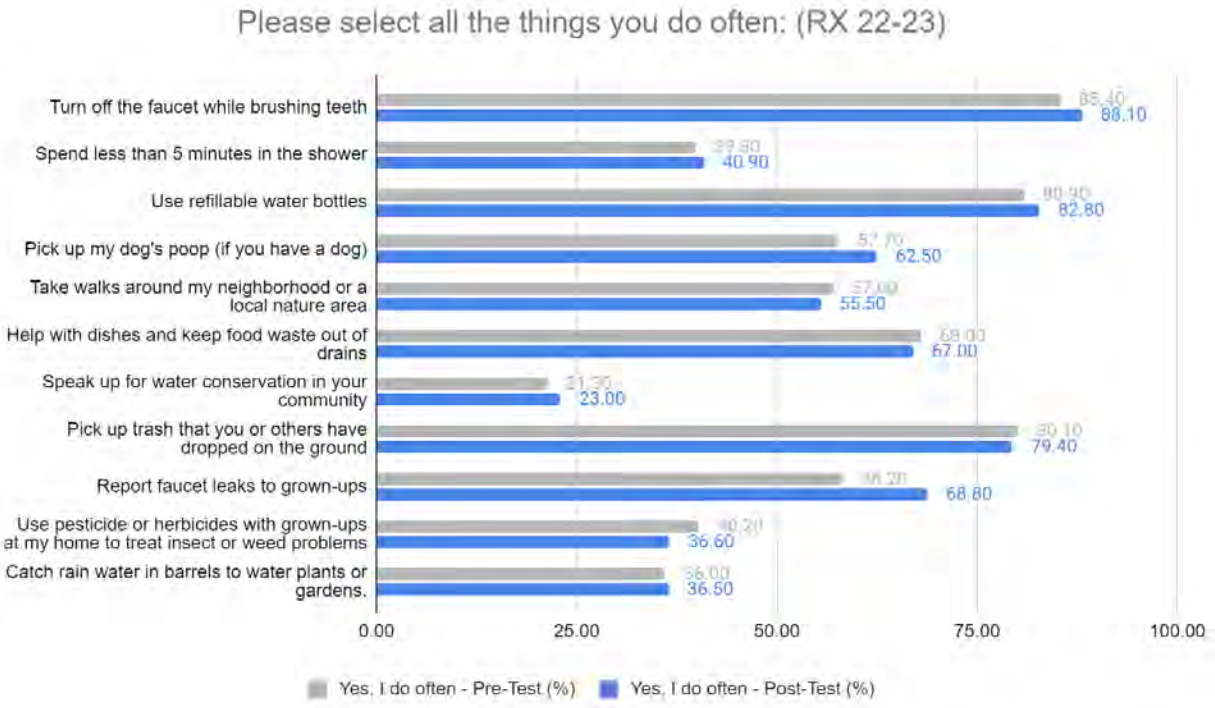

Please select which methods are or are not useful for farmers to conserve water. (% Change in answers from Pre to Post Test - RX 22-23)
Using drip irrigation.
Leveling their fields if they are planning to use flood irrigation.
Watering during the cooler parts of the day.
Watering during the hottest part of the day.
Planting cover crops to keep soil in place
22.03
3.96
-25.99
15.75
1.35
-17.10
14.23
-1.02
-13.20
-4.06
15.35
-11.19
12.48
4.34
-16.82
-30.00
-20.00
-10.00
0.00
10.00
20.00
30.00
Yes, this is useful - % Change
No, this is not useful - % Change
I haven't learned this yet - % Change

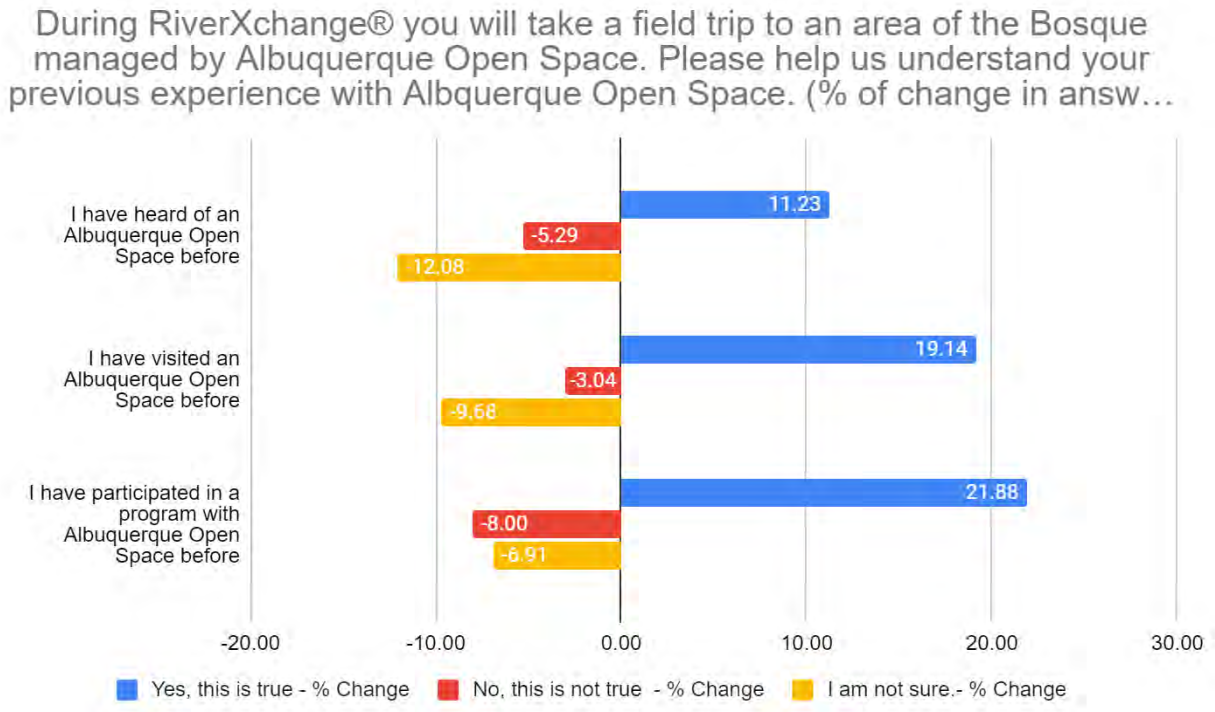

Select what you know about wastewater (water that goes down drains after being used in buildings like homes, schools or shops): (% of Change in answers from Pre to Post Test - RX 22-23)
Wastewater goes directly into the Rio Grande without being treated.
Septic tanks can be used for households to store and treat wastewater
Treated wastewater is returned to the Rio Grande
Fats, oils and greases are harmful when they go down the drain
Wastewater treatment can remove fats, oils and grease so it's ok to put them down the drain.
Treated wastewater can be used to water parks and golf courses
0.85
22.13
-22.98
15.37
7.94
-23.31
21.43
3.77
-25.20
14.89
0.67
-15.55
-0.41
25.24
-24.82
14.86
3.83
-18.69
-30.00
-20.00
-10.00
0.00
10.00
20.00
30.00
Yes, this is true - % Change
No, this is not true. - % Change
I haven't learned this yet - % Change


Humans have changed our local ecosystem quite a lot. Help us understand the ways you have learned about the following. Select all that apply. (% of Change in answers from Pre to Post Test-RX 22-23)
Construction of dams for water storage, flood control and irrigation
Introduction of non-native/invasive plants and animals
Straightening of river channels, making water flow much faster
Water conservation actions, like taking shorter showers or picking up dog poop.
Planting native trees to help the ecosystem
How household products like pesticides (bug killers), herbicides (plant killers) or motor oil can impact our ecosytem
25.39
6.40
-1.60
18.95
11.64
-0.27
26.23
4.46
1.71
30.94
1.76
-4.98
13.10
17.04
-3.14
30.32
5.67
-4.12
-10.00
0.00
10.00
20.00
30.00
40.00
I have learned this before in my previous classroom- % Change
I have taken field trips before where I learned this - % Change
I have learned this with my family. - % Change
I have not learned this yet. - % Change


Humans have changed our local ecosystem quite a lot. Help us understand the ways you have learned about the following. Select all that apply. (RX 22-23)
Construction of dams for water storage, flood control and irrigation
Introduction of non-native/invasive plants and animals
Straightening of river channels, making water flow much faster
Water conservation actions, like taking shorter showers or picking up dog poop.
Planting native trees to help the ecosystem
How household products like pesticides (bug killers), herbicides (plant killers) or motor oil can impact our ecosytem
60.50
22.50
16.90
18.20
49.10
29.80
30.30
19.10
54.20
22.50
19.10
21.30
72.10
25.00
26.70
6.80
60.80
37.50
18.10
8.70
67.00
22.50
22.80
13.50
0.00
20.00
40.00
60.00
80.00
I have learned this before in my previous classroom- Pre-Test (%)
I have taken field trips before where I learned this - Pre-Test (%)
I have learned this with my family. - Pre-Test (%)
I have not learned this yet. - Pre-Test (%)
I have learned this before in my previous classroom - Post-Test (%)
I have taken field trips before where I learned this - Post-Test (%)
I have learned this with my family. - Post-Test (%)
I have not learned this yet. - Post-Test (%)


Please select all the things you do often: (% of change in answers from Pre to Post Test - RX 22-23)
Turn off the faucet while brushing teeth
Spend less than 5 minutes in the shower
Use refillable water bottles
Pick up my dog's poop (if you have a dog)
Take walks around my neighborhood or a local nature area
Help with dishes and keep food waste out of drains
Speak up for water conservation in your community
Pick up trash that you or others have dropped on the ground
Report faucet leaks to grown-ups
Use pesticide or herbicides with grown-ups at my home to treat insect or weed problems
Catch rain water in barrels to water plants or gardens.
2.70
1.10
1.90
4.80
-1.50
-1.00
1.70
-0.70
10.60
-3.60
0.50
-5.00
0.00
5.00
10.00
15.00
Yes, I do often - % Change


Please select all the things you do often: (RX 22-23)
Turn off the faucet while brushing teeth
88.10
Spend less than 5 minutes in the shower
40.90
Use refillable water bottles
82.80
Pick up my dog's poop (if you have a dog)
62.50
Take walks around my neighborhood or a local nature area
55.50
Help with dishes and keep food waste out of drains
67.00
Speak up for water conservation in your community
23.00
Pick up trash that you or others have dropped on the ground
79.40
Report faucet leaks to grown-ups
68.80
Use pesticide or herbicides with grown-ups at my home to treat insect or weed problems
36.60
Catch rain water in barrels to water plants or gardens.
36.50
0.00
25.00
50.00
75.00
100.00
Yes, I do often - Pre-Test (%)
Yes, I do often - Post-Test (%)


During RiverXchange® you will take a field trip to an area of the Bosque managed by Albuquerque Open Space. Please help us understand your previous experience with Albquerque Open Space. (% of change in answ…
I have heard of an Albuquerque Open Space before
11.23
-5.29
12.08
I have visited an Albuquerque Open Space before
19.14
-3.04
-9.68
I have participated in a program with Albuquerque Open Space before
21.88
-8.00
-6.91
-20.00
-10.00
0.00
10.00
20.00
30.00
Yes, this is true - % Change
No, this is not true - % Change
I am not sure.- % Change

Appendix A: Background

As producers of children's water festivals and other grade K12 water resources outreach in NM since 2007, the RiverXchange program creators observed early on that NM elementary teachers rarely incorporated water concepts in the classroom beyond what is required by the state (e.g., water cycle), and that most elementary teachers considered "water" strictly as a science topic. While teachers personally acknowledged the importance of conserving water and keeping source water clean, they continued to find that upper elementary students had little or no understanding of major water resources topics unless the teacher specifically integrated a wide range of water topics into the curriculum. For this reason, as well as successful festival work with upper elementary students, this age level was selected as the focus for the RiverXchange program.

RiverXchange was created to provide a free program that is fun, interesting, and easy to integrate into the normal curriculum. The hope was to motivate participants to explore water resources topics in depth. The program was originally designed to be carried out over eight months so that students spend more time developing a sense of pride and personal connection to their own river ecosystem, as well as a personal connection to a distant river ecosystem and the students who live near it. Today RiverXchange runs over the course of 3-4 months, as a response to the challenges of implementing a year-long curriculum with the ongoing demands on teachers and students time and requirements for testing and other curriculum.

RiverXchange began in 2007 as a pilot project of Experiential EE, LLC (under a services agreement with the New Mexico Water Conservation Alliance) and the National Great Rivers Research and Education Center, featuring partnerships between two fourth grade classes in Albuquerque, NM, and two fifth grade classes in Godfrey, IL. A curriculum was developed, a field trip to the river was coordinated, and partner classes "met" three times during the year via video tele-conferencing to present what they had learned.

After the pilot project, RiverXchange transitioned to a web-based technology called a wiki. This enabled the program to overcome limitations such as the high cost, availability, and time zone logistical issues associated with video teleconferencing – and easily involve more classes. The curriculum was updated to incorporate the writing component and classroom guest speakers were introduced to reduce teacher workload and bring up-to-date technical information into the classroom. In 2017, the program switched to a blogging platform called Kidblog and in 2021 Kidblog rebranded to Fanschool. Due to the inundation of technology from virtual learning in the global pandemic and the continued barriers to connecting classes on Kidblog/Fanschool, RiverXchange piloted integrating a Capstone Project into the program instead of the blog in 2021-2022.

In 2012, ownership of RiverXchange transferred to Amy White of Orilla Consulting, LLC, who managed the program through July 2015. In August 2015, RiverXchange became part of the Ciudad Soil & Water Conservation District. In 2020, ownership and the trademark registration of RiverXchange® was transferred fully to Ciudad Soil and Water Conservation.
Since 2007, we have served over 20,166 students!

Appendix B: Photos

2022 Teacher Workshop at Open Space Visitor Center


Pole Planting Field Trips





Appendix C

Agriculture Presentation for 5th grade RiverXchange

1. What are we trying to teach students in this activity?

<u>Food waste is an immense contributor to water scarcity so we need to make changes in our habits of misuse of our food in order to reduce our water consumption.</u>

- The majority of freshwater (70% total) on Earth is used for agriculture. Agriculture is necessary and requires many natural resources to produce food and materials we need. The resources to produce the food we eat is very limited and most of what is wasted, ends up in the landfill.
    - How can we reduce our food waste and what other options do we have to prevent it from entering the landfill?

<u>If students understand the limited amount of water that is usable, their urgency for change will increase.</u>

- 97% of water on Earth is saltwater and unavailable for use by society. Students will learn about salinity and the difficulty of removing solvents from water to understand why the "Water World" has a limited source of usable water. Of all the water in the world only 0.003% of that water is available to use for drinking, hygiene, industry and agriculture and of that 0.003%, 70% of it is used for agriculture.

2. How can we tie this activity to our teaching goals:

<u>Learning Objectives</u>	**<u>Methods (models, observations, visuals, discussions, activities)</u>**
Only 3% of the water on Earth is freshwater and not all of that 3% is available to use.	Using models to demonstrate: ● 71% of Earth is water. 97% is saltwater. 3% is Freshwater Visuals/<u>Drop in the Bucket</u> Activity ○ Start with Earth's total water in Large cylinder (100%), Large cylinder (salt water in oceans -pour 97%), 2 Small cylinders (fresh water divide 2% (frozen in glaciers/ice caps-use globe, 1% in aquifers), pipette drop is the clean, usable water available to be shared with the world's plants/animals. ○ Show salinity and discuss the difficulty in separating salt from water.
Majority of usable water is used for agriculture. (70% of total usable water)	Discussion ● Introduce and define agriculture ● Farmers depend on the water cycle and climate for their crops. ● *What is Virtual Water?* - water we can't see that is used to create the items we consume, wear, use from start to finished product ● *How much food do we waste globally or in the U.S.?* 40% of food grown ends up in a landfill. ● Other precious resources are used in agriculture as well.
	Using models we aim to demonstrate:

Food waste is a major contributor to water waste and we don't see most of the water used to produce food.	● Creating a typical lunch using laminated cards with each food item to show how many gallons of virtual water is needed to create that lunch. ● Calculate with the students how much water was wasted when the food is not fully consumed. Ex: you only ate half your meal and threw out the leftovers. Discussion: ● Water is used to create the food we need to survive. Machines to process crops/ livestock, electricity, water/food to feed the animals, cleaning process of used water, transportation, etc all use water.
What are ways we can reduce food waste to help conserve water and other precious resources used for agriculture?	● Talk about the importance of being responsible about planning their meals to minimize food waste. ○ Meal planning ○ Work leftovers into meal planning ○ <u>Serving smaller portions with the option of adding more to prevent over serving and wasting.</u> ○ Consuming less meat (refer to : Practice "Meatless Mondays" ● Discuss the benefits of composting v. landfill

3. How can we tie this activity to standards?

Performance Expectation	**Disciplinary Core Ideas**
3-ESS2-1 Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season. **3-ESS2-2** Obtain and combine information to describe climates in different regions of the world.	**ESS2.C:** The roles of water in Earth's surface processes **ESS2.D:** Weather and climate
5-ESS3 Earth and Human Activity	**ESS3.C**: Human impact on Earth systems

What we do (Science and Engineering Practices)	**How we think (Crosscutting Concepts)**

Developing and Using Models	Patterns
Analyzing and Interpreting Data	Cause and Effect
Using Mathematics and Computational Thinking	Scale, Proportion and Quantity
	Structure and Function
Constructing Explanations	Systems and Systems Models
Engaging in Argument from Evidence	Stability and Change

4. How should this activity be organized?

I. *(10 min)* **Introduction**
Hi everyone, I'm ------- with Ciudad SWCD and I'm here with the awesome program you are in this year called RiverXchange; a program where you get to learn about your local environment, our watershed and ways you can do to protect and conserve water (define conservation). Reference prior knowledge from RX presentations they have received to tie together and ask them about highlights/questions that arose during those presentations (Stormwater, Wastewater, Drinking water).

1. **Open Presentation/Assess Prior Knowledge -** Ask if they know where their water comes from and how much water we have to use.

2. "First let's get a discussion going…"
    - "How many of you used water before you came to school?(raise hands) How did you use it?"
        - Typical Answers: Drink with breakfast, brushed teeth, restroom, for the dog/plants, shower, wash hands, toilet
    - "Okay, you're thinking about physical water use and that's great! How did you get that water?"
        - Water bottle, faucet…
    - "In what other ways did you use water that you didn't get out of the faucet?" "Did you eat? Did you wear clothes today? Did you turn on your lights?"
        - "Yes, all of those things used WATER but not in the ways you might think. We call this Virtual Water."
    - Where do you think all this water comes from? Where do you get your water? How is it cleaned? Recall Wastewater, Stormwater presentations. Our local watershed provides freshwater to the Rio Grande. (Rio Rancho = Aquifer)
    - Can we all agree it is important to conserve our clean water for all plants and animals to use?

II. *(20 min)* **Drop in the Bucket Activity**
We are known as the water planet. So why are we always worried we are running out of water? Do you know how much water on Earth is usable?

Part A: *(5 minutes) Discussion.* We are going to learn about how the tiny amount of water available to us is used. Can this used water be reused again? Let's see how that looks…

1. **Review the Water Cycle - precipitation, evaporation, condensation**
    - Important to remember that water can't be created or destroyed. We are drinking the same water dinosaurs used! (If they have done Pole Planting, express that the soil we dug through is also years and years of layers as well).
    - We have to keep what we have clean.

2. **Introduce and Define Agriculture**
    - Out of all the water on Earth, only a drop of that in comparison is usable for humans. The majority of that drop is used in Agriculture. Agriculture is another word for farming, growing and harvesting crops and raising animals.

Part B: *(15 minutes) Presenter led-activity*

Drop in Bucket Activity

Supplies:

- Graduated cylinder set (250 ml, 50ml, 10ml)
- Pipette
- Blue food coloring (or other natural alt)
- Globe
- Salt
- Mason Jar
- Cinnamon
- printed/ laminated pie charts
- Water

Learning Objectives: Only 3% of the water on Earth is freshwater and not all of that 3% is available to use. Majority of usable water is used for agriculture. (70% of total usable water)

1. **Let's take a look at how much water a "drop" is when you compare all the water on Earth.**

Steps:

A. Display globe and spin around to point out where water is located. **"So, what's the problem? That doesn't seem like we're hurting for water with all that!"**
B. Take a straw and pretend to draw out all the water from the globe and then "transfer" that water from the straw to the largest, 250mL graduated cylinder and fill it up. **"Imagine that this jar is holding all of the water on Earth."**
C. Ask students, **"Now, has anyone ever gone for a swim in the ocean and tasted the water?" Why can't we drink this water? "The water in the ocean has too much salt for us to use."**
D. Let's look at how much is ocean water and how much is fresh. *Pour 250mL with water up to 250 mL to represent the total water on Earth.

E. Quickly demonstrate salinity by pouring water into two glasses and have a volunteer add a few sprinkles of salt to the water, stir. In the second glass, another student will add cinnamon to represent soil/dirt to water and stir.
F. Discuss solutions/ salinity with the jar of water and tell the kids we will look back later to see if we can separate the water and salt. -To conclude the presentation, students will observe the separation of the cinnamon and water compared to the dissolved salt in water.
G. Refer back and tell them the largest bodies of ocean water are not able to be used. Next, pour 7.5 mL into 10 ml graduated cylinder to represent all fresh water on Earth.**"Now this is what we have that is usable (the 7.5 mL of "freshwater" in the 10 mL cylinder. Where does this usable water come from again? Is any of it stuck where we can't access it?"**
H. Discuss glaciers, ice caps and aquifers using the globe (2% of total water on Earth). Pour 5mL of the 7.5 mL into the 50 mL cylinder. **"Now, this is not very much, right?** "**What if I told you we still can't use all of this water?? Where else do you think water might be stuck?"**
I. Pour 2.5 mL from the 5 mL (~1% of total water on Earth) into the 50 mL cylinder for aquifers, atmosphere/water cycle, organisms. **"Okay, now does THIS represent the amount of water we have to use for our food, clothes, necessities?"**
J. Pipette "the drop representing the total amount of freshwater available for use by humans" from the 50mL and remind students that this small amount is what we use for household/hygiene, car washes, yards, pools, our animals, etc PLUS, we share this amount with nature, big industries, energy companies, agriculture, etc. **"Look at what we have left. This is the tiny amount we have to share with each other;not in the US, not in Albuquerque; this is all of the entire WORLD for all our wants, needs, extras, please can I just haves… How does this make you feel?"**

2. **Introduce and define Agriculture. Briefly remind them of the basic water cycle model- call on students for answers**.
    a. Local farmers rely on precipitation (rain and snow pack that feeds the Rio Grande) and groundwater (charged by the Rio Grande) for crops and livestock.
    b. New Mexico producers grow a variety of crops. Crops grown in New Mexico are often exported. Food we eat here is often imported but still requires water from other regions and sources like the Colorado River. No matter where our food comes from it requires water to grow.

III. *(20 min)* **Food waste is water waste**

Part A *(5 min): Discussion*. The food we eat requires valuable and scarce water to produce. How much water is needed to make the food we eat (i.e. virtual water)? What goes into making our food - farm and livestock?

Learning Objective: Food waste is a major contributor to water waste and we don't see most of the water used to produce food.

1. **"When we need to eat, we go to the store, the farmer's market, maybe a restaurant, right? It's easy, it's convenient and it's ready for us to eat. What went into making the food we are buying?"**
    a) Student responses:
        i) Farmers use water to grow our fruits and vegetables as well as to power their tractors and equipment.
        ii) Ranchers feed their livestock and give them lots of water.
        iii) Machines to process the food into cereal, burger patties, soup, etc.
        iv) Trucks to deliver food to communities.
2. **Virtual Water is water that is used to produce the food we eat. For example, it takes 660 gallons of water to make one hamburger with bun, lettuce and tomato**

Part B: *(10 min) Group Activity.*

My Eyes are Bigger than My Stomach: Let's Build a Meal

Supplies:

- Laminated meal cards with virtual water quantities on back
- Pencils and paper for math

1. **"I'm going to let you build a meal that you would see in the cafeteria or your lunch box and we are going to calculate approximately how much water it takes to make that meal. Let's get into groups of 4."**
    A. Each group will pick ingredients from the tray to make a meal:
        a. Fruit/ Veggie Smoothie: 557 gallons of water
            i. Cucumber: 42, Leafy Greens: 28, Orange: 67, Banana: 95, Peach: 109, Mango: 216
        b. Burger and Fries
            i. Tomato: 26 gallons of water to make 1 pound, Lettuce: 28, Cheese: 381, Beef: 1,847, Potato: 34 *bun and oil?
        c. Chicken and Rice
            i. Cabbage: 28, Rice: 299, Chicken: 518 *water to clean/ cook
        d. Spaghetti with meatballs
            i. Tomato: 26 gallons of water to make 1 pound, Pasta (dry): 222, Cheese: 381, Beef: 1,847
        e. Veg Spaghetti

i. Tomato: 26 gallons of water to make 1 pound, Pasta (dry): 222, Cheese: 381

2. **"On the back of your ingredients, you will find how much water went into producing the meal for your group. Calculate how many gallons of water it took to grow or process that meal. What ingredients are missing from your cards?"** Discuss the oil, water, seasoning that goes into making the meal.
3. **In your groups, calculate how much water is WASTED if you only finish half your meal and throw the rest away.**
4. **Okay, now, raise your hand if you always finish everything you served yourself."**
    A. So what about the food we waste when we don't finish a meal or forget about the food to eat in the fridge?
    B. Where do you dispose of your leftovers?
    C. Has anyone used a compost or maybe you've heard of composting but aren't quite sure what it is or why it's used? Compost turns food waste into soil.

Part C**:** *(5 min) Discussion.*

Learning Objective: What are ways we can reduce food waste to help conserve water and other precious resources used for agriculture?

Discuss the build up of waste in our landfills and how we can reduce the pollution in our urban areas. What is the impact of ourselves as individuals? Take it further - think about other ways to have an impact… Packaging, processing, convenience.

1. **What might be ways we could reduce food waste? What power do we have to create change?**
    A. By buying only what we need.
    B. Taking small portions
    C. Choosing meatless Mondays to reduce meat consumption.
    D. Creating a compost to prevent so much food going to the landfills.
    E. Buying directly from growers at farmer's markets, etc to reduce transportation and processing.
    F. Educating others like our families and communities.

IV. Conclusion (10min)

- What do you think this means for our environment and watershed - the Middle Rio Grande?

The water we drink comes from our watershed. Animals and plants also depend on this water. That's why it's important that we conserve what little water we have to use. We need to be responsible with the food that is not consumed so it doesn't end up in the landfill.

Share the Message

SSCAFCA shares social media messages from the Mid Rio Grande Stormwater Quality Team on our own Social Media pages. We also post and place our own Stormwater Quality Messaging on our social media pages.

KNOW YOUR ARROYOS

Arroyo Awareness Month
July, 2023

Heightening the public's awareness of the many functions of arroyos.

PROCLAMATION
TOWN OF BERNALILLO
ARROYO AWARENESS MONTH

WHEREAS: the Town of Bernalillo works with the Southern Sandoval County Arroyo Flood Control Authority (SSCAFCA) on flood and stormwater control;

WHEREAS: SSCAFCA is responsible for the major arroyos within our jurisdiction and, in addition to their utility for moving stormwater through the Town of Bernalillo the governing body wishes to also make people aware of their use as an amenity and a community resource;

WHEREAS: SSCAFCA acquires, improves, maintains, and operates flood and storm water control facilities on arroyos and watersheds that enter, originate in, or cross the Town of Bernalillo;

WHEREAS: given the pattern of brief, but intense, summer storms, there is danger from flooding and erosion associated with arroyos that the community should be aware of; and

WHEREAS: the Town of Bernalillo and SSCAFCA work together to educate individuals and businesses about reducing stormwater pollution by keeping trash and other pollutants out of our arroyos;

WHEREAS: SSCAFCA has researched the value of the natural arroyos in its jurisdiction with regard to their ability to infiltrate stormwater into groundwater and found that they are highly effective conduits for infiltration and therefore strives to maintain arroyos in as natural a state as possible;

WHEREAS: Arroyos serve many functions, from flood control to groundwater recharge to serving as a multi-use open space corridor that can be enjoyed by the public when not being used for flood control purposes; and

WHEREAS: everyone will benefit from a greater awareness of the benefits of natural arroyos.

NOW, THEREFORE, BE IT RESOLVED THAT I, Jack Torres as Mayor of the Town of Bernalillo, do hereby recognize July 2023 as Arroyo Awareness Month in the Town of Bernalillo and encourage residents to learn more about the arroyos in our community and the mission of the Southern Sandoval County Arroyo Flood Control Authority.

In witness thereof, I have hereunto set my hand and caused the Seal of the Town of Bernalillo to be affixed this 6th day of July 2023.

Jack Torres
Mayor of the Town of Bernalillo

Office of the Mayor
City of Rio Rancho, New Mexico

ARROYO AWARENESS MONTH 2023

WHEREAS: Established in State Law in 1990, the Southern Sandoval County Arroyo Flood Control Authority (SSCAFCA) acquires, improves, maintains, and operates flood and storm water control facilities on streams and watersheds that enter, originate in or cross its area of authority; and

WHEREAS: given the pattern of brief, but intense, summer storms, there is danger from flooding and erosion associated with arroyos that the community should be aware of; and

WHEREAS: Rio Rancho and SSCAFCA work together to educate individuals and businesses about reducing stormwater pollution by keeping trash and other pollutants out of our arroyos; and

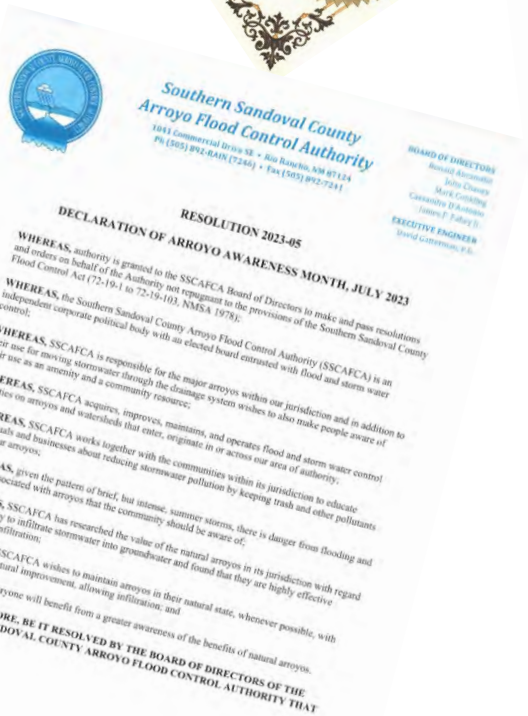
WHEREAS: arroyos serve many functions, from flood control to groundwater recharge to serving as a multi-use open space corridor that can be enjoyed by the public when not being used for flood control purposes; and

WHEREAS: everyone will benefit from a greater awareness of the benefits of natural arroyos.

NOW, THEREFORE, BE IT RESOLVED THAT I, Gregory D. Hull, as Mayor of the City of Rio Rancho, do hereby recognize July as Arroyo Awareness Month in the City of Rio Rancho.

June 2, 2023
Date

Gregory D. Hull, Mayor



Southern Sandoval County
Arroyo Flood Control Authority
1041 Commercial Drive SE • Rio Rancho, NM 87124
Ph (505) 892-RAIN (7246) • Fax (505) 892-7231

BOARD OF DIRECTORS
Ronald Bernstein
John Chavez
Mark Goldberg
Cassandra D'Antonio
James F. Fahey Jr.

EXECUTIVE ENGINEER
David Gutterman, P.E.

RESOLUTION 2023-05

DECLARATION OF ARROYO AWARENESS MONTH, JULY 2023

WHEREAS, authority is granted to the SSCAFCA Board of Directors to make and pass resolutions and orders on behalf of the Authority not repugnant to the provisions of the Southern Sandoval County Flood Control Act (72-19-1 to 72-19-103, NMSA 1978);

WHEREAS, the Southern Sandoval County Arroyo Flood Control Authority (SSCAFCA) is an independent corporate political body with an elected board entrusted with flood and storm water control;

WHEREAS, SSCAFCA is responsible for the major arroyos within our jurisdiction and in addition to their use for moving stormwater through the drainage system wishes to also make people aware of their use as an amenity and a community resource;

WHEREAS, SSCAFCA acquires, improves, maintains, and operates flood and storm water control facilities on arroyos and watersheds that enter, originate in or across our area of authority;

WHEREAS, SSCAFCA works together with the communities within its jurisdiction to educate individuals and businesses about reducing stormwater pollution by keeping trash and other pollutants out of our arroyos;

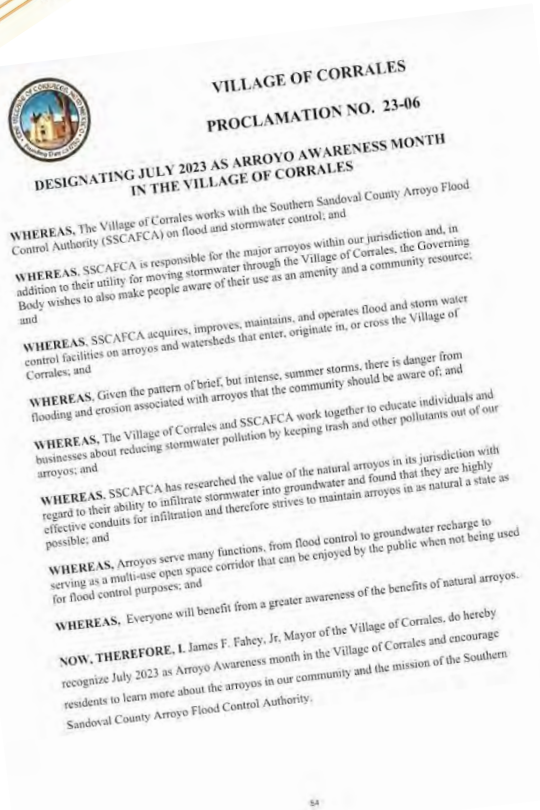
WHEREAS, given the pattern of brief, but intense, summer storms, there is danger from flooding and erosion associated with arroyos that the community should be aware of;

WHEREAS, SSCAFCA has researched the value of the natural arroyos in its jurisdiction with regard to their ability to infiltrate stormwater into groundwater and found that they are highly effective conduits for infiltration;

WHEREAS, SSCAFCA wishes to maintain arroyos in their natural state, whenever possible, with little or no structural improvement, allowing infiltration; and

WHEREAS, everyone will benefit from a greater awareness of the benefits of natural arroyos.

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE SOUTHERN SANDOVAL COUNTY ARROYO FLOOD CONTROL AUTHORITY THAT



VILLAGE OF CORRALES

PROCLAMATION NO. 23-06

DESIGNATING JULY 2023 AS ARROYO AWARENESS MONTH IN THE VILLAGE OF CORRALES

WHEREAS, The Village of Corrales works with the Southern Sandoval County Arroyo Flood Control Authority (SSCAFCA) on flood and stormwater control; and

WHEREAS, SSCAFCA is responsible for the major arroyos within our jurisdiction and, in addition to their utility for moving stormwater through the Village of Corrales, the Governing Body wishes to also make people aware of their use as an amenity and a community resource; and

WHEREAS, SSCAFCA acquires, improves, maintains, and operates flood and storm water control facilities on arroyos and watersheds that enter, originate in, or cross the Village of Corrales; and

WHEREAS, Given the pattern of brief, but intense, summer storms, there is danger from flooding and erosion associated with arroyos that the community should be aware of; and

WHEREAS, The Village of Corrales and SSCAFCA work together to educate individuals and businesses about reducing stormwater pollution by keeping trash and other pollutants out of our arroyos; and

WHEREAS, SSCAFCA has researched the value of the natural arroyos in its jurisdiction with regard to their ability to infiltrate stormwater into groundwater and found that they are highly effective conduits for infiltration and therefore strives to maintain arroyos in as natural a state as possible; and

WHEREAS, Arroyos serve many functions, from flood control to groundwater recharge to serving as a multi-use open space corridor that can be enjoyed by the public when not being used for flood control purposes; and

WHEREAS, Everyone will benefit from a greater awareness of the benefits of natural arroyos.

NOW, THEREFORE, I, James F. Fahey, Jr, Mayor of the Village of Corrales, do hereby recognize July 2023 as Arroyo Awareness month in the Village of Corrales and encourage residents to learn more about the arroyos in our community and the mission of the Southern Sandoval County Arroyo Flood Control Authority.

EDUCATION OUTREACH & ENGAGEMENT

Tour of the HJC for members of the Meadowlark Senior Center

Talking to the Sandoval County Master Gardnerrs

Meeting with the Mariposa homeowners Association

EDUCATION OUTREACH & ENGAGEMENT

Stormwater Presentation

Multiple presentations at Rio Rancho Public Schools

Yard Signs available upon request

Clean, repair and deliver the Stormwater Kiosk to various locations

HARVEY JONES CHANNEL OUTFALL

A low-impact development project which leveraged treated wastewater effluent and stormwater to establish a wetland on the banks of the Rio Grande

WETLANDS ARE AMONG THE MOST EFFECTIVE IN TERMS OF POLLUTANT REMOVAL AND ALSO OFFER AESTHETIC AND HABITAT VALUE.

Arroyo Classroom

Mid-year report 2022-2023

October-December

Submitted by: Education Manager
Erin Blaz

The Arroyo Classroom Team: Erin Blaz, Theresa Aragon, Astrid Mooney

Participating Schools:

	SCHOOL	Number of classes	Number of Students
Title I*	Enchanted Hills Elem.	6	126
	Martin Luther King Elem.*	5	100
	Sandia Vista Elem.	6	141
	Maggie Cordova Elem.*	6	119
	Cielo Azul Elem.*	5	108
	Puesta del Sol Elem.*	5	103
	Colinas del Norte*	5	107
	TOTALS	**38**	**804**

Task 1: Recruit and select classes.
Complete by September 2022. **Status: completed.**

Recruitment was exciting this year as all the schools we reached out responded with interest in the program, including Cielo Azul who did not participate in 2021-2022. Arroyo Classroom participants generally include the whole 3rd grade cohort, so offering the program to a school means that serving the whole grade level doesn't always line up exactly with the number of classes we target in our agreement with MRGSQT & SSCAFCA. This year, as class sizes and teachers shuffled around much like RiverXchange, we ended up with 38 classes and 804 students. Since this is 3 more classes than the 35 in our agreement with the funders and we compensate presenters for all 4 presentations in this program, Ciudad SWCD is working to figure out a solution to the budget increase for presentations that will need to be covered. Ciudad SWCD will propose solutions to the funders before any budget adjustments are made.

Task 2: Review and revise evaluation and curriculum.
Complete by September 2022. **Status: completed.**

The pre and post survey was revised, with a few slight changes to reflect our guest speakers program this year. The answer option "I haven't learned this yet" was also added to the Arroyo Classroom survey, as it was the RiverXchange survey.

Task 3: Coordinate classroom guest speakers.
Begin September 2022. On-going through May 2023. **Status: in process.**

All presentations are resuming in person programming this year. All presentations have been fully scheduled.

This year Hawks Aloft will be the only outside contractor for the program. Hawks Aloft is a great partner for this presentation as they have a team of educators and a variety of birds for the presentation. Unfortunately, they have informed us that in future years they will not be able to perform this service at the current compensation rate.

Justin Stevenson of RD Wildlife and our Bat presenter has confirmed he is unavailable this year, but hopes to resume involvement in the program in the future. Theresa Aragon, a biologist and educator, now formally employed with Ciudad SWCD, offered a Reptile/Arthropod presentation for Arroyo Classroom last year with Nature Matters and so she will be offering a similar presentation this year.

The Watershed presentation and Arroyo Walk/Field trip will be offered by Erin Blaz. Arroyo Walks have been scheduled in the fall this year to ensure they are completed (in case any pandemic related issues change school policies) and to explore if holding the walk first has any benefits on the following presentations.

Mid-year: All presentations have been scheduled. We met some challenges this year with scheduling the Bird presentations with Hawks Aloft. Once everything was scheduled and Hawks Aloft reviewed the schedule, they notified us that most of the presentation times would need to be moved to reduce the gaps between presentations as this was not ideal for the well-being of the birds, or the time required by staff. Theresa had to go back to these schools and move the times around, which proved to be difficult for some schools as their schedules are very limited in openings. Once everything was rescheduled, Hawks Aloft approved the final updated schedule. All other presentations are conducted by Ciudad education staff, so we are able to provide more flexibility with teachers' school schedules and gaps between presentation times.

During the second quarter, all 38 classes received their first presentation - which was either the Arroyo Walk or Watershed presentation (if weather was not good). 24 classes received the Bird presentation and 20 class received the Reptile presentation.

Task 4: Collect and analyze teacher feedback.
Complete by May 2022. **Status:** approaching.

Staff will revise teacher feedback form and submit to teachers at the end of the program.

Task 5: Reporting to sponsors.

Midyear report by January 31, 2022.
Final report by June 1, 2022.

Arroyo Classroom

2022-2023 Final Report

submitted by
Theresa Aragon & Erin Blaz, CSWCD
July 2022- June 2023

SUMMARY

The Arroyo Classroom program utilizes our natural arroyos as outdoor classrooms and brings local animals into the classroom to motivate 3rd graders to appreciate and protect the arroyos as important wildlife habitat. Orilla Consulting, LLC developed the program in 2012 and initially implemented the program for 7 classes at Maggie Cordova Elementary in Rio Rancho. In 2013, the program grew to serve 20 classes. On July 1st, 2015, Orilla Consulting, LLC transferred the program to Ciudad Soil and Water Conservation District as part of the larger education and outreach efforts throughout Bernalillo and Sandoval Counties. In the 2022-2023 school year, we served 38 classes within Rio Rancho Public Schools, reaching 39 teachers and approximately 804 students with 2,680 hours of program time.

Participating Schools

SCHOOL *Title 1 school	**Number of classes**	**Number of Students**
Enchanted Hills Elem.	6	126
Martin Luther King Elem.*	5	100
Sandia Vista Elem.	7	141
Maggie Cordova Elem.*	6	119
Cielo Azul Elem.*	5	108
Puesta del Sol Elem.*	5	103
Colinas Del Norte*	5	107
TOTALS	**39**	**804**

Sponsor

- Southern Sandoval County Arroyo and Flood Control Authority (SSCAFCA)

Sponsor provided a total of $22,050.00 in cash.

Deliverables:

All presentations were offered in person and completed.

- Watershed Presentations: 38:38
- Arroyo Walk: 38:38
- Bird Presentations: 37:38 (Teacher scheduling conflicts and cancellations prevented one presentation from being completed)
- Reptile & Arthropod Presentations: 38:38

Program Description

Essential Questions: What is a watershed and how does water move across it? What important functions do arroyos provide for humans and other creatures? In what ways can we enjoy arroyos safely and learn new things?

- Students characterize arroyos as ecosystems as well as drains
- Students identify arroyo features that support wildlife
- Students describe the plants, animals, birds, insects and other organisms that depend on the arroyo ecosystem
- Students explain the ways in which arroyos receive water, their benefits and the dangers of arroyos
- Students recite the rules for arroyo safety

The program consists of a four-part series of lessons, based on grade-level science standards and addressing areas of interest to SSCAFCA, such as reptiles, burrowing owls and other birds of prey, ATV use, pet waste, and arroyo safety. Erin Blaz and Theresa Aragon with Ciudad SWCD, delivered three of the lessons – an introductory lesson about watersheds, reptiles & arthropods as important wildlife in and around arroyos, and an arroyo walk that centered on native plants and animals.. Hawks Aloft provided bird presentations which included two birds of prey at each lesson and took careful consideration of cultural sensitivities to owls by partnering with staff in advance for each class.

This year the watershed lesson expounded on the water cycle and aimed for students to recognize how water moves across topographic maps. Students made predictions about how water falling on a raised land mass would travel differently than water on a flat plain and the path it will take.

Students used crumpled paper, multi-colored markers (representing water and pollutants) and a spray bottle to demonstrate how water moves through a watershed and carries pollutants along its path. In summary, this lesson introduced the concept of a watershed to students, demonstrated how surface water becomes polluted through various human impacts, and discussed the importance of keeping our arroyos clean. (Appendix A)

The arroyo walk this year began with a walk to an arroyo near the school to observe plants, animals, evidence of animals like scat and tracks, any visible human impacts and demonstrate the draining power of arroyos into the Rio Grande. We also observed tire tracks in the arroyos and talked about not using motorized vehicles in arroyos, as they are not permitted or allowed in the arroyos, and discussed the impacts of illegal dumping in arroyos. In the second part of the walking field trip we discussed desert plant adaptations and the desert climate. The lesson explored specific native plants in the arroyo habitat and how they cope with little surface water availability and precipitation, extreme temperatures (especially heat) and a windy, arid climate. We discussed the different types of adaptations plant leaves have as we observed the "hairs" on some, the thin leaf shapes and different leaf margins. Finally, using animal tracks and scat guides, the students enjoyed partnering in groups for a scavenger hunt to find evidence of different animals and shared their findings with the rest of the class.

Evaluation

Teachers overwhelmingly say they look forward to participating in Arroyo Classroom to teach about local ecology and conservation issues, incorporate more science in the classroom, to offer experiential learning opportunities and to offer learning opportunities within the community to their students. They find the presentations to be uniquely engaging and meaningful for their students. Teacher's find that Arroyo Classroom is complementary to other 3rd grade units of study such as life cycles and animal and plant adaptations. The animal presentations were a hit, as in years past. This year, the students were offered a hands-on animal presentation by having the opportunity to hold hatchling box turtles, live insects and insect collections. With in-person learning resuming this year, it was extremely encouraging to see how valued Arroyo Classroom was after a period away from field trips and in-person presentations.

Survey Summary

This is the sixth year that we have administered the pre and post-surveys for Arroyo Classroom. Based on feedback from last year, as well as the inclusion of arthropods and more reptiles in the presentations, we made some adjustments to the pre and post-surveys to reflect the content of the program. The survey questions included "Yes" and "No" questions as well as questions with three response options; "Yes, that is true," "No, that is not true," and "I have not learned that yet." This change allowed us to evaluate the growth in learning from the beginning of the program to the end, with students identifying by a large percentage that they felt confident in their responses by the end of the program.

This year we had 555 pre-survey responses and 534 post-survey responses. We were pleased with the amount of responses as compared to previous years and the help of email reminders to teachers to have their students complete the surveys greatly improved participation. A brief summary

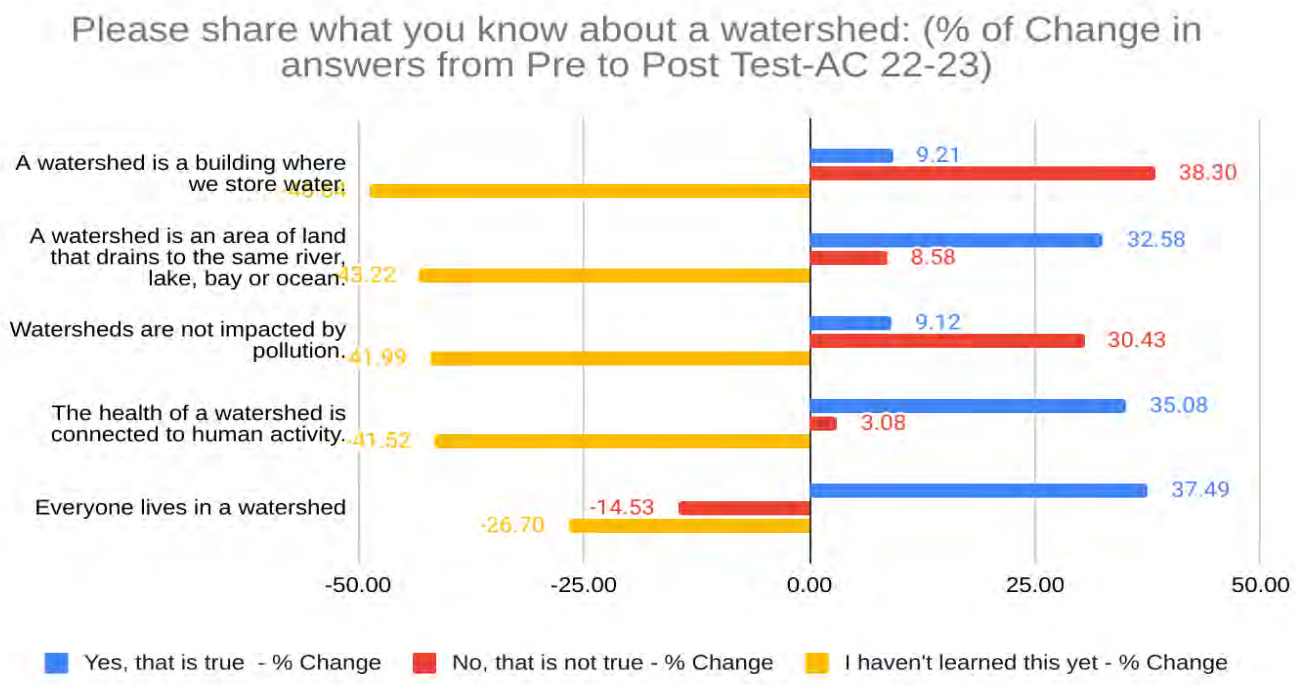
of findings from the survey metrics tells us that after the Arroyo Classroom:

- 32.5% more students can correctly define a watershed
- 37% more students know that “everyone lives in a watershed”
- 35% more students say that the health of a watershed is connected to human activity
- 31% more students say that dog poop impacts arroyo health
- 23% more students identify that pesticides and herbicides impact arroyo health
- 23% more students correctly identify that natural arroyos are wildlife habitat

Survey Metrics:

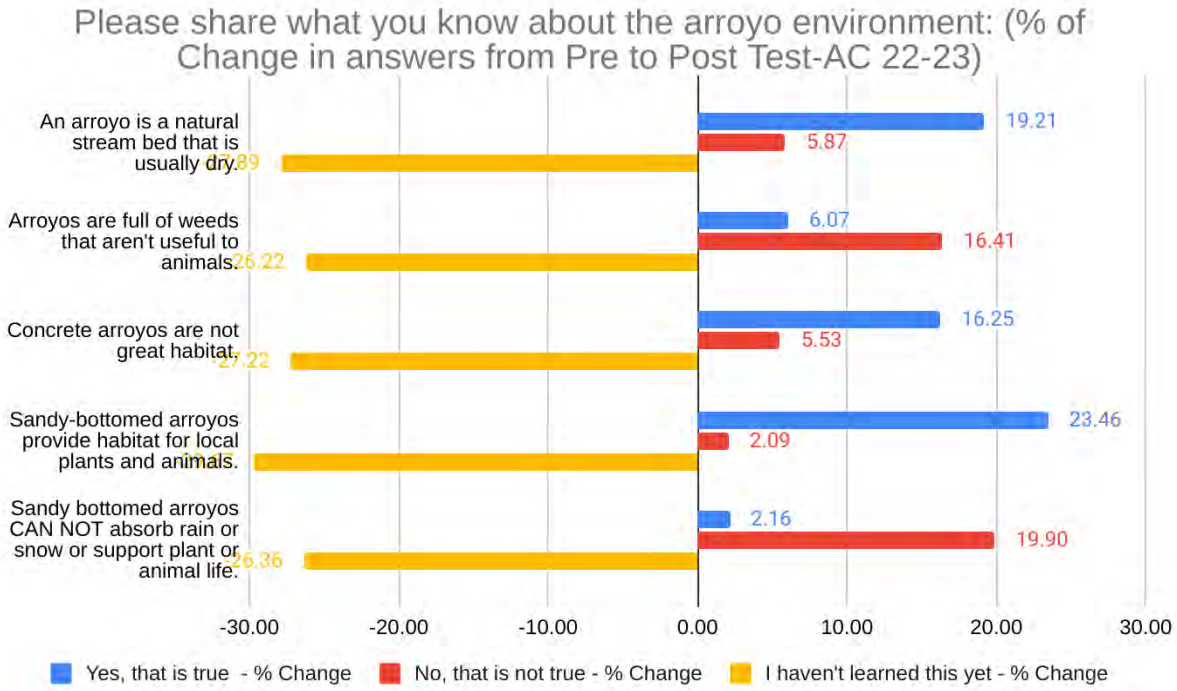
Arroyo Classroom Metrics / Evaluation 2022-2023

Item 1: Watersheds



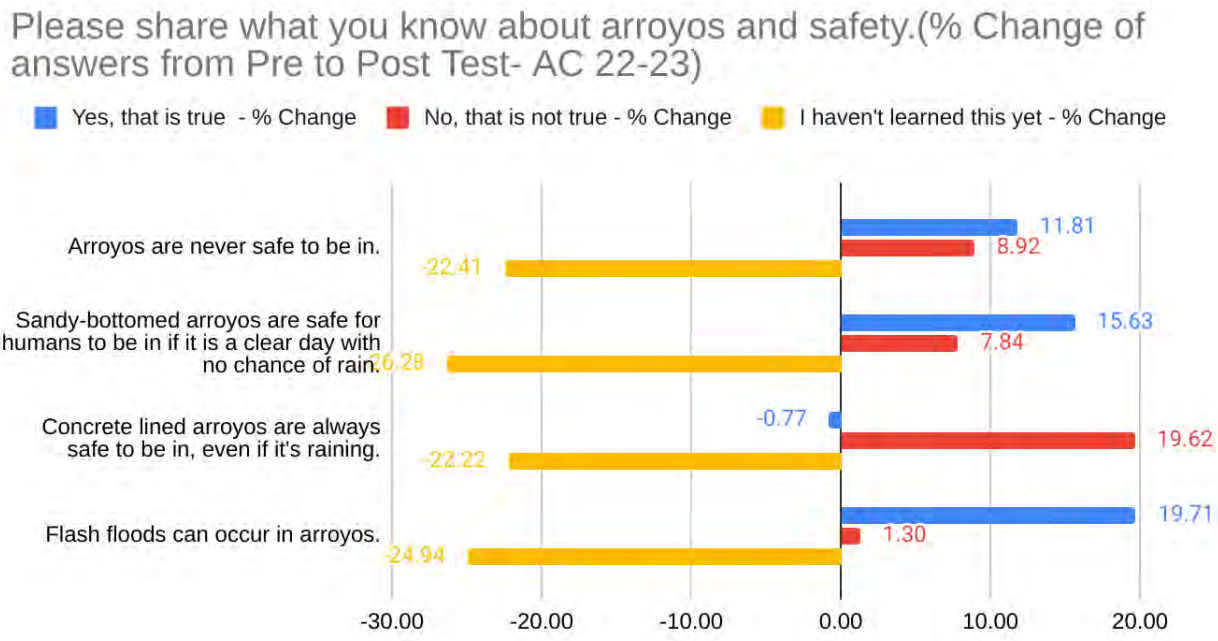
The decrease in incorrect response “building where we store water” and an increase in correct response for “area of land that drains” had great responses to show that students can clearly define a watershed.
The small increase for the incorrect response for Watersheds are not impacted by pollution” was not as expected, however, there may have been confusion with the wording of the question. We will consider rephrasing “human impact on watershed” next year. Students did show an understanding of human impact in the next question of the “health of a watershed connected to human activity.”

Item 2: Arroyo Environment



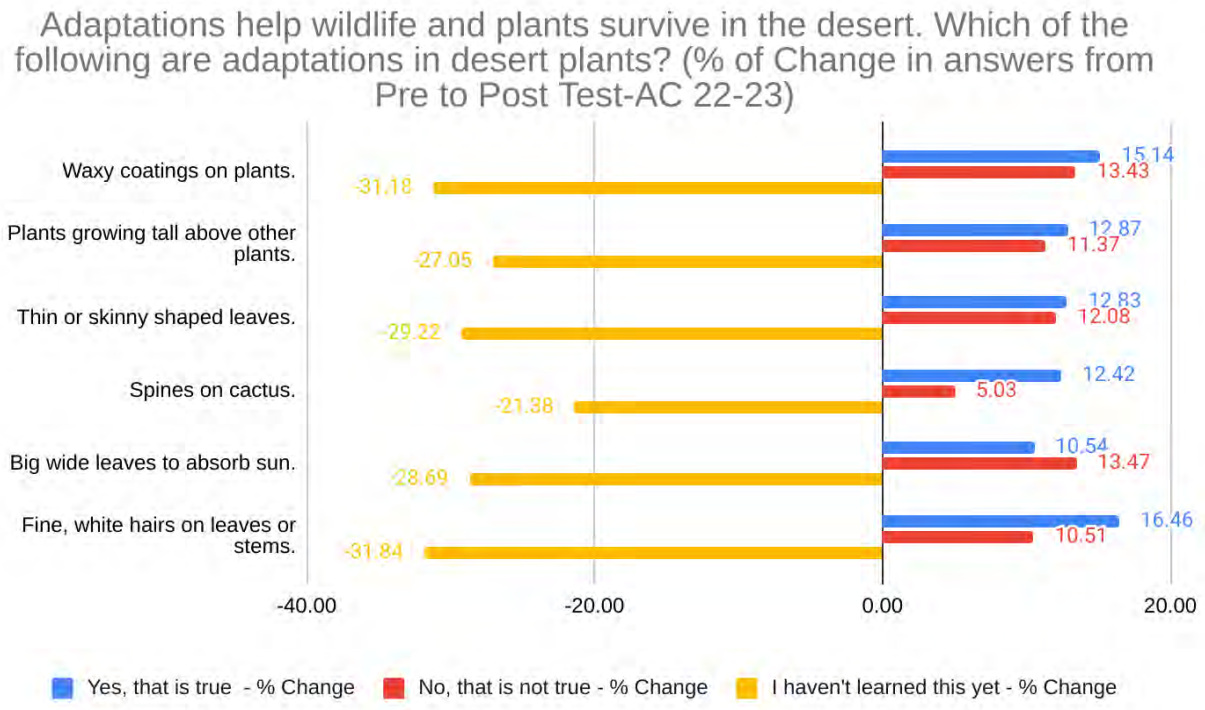
Students shifted from many “I haven’t learned this yet” responses to having a much better understanding of what an arroyo is and the huge benefits of natural, sandy arroyos in their environment. There was a lot of positive growth in learning about arroyos.

Item 3: Arroyo Safety



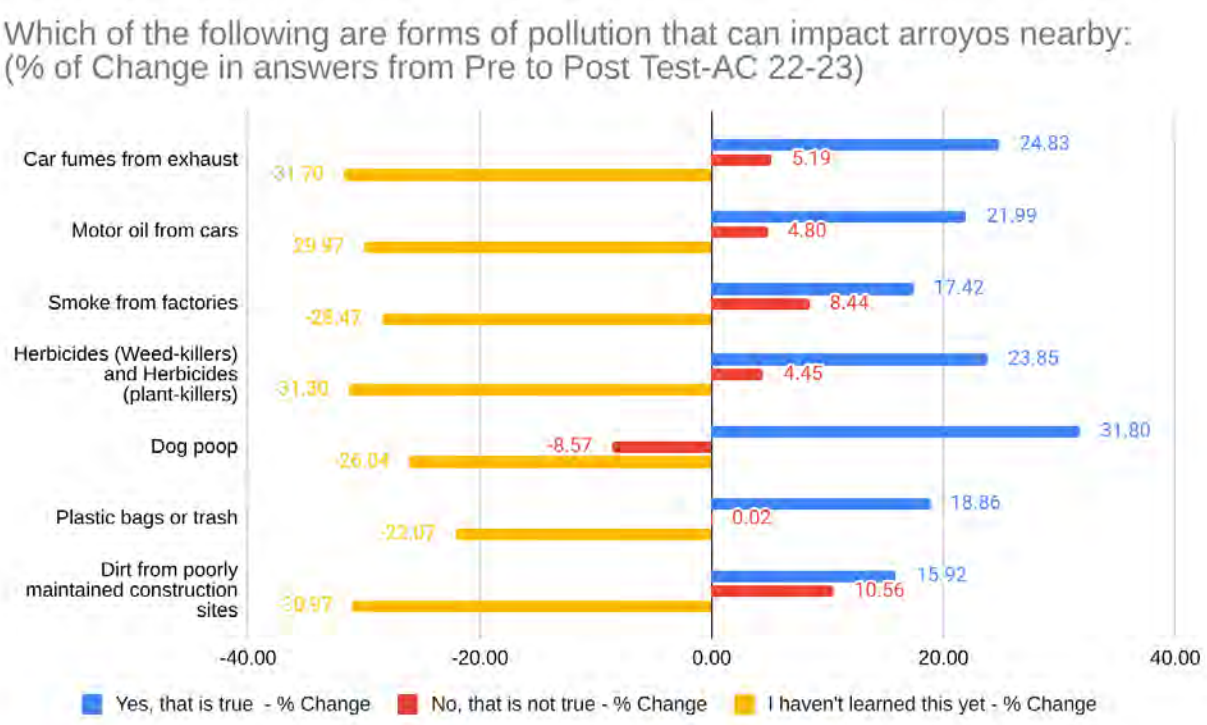
The % of change from pre-survey “I haven’t learned this yet” to the post-survey responses and an increase in correct responses are great indicators of growth in all areas of arroyo safety. The “Arroyos are never safe to be in” may have been confusing and we will consider rewording this question to specify what type of arroyos are safe and under what conditions are they safe. The correct answer is clearly understood by the students since their response to safety in sandy arroyos was that it is safe under good weather conditions. While there was a greater increase in “True-Arroyos are never safe” responses, this may also demonstrate family safety practices and behaviors that aren’t swayed easily by education.

Item 4: Adaptations to desert



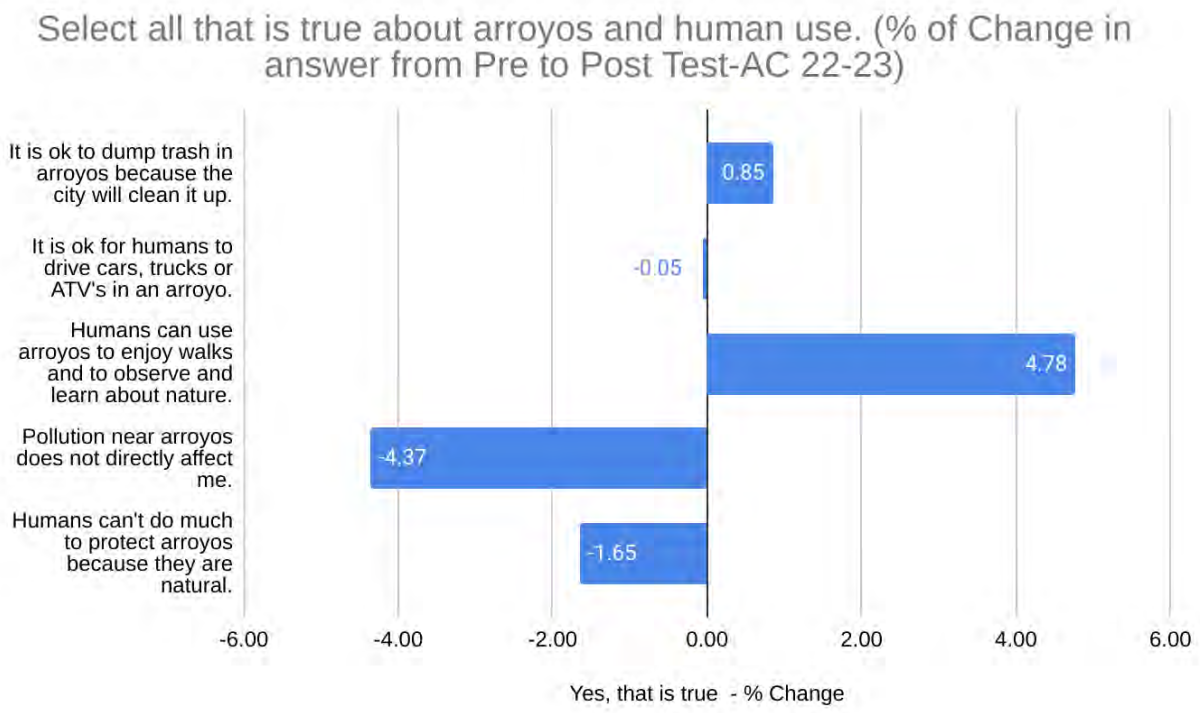
Although there is a large percentage of change from “I haven’t learned this yet,” the students seem divided on whether or not the correct response is true or false.
It’s great that the students recalled that the fine “hairs” on plants are adaptations to deserts since many of the students asked about this when they were observing plants during their Arroyo Walk field trips! There is opportunity to provide more directed lessons next year on plant adaptations based on the close true and false answers.

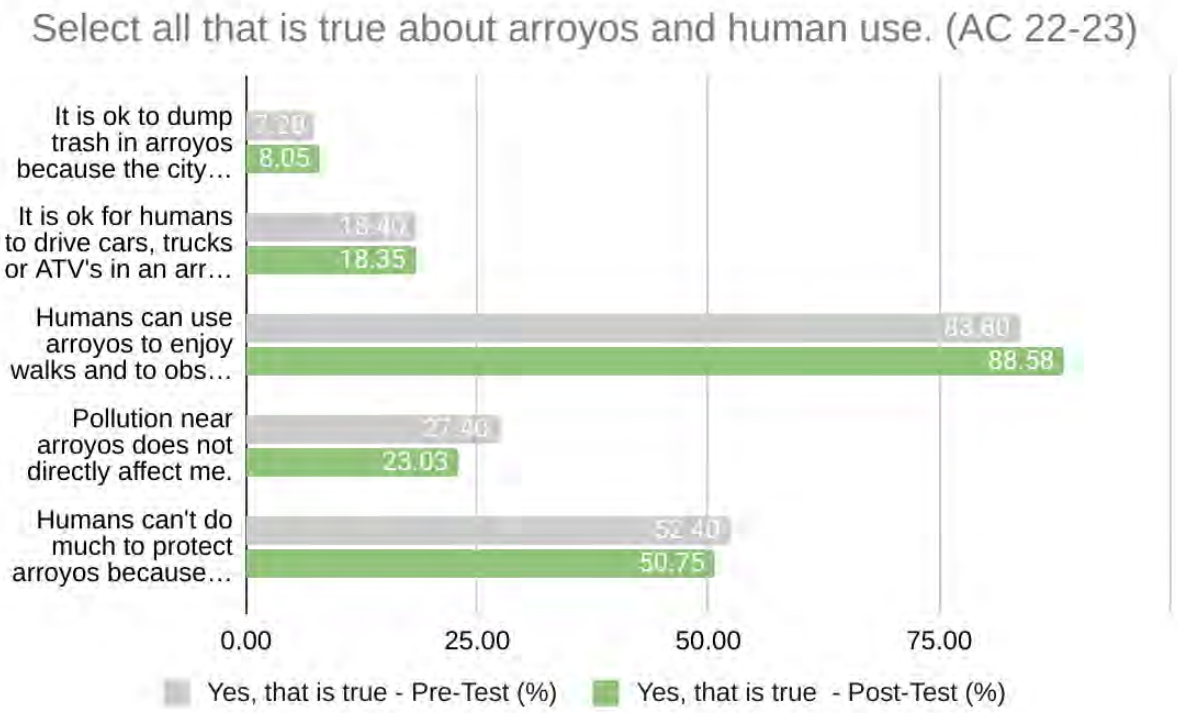
Item 5:Pollution



There is such positive growth in understanding how pollution impacts arroyos. Rather than thinking of arroyos as just another place trash piles up and relating that to need to only do a litter pick up, they are making connections between the health of our overall watershed by what lands in the arroyos.

Item 6: Human Use





Approximately ⅛ of students (Both pre and post-survey) believe it is okay to drive through arroyos but that might be due to the high number of people doing it without a lot of discussion around why that may impact the wildlife who use these areas as habitat and space.

Although there is a slight increase in the percentage of change of students who think the city will clean up the trash in the arroyos, the actual number started low at only 40/ 555 students and increased by 3 total students.

Including a more direct discussion of how to share our space responsibly is a consideration for next year.

Activity Guide for 3rd Grade – Building a Watershed

1. What are we trying to teach students in this activity?
A watershed is an area of land where all the water flows (or sheds) into a common body of water. We live in the Middle Rio Grande watershed. As water moves downhill, it carries sediments and other materials to the river. Water is a precious resource and we can help improve the quality of the river by picking up after our pets and not littering or throwing trash on the ground.

2. How can we tie this activity to our teaching goals:

Our Goals	**Where we can relate our goals to this activity**
We all live in a watershed	Use a model to show an understanding of the term "watershed"
Water moves downhill and can carry pollution as it moves across a landscape	Demonstrate the movement of water with the model.
Picking up after our pets and minimizing our trash, and the trash on the ground helps keep our river clean	Talk about the importance of being responsible and how caring for the watershed in this way not only protects the water, but also helps the people and plants and animals that depend on the water as well.

Supplies:
- Copy paper
- Washable markers (blue, red, brown, black)
- Disposable roasting trays
- NM relief map
- Role cards
- We All Live in a Watershed poster
- whiteboard markers
- squirt bottles
- ABCWUA aquifer poster

3. How can we tie this activity to standards?
- Earth's features are constantly changed by a combination of slow and rapid processes that include erosion and weathering
- Living things cause changes to their environment, some detrimental, some beneficial
- Defining a behavioral, structural challenge and generating possible solutions

<u>NGSS</u>

3-ESS3-1 Make a claim about the merit of a design solution that reduces the impacts of a weather-related hazard.*

2-ESS2-2. Develop a model to represent the shapes and kinds of land and bodies of water in an area.

NM Social Studies Standards

Theme 4. Geography 11.
3.23. Identify and use a variety of digital and analog mapping tools to locate places.

Them 4. Geography 12.
3.25. Identify the components of the Earth's biosystems and their makeup.

4. How should this activity be organized?

I. Pre-activity (10-15 minutes)

- How many of you used water before you came to school? How did you use it? Where do you think all this water comes from?
- Has anyone heard of the term "watershed" before? Highlight that it is a compound word. What do you think when you hear this word? Have them give an example of "shed" as a verb. *A watershed is an area of land where all the water sheds into the same body of water, like a river, lake, bay or ocean.*
- Where does the water come from in nature? *Rain or snow*
- Pull out the NM relief map. Discuss the purpose of a map. Introduce concept of a "key". Have them help you find ABQ on the map and the Rio Grande. Talk with students about the map/model. Point out the Rio Grande Watershed through the middle of the NM relief map. Where are there mountains and hills? Where do you see rivers and lakes?
- What would happen if we sprayed water on the mountain peaks, what will happen to it? *It will flow downhill.* Let's find out by making our own model/map, similar to the relief map.
- Introduce water cycle. A water cycle happens on a watershed

II. Build A Watershed Activity (25 min)

Part A: 10 min

- Demonstrate activity while students are sitting.
    - With your imagination, imagine that this piece of paper is a piece of land.
    - Crumple up the piece of paper and then smooth it back out most of the way. Leave it a bit crumpled, showing small ridges (high points) and valleys (low points).
    - Find the ridgelines (tops of the fold lines). Use the blue marker to color along the ridgelines on your "land". Identify the ridges.
- Pair students (groups of 2), with teachers help. Assign each a number 1-2. Write roles on a whiteboard:

    - 1 - Crumpler / Drawer
    - 2 - Sprayer / Disposer
- Gathered around their trays, ask students to crumple their paper and draw their ridgelines. Once they are complete - Hands on their hand so we know they are ready for the next step. Announce that students have 30 more seconds when it seems that each group has enough ridgelines.
- What do you think will happen to your land when it "rains"? What will happen to the blue ridge lines? Where will the "rainwater" travel? How does the water cycle happen on your watershed?
- Model for students the distance we want them to aim from as they spray (i.e. the length of your elbow to hand, vertically placed on the tray). And 5 full sprays. (idea: Students can be drill sergeants about the three sprays, acknowledge that sometimes the spray bottles act funny but that we are trusting our classmates to count for themselves to do only five full sprays...).
- Altogether, sprayers squirt your model a few times to create a "rainstorm" over your land. Observe what happens.As your rainfall accumulates, watch the pathways where the excess "rainfall" travels.
- With teachers, walk around to ask each pair to explain what the water is doing and show you rivers and streams in their model.
- Have teachers help pick up all the spray bottles, and ask everyone to place their hands on their head and have a small group discussion about their observations.

  Part B: 15 min
- Have pairs switch roles, "disposers" can throw out previous model. Tell students they will keep the same number assigned earlier and tell them what role they will be playing.
    - 1 - Sprayer / Disposer
    - 2 - Crumpler / Drawer

III. What's In the Water?

Experiment with how "pollutants" might travel through their watersheds.

- With a new piece of "land", imagine this represents the City of Rio Rancho or the Rio Grande Watershed. Show one of the Watershed posters and point out all the human activity that happens in a watershed (driving cars, making things (manufacturing), farming, walking our dogs, etc.)
- What might be on this land that we wouldn't want in our water? What is pollution? Have you ever seen it? What does it look like?
- As students share, note the types of pollution on a poster or white board and create a key for groups to use. (Roads/Cars - black, Trash - Green, Dog poop-brown (and/or orange if you have more groups than markers)) Depending on the group, you could also identify Factories - Red
- Before crumpling, have drawers (with their support drawers) mark their papers with the brown, red and black marker to represent farms, factories, houses, streets, dog poop and trash.
- Announce that students have 30 more seconds when it seems that each group has drawn enough. Then ask all students to put their hands on their head. Then have crumplers -crumple paper and then partially smooth it out. Altogether, have sprayers spray the piece of paper.

- What happened to the pollution when it rained? Describe what happened at the highest and lowest point in your watershed. How quickly did it spread? Are there any places on the land where it didn't go?

V. Conclusion (10min)

- What do you think this means for our watershed - the Middle Rio Grande?

The water we drink comes from our watershed. Animals and plants also depend on this water. That's why it's important that we try not to pollute either the water or the land. Anything that pollutes the land will eventually wind up in the water.

- What might be ways we could reduce pollution in our watershed?

By picking up trash and picking up dog poop if we have dogs.

Activity Guide for 3rd Grade – Arroyo Walk (Animal and Plant Adaptations)

1. What are we trying to teach the students in this activity?
Arroyos are cool places where animals live, animals and plants are adapted to live in the desert.

2. How can we tie this activity to our teaching goals:

Our Goals	Where we can relate our goals to this activity
Animals live in arroyos	Look for evidence of animals.
We should visit arroyos carefully	Talk about when it is safe.
Picking up dog poop keeps germs out of our river	We'll probably see poop, talk about how it can make animals sick.

Supplies:

- Thermometers
- Clipboards
- Poster of leaf adaptations
- Wax paper
- Paper towels
- Tape

3. How can we tie this activity to standards?

- Measure energy (temperature change)
- Posing a question, using numerical data, various methods to display results
- Animals and plants have adaptations that improve chances of survival
- Classifying animals and plants
- Living things cause changes to their environment, some detrimental, some beneficial

5. How should this activity be organized?

I. Pre-activity (10 minutes)

- Do you ever visit/play in arroyos? What do you do?
- What are arroyos for? Managing storm water to keep our town from flooding when we get a heavy rain. **Show first flush video.**
- Talk about arroyo saftey – don't go into arroyos when you see clouds in the sky.
- Because our arroyos are natural, with sandy sides and bottom, they are safer.
- In Albuquerque, the arroyos have concrete sides and water travels so fast, it is really dangerous to ever go in arroyos. Some arroyos come from the canyon where it might be raining but you can't see.
- Our arroyos are home to all kinds of animals and plants, so they are a wonderful place to enjoy nature. What kinds of animals do you think might live in the arroyo?
- Walk out to arroyo

II. Lizard activity (15 min)

- 5min Look for evidence of animals. What kind of evidence? Scat, tracks, holes.
- What kind of animals live in holes (besides snakes)?
- What do you think makes it difficult to live out here? Heat, sunburn, not much water, cold at night. Animals and plants have special **adaptations** (special things about their bodies) that make it easier for them to live in this habitat.

- How do they get water? From plants, from condensation under rocks.
- How could they avoid heat? Stay in burrows or shade during the day, active at night.
- Some animals love the heat, though! Lizards are cold-blooded, which doesn't mean they are actually cold. It means their body temperature is determined by the environment. They need to absorb heat from their surroundings to function.
- Each student take a thermometer. This is a lizard, and it needs to maintain its body temperature at a certain level: fence lizard 35C (95F), whiptail 38.6C (101F). How can it keep from getting too hot? How can it keep from getting too cold? Lizards regulate their body temperature through behavior.
- Plants do kind of the same thing – hold one palm out flat, one sideways. Which feels hotter? Prickly pear cactus pads grow sideways instead of flat to keep themselves cool!

IV. Plant activity (15 min)

- What do plants need in order to survive? Water, sunlight, air, soil
- What makes it difficult for plants in the desert? It's so hot and there's so little rain.
- How do plants get water? **Show evapotranspiration diagram.** It's kind of like when we're hot, we sweat. But if we lose too much water from sweating we get dehydrated.
- How do they keep cool? Remember prickly pear? **Show pictures of hedgehog and prickly pear cacti.** Desert plants can **s**hade themselves! Hedgehog cactus has lots of spines that shade the surface and also blocks the wind.
- The leaves of many desert plants are **adapted** so that they don't lose too much water.
- Show leaf adaptations poster (fuzzy, small, curled, waxy, green stems but no leaves)

If weather is ok:

- Out in arroyo, we'll do an investigation.
- How many of the plants we see will have these adaptations? Hypothesize.
- To be fair, we can't just pick the plants we like. Standing in one spot, collect the first 6 *different* leaves you see.
- Draw each one, and describe what adaptation it has.
- How many of your 6 leaves have one of the adaptations listed?
- Why don't all have it? Some plants avoid the heat by just growing and producing seed really fast before the weather gets hot, and then they just die off and leave their seeds to grow next year!
- Search for seeds.

If windy, inside activity:

- Let's investigate one way they keep water. **Dab water on board, cover one spot with paper towel, one spot with wax paper.** Which do you think will evaporate faster?
- **Show prickly pear picture.** Make model of prickly pear pad: paper towels with wax paper taped around the outside. **Show cut prickly pear pad.**
- Maybe do experiment: soak wax-covered and non wax-covered leaves in water and time how long they take to dry.

V. Conclusion (10min)

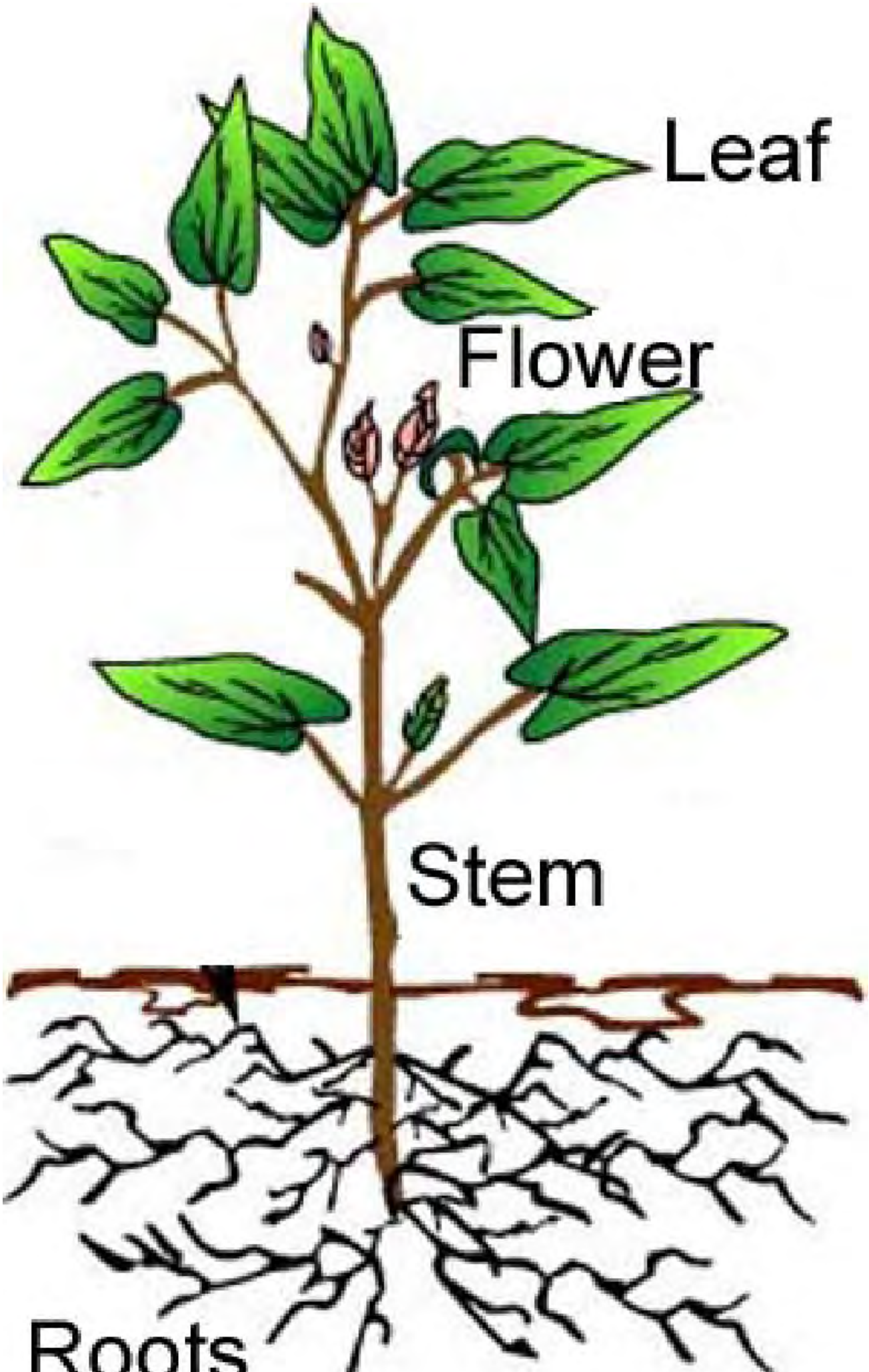
- Arroyos are for flood control, and we shouldn't play in them when clouds are in the sky.
- But they are cool places where animals and plants live, and we can visit when it's clear weather.
- Animals and plants are adapted to live in the desert climate.
- What we do in arroyos affects the plants, and animals' habitats. Should we ride ATVs up the sides? That's something humans do to change our environment for the worse.

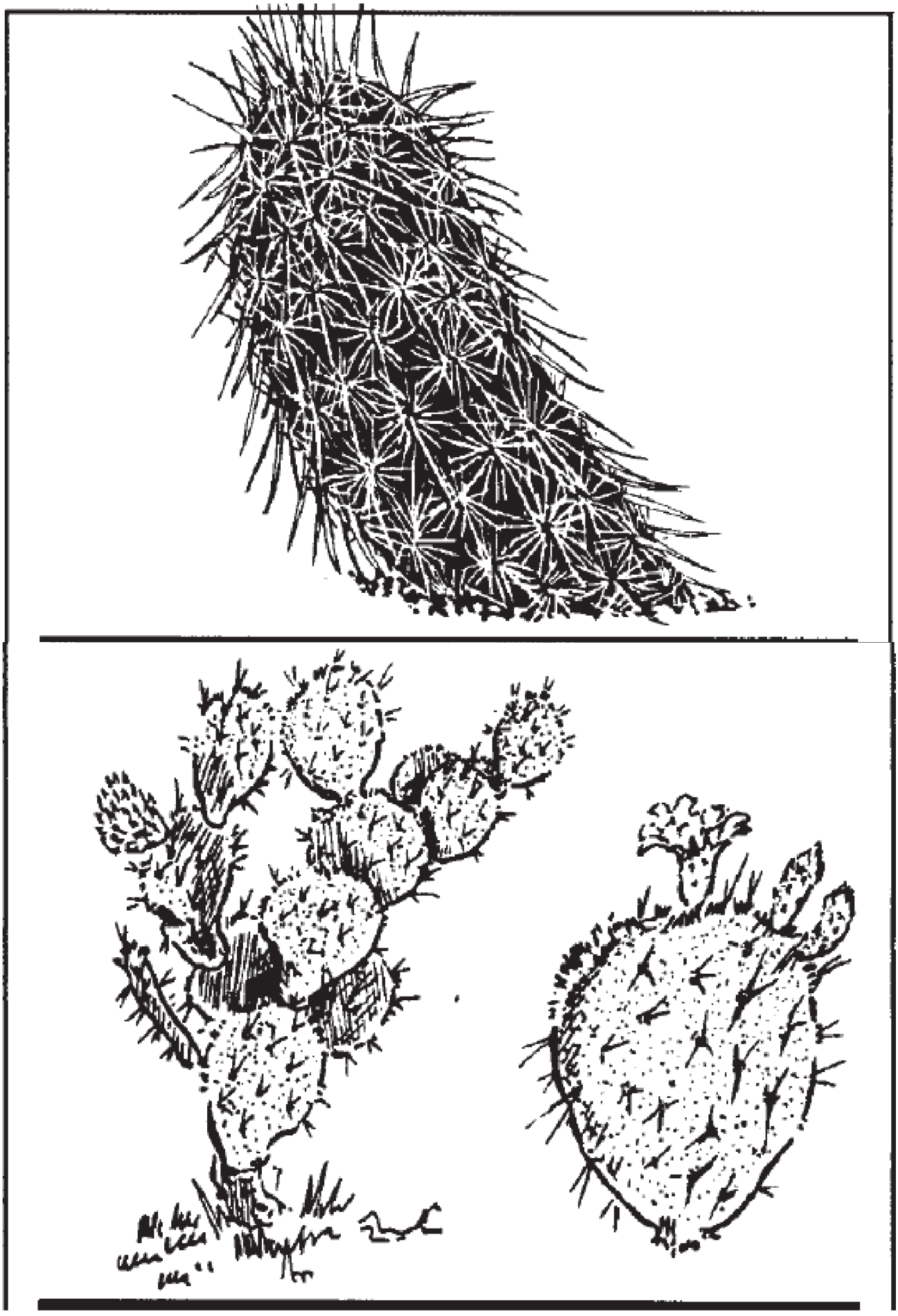
- Picking up dog poop is important because it can make animals sick. Where does the water go when it flows down the arroyo? The Rio Grande! Keeping dog poop out of the river is one way humans can change our environment for the better.
- Walk back to classroom

Leaf Adaptations

1. Fuzzy leaves or lots of spines
2. Small leaves
3. Curled leaves
4. Waxy leaves

5. **Green stems but no leaves!**


Leaf
Flower
Stem
Roots



Town of Bernalillo

"The City of Coronado"

From May 2023 to current, the Town of Bernalillo has hosted the educational stormwater kiosk with approximately .5 visitors per day.

In addition, we have distributed stormwater brochures from our of the Planning Department Office and Town Hall reception desk. Approximately 30.

We have also produced newsletter articles in support of stormwater to include the promotion of the kiosk and fats, oils and greases.

THE UNIVERSITY OF NEW MEXICO

BEMP
Bosque Ecosystem Monitoring Program

BOSQUE SCHOOL
Challenging Education

Bosque **E**cosystem **M**onitoring **P**rogram in coordination with the Mid Rio Grande Stormwater Quality Team.

2022 Annual Stormwater Quality Team Technical Report

Submitted December 21, 2022

WORK COMPLETED BY:
Bosque Ecosystem Monitoring Program (BEMP)

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REGARDING BEMP PROFESSIONAL SERVICES AGREEMENT
FOR: Mid Rio Grande Stormwater Quality Team

DATE SUBMITTED:
21 December 2022

Key personnel and contact information:
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Introduction

Staff from the Bosque Ecosystem Monitoring Program (BEMP) collected data from eight (seven in January) sample locations from north to south along the Rio Grande. Sampling occurred quarterly in 2022 during the months of January, April, July and October. Monitoring objectives were to:

1. Assess *Escherichia coli* concentrations in the river; to see how these levels change flowing into, through, and out of Albuquerque; and how these levels fluctuate temporally over the year.
2. Obtain levels of dissolved oxygen (DO), turbidity, conductivity, temperature, and pH to assist in water quality interpretation and to see how various river inputs may affect these parameters.

Escherichia coli standards

Escherichia coli is a bacteria that has been used as an indicator of fecal contamination of surface water. The presence of *E. coli* in high concentrations can cause human health issues and can also indicate the presence of other harmful pathogens.

The EPA and the State of New Mexico recognize an upper limit for *E. coli* presence in primary contact water as 410 MPN/100 mL. However, limits set by the Pueblo of Isleta, a community just south of Albuquerque, are 88 MPN/100mL due to special usages and hereafter is referred to as the "desired limit" and is the ideal upper limit of *E. coli* concentration for sampled locations.

Sampling strategy

Quarterly sampling took place at eight (seven in January) river sites spanning approximately 26 miles (Table 1, Figure 1). Sampling for seven of the eight locations occurred along the west bank of the Rio Grande. An eighth location, State Land Office (SLO), was collected on the east bank of the Rio Grande across

from the Los Padillas site (Table 1, Figure 1). The northernmost site, Willow Creek, is located on the south side of HWY 550 in northern Rio Rancho and was selected to show the quality of the water entering Albuquerque (Table 1, Figure 1). The southernmost sites, Los Padillas and SLO, are located west of the Valle de Oro National Wildlife Refuge, and below Albuquerque's Southside Wastewater Reclamation Plant, in southern Albuquerque (Table 1, Figure 1). These sites are used to represent the quality of the water leaving Albuquerque. Quarterly sampling occurred upstream to downstream during the months of January*, April, July, and October.

**In January sampling did not occur at the SLO site as this site had not yet been added to the contract.*

Table 1. Sampling location from north to south.

Site Name	**Latitude and Longitude**	**Nearby landmark**
Willow Creek	35.295546, -106.581921	South of the HWY 550 Bridge, west riverbank
Corrales	35.208357, -106.622984	Across and slightly downstream of the North Diversion Channel
Bobcat	35.196928, -106.643422	South of Alameda Bridge, west riverbank
Montaño	35.145738, -106.678711	South of Montaño Bridge, west riverbank
Central West	35.089068, -106.681366	North of Central Bridge, west riverbank
Rio Bravo West	35.027410, -106.673757	North of Rio Bravo Bridge, west riverbank
Los Padillas	34.973066, -106.690553	North of I-25 Bridge near Valle de Oro NWR, west riverbank
State Land Office (SLO)	34.970360, -106.688214	North of I-25 Bridge near Valle de Oro NWR, east riverbank

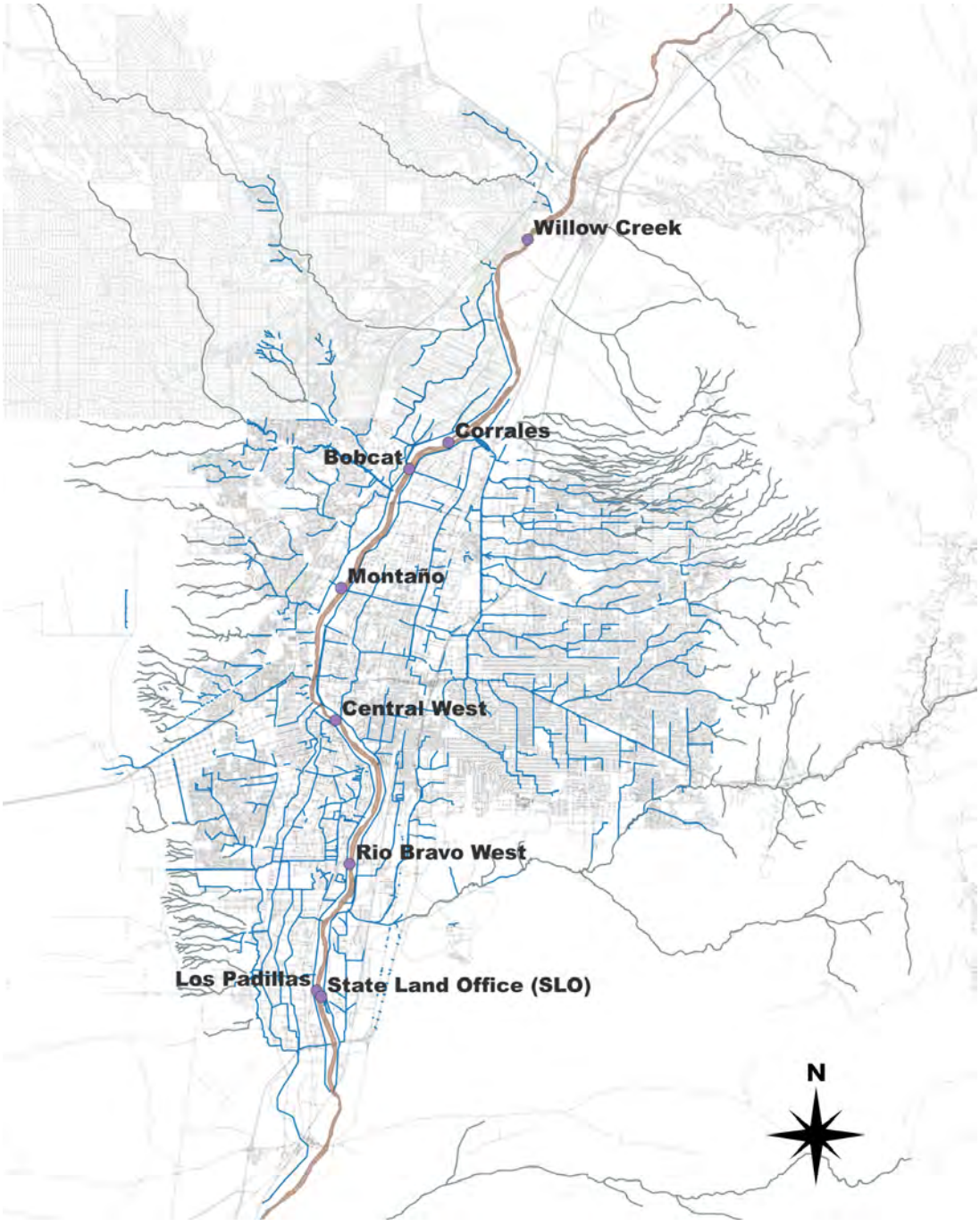


Figure 1. Sampling locations for 2022. Additional GIS layers include arroyos, drains and ditches, city streets, and river center.

Procedures

Prior to sampling, all equipment to be used was calibrated at the University of New Mexico using the manufacturer's protocol. An ice bath was constructed using

a small cooler filled with an ice water slurry and equipped with a digital max/min thermometer to ensure proper holding conditions for *Escherichia coli* samples prior to delivery to the receiving laboratory. River flow was recorded using the USGS Rio Grande central gauge. All sampling and safety equipment were transported to each site by BEMP staff. Upon arrival at each collection site, safe river entry was determined using river flow data, visual inspection of the river, and if necessary, an extendable pole to determine depth. If the river was determined safe to enter, a collecting crew would don waders and personal flotation devices (PFDs) prior to entering the water. The collecting crew would walk in-stream away from the river bank to sample an area of water with adequate mixing. No fewer than two members of the collecting team entered the water at any one time while a minimum of one additional member stayed on shore with a throw rope for safety purposes. If only two crew members are available samples are taken from shore using modified poles and collection cups. Instream field parameters were collected following methodologies established by the New Mexico Environment Department, SOP 9.1 (NMED 2013) and included pH, conductivity, specific conductance, water temperature, and dissolved oxygen. Staff trained in proper *E. coli* collection technique collected samples at each site using gloved hands and specimen cups provided by the analyzing laboratory. Turbidity samples were collected in vials for analysis. Site specific information was collected including air temperature, number of upstream waterfowl, water color, and any unusual odors. Photo documentation of each site was taken with written site name, date, and time of arrival included in the photograph. *E. coli* samples were labeled with site name and collection time using laboratory provided labels and tamper-proof seals were applied. These samples were placed in sealed bags and submerged in the ice bath for transportation. After the final site was collected a "blank" *E. coli* sample was made using proper collection techniques using deionized water. This sample was labeled as "blank", stored, and transported using the same technique as the river samples. All *E. coli* samples were transported to Hall Environmental Analysis Laboratory in Albuquerque, New Mexico where *E. coli* coliform enumeration analysis was performed.

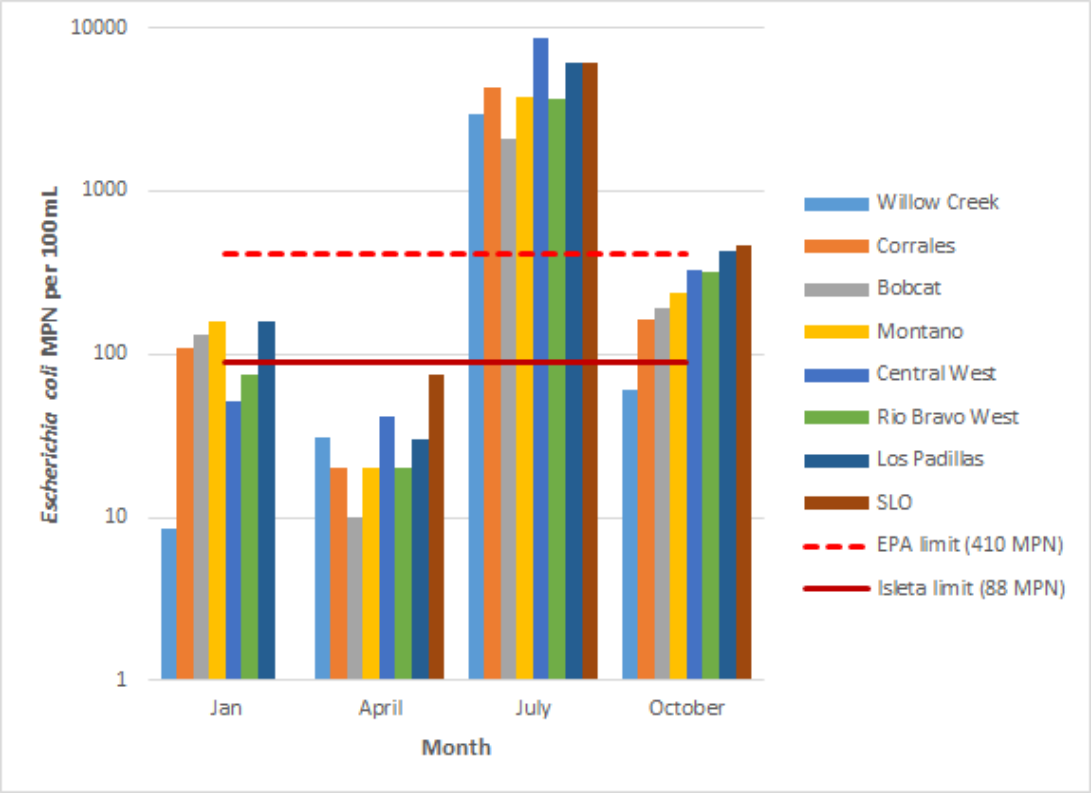


Figure 2a. *Escherichia coli* MPN/100mL on Log 10 scale at sampling sites across months.

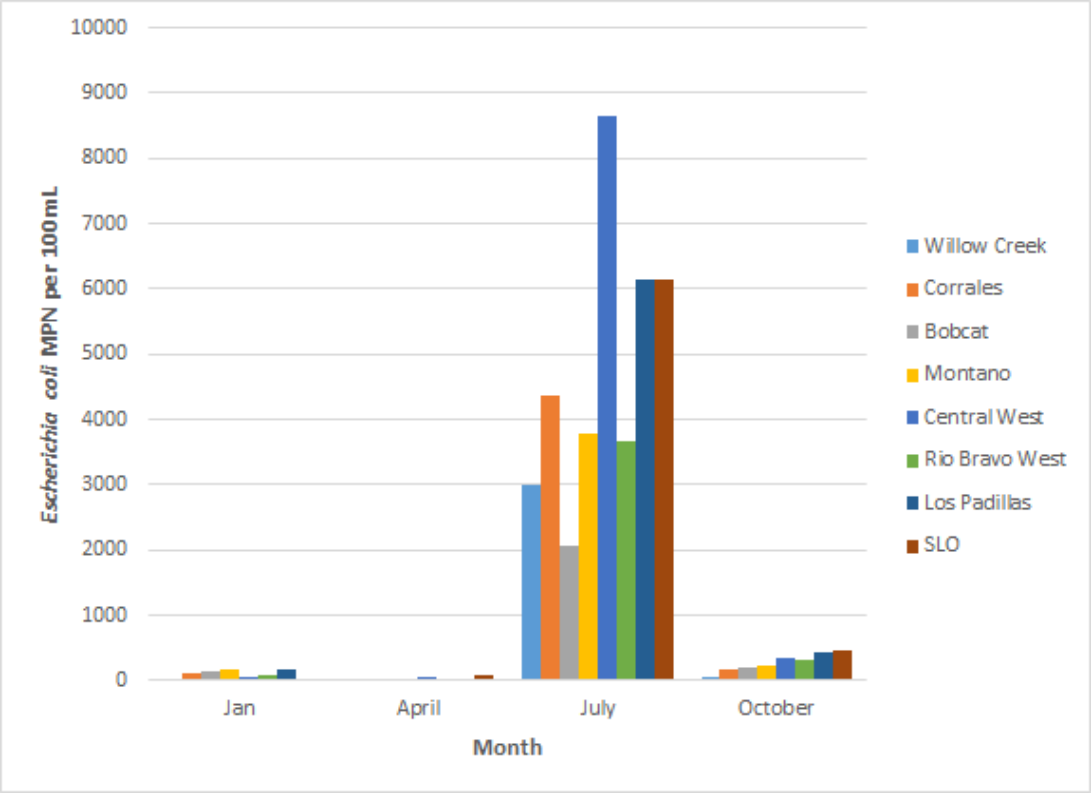


Figure 2b. *Escherichia coli* MPN/100mL at sampling sites across months. Same data as in Figure 2a but on a linear scale.

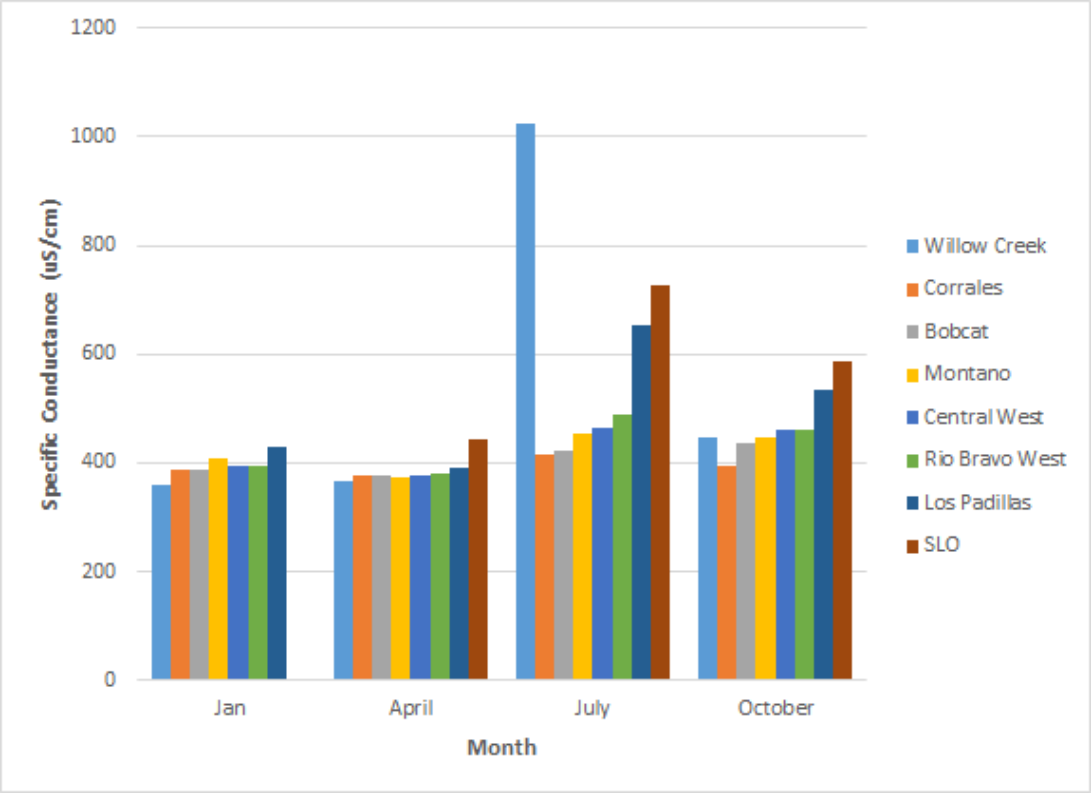


Figure 3. Specific conductance uS/cm measured at sampling sites across months.

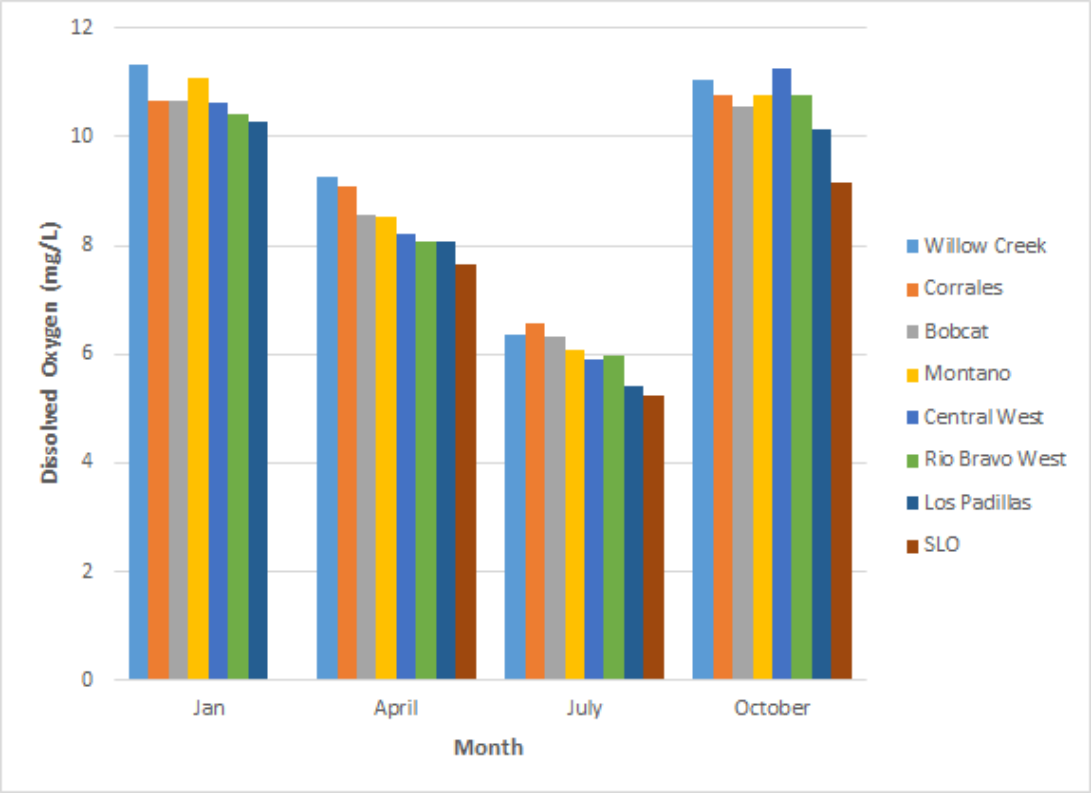


Figure 4. Dissolved oxygen mg/L measured at sampling sites across months.

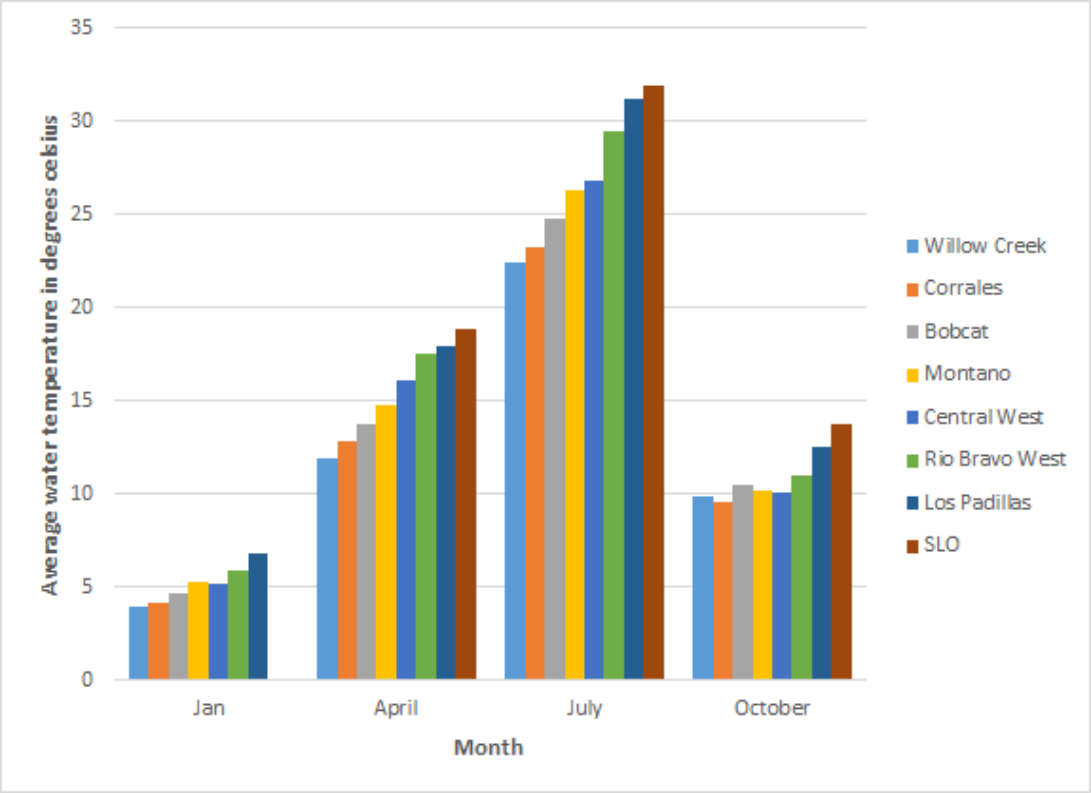


Figure 5. Temperature in degrees celsius measured at sampling sites across months.

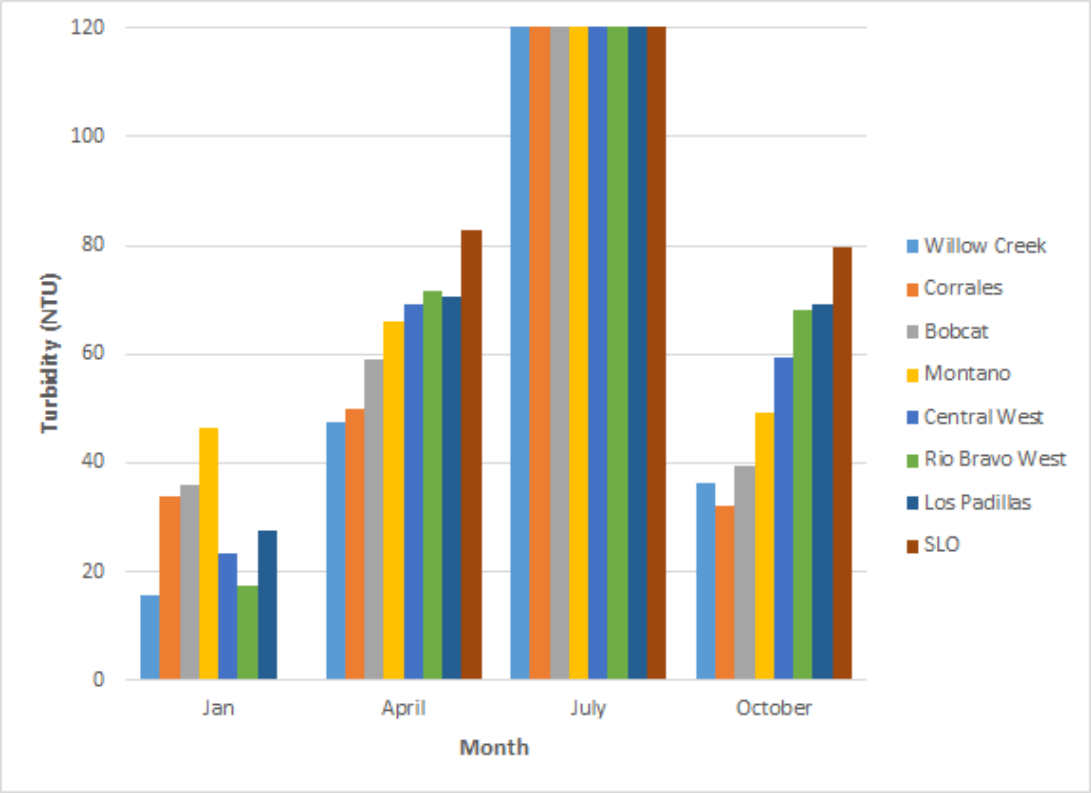


Figure 6. Turbidity (NTU) measured at sampling sites across months. Turbidity in July exceeded the instrument's range resulting in over range values at sample locations.

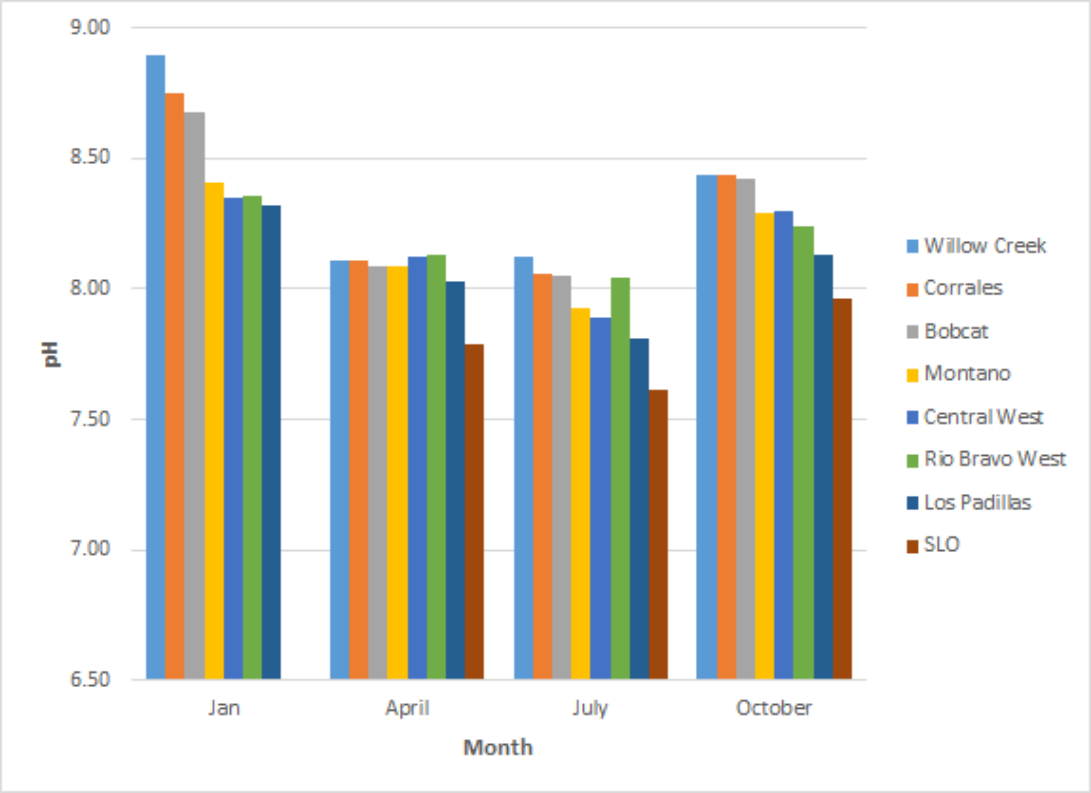


Figure 7. pH measured at the sampling sites across months.

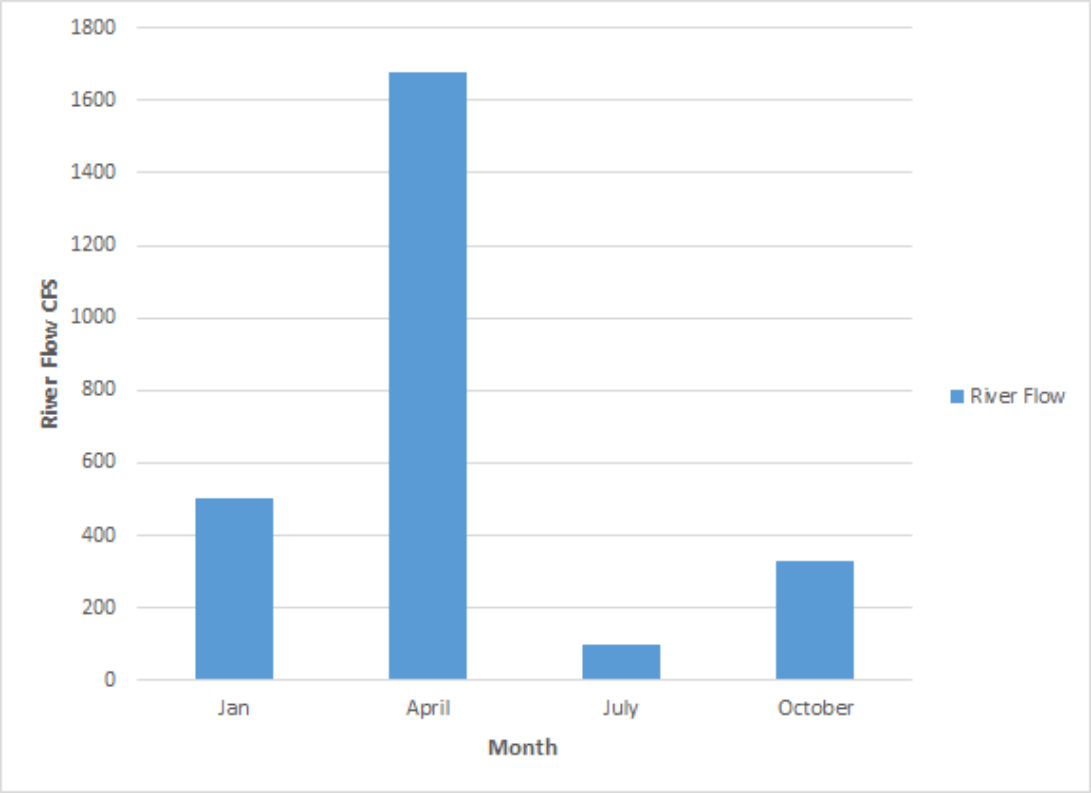


Figure 8. River flow at the Albuquerque gauge across sites.

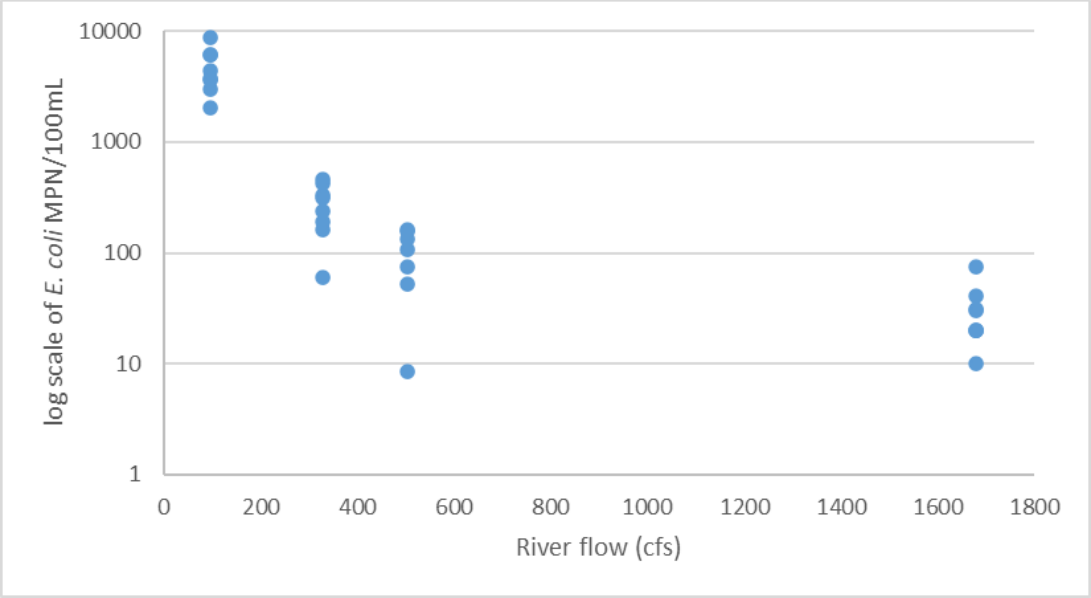


Figure 9. Log scale of *E. coli* vs river flow.

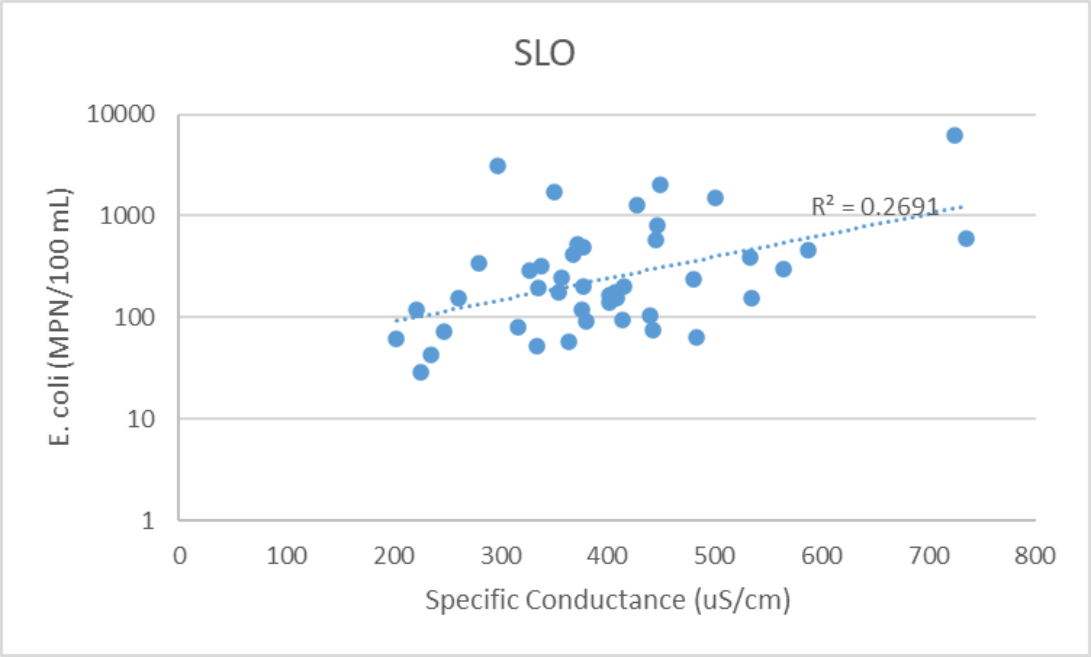


Figure 10. Log scale of *E. coli* vs. specific conductance at the SLO site for 2017-2022.

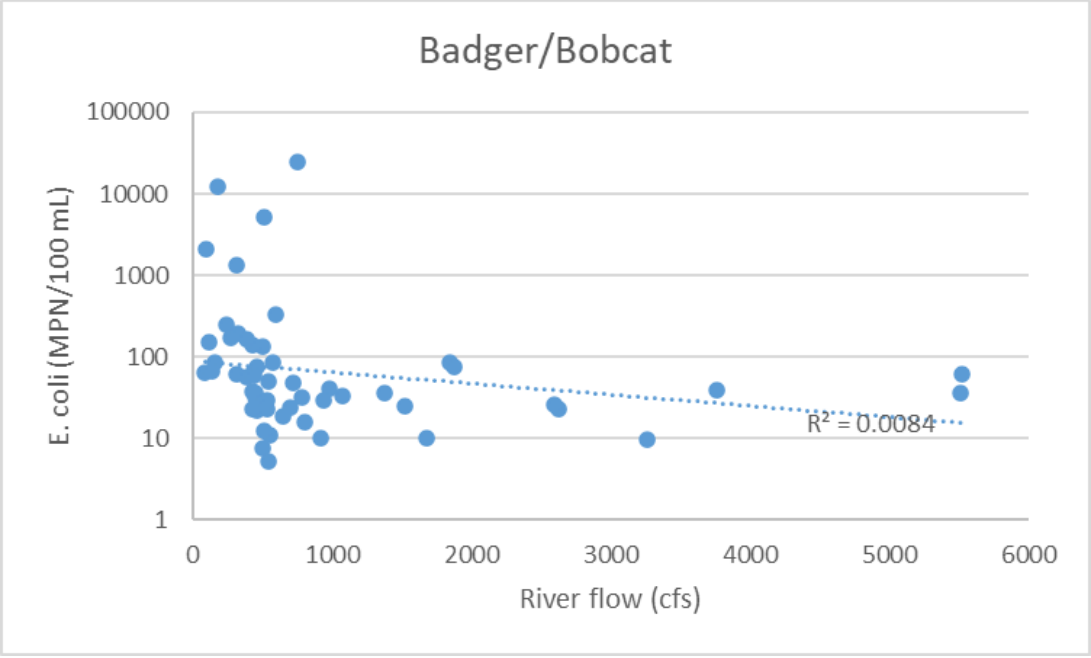


Figure 11. Log scale of *E. coli* vs. river flow at the Badger/Bobcat site (Alameda Bridge) for 2017-2022.

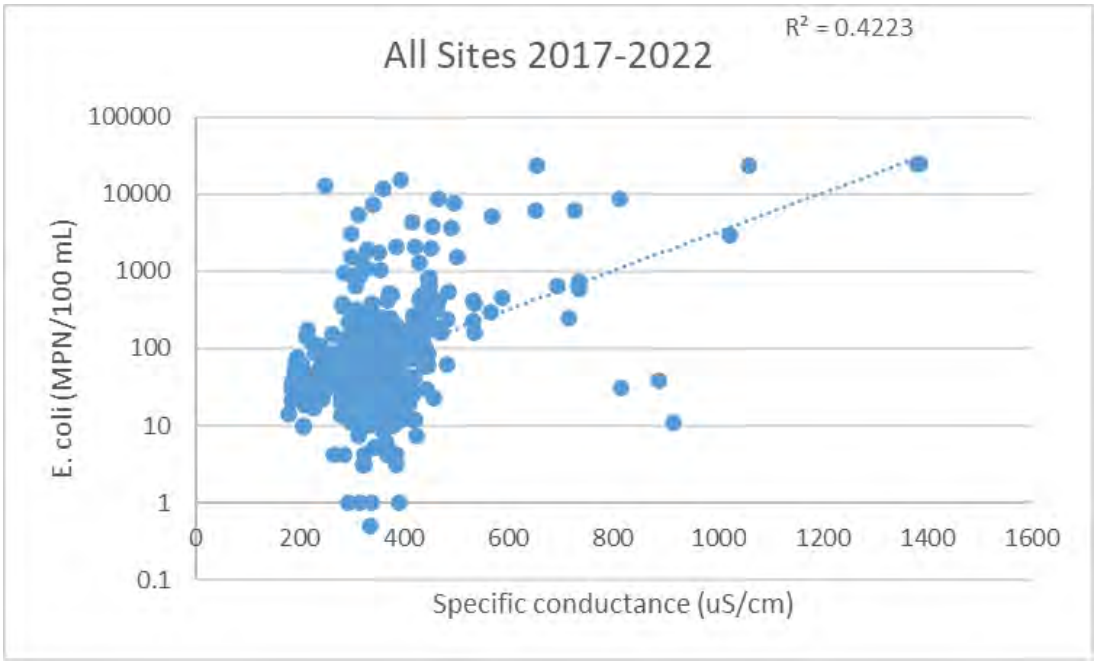


Figure 12. Log scale of *E. coli* vs. specific conductance for all sites from 2017-2022.

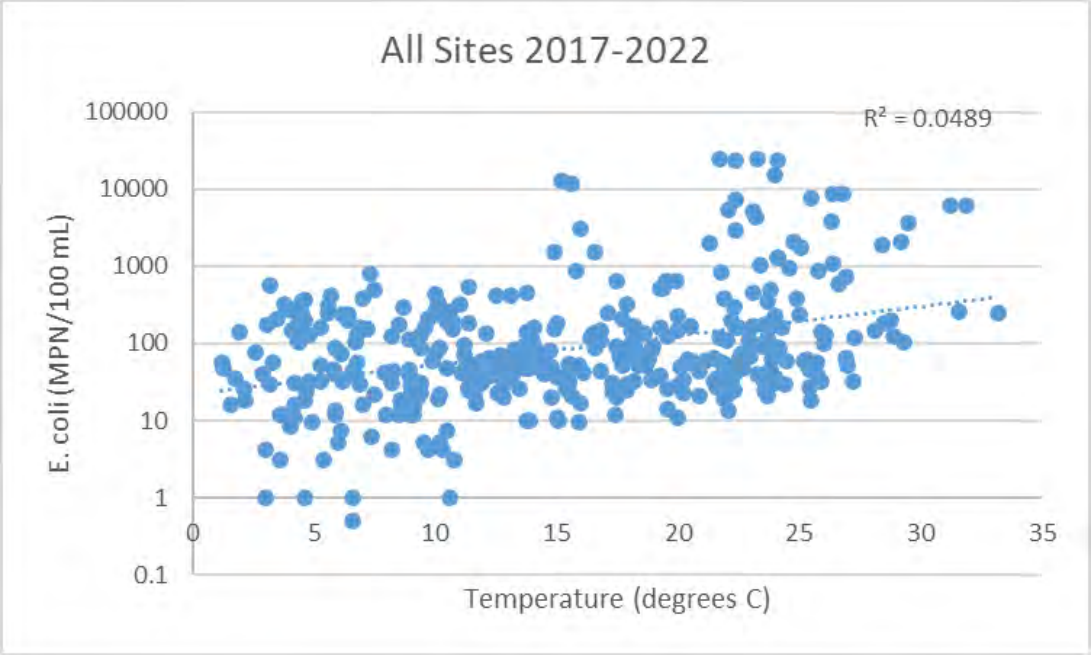


Figure 13. Log scale of *E. coli* vs. water temperature for all sites from 2017-2022.

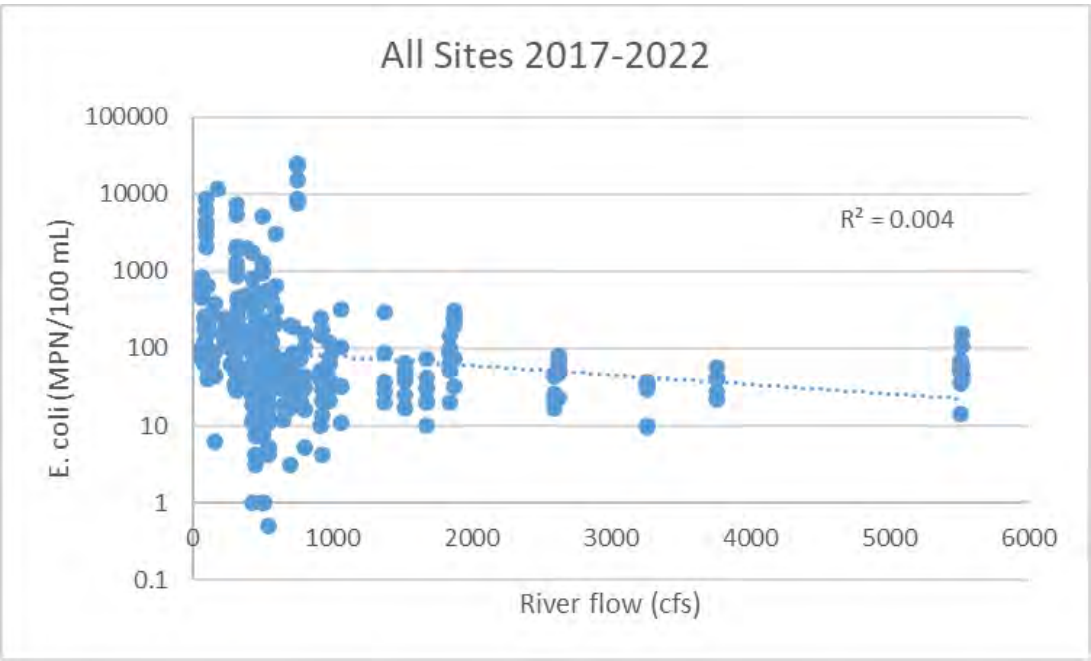


Figure 14. Log scale of *E. coli* vs. river flow for all sites from 2017-2022.

Conclusions

Escherichia coli

Escherichia coli levels exceeded the desired limit of 88 MPN/100 mL on three of the four sampling dates during January, July and October. These levels also exceeded the EPA and state limits of 410 MPN/100 mL on two of those sampling dates in July and October (Figure 2a,b).

The desired limits (88 MPN/100mL) were exceeded in January at Corrales, Bobcat, Montano, and Los Padillas. In July, samples exceeded both desired limits (88 MPN/100mL) and EPA limits (410 MPN/100mL) at all sampling locations. The highest *E. coli* level recorded for July was at Central West with 8,664 MPN/100mL. The lowest *E. coli* level recorded for July was at Bobcat with 2,064 MPN/100mL. In October all sample locations except Willow Creek exceeded the desired limits (88 MPN/100mL) with Los Padillas and SLO exceeding the EPA limits (410 MPN/100mL). The highest recorded *E. coli* level recorded for October was at SLO with 464 MPN/100mL. The lowest *E. coli* level recorded for October was at Willow Creek with 60.5 MPN/100mL.

The extremely high *E. coli* levels seen in July correspond with thunderstorms that occurred in the days preceding the collection. These rain events were responsible for the first rewetting of the Rio Grande after days of river drying in the Albuquerque stretch of the Rio Grande. This demonstrates how precipitation and runoff events can dramatically impact *E. coli* in the Rio Grande (Figure 2a,b). Exceedances disproportionately occurred in southern sites compared to northern sites, with SLO and/or Los Padillas (the southernmost sites, located below Albuquerque's Southside Wastewater Reclamation Plant - SWRP) exceeding the *E. coli* limits in all months that exceedances occurred (Figure 2a,b).

Specific conductance

Specific conductance had a large peak in July at Willow Creek and corresponded to the precipitation events preceding collections. Excluding this one value, Los Padillas and SLO are seen to have the highest specific conductance, deviating from the typical trend seen at other sampling locations. This trend is more pronounced later in the sampling season, most noticeable in July and October (Figure 3).

Dissolved oxygen

Dissolved oxygen (DO) levels are important for the health of aquatic systems and are directly influenced by numerous natural factors including respiration and consumption by aquatic life, salinity, and temperature. The DO levels in 2022 were lowest in July and highest in January and October (Figure 4), inversely related to average water temperature (Figure 5). This indicates that temperature may be the main driver of DO in this system.

Turbidity

Turbidity fluctuated throughout the year, peaking in July when the turbidity of the water exceeded the detection limitations of the equipment resulting in over-range values (Figure 6). This corresponds with the rewetting of the river (and low river flows) occurring from storm events.

pH

pH fluctuated throughout the year; values are seen in Figure 7.

Multi-year analyses

As mentioned in previous reports, specific conductance has the strongest correlation with *E. coli* levels (R^2 0.4223, Figure 12). This relationship is also seen at the site level (Figure 10), though can be driven by outliers. *E. coli* data from this year had a correlation with river flow with a 0.407 R^2 (Figure 9), but when analyzing trends across all sites from 2017-2022, the R^2 was 0.004 (Figure 14). When looking across multiple years within a site, the R^2 between *E. coli* and river flow continued to be low at 0.0084 (Figure 11). Temperature is also a poor predictor of *E. coli* when used alone (Figure 13).

Discussion

Even with reduced sampling, water quality parameters follow similar patterns of seasonal change noted in previous years. The reduced sampling method does miss some peak levels that could be caused by seasonal monsoons and periods of low flow. Season and water source (e.g., runoff) are strong contributors to *E. coli* levels. Temporal variation during typical peak flows (June through August) can be used to assess the typical peak *E. coli* values as well as rate of change by employing more frequent sampling. More frequent sampling in September would allow assessment of the impact of monsoons, if trends continue with late tropical storms occurring in September rather than in July.

Middle Rio Grande Stormwater Quality Team Final Report prepared by the Bosque Ecosystem Monitoring Program

JUNE 1, 2023

1

1.1 COMPREHENSIVE OVERVIEW

Historically, culturally, ecologically - the Rio Grande is the heart of our region and the primary resource by which New Mexico's young people familiarize themselves with water. Utilizing its ecosystem as "classroom", BEMP's stormwater science outreach education program aims to teach young people how the health of the Rio Grande is directly related to the health of the surrounding watershed and how they can be stewards in helping to keep the Rio "Grand".

To this end, **6,250 students** throughout Bernalillo and Sandoval counties connected with their local watershed through participation in BEMP activities throughout the 2022-2023 school year; 4,988 contacts of this total were engaged through purely stormwater science specific lessons (up 490% from the year previous).

BEMP's ongoing stormwater science program features synchronous and asynchronous learning resources, as well as in-person programming opportunities. Synchronous resources are remote, live, lessons that include stormwater science concepts and/or projects. Asynchronous curricular components are self-led, virtual lessons that represent a version of the regular stormwater science class and 1-page summer activities; BEMP currently offers five different, 30-minute asynchronous lessons. As schools returned to in-person programming for the 2022-23 school year, in-person visitation to school campuses and the bosque once again became a successful venue for stormwater science education.

Committed to equitably contributing to our community, BEMP's ongoing initiatives support students with accessible, equitable education, including community disseminated educational materials and annual events (Luquillo Sevilleta Virtual Symposium and Crawford Symposium) that are actively featured on BEMP's website and social media platforms (See sections 2.2 and 3.0 of this document for more detailed information). All activities and materials, virtual and printable, are available in English and Spanish to better support inclusion and accessibility to STEM resources for New Mexico's diverse communities.

1.1.1 *Delivery of BEMP Annual Report*

The Bosque Ecosystem Monitoring Program (BEMP) mailed the BEMP 2022 Annual Report on April 1, 2023. This provides a comprehensive overview of the work done during the performance period up through March 31, 2022. The key sections of that report for MRGSQT include:

Pg. 36	Water quality funding parameters
Pg. 70	Total outreach numbers and list of schools served

2

2.1 STORMWATER SCIENCE EDUCATION AND CURRICULUM

2.1.1 *Place-based storm water experiences via in-person and synchronous learning.*

2,934 students served

BEMP education continues its commitment to better support the diverse needs of New Mexico's students, teachers and families by offering a multi-level educational pathway to engage with BEMP programming. Through this multi-level pathway, BEMP stormwater science curriculum during the 2022-23 school year was taught via in-person school visits, remote classroom lessons, and as study trips to the bosque.

For students able to access the field, BEMP offers its stormwater study trip anew and it has been a great success! Throughout the study trip experience, students collect and test water quality samples and macroinvertebrate populations hands-on while learning about environmental justice and water health in downstream communities. GLOBE (Global Learning and Observations to Benefit the Environment) protocols are followed during data collection sampling in anticipation of reporting student collected data at a future date. Classes also returned to monthly monitoring for lessons taught about data collection procedures, phenological changes, groundwater levels and stewardship initiatives. Additional

lessons focused on the geographical origins of the Rio Grande and our local drinking water, watershed dynamics, and the stability of the Rio Grande's water composition throughout the year. Water input fluctuation was discussed in relation to pollution impacts and other bioindicators of watershed health.

For students limited in their ability to leave campus, BEMP education provides in-person classroom sessions outdoors on students' campuses and surrounding ecosystems. This was done in conjunction with remote lessons that leverage learning and connection within a student's own place-based residence. For example, for students unable to attend monthly data collections onsite in the bosque, a modified version was established to engage students in precipitation, litterfall and arthropod data collections on their own school campuses. Via exposure to data collection in their own neighborhoods, students gain first hand scientific experience while broadening their awareness of the ecosystem all around them rather than as something distant. Other curriculum development examples include a modified stormwater science activity for elementary ages to discuss watersheds and invent an arthropod while highlighting the connectivity of macroinvertebrate communities to water health, and an asynchronous series analyzing multiple years of groundwater monitoring data in the Rio Grande Valley to discuss the relationship of resource depletion and potential pollution influences.

This school year we continued to offer lessons like Exploring the Outdoors and Bosque Data Jam as part of our curriculum. Both lessons focus on water quality and storm impacts, phenological observation, ecosystem monitoring, climate change, scientific processes, graphing and data analysis, encouraging a deeper understanding of nature in students' backyards while developing career-based skills in the sciences, public-speaking and presentation delivery. As in previous years, at the end of their educational process, students come up with a creative piece to represent the results of their scientific projects that are then presented at one or both of our annual events, BEMP Crawford Symposium (April) and/or the Luquillo-Sevilleta Virtual Symposium (April - presentations in Spanish). College Career High School student presentations were again a highlight, focusing research projects on water quality and storm impact topics generated from data they collected and analyzed to understand first hand the impacts of storms in their own neighborhoods. Through their projects, students broadened community awareness about this topic with the hope of empowering future generations to make a more positive impact.

Throughout the 2022-2023 school year, BEMP served 2,934 students in 41 different schools and community organizations within Bernalillo, Valencia, Socorro, Dona Ana, Sierra and Sandoval counties through these lessons.

2.1.2 *Classroom engagement through asynchronous learning.*

1,782 students served, 83,851 indirect interactions

Asynchronous curricular components continue to be designed to meet the diverse needs of students and teachers that otherwise cannot interact with BEMP directly due to timing, scheduling, or other involvement restrictions. As self-led, virtual or printable lessons, BEMP's asynchronous lessons cover a broader array of water quality concepts through various means.

Throughout the 2022-2023 school year, BEMP served 1,782 students within Bernalillo and Sandoval counties through these lessons.

Virtual Lessons **650 students** We continue to offer remote lessons with stormwater science content. This year, BEMP educators have been expanding on previous remote stormwater science lessons to include groundwater datasets, including what it is, how it is measured and why it is important. Through use of an aquifer model, students look at several years of data to discuss the relationship between groundwater and river health. Additional lesson concepts include a watershed model before and after storm events, environmental justice in downstream communities and stewardship components. These lessons are remote, multi-part, asynchronous lessons offered through Edpuzzle, an interactive video lesson platform.

Self-directed Printable Activities **1,132 downloads** BEMP has been creating and distributing self-led, printable activities to help students and their families become engaged outside and explore their yards, neighborhoods and public lands while also collecting their own data. Subject examples include stormwater pollution sources and watershed heath via the observation of trash accumulation. All activities created have been translated in both English and Spanish and have been uploaded to our website for increased accessibility. Educational resources can be found here.

Social media **82,471 interactions** In maintaining initiatives to make educational materials more accessible to members of our community, BEMP continues to increase its presence on social media channels. Every day of the week, BEMP staff highlight ecological findings, time in the field, educational activities, and resources from partners. Stormwater science related concepts are consistently presented in Water Wednesday posts including topics such as

educational resources from RiverXchange, evidence of water pollution and its effect on wildlife, aquatic invertebrate populations and water health, and stewardship opportunities to reduce impacts on water quality and consumption habits. All materials are provided in English and Spanish.

YouTube channel activity videos **1,380 views** BEMP's YouTube channel contains videos of our events as well as instructional videos that supplement activities to help guide students through their lessons. Those videos can be found on our YouTube channel, BEMP (Bosque Ecosystem Monitoring Program).

2.1.3 *Events*

272 students served

Providing the community with an opportunity to learn how important student-collected data are for informing the management of our urban riparian system, BEMP's annual community events successfully adapted for another year to include both virtual and in-person components. Featuring a culmination of student presentations that relied heavily on student collected data and employed their professional development and presentation skills, both the Luquillo-Sevilleta Virtual Symposium and Crawford Symposium were a success in emphasizing the importance of water quality and Stormwater Science concepts.

Additionally, BEMP participated in several other community events and educational festivals to spread community awareness of watershed health, monitoring efforts, and inspire stewardship therein. Examples include participation in Environmental Justice Community Days with Valle de Oro, the Water Series with Latino Outdoors, and tabling events like that at Jefferson Middle School. Lessons at these events offer attendees exposure to stormwater science specific printed materials and/or water chemistry testing opportunities.

2.1.4 *Watershed Education Collaboration Group*

Ongoing collaboration with the Ciudad Soil and Water Conservation District as part of the Watershed Education Collaborative Group continues. Mutual collaboration rests on the goal of increasing student

awareness about water, watersheds and other related components (historical, present and future) related to stormwater in New Mexico.

This year we participated in RiverXchange's annual teacher training by presenting our Dabbling in Data lesson, encouraging attendants to incorporate science, math, and environmental education concepts into their classrooms. Our Dabbling in Data lesson focuses on BEMP's groundwater dataset by analyzing multiple years of data in the Rio Grande Valley to discuss the relationship of resource depletion and potential pollution influences.

Additionally, a previously developed collaboration activity was used to support student learning during Environmental Justice Community Days with Valle de Oro. This lesson encourages students' awareness of the water cycle, emphasizing the journey of raindrops and the various point and nonpoint pollution sources encountered on their way to the river. Students also participated in water quality testing as a medium to discuss stormwater path pollutants, stormwater control structures, and potential sources of water waste.

Moving forward, we would like to continue building a K-12+ water curriculum that scaffolds student learning about stormwater and water related concepts by age group. In utilizing our partnership, we will collectively discern where each of our organizations educational programming best fit within student's experience and build from those strengths while attending to any gaps in student learning we discover. Our collective aim is to offer continuous exposure to stormwater and water quality subjects throughout each grade level while improving New Mexican youth's accessibility to these subjects.

Moreover, we hope to engage with K-12+ teachers through mutually supported trainings to enhance their familiarity with and alignment of class curriculum with environmental education opportunities. Serving as a resource to enhance teacher comfort with stormwater programming, procedures and data collection, as well as increasing student access to the outdoors, these collaboratively designed teacher trainings would support educators in how to incorporate environmental education into their classrooms and/or outdoor spaces and teach environmental issues, ecosystem health and stewardship.

2.1.5 *Assessment tool - IRB update*

This addresses section 2.1.10 in previous reports: Assessment tool of overall effectiveness. BEMP continues to pursue IRB certification so as to officially assess our educational programming and its effectiveness amongst student populations. The IRB is currently in pre-review in UNM's governing board and assessment office. A modified version of our IRB has been in use to analyze the short and long term effects of BEMP programming on students participating in BEMP's UNM undergraduate field classes; our first round of results will be available soon.

3

3.1 OUTREACH NUMBERS

3.1.1 Table(s) of Educational and Indirect outreach numbers for FY 22-23

Education and Curriculum - Stormwater Specific

	Synchronous	**Asynchronous**		**Events**	**Total**
		Virtual Lessons	**1-page Activities**		
Students	2,934	650	1,132	272	**4,988**
Adults**	600	N/A	N/A	86	**686****
Total (Including Adult Contacts)	3,534	650	1,132	358	**5,674****

** Adult contacts not included in total contacts reported

Social Media

	Reaches	**Engagements**	**Views**	**Total**
Instagram	42,197	4,955	N/A	47,152
Facebook	20,948	14,371	N/A	35,319
Youtube	N/A	N/A	1,380	1,380
Total	63,145	19,326	1,380	**83,851**

AMAFCA

Albuquerque Metropolitan Arroyo Flood Control Authority

On April 28th, 2023 AMAFCA presented to a studio class at UNM's school of architecture.

April 6, 2023

Dear AMAFCA,

On behalf of the Land and Water Summit Planning Committee, Ciudad Soil & Water Conservation District would like to take this opportunity to thank you for the generous sponsorship in the amount of $3,500 that was provided for the 2023 Land and Water Summit Hybrid Conference. As the fiscal manager for the Land and Water Summit, Ciudad SWCD is pleased to report that the AMAFCA charitable **Reservoir Level** sponsor contribution assisted with the planning efforts and implementation of the conference.

Through AMAFCA's sponsorship, the Land and Water Summit hosted a pre-conference field trip with 55 attendees and a conference with 249 registered attendees, 131 in-person and 118 remote viewers, and 20 sponsors receiving 30,481 impressions.

The 2023 Land and Water Summit featured a diverse range of presentations on topics related to building resilient landscapes and societies in the face of environmental challenges. A common theme that emerged was the importance of collaboration with communities in developing strategies for resilience. Presentations on shortage-sharing and water agreements highlighted the need for cooperation and sharing in managing scarce resources. Indigenous resiliency was also a prominent topic, emphasizing the importance of traditional knowledge and analysis in land and water management.

The Land and Water Summit annual conference plays a vital role in continuing education about resource conservation and best practices for safeguarding and enhancing local landscapes. The event could not be possible without AMAFCA's financial contribution. The Land and Water Summit Planning Committee and Ciudad SWCD are immensely grateful for your generous support and sponsorship of the conference.

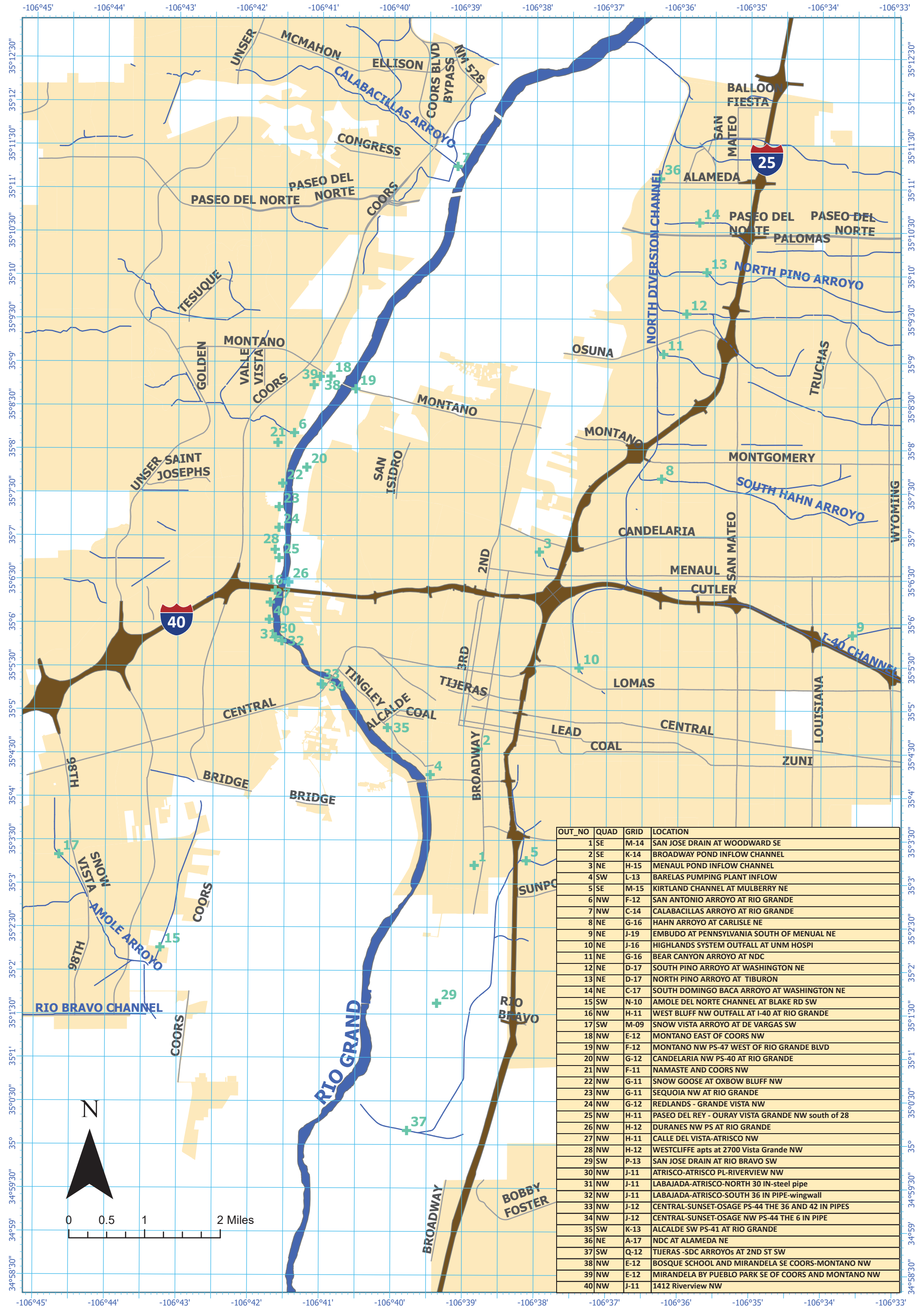
Sincerely,

J. Steven Glass
Land and Water Summit Planning Committee, Co-Chair
Ciudad Soil & Water Conservation District, Board Chair

Summary of AMAFCA's MS4
Dry Weather Discharge Screening Program
FY 2023 (July 1, 2022 - June 30, 2023)

NPDES Permit No. NMR04A000
Part III. A.2 - Dry Weather Discharge Screening of MS4

Dry Weather Screening of Outfalls 2023 Report



OUT_NO	QUAD	GRID	LOCATION
1	SE	M-14	SAN JOSE DRAIN AT WOODWARD SE
2	SE	K-14	BROADWAY POND INFLOW CHANNEL
3	NE	H-15	MENAUL POND INFLOW CHANNEL
4	SW	L-13	BARELAS PUMPING PLANT INFLOW
5	SE	M-15	KIRTLAND CHANNEL AT MULBERRY NE
6	NW	F-12	SAN ANTONIO ARROYO AT RIO GRANDE
7	NW	C-14	CALABACILLAS ARROYO AT RIO GRANDE
8	NE	G-16	HAHN ARROYO AT CARLISLE NE
9	NE	J-19	EMBUDO AT PENNSYLVANIA SOUTH OF MENUAL NE
10	NE	J-16	HIGHLANDS SYSTEM OUTFALL AT UNM HOSPI
11	NE	G-16	BEAR CANYON ARROYO AT NDC
12	NE	D-17	SOUTH PINO ARROYO AT WASHINGTON NE
13	NE	D-17	NORTH PINO ARROYO AT TIBURON
14	NE	C-17	SOUTH DOMINGO BACA ARROYO AT WASHINGTON NE
15	SW	N-10	AMOLE DEL NORTE CHANNEL AT BLAKE RD SW
16	NW	H-11	WEST BLUFF NW OUTFALL AT I-40 AT RIO GRANDE
17	SW	M-09	SNOW VISTA ARROYO AT DE VARGAS SW
18	NW	E-12	MONTANO EAST OF COORS NW
19	NW	F-12	MONTANO NW PS-47 WEST OF RIO GRANDE BLVD
20	NW	G-12	CANDELARIA NW PS-40 AT RIO GRANDE
21	NW	F-11	NAMASTE AND COORS NW
22	NW	G-11	SNOW GOOSE AT OXBOW BLUFF NW
23	NW	G-11	SEQUOIA NW AT RIO GRANDE
24	NW	G-12	REDLANDS - GRANDE VISTA NW
25	NW	H-11	PASEO DEL REY - OURAY VISTA GRANDE NW south of 28
26	NW	H-12	DURANES NW PS AT RIO GRANDE
27	NW	H-11	CALLE DEL VISTA-ATRISCO NW
28	NW	H-12	WESTCLIFFE apts at 2700 Vista Grande NW
29	SW	P-13	SAN JOSE DRAIN AT RIO BRAVO SW
30	NW	J-11	ATRISCO-ATRISCO PL-RIVERVIEW NW
31	NW	J-11	LABAJADA-ATRISCO-NORTH 30 IN-steel pipe
32	NW	J-11	LABAJADA-ATRISCO-SOUTH 36 IN PIPE-wingwall
33	NW	J-12	CENTRAL-SUNSET-OSAGE PS-44 THE 36 AND 42 IN PIPES
34	NW	J-12	CENTRAL-SUNSET-OSAGE NW PS-44 THE 6 IN PIPE
35	SW	K-13	ALCALDE SW PS-41 AT RIO GRANDE
36	NE	A-17	NDC AT ALAMEDA NE
37	SW	Q-12	TIJERAS -SDC ARROYOs AT 2ND ST SW
38	NW	E-12	BOSQUE SCHOOL AND MIRANDELA SE COORS-MONTANO NW
39	NW	E-12	MIRANDELA BY PUEBLO PARK SE OF COORS AND MONTANO NW
40	NW	J-11	1412 Riverview NW

Outfall Locations

DRY WEATHER OUTFALLS SCREENING 2023
TABLE OF CONTENTS

LOCATION	**SAN JOSE DRAIN AT BETHEL SE**						
OUTFALL_NO	1	QUAD	SE	GRID	M-14	SAMPLED	☐
DATE_INSP	11/21/2022	TIME	10:55	Inspected by	SK		
WEATHER	SUNNY	flow	NO	FLOW_GPM	0		
APPEARANCE	na	GROSS POLLUTANT	na				
Source of Flow	na						
link	X:\MD\SHARE\MD-Storm\7_NPDES\311_SWQ_Complaints\2023\2 - DW Screening-2022-2023\East\1-M						

AIR_TEMP_F	42	Lab	
WATER_TEMP_F		Lab_Report	
pH		E_coli_Coliform_mpn/100ml	
CONDUCTIVITY_Umos/cm		Ammonia_mg/l	
BOD_mg/l		Nitrite_NO2_mg/l	
COD_mg/l		Nitrate_NO3_mg/l	
TSS_mg/l		TKN_Tot_Kjeld_N_mg/l	
TDS_mg/l		Phosphorus_total_mg/l_P	
N-Hexane Extractabie-(Oil_Grease)_mg/l		Hardness_mg/l_CaCO3	
Floride_mg/l		Chlorine_mg/l	

LOCATION	**BROADWAY POND INFLOW CHANNEL**						
OUTFALL_NO	2	QUAD	SE	GRID	K-14	SAMPLED	☑
DATE_INSP	1/13/2023	TIME	10:00	Inspected by	SL		
WEATHER	CLOUDY	flow	Y	FLOW_GPM	5		
APPEARANCE	clear	GROSS POLLUTANT	none				
Source of Flow	Irrigation, well wash, fire hydants discharge						
link	X:\MD\SHARE\MD-Storm\7_NPDES\311_SWQ_Complaints\2023\2 - DW Screening--new-2022-2023\2-K						

AIR_TEMP_F	39		Lab		
WATER_TEMP_F	32		Lab_Report	2301537	
pH	8.1		E_coli_Coliform_mpn/100ml	>2419.6	
CONDUCTIVITY_Umos/cm	510		Ammonia_mg/l	<1	
BOD_mg/l	<2		Nitrite_NO2_mg/l	<0.5	
COD_mg/l	<20		Nitrate_NO3_mg/l	<0.5	
TSS_mg/l	<4		TKN_Tot_Kjeld_N_mg/l	<1	
TDS_mg/l	301		Phosphorus_total_mg/l_P	0.39	
N-Hexane Extractabie-(Oil_Grease)_mg/l	<9.9		Hardness_mg/l_CaCO3	190	
Floride_mg/l	0.68		Chlorine_mg/l	<0.05	

LOCATION	**MENAUL POND INFLOW CHANNEL**						
OUTFALL_NO	3	QUAD	NE	GRID	H-15	SAMPLED	☐
DATE_INSP	11/21/2022	TIME	2:40	Inspected by	SK		
WEATHER	SUNNY	flow	NO	FLOW_GPM	0		
APPEARANCE	na	GROSS POLLUTANT	na				
Source of Flow	na						
link	X:\MD\SHARE\MD-Storm\7_NPDES\311_SWQ_Complaints\2023\2 - DW Screening-2022-2023\East\3-H						

AIR_TEMP_F	50	Lab	
WATER_TEMP_F		Lab_Report	
pH		E_coli_Coliform_mpn/100ml	
CONDUCTIVITY_Umos/cm		Ammonia_mg/l	
BOD_mg/l		Nitrite_NO2_mg/l	
COD_mg/l		Nitrate_NO3_mg/l	
TSS_mg/l		TKN_Tot_Kjeld_N_mg/l	
TDS_mg/l		Phosphorus_total_mg/l_P	
N-Hexane Extractabie-(Oil_Grease)_mg/l		Hardness_mg/l_CaCO3	
Floride_mg/l		Chlorine_mg/l	

LOCATION	**BARELAS PUMPING PLANT INFLOW**						
OUTFALL_NO	4	QUAD	SW	GRID	L-13	SAMPLED	☑
DATE_INSP	11/29/2022	TIME	10:45	Inspected by	SK		
WEATHER	SUNNY	flow	Y	FLOW_GPM	5		
APPEARANCE	clear	GROSS POLLUTANT	none				
Source of Flow	groundwater infilteration to the storm lines						
link	X:\MD\SHARE\MD-Storm\7_NPDES\311_SWQ_Complaints\2023\2 - DW Screening--new-2022-2023\4-L						

AIR_TEMP_F	50	Lab	HALL ENVIRONMENTAL
WATER_TEMP_F	52	Lab_Report	2211E23
pH	8.23	E_coli_Coliform_mpn/100ml	1011.2
CONDUCTIVITY_Umos/cm	780	Ammonia_mg/l	<2
BOD_mg/l	<2	Nitrite_NO2_mg/l	<0.1
COD_mg/l	nd	Nitrate_NO3_mg/l	0.14
TSS_mg/l	<4	TKN_Tot_Kjeld_N_mg/l	<2
TDS_mg/l	522	Phosphorus_total_mg/l_P	0.23
N-Hexane Extractabie-(Oil_Grease)_mg/l	<10	Hardness_mg/l_CaCO3	290
Floride_mg/l	0.72	Chlorine_mg/l	<0.05

LOCATION	KIRTLAND CHANNEL AT MULBERRY NE						
OUTFALL_NO	5	QUAD	SE	GRID	M-15	SAMPLED	☐
DATE_INSP	11/21/2022	TIME	11:05	Inspected by	SK		
WEATHER	SUNNY	flow	N	FLOW_GPM	0		
APPEARANCE	na	GROSS POLLUTANT	na				
Source of Flow	na						
link	X:\MD\SHARE\MD-Storm\7_NPDES\311_SWQ_Complaints\2023\2 - DW Screening-2022-2023\East\5-M						

AIR_TEMP_F	42	Lab	
WATER_TEMP_F		Lab_Report	
pH		E_coli_Coliform_mpn/100ml	
CONDUCTIVITY_Umos/cm		Ammonia_mg/l	
BOD_mg/l		Nitrite_NO2_mg/l	
COD_mg/l		Nitrate_NO3_mg/l	
TSS_mg/l		TKN_Tot_Kjeld_N_mg/l	
TDS_mg/l		Phosphorus_total_mg/l_P	
N-Hexane Extractabie-(Oil_Grease)_mg/l		Hardness_mg/l_CaCO3	
Floride_mg/l		Chlorine_mg/l	

LOCATION	**SAN ANTONIO ARROYO AT RIO GRANDE**						
OUTFALL_NO	6	QUAD	NW	GRID	F-12	SAMPLED	☐
DATE_INSP	11/18/2022	TIME	10:15	Inspected by	SK		
WEATHER	CLOUDY	flow	NO	FLOW_GPM	0		
APPEARANCE	na	GROSS POLLUTANT	na				
Source of Flow	na						
link	X:\MD\SHARE\MD-Storm\7_NPDES\311_SWQ_Complaints\2023\2 - DW Screening--new-2022-2023\6-F						

AIR_TEMP_F	34	Lab	
WATER_TEMP_F		Lab_Report	
pH		E_coli_Coliform_mpn/100ml	
CONDUCTIVITY_Umos/cm		Ammonia_mg/l	
BOD_mg/l		Nitrite_NO2_mg/l	
COD_mg/l		Nitrate_NO3_mg/l	
TSS_mg/l		TKN_Tot_Kjeld_N_mg/l	
TDS_mg/l		Phosphorus_total_mg/l_P	
N-Hexane Extractabie-(Oil_Grease)_mg/l		Hardness_mg/l_CaCO3	
Floride_mg/l		Chlorine_mg/l	

LOCATION	**CALABACILLAS ARROYO AT RIO GRANDE**

OUTFALL_NO	7	QUAD	NW	GRID	C-14	SAMPLED	☐
DATE_INSP	11/18/2022	TIME	11:25	Inspected by	SK		
WEATHER	CLOUDY	flow	N	FLOW_GPM	0		
APPEARANCE	na	GROSS POLLUTANT	na				
Source of Flow	na						

link	X:\MD\SHARE\MD-Storm\7_NPDES\311_SWQ_Complaints\2023\2 - DW Screening--new-2022-2023\7-C

AIR_TEMP_F	36	Lab	
WATER_TEMP_F		Lab_Report	
pH		E_coli_Coliform_mpn/100ml	
CONDUCTIVITY_Umos/cm		Ammonia_mg/l	
BOD_mg/l		Nitrite_NO2_mg/l	
COD_mg/l		Nitrate_NO3_mg/l	
TSS_mg/l		TKN_Tot_Kjeld_N_mg/l	
TDS_mg/l		Phosphorus_total_mg/l_P	
N-Hexane Extractabie-(Oil_Grease)_mg/l		Hardness_mg/l_CaCO3	
Floride_mg/l		Chlorine_mg/l	

LOCATION	**HAHN ARROYO AT CARLISLE NE**						
OUTFALL_NO	8	QUAD	NE	GRID	G-16	SAMPLED	☐
DATE_INSP	11/22/2022	TIME	1:50	Inspected by	SK		
WEATHER	CLOUDY	flow	NO	FLOW_GPM	0		
APPEARANCE	na	GROSS POLLUTANT	na				
Source of Flow	na						
link	X:\MD\SHARE\MD-Storm\7_NPDES\311_SWQ_Complaints\2023\2 - DW Screening-2022-2023\East\8-G						

AIR_TEMP_F	49	Lab	
WATER_TEMP_F		Lab_Report	
pH		E_coli_Coliform_mpn/100ml	
CONDUCTIVITY_Umos/cm		Ammonia_mg/l	
BOD_mg/l		Nitrite_NO2_mg/l	
COD_mg/l		Nitrate_NO3_mg/l	
TSS_mg/l		TKN_Tot_Kjeld_N_mg/l	
TDS_mg/l		Phosphorus_total_mg/l_P	
N-Hexane Extractabie-(Oil_Grease)_mg/l		Hardness_mg/l_CaCO3	
Floride_mg/l		Chlorine_mg/l	

LOCATION	**EMBUDO AT PENNSYLVANIA SOUTH OF MENUAL NE**

OUTFALL_NO	9	QUAD	NE	GRID	J-19	SAMPLED	☐
DATE_INSP	11/21/2022	TIME	2:15	Inspected by	SK		
WEATHER	SUNNY	flow	NO	FLOW_GPM	0		
APPEARANCE	na	GROSS POLLUTANT	na				
Source of Flow	na						
link	X:\MD\SHARE\MD-Storm\7_NPDES\311_SWQ_Complaints\2023\2 - DW Screening-2022-2023\East\9-J1						

AIR_TEMP_F	50	Lab	
WATER_TEMP_F		Lab_Report	
pH		E_coli_Coliform_mpn/100ml	
CONDUCTIVITY_Umos/cm		Ammonia_mg/l	
BOD_mg/l		Nitrite_NO2_mg/l	
COD_mg/l		Nitrate_NO3_mg/l	
TSS_mg/l		TKN_Tot_Kjeld_N_mg/l	
TDS_mg/l		Phosphorus_total_mg/l_P	
N-Hexane Extractabie-(Oil_Grease)_mg/l		Hardness_mg/l_CaCO3	
Floride_mg/l		Chlorine_mg/l	

LOCATION	NDC AT TUCKER						
OUTFALL_NO	10	QUAD	NE	GRID	J-16	SAMPLED	☑
DATE_INSP	12/8/2022	TIME	1:40	Inspected by	SK		
WEATHER	SUNNY	flow	YES	FLOW_GPM	3		
APPEARANCE	clear, slight yellow	GROSS POLLUTANT	none				
Source of Flow	Irrigation, Burton 3 well wash from 3901 Lead NE, fire hydants discharge						
link	X:\MD\SHARE\MD-Storm\7_NPDES\311_SWQ_Complaints\2023\2 - DW Screening-2022-2023\East\10-J						

AIR_TEMP_F	48	Lab	HALL ENVIRONMENTAL
WATER_TEMP_F	37	Lab_Report	2212536
pH	8.29	E_coli_Coliform_mpn/100ml	1046.2
CONDUCTIVITY_Umos/cm	300	Ammonia_mg/l	<5
BOD_mg/l	<12.	Nitrite_NO2_mg/l	<0.5
COD_mg/l	176	Nitrate_NO3_mg/l	<0.5
TSS_mg/l	16	TKN_Tot_Kjeld_N_mg/l	<5
TDS_mg/l	240	Phosphorus_total_mg/l_P	0.09
N-Hexane Extractabie-(Oil_Grease)_mg/l	<9.5	Hardness_mg/l_CaCO3	120
Floride_mg/l	<0.5	Chlorine_mg/l	<0.05

LOCATION	**BEAR CANYON ARROYO AT NDC**						
OUTFALL_NO	11	QUAD	NE	GRID	G-16	SAMPLED	☐
DATE_INSP	11/22/2022	TIME	2:12	Inspected by	SK		
WEATHER	CLOUDY	flow	NO	FLOW_GPM	0		
APPEARANCE	na	GROSS POLLUTANT	na				
Source of Flow	na						
link	X:\MD\SHARE\MD-Storm\7_NPDES\311_SWQ_Complaints\2023\2 - DW Screening-2022-2023\East\11-						

AIR_TEMP_F	49	Lab	
WATER_TEMP_F		Lab_Report	
pH		E_coli_Coliform_mpn/100ml	
CONDUCTIVITY_Umos/cm		Ammonia_mg/l	
BOD_mg/l		Nitrite_NO2_mg/l	
COD_mg/l		Nitrate_NO3_mg/l	
TSS_mg/l		TKN_Tot_Kjeld_N_mg/l	
TDS_mg/l		Phosphorus_total_mg/l_P	
N-Hexane Extractabie-(Oil_Grease)_mg/l		Hardness_mg/l_CaCO3	
Floride_mg/l		Chlorine_mg/l	

LOCATION	**SOUTH PINO ARROYO AT WASHINGTON NE**						
OUTFALL_NO	12	QUAD	NE	GRID	D-17	SAMPLED	☐
DATE_INSP	11/22/2022	TIME	2:25	Inspected by	SK		
WEATHER	CLOUDY	flow	NO	FLOW_GPM	0		
APPEARANCE	na	GROSS POLLUTANT	na				
Source of Flow	na						
link	X:\MD\SHARE\MD-Storm\7_NPDES\311_SWQ_Complaints\2023\2 - DW Screening-2022-2023\East\12-						

AIR_TEMP_F	49	Lab	
WATER_TEMP_F		Lab_Report	
pH		E_coli_Coliform_mpn/100ml	
CONDUCTIVITY_Umos/cm		Ammonia_mg/l	
BOD_mg/l		Nitrite_NO2_mg/l	
COD_mg/l		Nitrate_NO3_mg/l	
TSS_mg/l		TKN_Tot_Kjeld_N_mg/l	
TDS_mg/l		Phosphorus_total_mg/l_P	
N-Hexane Extractabie-(Oil_Grease)_mg/l		Hardness_mg/l_CaCO3	
Floride_mg/l		Chlorine_mg/l	

LOCATION	**NORTH PINO ARROYO AT TIBURON NE**						
OUTFALL_NO	13	QUAD	NE	GRID	D-17	SAMPLED	☐
DATE_INSP	11/22/2022	TIME	2:30	Inspected by	SK		
WEATHER	CLOUDY	flow	NO	FLOW_GPM	0		
APPEARANCE	na	GROSS POLLUTANT	na				
Source of Flow	na						
link	X:\MD\SHARE\MD-Storm\7_NPDES\311_SWQ_Complaints\2023\2 - DW Screening-2022-2023\East\13-						

AIR_TEMP_F	49	Lab	
WATER_TEMP_F		Lab_Report	
pH		E_coli_Coliform_mpn/100ml	
CONDUCTIVITY_Umos/cm		Ammonia_mg/l	
BOD_mg/l		Nitrite_NO2_mg/l	
COD_mg/l		Nitrate_NO3_mg/l	
TSS_mg/l		TKN_Tot_Kjeld_N_mg/l	
TDS_mg/l		Phosphorus_total_mg/l_P	
N-Hexane Extractabie-(Oil_Grease)_mg/l		Hardness_mg/l_CaCO3	
Floride_mg/l		Chlorine_mg/l	

LOCATION	**SOUTH DOMINGO BACA ARROYO AT WASHINGTON NE**						
OUTFALL_NO	14	QUAD	NE	GRID	C-17	SAMPLED	☐
DATE_INSP	11/22/2022	TIME	2:45	Inspected by	SK		
WEATHER	CLOUDY	flow	NO	FLOW_GPM	0		
APPEARANCE	na	GROSS POLLUTANT	na				
Source of Flow	na						
link	X:\MD\SHARE\MD-Storm\7_NPDES\311_SWQ_Complaints\2023\2 - DW Screening-2022-2023\East\14-						

AIR_TEMP_F	49	Lab	
WATER_TEMP_F		Lab_Report	
pH		E_coli_Coliform_mpn/100ml	
CONDUCTIVITY_Umos/cm		Ammonia_mg/l	
BOD_mg/l		Nitrite_NO2_mg/l	
COD_mg/l		Nitrate_NO3_mg/l	
TSS_mg/l		TKN_Tot_Kjeld_N_mg/l	
TDS_mg/l		Phosphorus_total_mg/l_P	
N-Hexane Extractabie-(Oil_Grease)_mg/l		Hardness_mg/l_CaCO3	
Floride_mg/l		Chlorine_mg/l	

LOCATION	**AMOLE DEL NORTE CHANNEL AT BLAKE SW**						
OUTFALL_NO	15	QUAD	SW	GRID	N-10	SAMPLED	☐
DATE_INSP	11/15/2022	TIME	2:00	Inspected by	SK		
WEATHER	SUNNY	flow	NO	FLOW_GPM	0		
APPEARANCE	na	GROSS POLLUTANT	na				
Source of Flow	na						
link	X:\MD\SHARE\MD-Storm\7_NPDES\311_SWQ_Complaints\2023\2 - DW Screening--new-2022-2023\15-						

AIR_TEMP_F	47	Lab	
WATER_TEMP_F		Lab_Report	
pH		E_coli_Coliform_mpn/100ml	
CONDUCTIVITY_Umos/cm		Ammonia_mg/l	
BOD_mg/l		Nitrite_NO2_mg/l	
COD_mg/l		Nitrate_NO3_mg/l	
TSS_mg/l		TKN_Tot_Kjeld_N_mg/l	
TDS_mg/l		Phosphorus_total_mg/l_P	
N-Hexane Extractabie-(Oil_Grease)_mg/l		Hardness_mg/l_CaCO3	
Floride_mg/l		Chlorine_mg/l	

LOCATION	**WEST BLUFF NW OUTFALL AT RIO GRANDE AT I-40**						
OUTFALL_NO	16	QUAD	NW	GRID	H-11	SAMPLED	☐
DATE_INSP	11/16/2022	TIME	3:20	Inspected by	SK		
WEATHER	CLOUDY	flow	NO	FLOW_GPM	0		
APPEARANCE	na	GROSS POLLUTANT	na				
Source of Flow	na						
link	X:\MD\SHARE\MD-Storm\7_NPDES\311_SWQ_Complaints\2023\2 - DW Screening--new-2022-2023\16						

AIR_TEMP_F	44	Lab	
WATER_TEMP_F		Lab_Report	
pH		E_coli_Coliform_mpn/100ml	
CONDUCTIVITY_Umos/cm		Ammonia_mg/l	
BOD_mg/l		Nitrite_NO2_mg/l	
COD_mg/l		Nitrate_NO3_mg/l	
TSS_mg/l		TKN_Tot_Kjeld_N_mg/l	
TDS_mg/l		Phosphorus_total_mg/l_P	
N-Hexane Extractabie-(Oil_Grease)_mg/l		Hardness_mg/l_CaCO3	
Floride_mg/l		Chlorine_mg/l	

LOCATION	**SNOW VISTA ARROYO AT DE VARGAS SW**						
OUTFALL_NO	17	QUAD	SW	GRID	M-09	SAMPLED	☐
DATE_INSP	11/15/2022	TIME	2:30	Inspected by	SK		
WEATHER	SUNNY	flow	NO	FLOW_GPM	0		
APPEARANCE	na	GROSS POLLUTANT	na				
Source of Flow	na						
link	X:\MD\SHARE\MD-Storm\7_NPDES\311_SWQ_Complaints\2023\2 - DW Screening--new-2022-2023\17-						

AIR_TEMP_F	47	Lab	
WATER_TEMP_F		Lab_Report	
pH		E_coli_Coliform_mpn/100ml	
CONDUCTIVITY_Umos/cm		Ammonia_mg/l	
BOD_mg/l		Nitrite_NO2_mg/l	
COD_mg/l		Nitrate_NO3_mg/l	
TSS_mg/l		TKN_Tot_Kjeld_N_mg/l	
TDS_mg/l		Phosphorus_total_mg/l_P	
N-Hexane Extractabie-(Oil_Grease)_mg/l		Hardness_mg/l_CaCO3	
Floride_mg/l		Chlorine_mg/l	

LOCATION	MONTANO EAST OF COORS NW						
OUTFALL_NO	18	QUAD	NW	GRID	E-12	SAMPLED	☐
DATE_INSP	11/18/2022	TIME	11:05	Inspected by	SK		
WEATHER	CLOUDY	flow	NO	FLOW_GPM	0		
APPEARANCE	na	GROSS POLLUTANT	na				
Source of Flow	na						
link	X:\MD\SHARE\MD-Storm\7_NPDES\311_SWQ_Complaints\2023\2 - DW Screening--new-2022-2023\18-						

AIR_TEMP_F	36	Lab	
WATER_TEMP_F		Lab_Report	
pH		E_coli_Coliform_mpn/100ml	
CONDUCTIVITY_Umos/cm		Ammonia_mg/l	
BOD_mg/l		Nitrite_NO2_mg/l	
COD_mg/l		Nitrate_NO3_mg/l	
TSS_mg/l		TKN_Tot_Kjeld_N_mg/l	
TDS_mg/l		Phosphorus_total_mg/l_P	
N-Hexane Extractabie-(Oil_Grease)_mg/l		Hardness_mg/l_CaCO3	
Floride_mg/l		Chlorine_mg/l	

LOCATION	**MONTANO NW PS-47 WEST OF RIO GRANDE BLVD**						
OUTFALL_NO	19	QUAD	NW	GRID	F-12	SAMPLED	☐
DATE_INSP	11/30/2022	TIME	11:40	Inspected by	SK		
WEATHER	SUNNY	flow	NO	FLOW_GPM	0		
APPEARANCE	na	GROSS POLLUTANT	na				
Source of Flow	na						
link	X:\MD\SHARE\MD-Storm\7_NPDES\311_SWQ_Complaints\2023\2 - DW Screening-2022-2023\East\19-						

AIR_TEMP_F	45	Lab	
WATER_TEMP_F		Lab_Report	
pH		E_coli_Coliform_mpn/100ml	
CONDUCTIVITY_Umos/cm		Ammonia_mg/l	
BOD_mg/l		Nitrite_NO2_mg/l	
COD_mg/l		Nitrate_NO3_mg/l	
TSS_mg/l		TKN_Tot_Kjeld_N_mg/l	
TDS_mg/l		Phosphorus_total_mg/l_P	
N-Hexane Extractabie-(Oil_Grease)_mg/l		Hardness_mg/l_CaCO3	
Floride_mg/l		Chlorine_mg/l	

LOCATION	**CANDELARIA NW PS-40 AT RIO GRANDE**						
OUTFALL_NO	20	QUAD	NW	GRID	G-12	SAMPLED	☑
DATE_INSP	1/26/2023	TIME	9:50	Inspected by	SL		
WEATHER	CLOUDY	flow	YES	FLOW_GPM	3		
APPEARANCE	clear	GROSS POLLUTANT	none				
Source of Flow	groundwater infiltration						
link	X:\MD\SHARE\MD-Storm\7_NPDES\311_SWQ_Complaints\2023\2 - DW Screening-2022-2023\East\20-						

AIR_TEMP_F	38	Lab	HALL ENVIRONMENTAL
WATER_TEMP_F	40	Lab_Report	2301A03
pH	8.16	E_coli_Coliform_mpn/100ml	127.4
CONDUCTIVITY_Umos/cm	470	Ammonia_mg/l	<1
BOD_mg/l	5.0	Nitrite_NO2_mg/l	<0.1
COD_mg/l	<20	Nitrate_NO3_mg/l	<0.1
TSS_mg/l	<4	TKN_Tot_Kjeld_N_mg/l	<1
TDS_mg/l	317	Phosphorus_total_mg/l_P	0.067
N-Hexane Extractabie-(Oil_Grease)_mg/l	<10	Hardness_mg/l_CaCO3	170
Floride_mg/l	0.36	Chlorine_mg/l	<0.05

LOCATION	NAMASTE AND COORS NW						
OUTFALL_NO	21	QUAD	NW	GRID	F-11	SAMPLED	☐
DATE_INSP	11/18/2022	TIME	10:00	Inspected by	SK		
WEATHER	CLOUDY	flow	NO	FLOW_GPM	0		
APPEARANCE	na	GROSS POLLUTANT	na				
Source of Flow	na						
link	X:\MD\SHARE\MD-Storm\7_NPDES\311_SWQ_Complaints\2023\2 - DW Screening--new-2022-2023\21-						

AIR_TEMP_F	34	Lab	
WATER_TEMP_F		Lab_Report	
pH		E_coli_Coliform_mpn/100ml	
CONDUCTIVITY_Umos/cm		Ammonia_mg/l	
BOD_mg/l		Nitrite_NO2_mg/l	
COD_mg/l		Nitrate_NO3_mg/l	
TSS_mg/l		TKN_Tot_Kjeld_N_mg/l	
TDS_mg/l		Phosphorus_total_mg/l_P	
N-Hexane Extractabie-(Oil_Grease)_mg/l		Hardness_mg/l_CaCO3	
Floride_mg/l		Chlorine_mg/l	

LOCATION	**SNOW GOOSE AT OXBOW BLUFF NW**						
OUTFALL_NO	22	QUAD	NW	GRID	G-11	SAMPLED	☐
DATE_INSP	11/17/2022	TIME	4:00	Inspected by	SK		
WEATHER	SUNNY	flow	NO	FLOW_GPM	0		
APPEARANCE	na	GROSS POLLUTANT	na				
Source of Flow	na						
link	X:\MD\SHARE\MD-Storm\7_NPDES\311_SWQ_Complaints\2023\2 - DW Screening--new-2022-2023\22-						

AIR_TEMP_F	45	Lab	
WATER_TEMP_F		Lab_Report	
pH		E_coli_Coliform_mpn/100ml	
CONDUCTIVITY_Umos/cm		Ammonia_mg/l	
BOD_mg/l		Nitrite_NO2_mg/l	
COD_mg/l		Nitrate_NO3_mg/l	
TSS_mg/l		TKN_Tot_Kjeld_N_mg/l	
TDS_mg/l		Phosphorus_total_mg/l_P	
N-Hexane Extractabie-(Oil_Grease)_mg/l		Hardness_mg/l_CaCO3	
Floride_mg/l		Chlorine_mg/l	

LOCATION	**SEQUOIA NW AT RIO GRANDE**						
OUTFALL_NO	23	QUAD	NW	GRID	G-11	SAMPLED	☐
DATE_INSP	11/17/2022	TIME	3:26	Inspected by	SK		
WEATHER	SUNNY	flow	NO	FLOW_GPM	0		
APPEARANCE	na	GROSS POLLUTANT	na				
Source of Flow	na						
link	X:\MD\SHARE\MD-Storm\7_NPDES\311_SWQ_Complaints\2023\2 - DW Screening--new-2022-2023\23-						

AIR_TEMP_F	45	Lab	
WATER_TEMP_F		Lab_Report	
pH		E_coli_Coliform_mpn/100ml	
CONDUCTIVITY_Umos/cm		Ammonia_mg/l	
BOD_mg/l		Nitrite_NO2_mg/l	
COD_mg/l		Nitrate_NO3_mg/l	
TSS_mg/l		TKN_Tot_Kjeld_N_mg/l	
TDS_mg/l		Phosphorus_total_mg/l_P	
N-Hexane Extractabie-(Oil_Grease)_mg/l		Hardness_mg/l_CaCO3	
Floride_mg/l		Chlorine_mg/l	

LOCATION	**REDLANDS - GRANDE VISTA NW**						
OUTFALL_NO	24	QUAD	NW	GRID	G-12	SAMPLED	☐
DATE_INSP	11/17/2022	TIME	3:05	Inspected by	SK		
WEATHER	SUNNY	flow	NO	FLOW_GPM	0		
APPEARANCE	na	GROSS POLLUTANT	na				
Source of Flow	na						
link	X:\MD\SHARE\MD-Storm\7_NPDES\311_SWQ_Complaints\2023\2 - DW Screening--new-2022-2023\24-						

AIR_TEMP_F	45	Lab	
WATER_TEMP_F		Lab_Report	
pH		E_coli_Coliform_mpn/100ml	
CONDUCTIVITY_Umos/cm		Ammonia_mg/l	
BOD_mg/l		Nitrite_NO2_mg/l	
COD_mg/l		Nitrate_NO3_mg/l	
TSS_mg/l		TKN_Tot_Kjeld_N_mg/l	
TDS_mg/l		Phosphorus_total_mg/l_P	
N-Hexane Extractabie-(Oil_Grease)_mg/l		Hardness_mg/l_CaCO3	
Floride_mg/l		Chlorine_mg/l	

LOCATION	**PASEO DEL REY - OURAY - VISTA GRANDE NW**						
OUTFALL_NO	25	QUAD	NW	GRID	H-11	SAMPLED	☐
DATE_INSP	11/17/2022	TIME	10:55	Inspected by	SK		
WEATHER	SUNNY	flow	NO	FLOW_GPM	0		
APPEARANCE	na	GROSS POLLUTANT	na				
Source of Flow	na						
link	X:\MD\SHARE\MD-Storm\7_NPDES\311_SWQ_Complaints\2023\2 - DW Screening--new-2022-2023\25-						

AIR_TEMP_F	39	Lab	
WATER_TEMP_F		Lab_Report	
pH		E_coli_Coliform_mpn/100ml	
CONDUCTIVITY_Umos/cm		Ammonia_mg/l	
BOD_mg/l		Nitrite_NO2_mg/l	
COD_mg/l		Nitrate_NO3_mg/l	
TSS_mg/l		TKN_Tot_Kjeld_N_mg/l	
TDS_mg/l		Phosphorus_total_mg/l_P	
N-Hexane Extractabie-(Oil_Grease)_mg/l		Hardness_mg/l_CaCO3	
Floride_mg/l		Chlorine_mg/l	

LOCATION	**DURANES NW PS AT RIO GRANDE**						
OUTFALL_NO	26	QUAD	NW	GRID	H-12	SAMPLED	☑
DATE_INSP	1/13/2023	TIME	1:30	Inspected by	SL		
WEATHER	CLOUDY	flow	YES	FLOW_GPM	3		
APPEARANCE	clear	GROSS POLLUTANT	none				
Source of Flow	groundwater infilteration and Duranes groundwater pump station at Zickert and Apple N						
link	X:\MD\SHARE\MD-Storm\7_NPDES\311_SWQ_Complaints\2023\2 - DW Screening-2022-2023\East\26-						

AIR_TEMP_F	48	Lab	HALL ENVIRONMENTAL
WATER_TEMP_F	43	Lab_Report	2301542
pH	8.05	E_coli_Coliform_mpn/100ml	238.2
CONDUCTIVITY_Umos/cm	500	Ammonia_mg/l	<1
BOD_mg/l	2.4	Nitrite_NO2_mg/l	<0.5
COD_mg/l	<20	Nitrate_NO3_mg/l	<0.5
TSS_mg/l	18	TKN_Tot_Kjeld_N_mg/l	<1
TDS_mg/l	306	Phosphorus_total_mg/l_P	0.13
N-Hexane Extractabie-(Oil_Grease)_mg/l	,9.84	Hardness_mg/l_CaCO3	200
Floride_mg/l	0.58	Chlorine_mg/l	<0.05

LOCATION	**CALLE DEL VISTA-ATRISCO NW**						
OUTFALL_NO	27	QUAD	NW	GRID	H-11	SAMPLED	☐
DATE_INSP	11/16/2022	TIME	3:10	Inspected by	SK		
WEATHER	CLOUDY	flow	NO	FLOW_GPM	0		
APPEARANCE	NA	GROSS POLLUTANT	na				
Source of Flow	NA						
link	X:\MD\SHARE\MD-Storm\7_NPDES\311_SWQ_Complaints\2023\2 - DW Screening--new-2022-2023\27-						

AIR_TEMP_F	44	Lab	
WATER_TEMP_F		Lab_Report	
pH		E_coli_Coliform_mpn/100ml	
CONDUCTIVITY_Umos/cm		Ammonia_mg/l	
BOD_mg/l		Nitrite_NO2_mg/l	
COD_mg/l		Nitrate_NO3_mg/l	
TSS_mg/l		TKN_Tot_Kjeld_N_mg/l	
TDS_mg/l		Phosphorus_total_mg/l_P	
N-Hexane Extractabie-(Oil_Grease)_mg/l		Hardness_mg/l_CaCO3	
Floride_mg/l		Chlorine_mg/l	

LOCATION	**WESTCLIFFE APTS AT 2700 VISTA GRANDE NW**						
OUTFALL_NO	28	QUAD	NW	GRID	H-12	SAMPLED	☐
DATE_INSP	11/17/2022	TIME	10:45	Inspected by			
WEATHER	SUNNY	flow	NO	FLOW_GPM	0		
APPEARANCE	na	GROSS POLLUTANT	na				
Source of Flow	na						
link	X:\MD\SHARE\MD-Storm\7_NPDES\311_SWQ_Complaints\2023\2 - DW Screening--new-2022-2023\28-						

AIR_TEMP_F	39	Lab	
WATER_TEMP_F		Lab_Report	
pH		E_coli_Coliform_mpn/100ml	
CONDUCTIVITY_Umos/cm		Ammonia_mg/l	
BOD_mg/l		Nitrite_NO2_mg/l	
COD_mg/l		Nitrate_NO3_mg/l	
TSS_mg/l		TKN_Tot_Kjeld_N_mg/l	
TDS_mg/l		Phosphorus_total_mg/l_P	
N-Hexane Extractabie-(Oil_Grease)_mg/l		Hardness_mg/l_CaCO3	
Floride_mg/l		Chlorine_mg/l	

LOCATION	**SAN JOSE DRAIN AT RIO BRAVO SW**						
OUTFALL_NO	29	QUAD	SW	GRID	P-13	SAMPLED	☐
DATE_INSP	11/21/2022	TIME	10:45	Inspected by	SK		
WEATHER	SUNNY	flow	NO	FLOW_GPM	0		
APPEARANCE	na	GROSS POLLUTANT	na				
Source of Flow	na						
link	X:\MD\SHARE\MD-Storm\7_NPDES\311_SWQ_Complaints\2023\2 - DW Screening-2022-2023\East\29-						

AIR_TEMP_F	42	Lab	
WATER_TEMP_F		Lab_Report	
pH		E_coli_Coliform_mpn/100ml	
CONDUCTIVITY_Umos/cm		Ammonia_mg/l	
BOD_mg/l		Nitrite_NO2_mg/l	
COD_mg/l		Nitrate_NO3_mg/l	
TSS_mg/l		TKN_Tot_Kjeld_N_mg/l	
TDS_mg/l		Phosphorus_total_mg/l_P	
N-Hexane Extractabie-(Oil_Grease)_mg/l		Hardness_mg/l_CaCO3	
Floride_mg/l		Chlorine_mg/l	

LOCATION	**ATRISCO-ATRISCO PL-RIVERVIEW NW**						
OUTFALL_NO	30	QUAD	NW	GRID	J-11	SAMPLED	☐
DATE_INSP	11/15/2022	TIME	3:25	Inspected by	SK		
WEATHER	SUNNY	flow	NO	FLOW_GPM	0		
APPEARANCE	na	GROSS POLLUTANT	na				
Source of Flow	na						
link	X:\MD\SHARE\MD-Storm\7_NPDES\311_SWQ_Complaints\2023\2 - DW Screening--new-2022-2023\30-						

AIR_TEMP_F	48	Lab	
WATER_TEMP_F		Lab_Report	
pH		E_coli_Coliform_mpn/100ml	
CONDUCTIVITY_Umos/cm		Ammonia_mg/l	
BOD_mg/l		Nitrite_NO2_mg/l	
COD_mg/l		Nitrate_NO3_mg/l	
TSS_mg/l		TKN_Tot_Kjeld_N_mg/l	
TDS_mg/l		Phosphorus_total_mg/l_P	
N-Hexane Extractabie-(Oil_Grease)_mg/l		Hardness_mg/l_CaCO3	
Floride_mg/l		Chlorine_mg/l	

LOCATION	**LABAJADA-ATRISCO-NORTH 30 IN PIPE**						
OUTFALL_NO	31	QUAD	NW	GRID	J-11	SAMPLED	☐
DATE_INSP	11/15/2022	TIME	3:20	Inspected by	SK		
WEATHER	SUNNY	flow	NO	FLOW_GPM	0		
APPEARANCE	na	GROSS POLLUTANT	na				
Source of Flow	na						
link	X:\MD\SHARE\MD-Storm\7_NPDES\311_SWQ_Complaints\2023\2 - DW Screening--new-2022-2023\31-						

AIR_TEMP_F	48	Lab	
WATER_TEMP_F		Lab_Report	
pH		E_coli_Coliform_mpn/100ml	
CONDUCTIVITY_Umos/cm		Ammonia_mg/l	
BOD_mg/l		Nitrite_NO2_mg/l	
COD_mg/l		Nitrate_NO3_mg/l	
TSS_mg/l		TKN_Tot_Kjeld_N_mg/l	
TDS_mg/l		Phosphorus_total_mg/l_P	
N-Hexane Extractabie-(Oil_Grease)_mg/l		Hardness_mg/l_CaCO3	
Floride_mg/l		Chlorine_mg/l	

LOCATION	**LABAJADA-ATRISCO-SOUTH 36 IN PIPE-WINGWALL**						
OUTFALL_NO	32	QUAD	NW	GRID	J-11	SAMPLED	☐
DATE_INSP	11/15/2022	TIME	3:20	Inspected by	SK		
WEATHER	SUNNY	flow	NO	FLOW_GPM	0		
APPEARANCE	na	GROSS POLLUTANT	na				
Source of Flow	na						
link	X:\MD\SHARE\MD-Storm\7_NPDES\311_SWQ_Complaints\2023\2 - DW Screening--new-2022-2023\32						

AIR_TEMP_F	48	Lab	
WATER_TEMP_F		Lab_Report	
pH		E_coli_Coliform_mpn/100ml	
CONDUCTIVITY_Umos/cm		Ammonia_mg/l	
BOD_mg/l		Nitrite_NO2_mg/l	
COD_mg/l		Nitrate_NO3_mg/l	
TSS_mg/l		TKN_Tot_Kjeld_N_mg/l	
TDS_mg/l		Phosphorus_total_mg/l_P	
N-Hexane Extractabie-(Oil_Grease)_mg/l		Hardness_mg/l_CaCO3	
Floride_mg/l		Chlorine_mg/l	

LOCATION	**CENTRAL-SUNSET-OSAGE PS-44 THE 36 AND 42 IN PIPES**						
OUTFALL_NO	33	QUAD	NW	GRID	J-12	SAMPLED	☑
DATE_INSP	11/28/2022	TIME	2:30	Inspected by	SK		
WEATHER	CLOUDY	flow	YES	FLOW_GPM	0		
APPEARANCE	clear	GROSS POLLUTANT	none				
Source of Flow	groundwater at the Atrisco park						
link	X:\MD\SHARE\MD-Storm\7_NPDES\311_SWQ_Complaints\2023\2 - DW Screening-2022-2023\West\33-						

AIR_TEMP_F	48	Lab	HALL ENVIRONMENTAL
WATER_TEMP_F	46	Lab_Report	2211D77
pH	8.24	E_coli_Coliform_mpn/100ml	111.8
CONDUCTIVITY_Umos/cm	670	Ammonia_mg/l	<1
BOD_mg/l	<2	Nitrite_NO2_mg/l	<0.1
COD_mg/l	nd	Nitrate_NO3_mg/l	0.2
TSS_mg/l	<4	TKN_Tot_Kjeld_N_mg/l	<1
TDS_mg/l	439	Phosphorus_total_mg/l_P	0.1
N-Hexane Extractabie-(Oil_Grease)_mg/l	<9.7	Hardness_mg/l_CaCO3	230
Floride_mg/l	0.55	Chlorine_mg/l	<0.05

LOCATION	**CENTRAL-SUNSET-OSAGE NW PS-44 THE 6 IN PIPE**						
OUTFALL_NO	**34**	QUAD	NW	GRID	J-12	SAMPLED	☐
DATE_INSP	11/15/2022	TIME	3:05	Inspected by	SK		
WEATHER	SUNNY	flow	NO	FLOW_GPM	0		
APPEARANCE	na	GROSS POLLUTANT	na				
Source of Flow	na						
link	X:\MD\SHARE\MD-Storm\7_NPDES\311_SWQ_Complaints\2023\2 - DW Screening--new-2022-2023\34-						

AIR_TEMP_F	48	Lab	
WATER_TEMP_F		Lab_Report	
pH		E_coli_Coliform_mpn/100ml	
CONDUCTIVITY_Umos/cm		Ammonia_mg/l	
BOD_mg/l		Nitrite_NO2_mg/l	
COD_mg/l		Nitrate_NO3_mg/l	
TSS_mg/l		TKN_Tot_Kjeld_N_mg/l	
TDS_mg/l		Phosphorus_total_mg/l_P	
N-Hexane Extractabie-(Oil_Grease)_mg/l		Hardness_mg/l_CaCO3	
Floride_mg/l		Chlorine_mg/l	

LOCATION	**ALCALDE SW PS-41 AT RIO GRANDE**						
OUTFALL_NO	35	QUAD	SW	GRID	K-13	SAMPLED	☐
DATE_INSP	11/21/2022	TIME	11:25	Inspected by	SK		
WEATHER	SUNNY	flow	NO	FLOW_GPM	0		
APPEARANCE	na	GROSS POLLUTANT	na				
Source of Flow	na						
link	X:\MD\SHARE\MD-Storm\7_NPDES\311_SWQ_Complaints\2023\2 - DW Screening-2022-2023\East\35-						

AIR_TEMP_F	46	Lab	
WATER_TEMP_F		Lab_Report	
pH		E_coli_Coliform_mpn/100ml	
CONDUCTIVITY_Umos/cm		Ammonia_mg/l	
BOD_mg/l		Nitrite_NO2_mg/l	
COD_mg/l		Nitrate_NO3_mg/l	
TSS_mg/l		TKN_Tot_Kjeld_N_mg/l	
TDS_mg/l		Phosphorus_total_mg/l_P	
N-Hexane Extractabie-(Oil_Grease)_mg/l		Hardness_mg/l_CaCO3	
Floride_mg/l		Chlorine_mg/l	

LOCATION	NDC AT ALAMEDA NE						
OUTFALL_NO	36	QUAD	NE	GRID	C-17	SAMPLED	☑
DATE_INSP	11/29/2022	TIME	2:00	Inspected by	SK		
WEATHER	SUNNY	flow	YES	FLOW_GPM	15		
APPEARANCE	clear	GROSS POLLUTANT	leaves, papers, plastics				
Source of Flow	Irrigation water and well wash water at Love wells #4 and 8 and Ridge Crest #3 and 4.						
link	X:\MD\SHARE\MD-Storm\7_NPDES\311_SWQ_Complaints\2023\2 - DW Screening--new-2022-2023\36-						

AIR_TEMP_F	54	Lab	HALL ENVIRONMENTAL
WATER_TEMP_F	52	Lab_Report	2211E40
pH	8.11	E_coli_Coliform_mpn/100ml	21.6
CONDUCTIVITY_Umos/cm	520	Ammonia_mg/l	<5
BOD_mg/l	9	Nitrite_NO2_mg/l	<0.5
COD_mg/l	45.4	Nitrate_NO3_mg/l	<0.5
TSS_mg/l	<4	TKN_Tot_Kjeld_N_mg/l	<5
TDS_mg/l	354	Phosphorus_total_mg/l_P	0.07
N-Hexane Extractabie-(Oil_Grease)_mg/l	<9.8	Hardness_mg/l_CaCO3	180
Floride_mg/l	0.67	Chlorine_mg/l	<0.05

LOCATION	**TIJERAS ARROYO AT 2ND ST SW**						
OUTFALL_NO	37	QUAD	SW	GRID	Q-12	SAMPLED	☐
DATE_INSP	11/21/2022	TIME	10:30	Inspected by	SK		
WEATHER	SUNNY	flow	NO	FLOW_GPM	0		
APPEARANCE	na	GROSS POLLUTANT	na				
Source of Flow	na						
link	X:\MD\SHARE\MD-Storm\7_NPDES\311_SWQ_Complaints\2023\2 - DW Screening-2022-2023\East\37-						

AIR_TEMP_F	42	Lab	
WATER_TEMP_F		Lab_Report	
pH		E_coli_Coliform_mpn/100ml	
CONDUCTIVITY_Umos/cm		Ammonia_mg/l	
BOD_mg/l		Nitrite_NO2_mg/l	
COD_mg/l		Nitrate_NO3_mg/l	
TSS_mg/l		TKN_Tot_Kjeld_N_mg/l	
TDS_mg/l		Phosphorus_total_mg/l_P	
N-Hexane Extractabie-(Oil_Grease)_mg/l		Hardness_mg/l_CaCO3	
Floride_mg/l		Chlorine_mg/l	

LOCATION	**MIRANDELA BY PUEBLO PARK SE OF COORS AND MONTANO NW**						
OUTFALL_NO	38	QUAD	NW	GRID	E-12	SAMPLED	☐
DATE_INSP	11/18/2022	TIME	10:35	Inspected by	SK		
WEATHER	CLOUDY	flow	NO	FLOW_GPM	0		
APPEARANCE	na	GROSS POLLUTANT	na				
Source of Flow	na						
link	X:\MD\SHARE\MD-Storm\7_NPDES\311_SWQ_Complaints\2023\2 - DW Screening--new-2022-2023\38-						

AIR_TEMP_F	36	Lab	
WATER_TEMP_F		Lab_Report	
pH		E_coli_Coliform_mpn/100ml	
CONDUCTIVITY_Umos/cm		Ammonia_mg/l	
BOD_mg/l		Nitrite_NO2_mg/l	
COD_mg/l		Nitrate_NO3_mg/l	
TSS_mg/l		TKN_Tot_Kjeld_N_mg/l	
TDS_mg/l		Phosphorus_total_mg/l_P	
N-Hexane Extractabie-(Oil_Grease)_mg/l		Hardness_mg/l_CaCO3	
Floride_mg/l		Chlorine_mg/l	

LOCATION	**BOSQUE SCHOOL AND MIRANDELA SE OF COORS AND MONTANO NW**						
OUTFALL_NO	39	QUAD	NW	GRID	E-12	SAMPLED	☐
DATE_INSP	11/18/2022	TIME	10:45	Inspected by	SK		
WEATHER	CLOUDY	flow	NO	FLOW_GPM	0		
APPEARANCE	na	GROSS POLLUTANT	na				
Source of Flow	na						
link	X:\MD\SHARE\MD-Storm\7_NPDES\311_SWQ_Complaints\2023\2 - DW Screening--new-2022-2023\39-						

AIR_TEMP_F	36	Lab	
WATER_TEMP_F		Lab_Report	
pH		E_coli_Coliform_mpn/100ml	
CONDUCTIVITY_Umos/cm		Ammonia_mg/l	
BOD_mg/l		Nitrite_NO2_mg/l	
COD_mg/l		Nitrate_NO3_mg/l	
TSS_mg/l		TKN_Tot_Kjeld_N_mg/l	
TDS_mg/l		Phosphorus_total_mg/l_P	
N-Hexane Extractabie-(Oil_Grease)_mg/l		Hardness_mg/l_CaCO3	
Floride_mg/l		Chlorine_mg/l	

LOCATION	**1406-1412 RIVERVIEW NW**						
OUTFALL_NO	**40**	QUAD	NW	GRID	J-11	SAMPLED	☐
DATE_INSP	11/16/2022	TIME	2:45	Inspected by	SK		
WEATHER	CLOUDY	flow	NO	FLOW_GPM	0		
APPEARANCE	na	GROSS POLLUTANT	na				
Source of Flow	na						
link	X:\MD\SHARE\MD-Storm\7_NPDES\311_SWQ_Complaints\2023\2 - DW Screening-2022-2023\West\40-						

AIR_TEMP_F	44	Lab	
WATER_TEMP_F		Lab_Report	
pH		E_coli_Coliform_mpn/100ml	
CONDUCTIVITY_Umos/cm		Ammonia_mg/l	
BOD_mg/l		Nitrite_NO2_mg/l	
COD_mg/l		Nitrate_NO3_mg/l	
TSS_mg/l		TKN_Tot_Kjeld_N_mg/l	
TDS_mg/l		Phosphorus_total_mg/l_P	
N-Hexane Extractabie-(Oil_Grease)_mg/l		Hardness_mg/l_CaCO3	
Floride_mg/l		Chlorine_mg/l