WIMBERLEY VALLEY WATERSHED ASSOCIATION:
CLEAN RIVERS PROGRAM OVERVIEW

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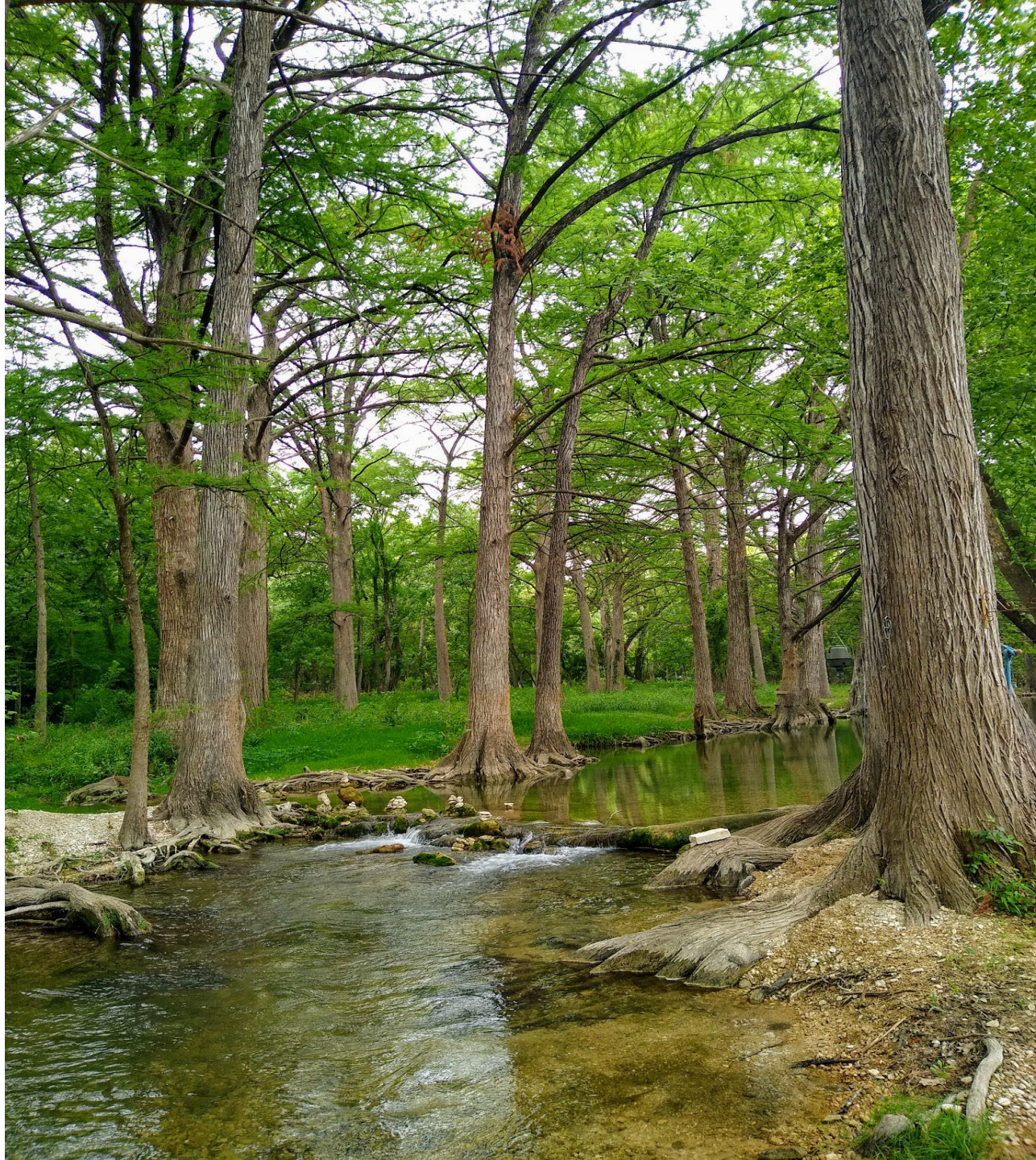
Guadalupe-Blanco River Basin Steering Committee Meeting
March 15, 2023

The Meadows Center
for Water and the Environment
Texas State University

OUTLINE

Routine Water Quality Monitoring:

- Upper Blanco River **monthly** monitoring (Segment 1813) at 3 sites
- Upper Blanco River **quarterly** monitoring (Segment 1813) at 4 sites
- Cypress Creek **quarterly** monitoring (Segment 1815) at 6 sites



Upper Blanco River

Monthly Monitoring
Sep 2019 – Feb 2023

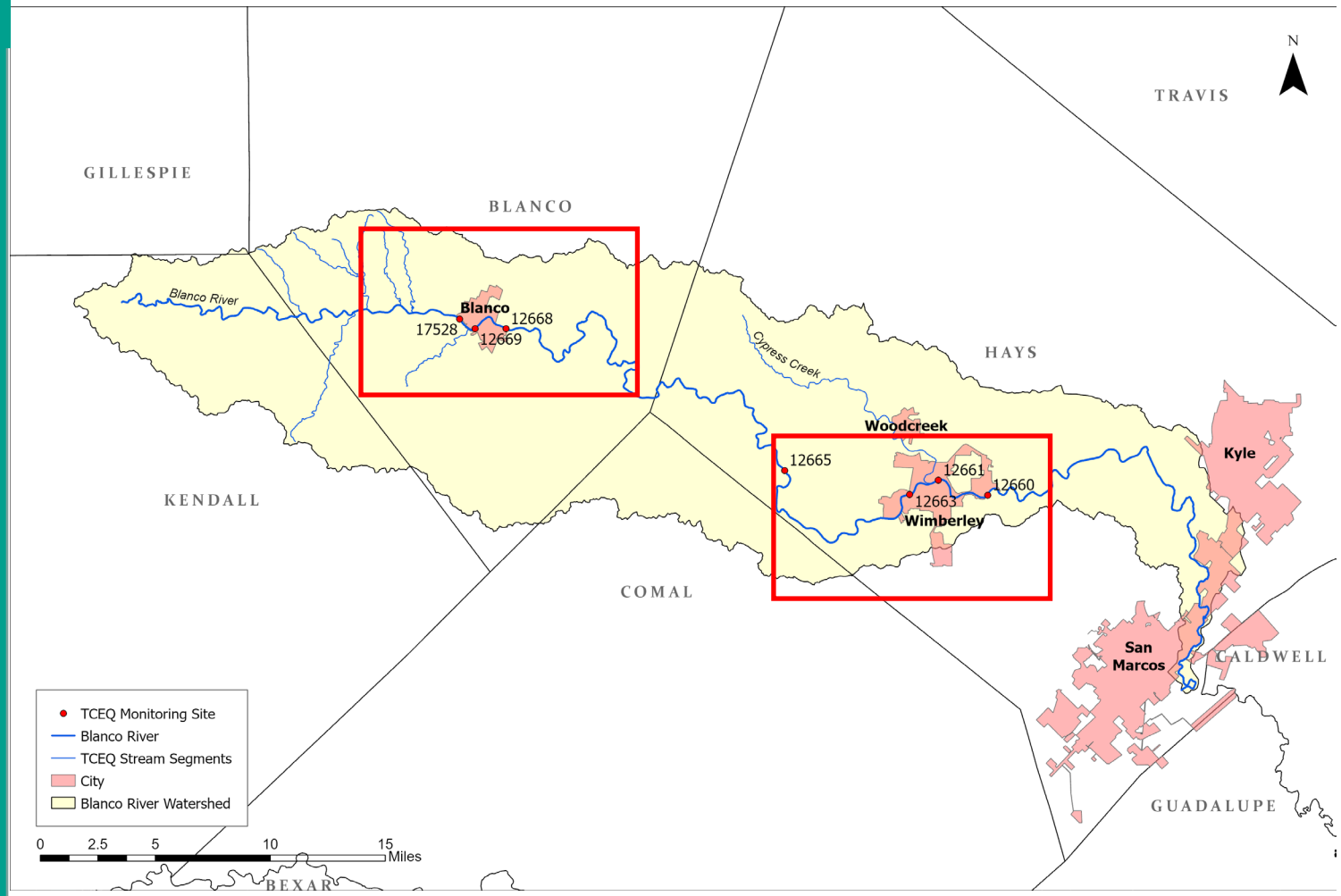
Purpose: To monitor water quality concerns resulting from wastewater treatment plant discharge.

Three locations:

- 17528 – Upstream of Pany Dr.
- 12669 – Blanco River @ PR23
- 12668 – Blanco River @ FM165

Parameters:

- Field
- Flow
- Conventionals
- *E. coli* Bacteria

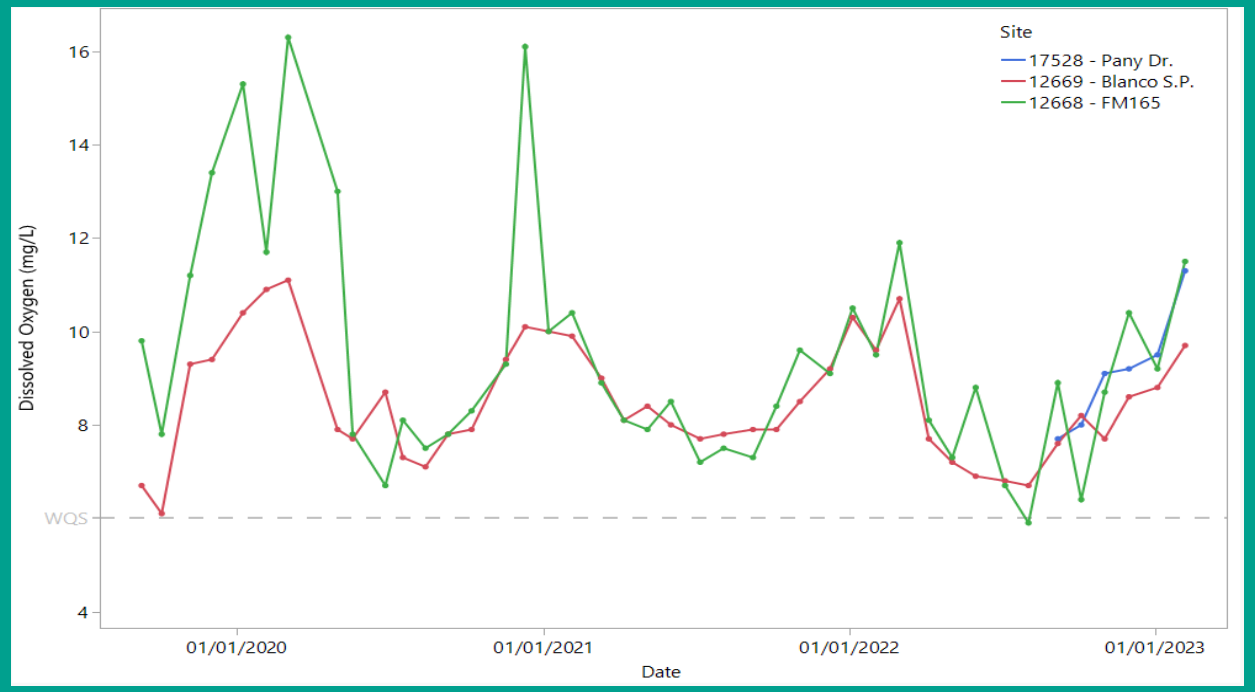


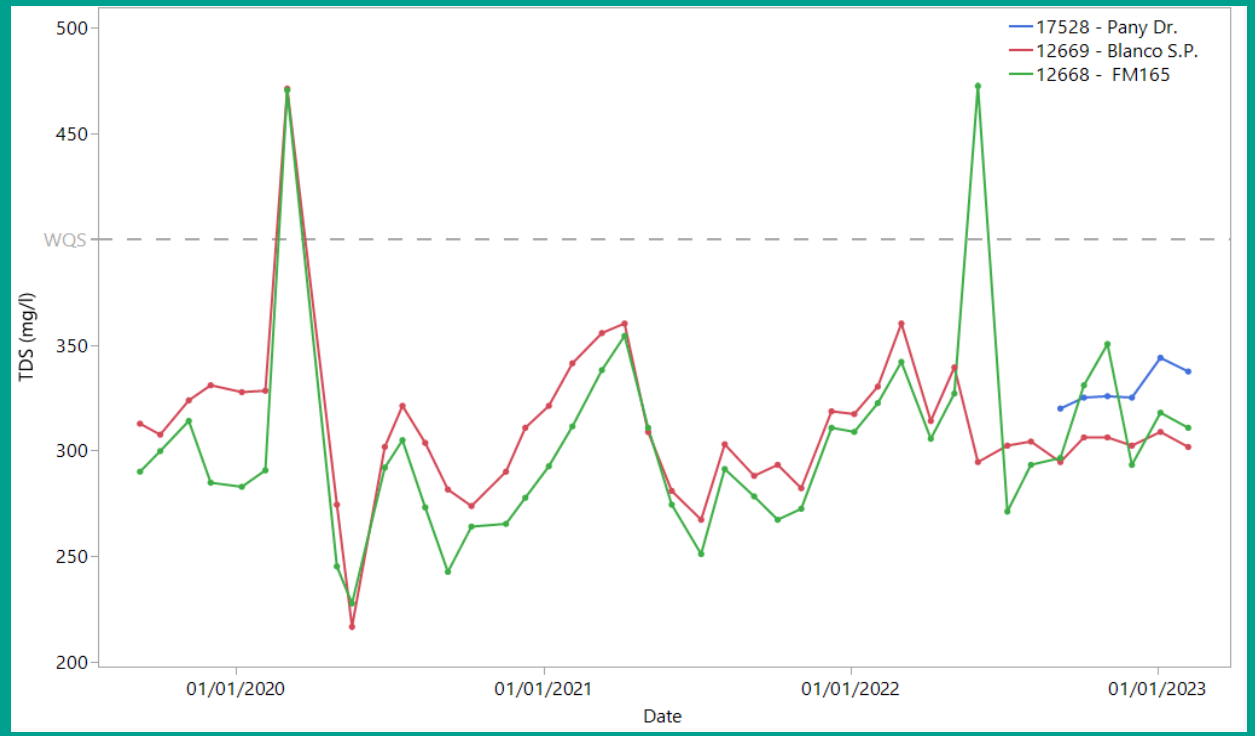
Upper Blanco River

Monthly Monitoring Results (Sep 2019 – Feb 2023)

- Dissolved Oxygen (mg/L)
  - All values above the WQS
  - Higher values at FM165
  - Increased nutrient enrichment » more algae » more photosynthesis

- Total Dissolved Solids (mg/l)
  - Some values exceed WQS





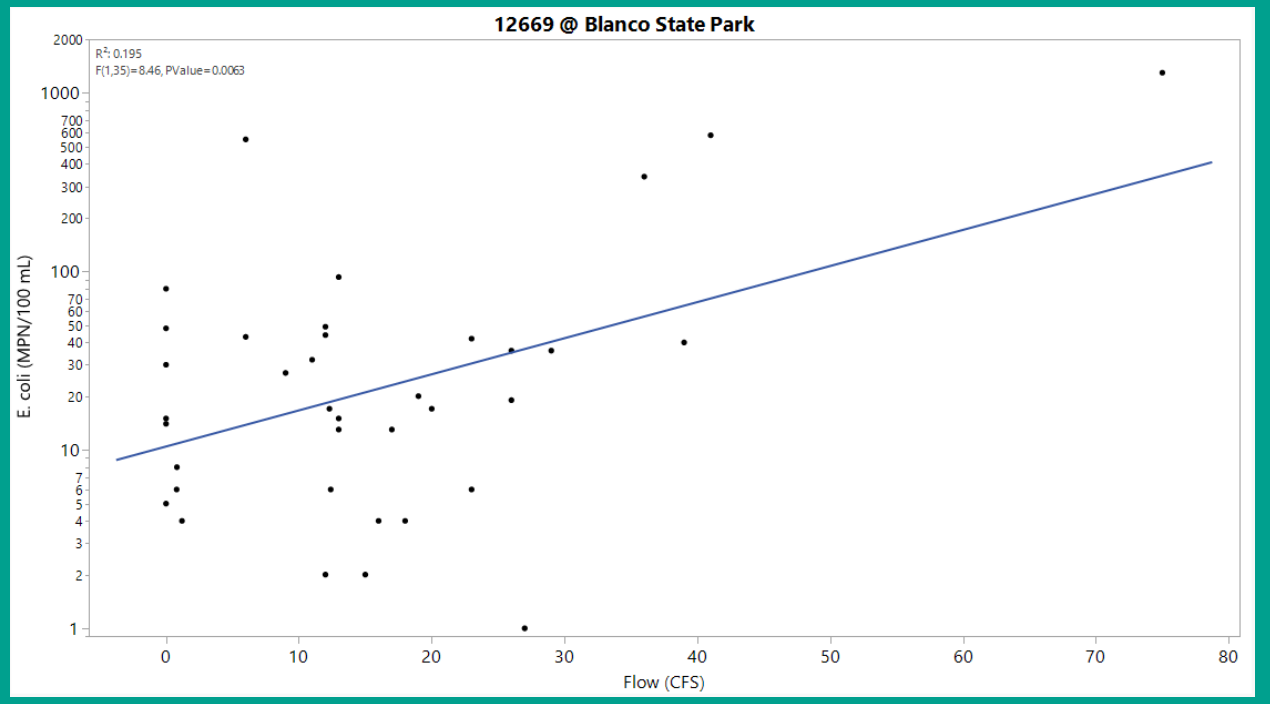
Upper Blanco River

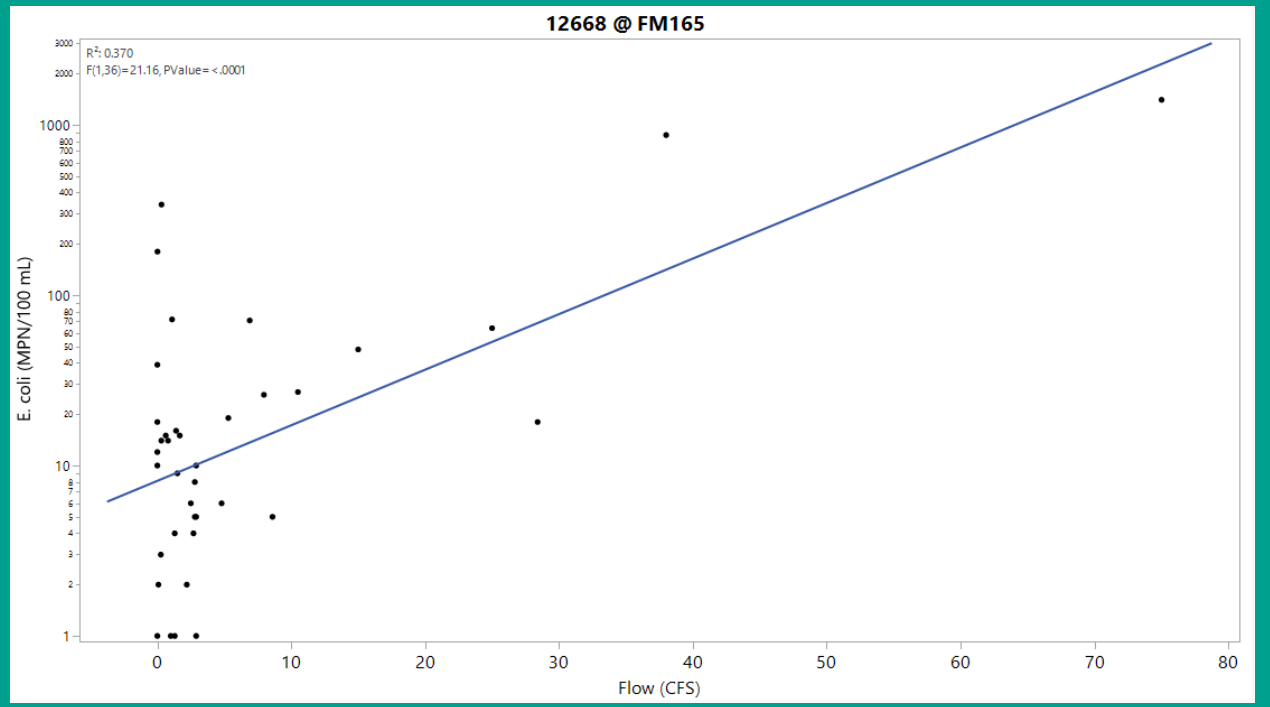
Monthly Monitoring Results (Sep 2019 – Feb 2023)

E. Coli (MPN/100 ml)

- WQS geomean met at all sites
- Strong and significant correlation with flow at two of three sites

Site	Number of samples	Geometric Mean (MPN/100 ml)
17528 – Pany Dr.	6	32
12669 – Blanco S.P.	42	21
12668 – FM165	42	13



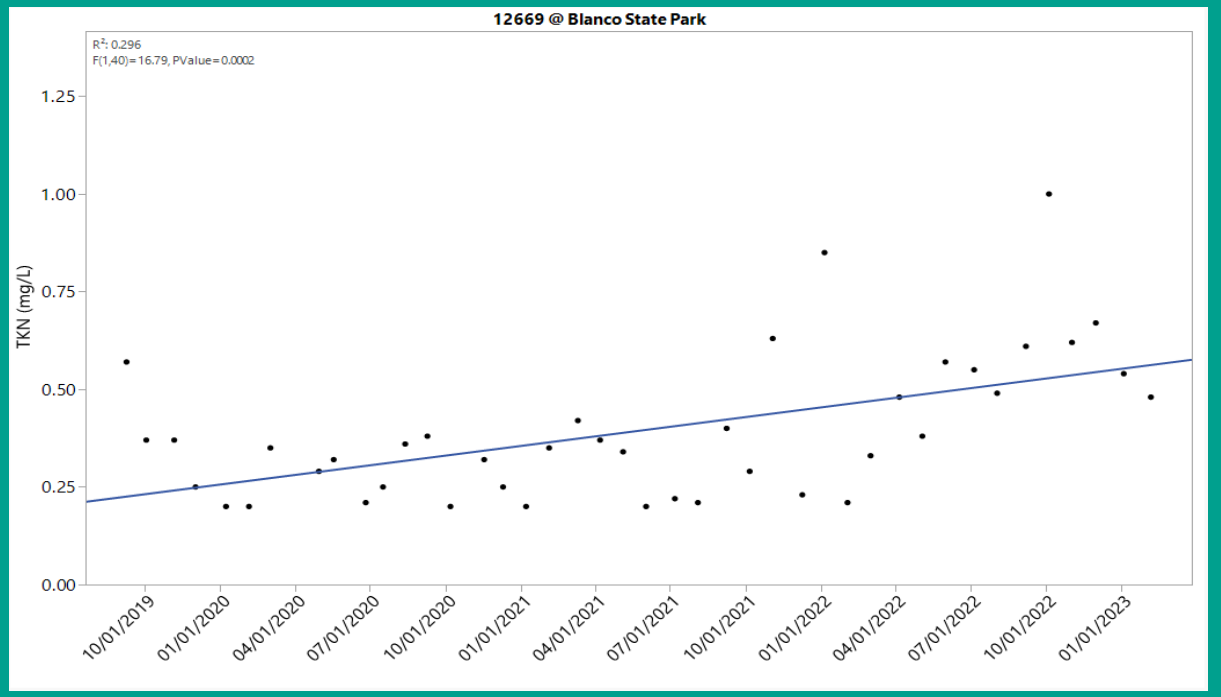


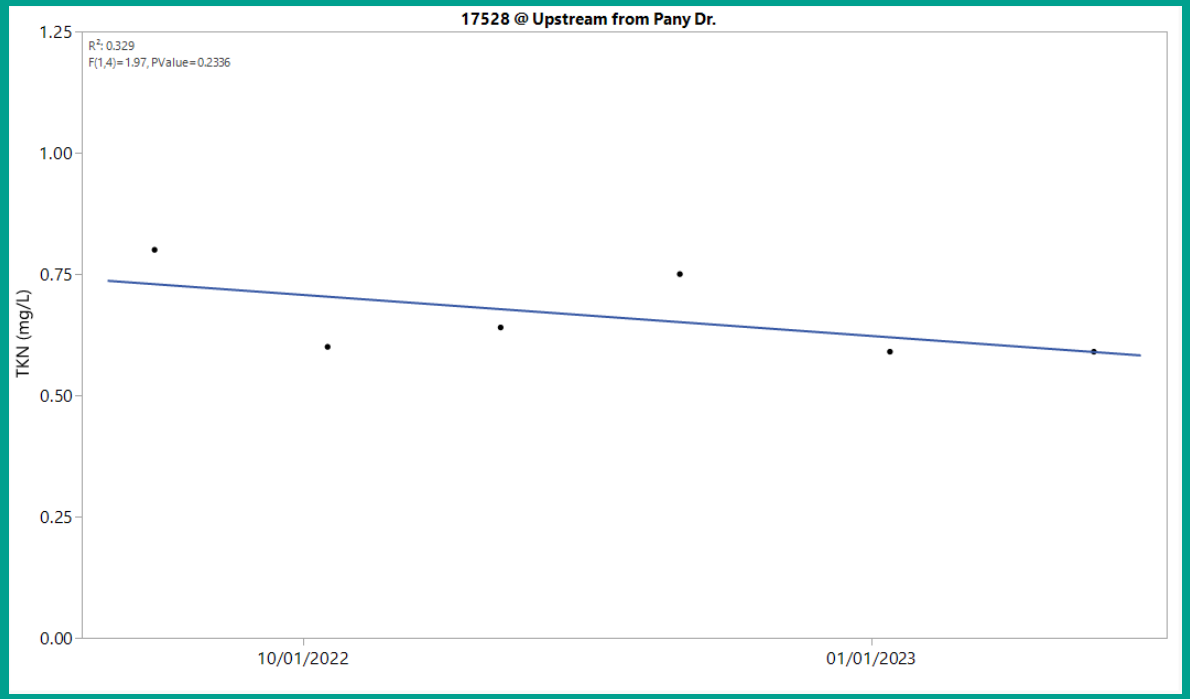
Upper Blanco River

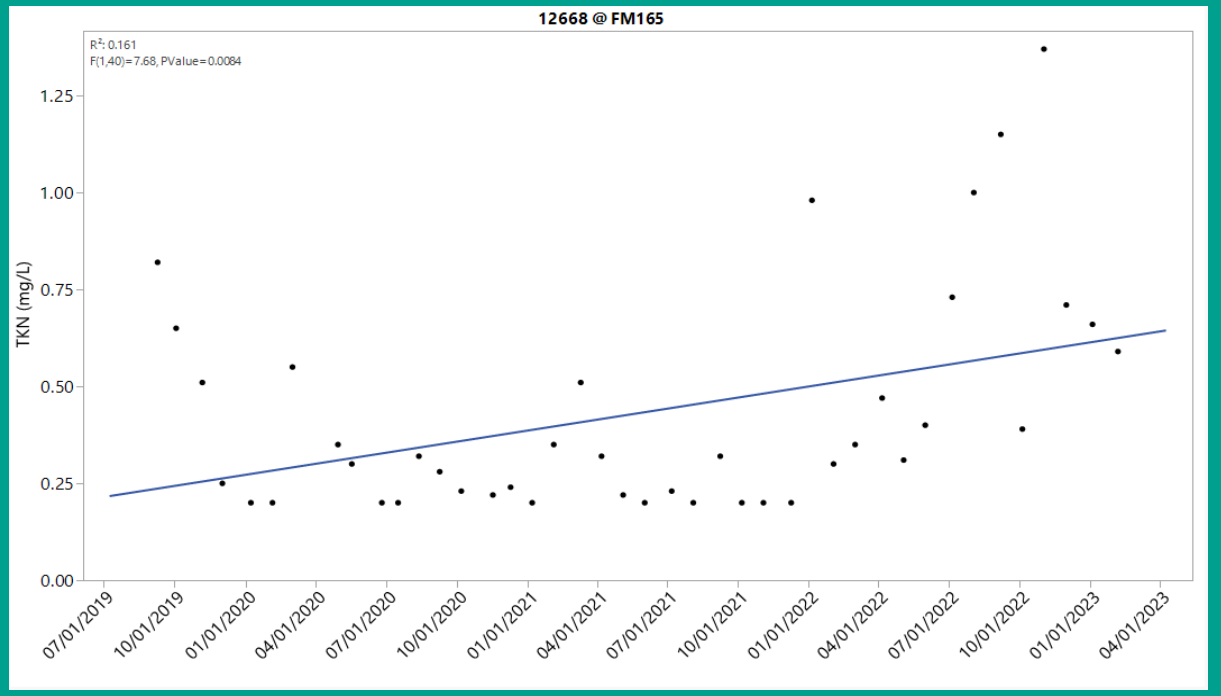
Monthly Monitoring Results (Sep 2019 – Feb 2023)

TKN (mg/L)

- Increasing and significant trend at two of three sites
- Appears to be more variability at FM165





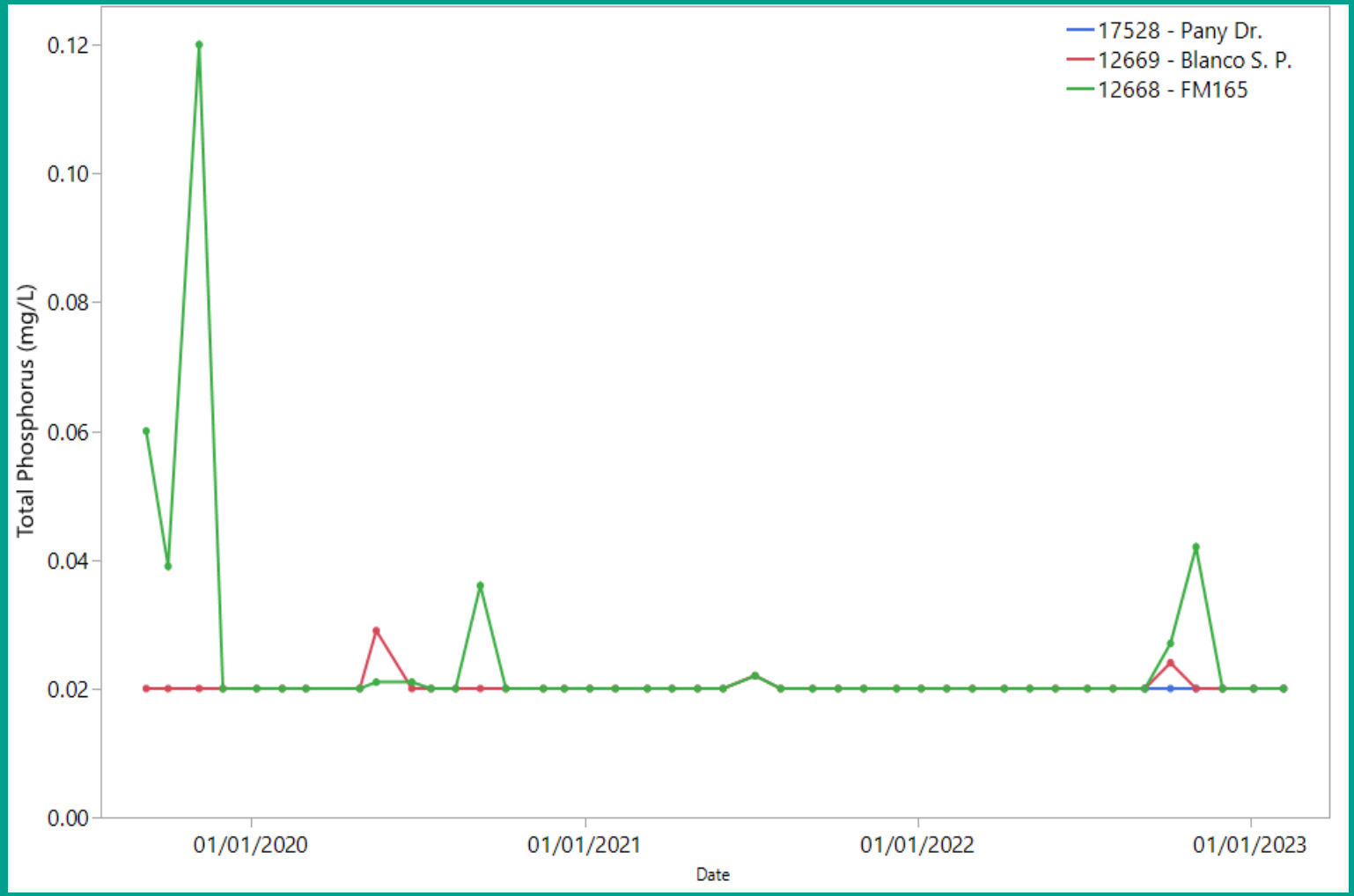


Upper Blanco River

Monthly Monitoring Results (Sep 2019 – Feb 2023)

Total Phosphorus (mg/L)

- WQS met for all events/sites
- More variability at FM 165
- Most results are nondetects



Upper Blanco River

(@FM165)

8 Jan 2020

26 Jun 2020

7 Apr 2021

10 Mar 2023

Upper Blanco River

Quarterly Monitoring
Mar 2019 – Dec 2022

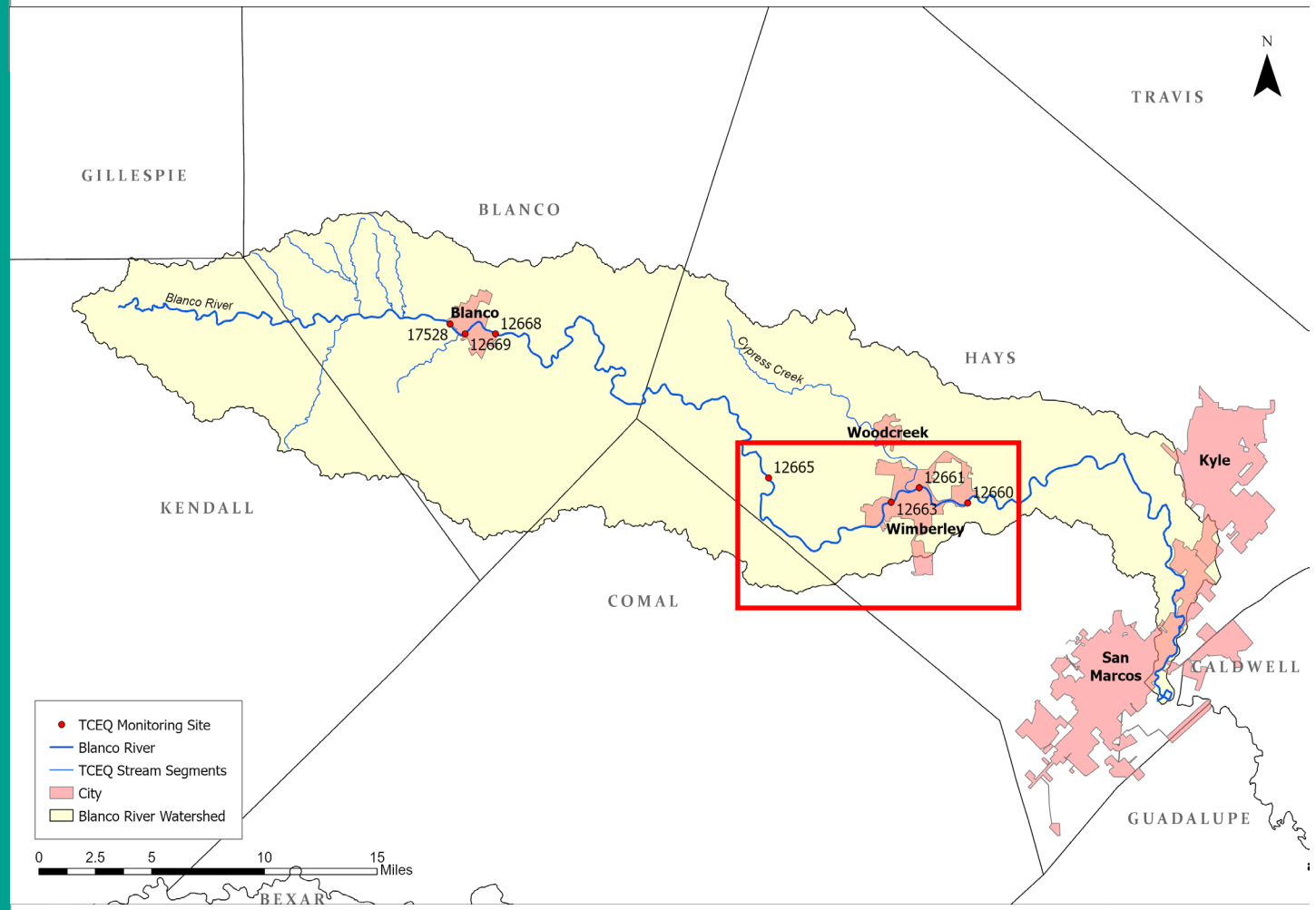
Purpose: To collect water quality data for assessment in the Texas Integrated Report.

Four locations:

- 12665 – Blanco River @ Fischer Store Rd.
- 12663 – Blanco River @ Pioneer Town
- 12661 – Blanco River @ RR12
- 12660 – Blanco River @ CR174

Parameters:

- Field
- Flow
- Conventionals
- Bacteria



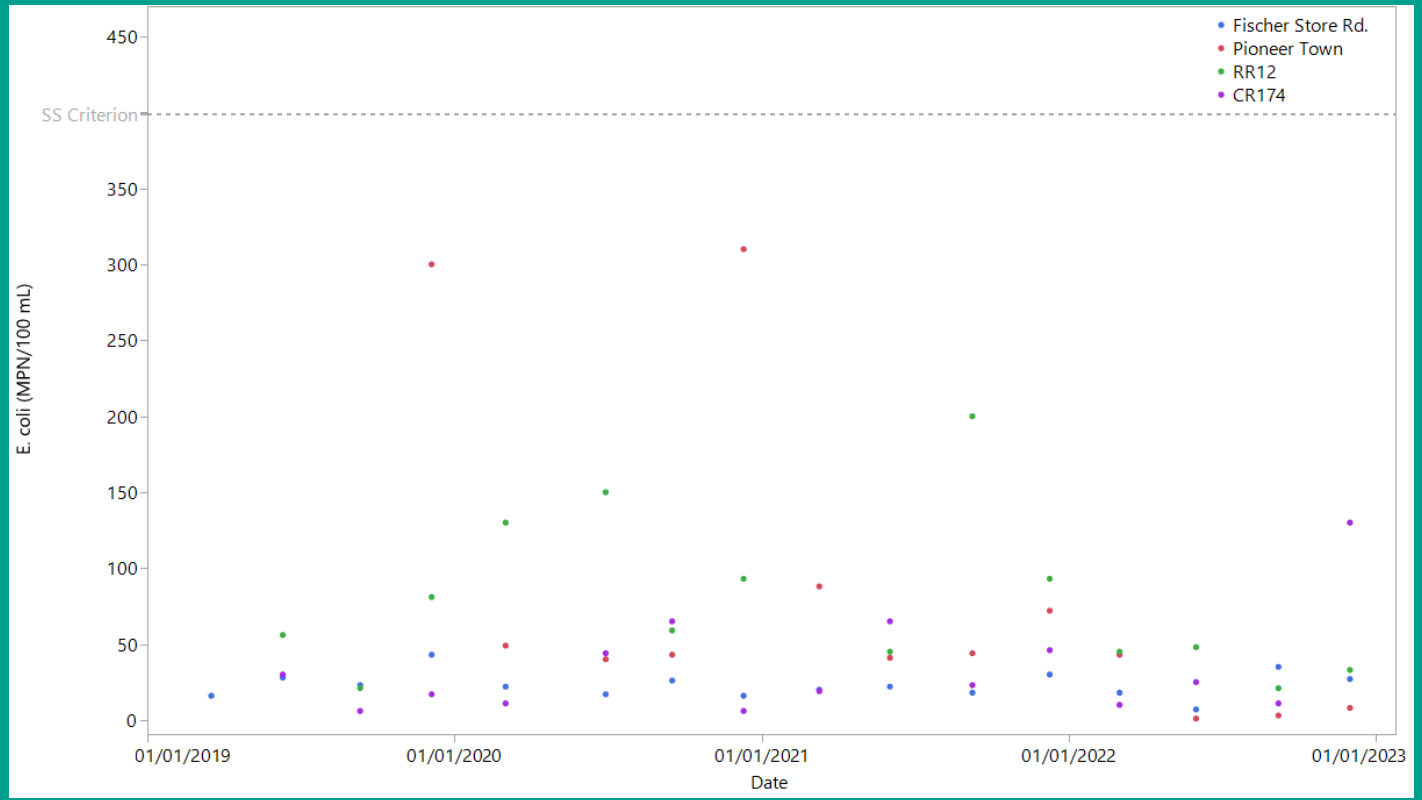
Upper Blanco River

Quarterly Monitoring Results (Mar 2019 – Dec 2022)

Site	Number of Samples	Geometric Mean (MPN/100 ml)
Fischer Store Rd.- 12665	16	21.4
Pioneer Town - 12663	16	34.3
RR12 - 12676	16	62.1
CR174 - 12660	15	23.0

E. coli bacteria

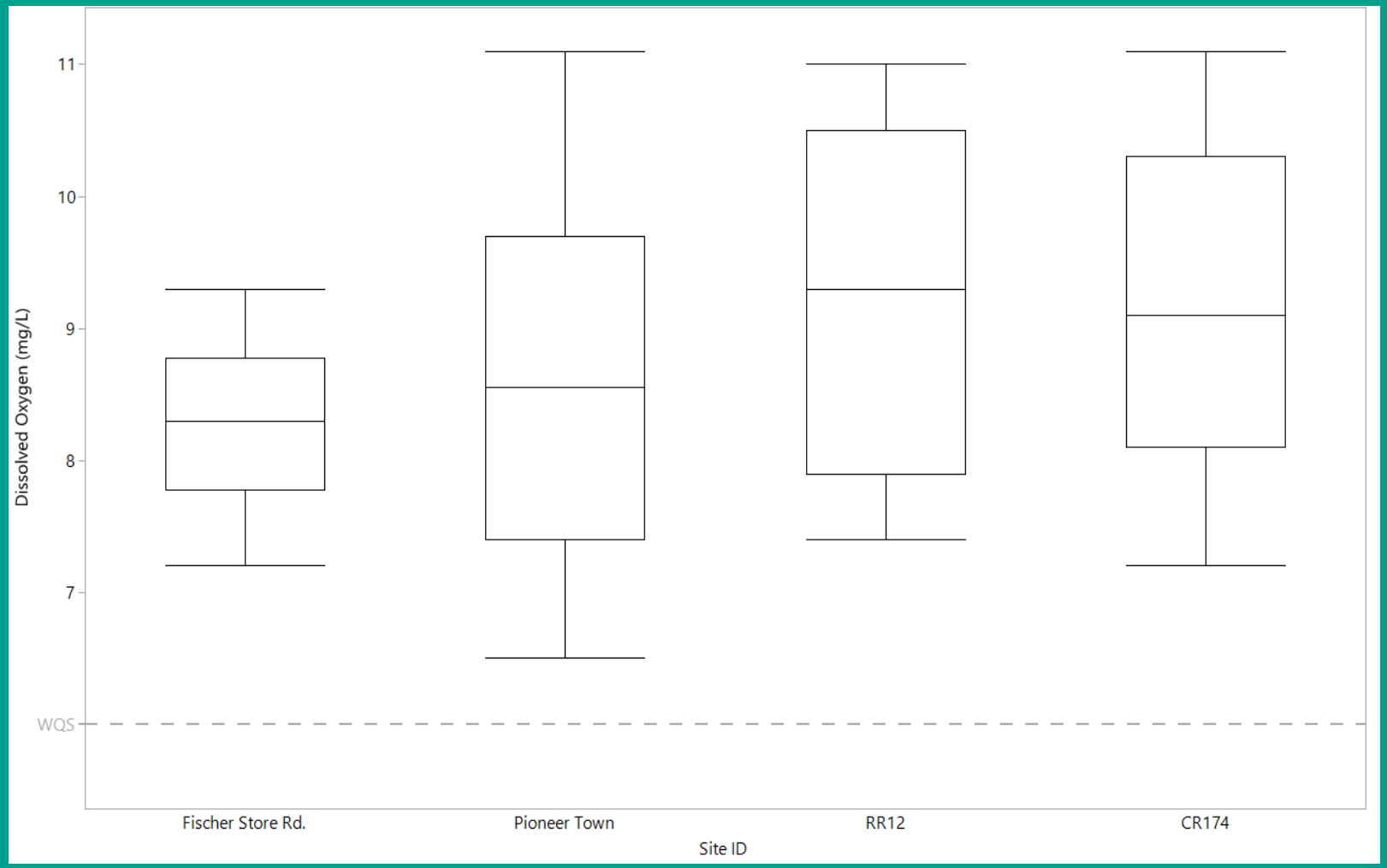
- Geomean values below WQS (126 MPN/100 mL)
- All samples/sites had values below the single sample criterion (399 MPN/100 ml)
- Higher colony counts in urbanized areas



Upper Blanco River

Quarterly Monitoring Results (Mar 2019 – Dec 2022)

- Dissolved Oxygen
  - All values above WQS



Cypress Creek

Quarterly Monitoring

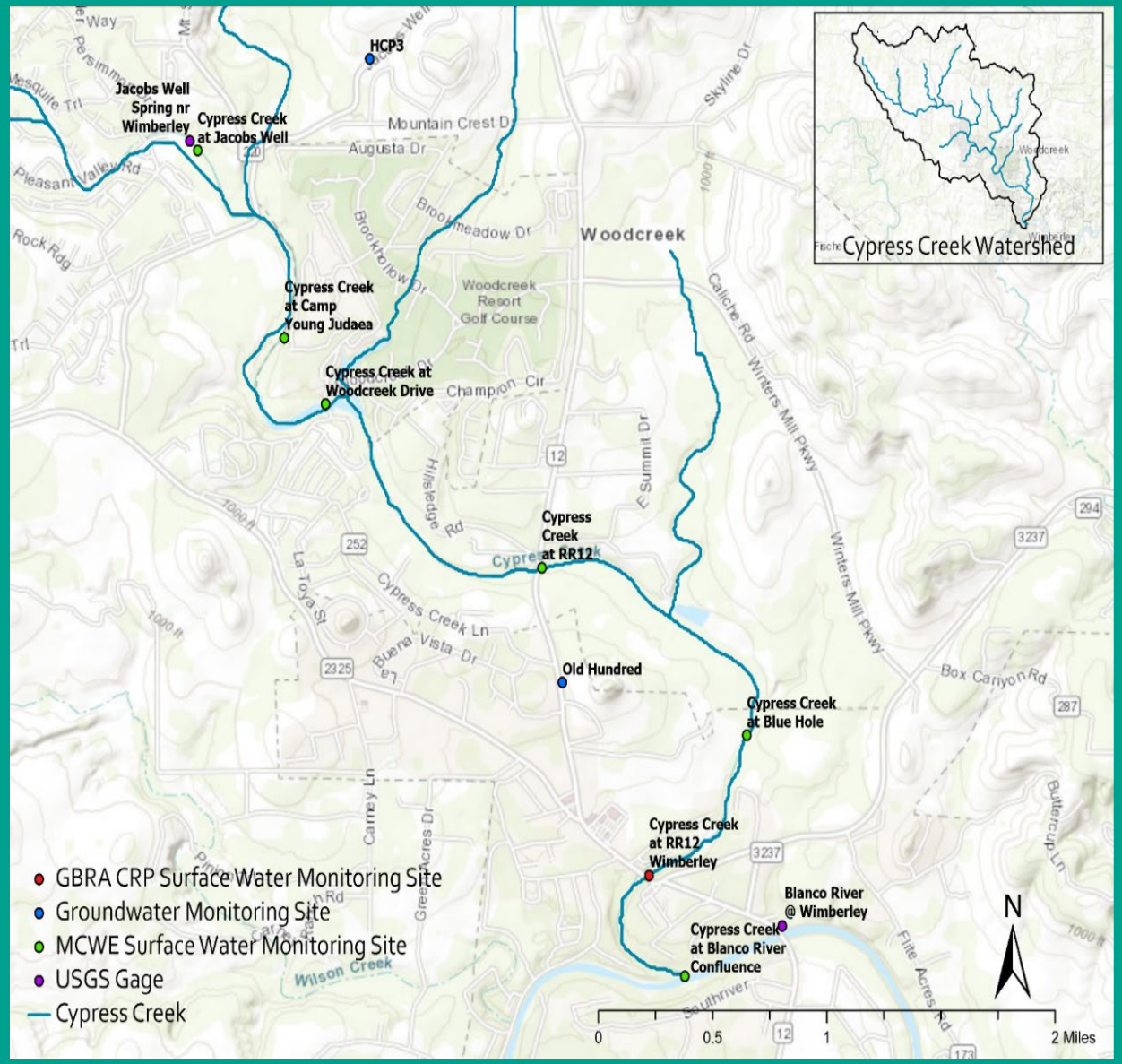
Purpose: To collect water quality data in support of the WPP.

Six locations:

- 12677 – CC @ Jacob's Well
- 22109 – CC @ Camp Young Judea
- 22110 – CC @ Woodcreek Dr.
- 12676 – CC @ RR12
- 12675 – CC @ Blue Hole*
- *12674 – CC @ FM12 in Wimberley*
- 12673 – CC @ Blanco Riv. Confluence*

Parameters:

Field	Flow
Conventionals	*E. coli* Bacteria
24-hour DO (*)	Groundwater wells



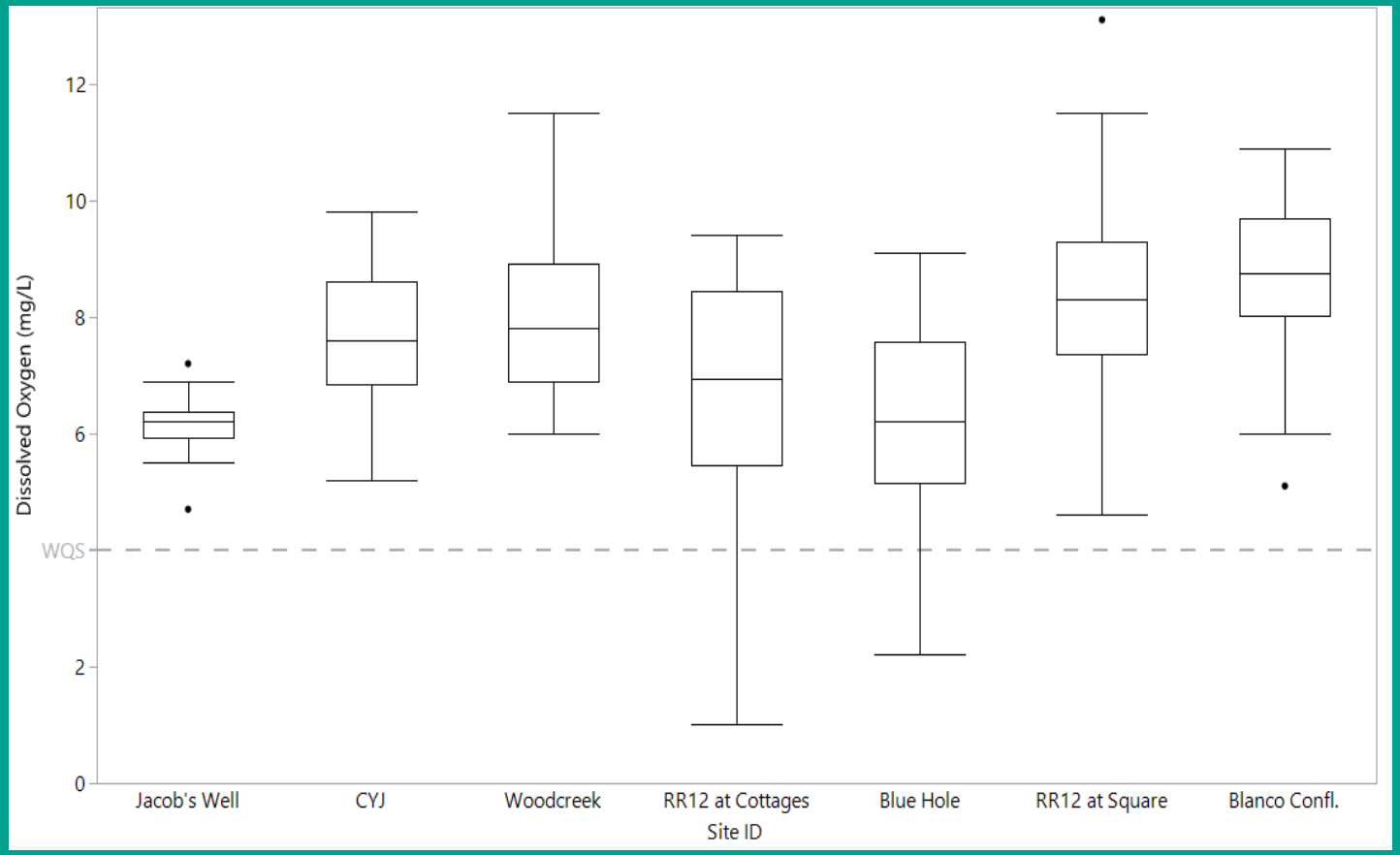
Cypress Creek

Quarterly Monitoring Results (Sep. 2016-Dec 2022)

Dissolved Oxygen (mg/L)

- Grab – two sites extend below WQS
  - RR12 Cottages
  - Blue Hole

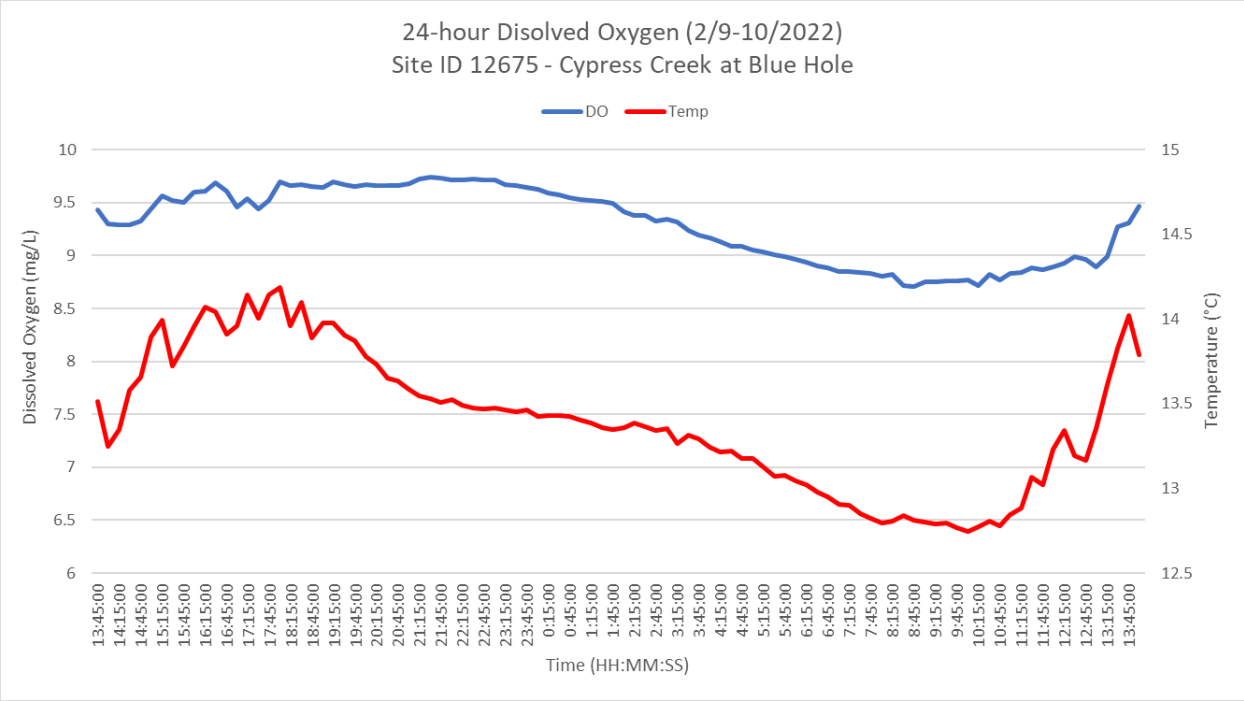
- 24-hour (2 events – Apr, Sep 2019)
  - Blue Hole – Sep event exceeded both criteria
  - Blanco Confluence – Both events met criteria

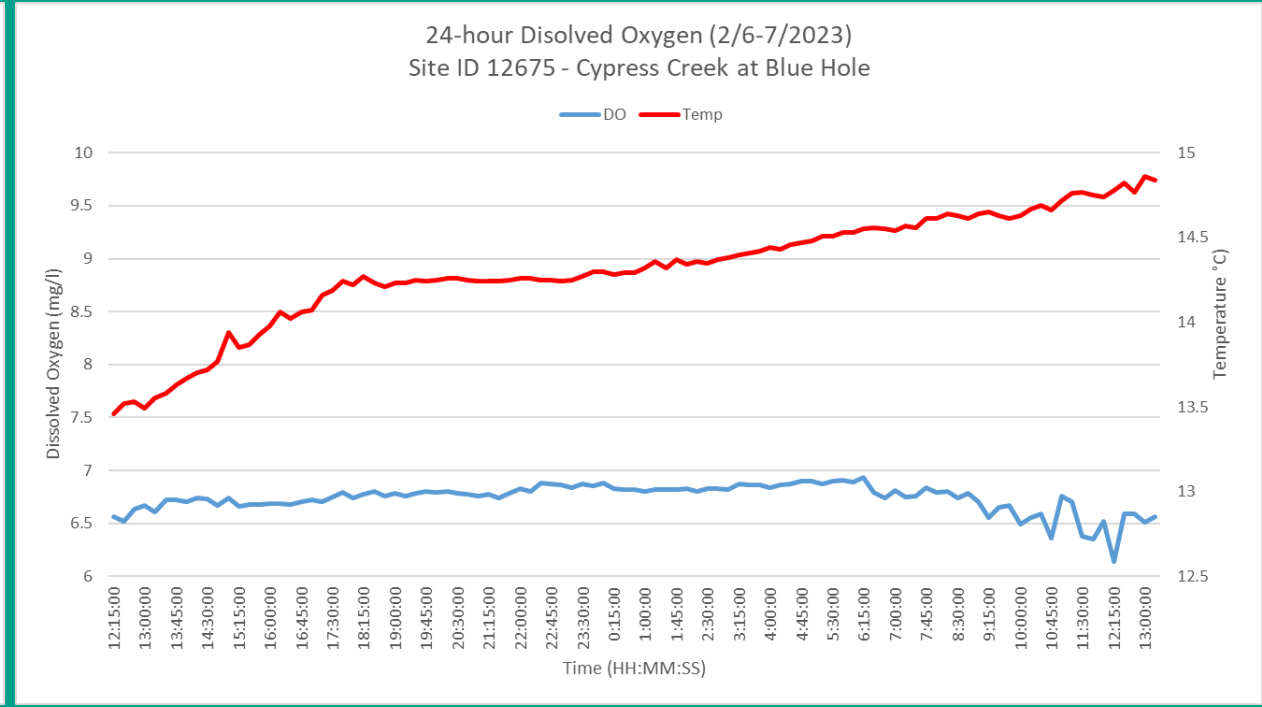


Cypress Creek

24-Hour Dissolved Oxygen (February 2022 and 2023)

Parameter Averages	2022	2023
Discharge (cfs)	5	0.28
Temperature (°C)	13.4	14.3
pH (su)	7.7	7.6
Conductivity (µS/cm)	593	612
Dissolved Oxygen (mg/l)	9.3	6.7
*DO Min/Max	8.7/9.7	6.1/6.9

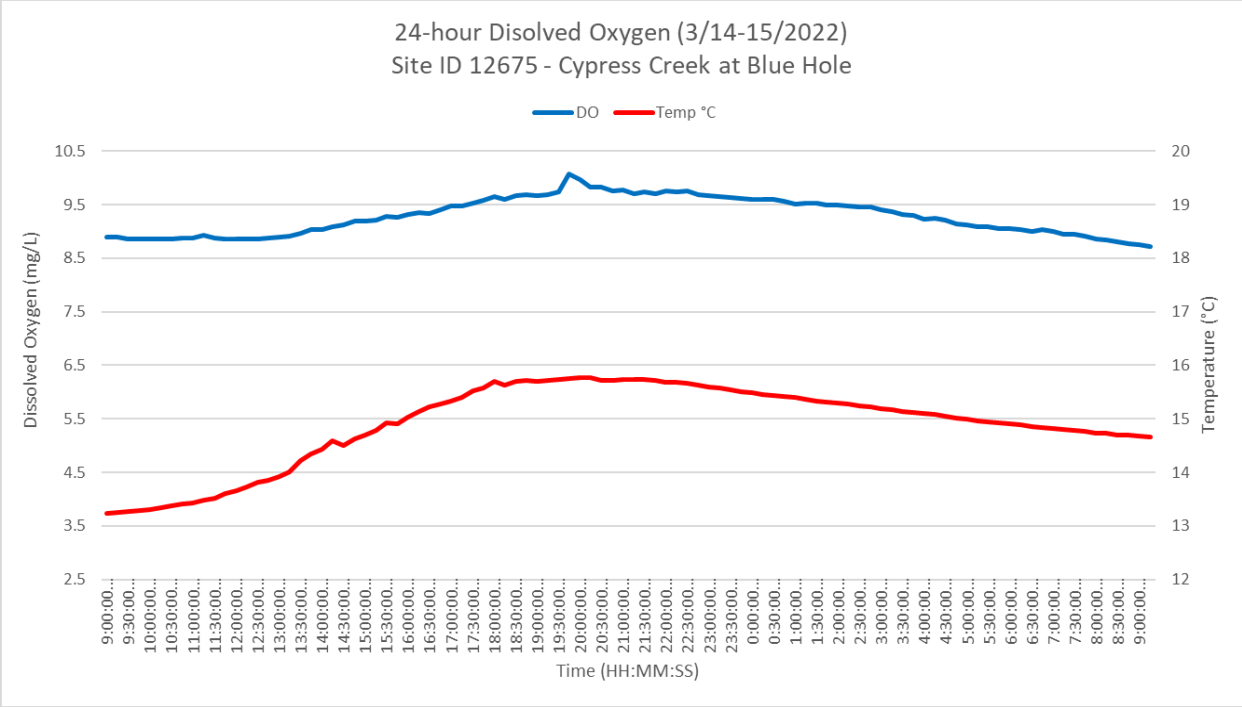


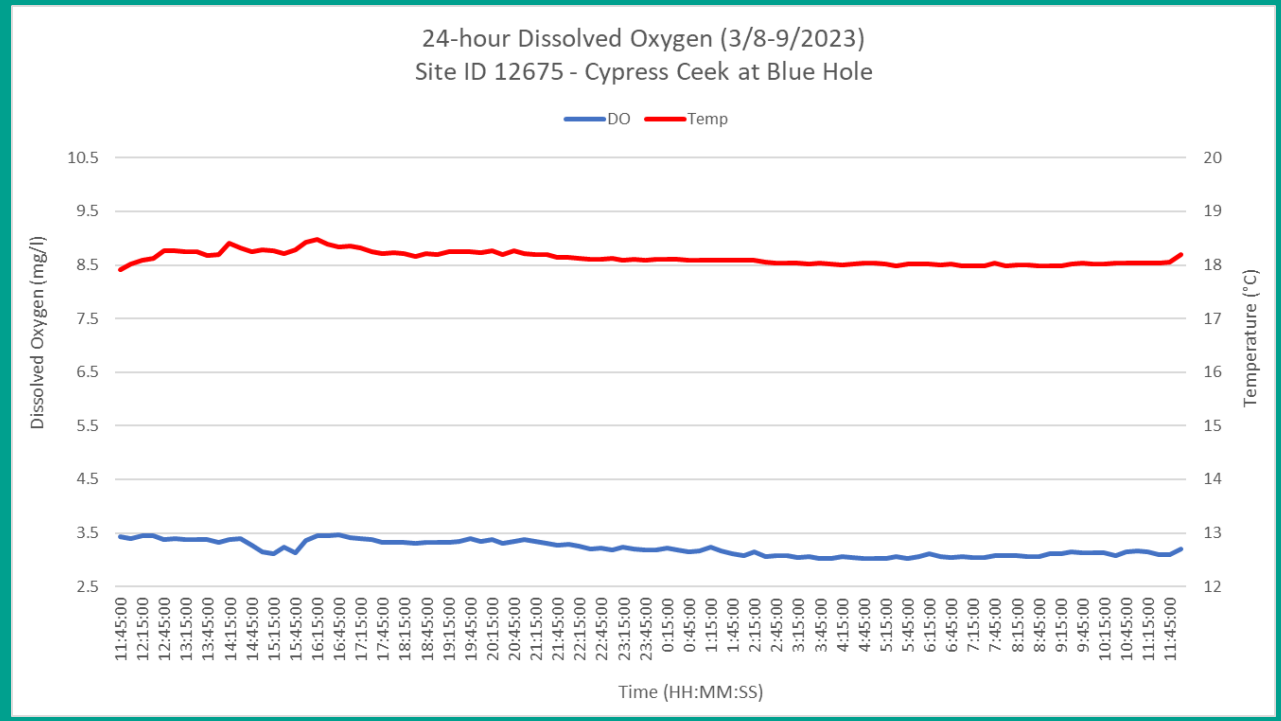


Cypress Creek

24-Hour Dissolved Oxygen
March 2022 and 2023

Parameter Averages	2022	2023
Discharge (cfs)	6.8	3.7
Temperature (°C)	14.9	18.5
pH (su)	7.8	7.1
Conductivity (µS/cm)	646	652
Dissolved Oxygen (mg/l)	9.3	3.2
*DO Min/Max	8.7/10.0	3.0/3.5

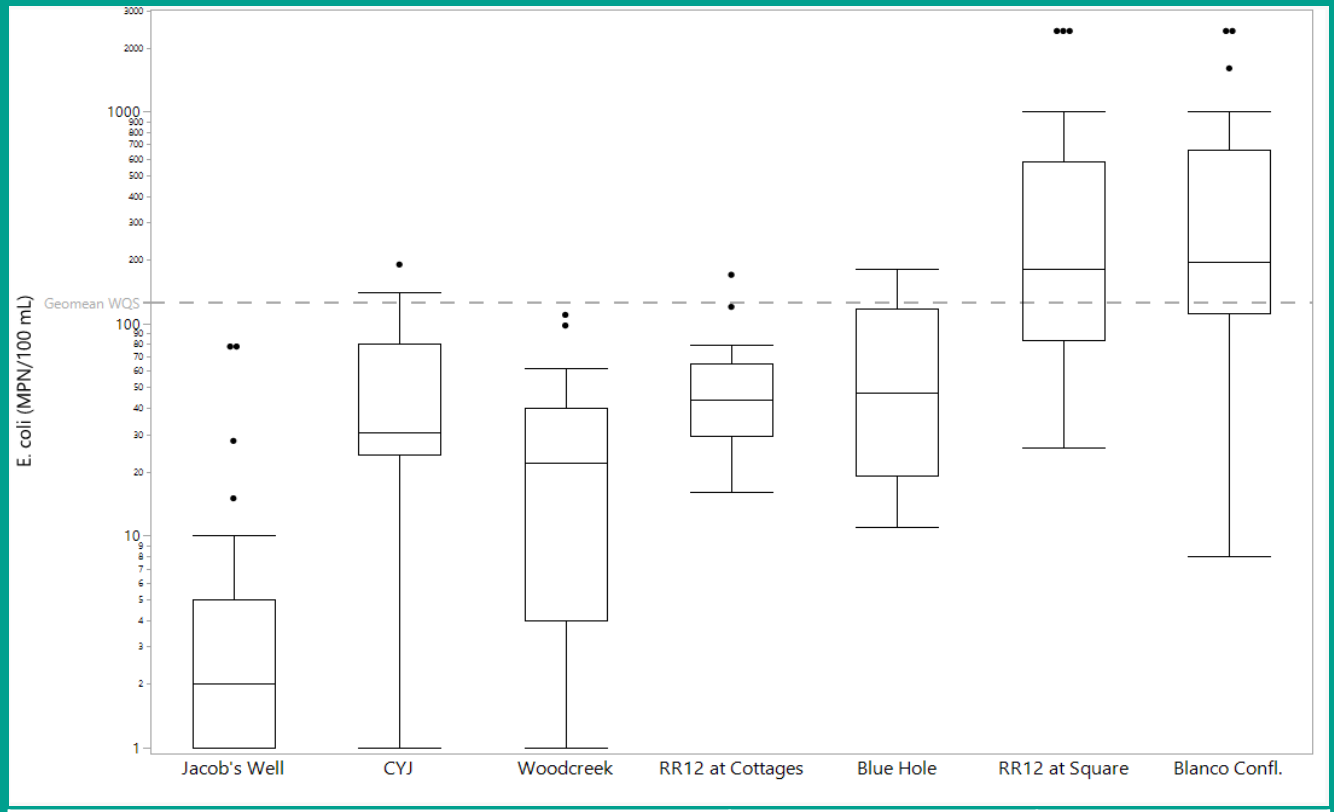




Cypress Creek

Quarterly Monitoring Results (Sep. 2016-Dec 2022)

- E. coli (MPN/100 mL)
  - Geometric means below WQS at all sites except two
    - RR12 at Wimberley Square
    - Blanco River Confluence

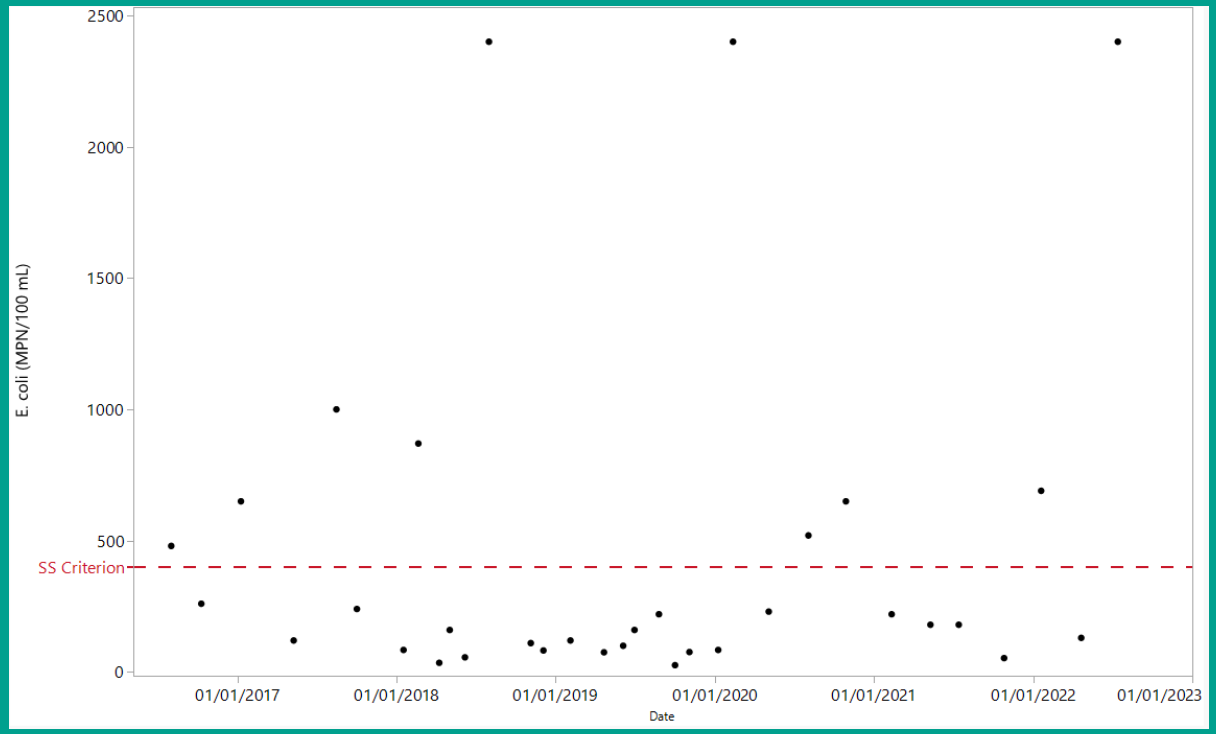


Site	Number of Samples	Geometric Mean
Jacob's Well - 12677	24	3.2
Camp Young Judea- 22109	16	27.8
Woodcreek Dr. - 22110	16	12.6
RR12 at Cottages - 12676	24	46.3
Blue Hole - 12675	24	45.6
RR12 at Square - 12674	33	214.9
Blanco Confluence - 12673	24	250.5

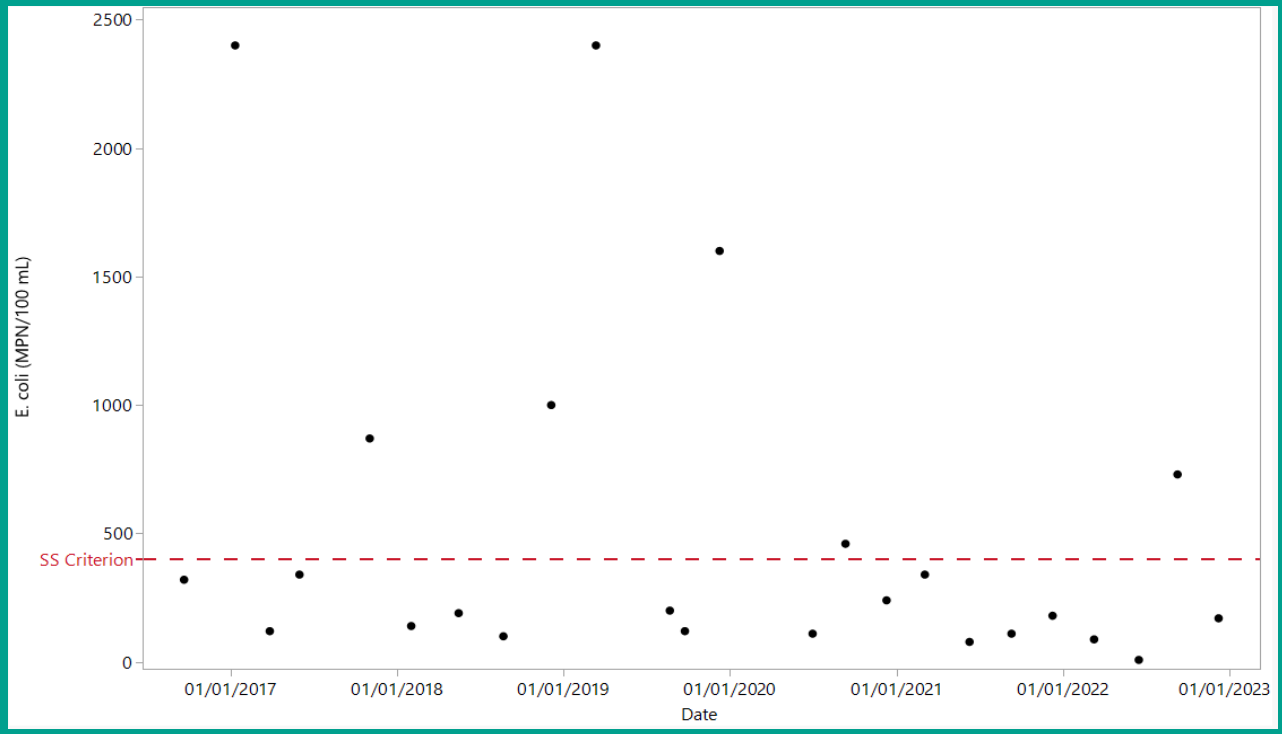
Cypress Creek

Quarterly Monitoring E. coli Bacteria Results (Sep. 2016-Dec 2022)

RR12 at Wimberley Square



Blanco River Confluence



Summary

Upper Blanco River – Monthly Monitoring

- FM165 shows signs of nutrient enrichment
  - Dissolved oxygen fluctuations
  - TKN increasing trend
  - Total Phosphorus detectable when WWTP discharges and other times (?)

Upper Blanco River – Quarterly Monitoring

- E. coli bacteria and Dissolved oxygen appear stable

Cypress Creek

- E. coli bacteria values high downstream of RR12
- Dissolved oxygen values concern (grab and 24-hour)

TEXAS STREAM TEAM BASIN ACTIVITY

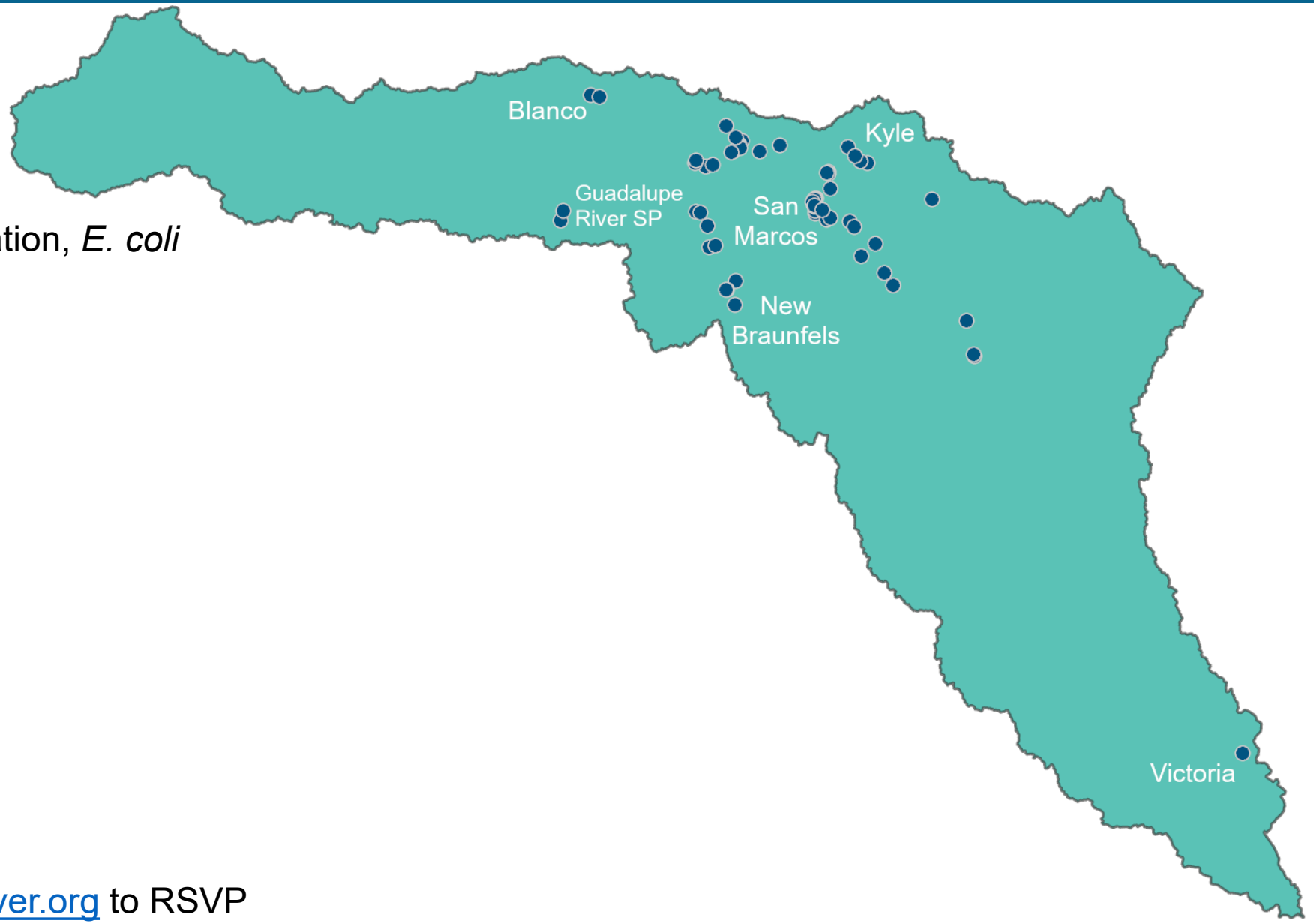
2022 Activity:
- Active sites = 66
- Sampling events = 882
- Trainings = 12

Monitoring types: Riparian Evaluation, *E. coli* Bacteria, and Core

Active Groups:
- Guadalupe Master Naturalists
- Headwaters at the Comal
- Lindheimer Master Naturalists
- Plum Creek Stewards
- San Marcos River Rangers
- Wimberley Valley Monitors

Upcoming Trainings:
- *E. coli* Bacteria: April 8, 10–2
- Standard Core: April 9, 10–2
- Standard Core: May 13, 10–2
- Standard Core: June 11, 10–2

Email RiverRangers@sanmarcosriver.org to RSVP



Contact

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