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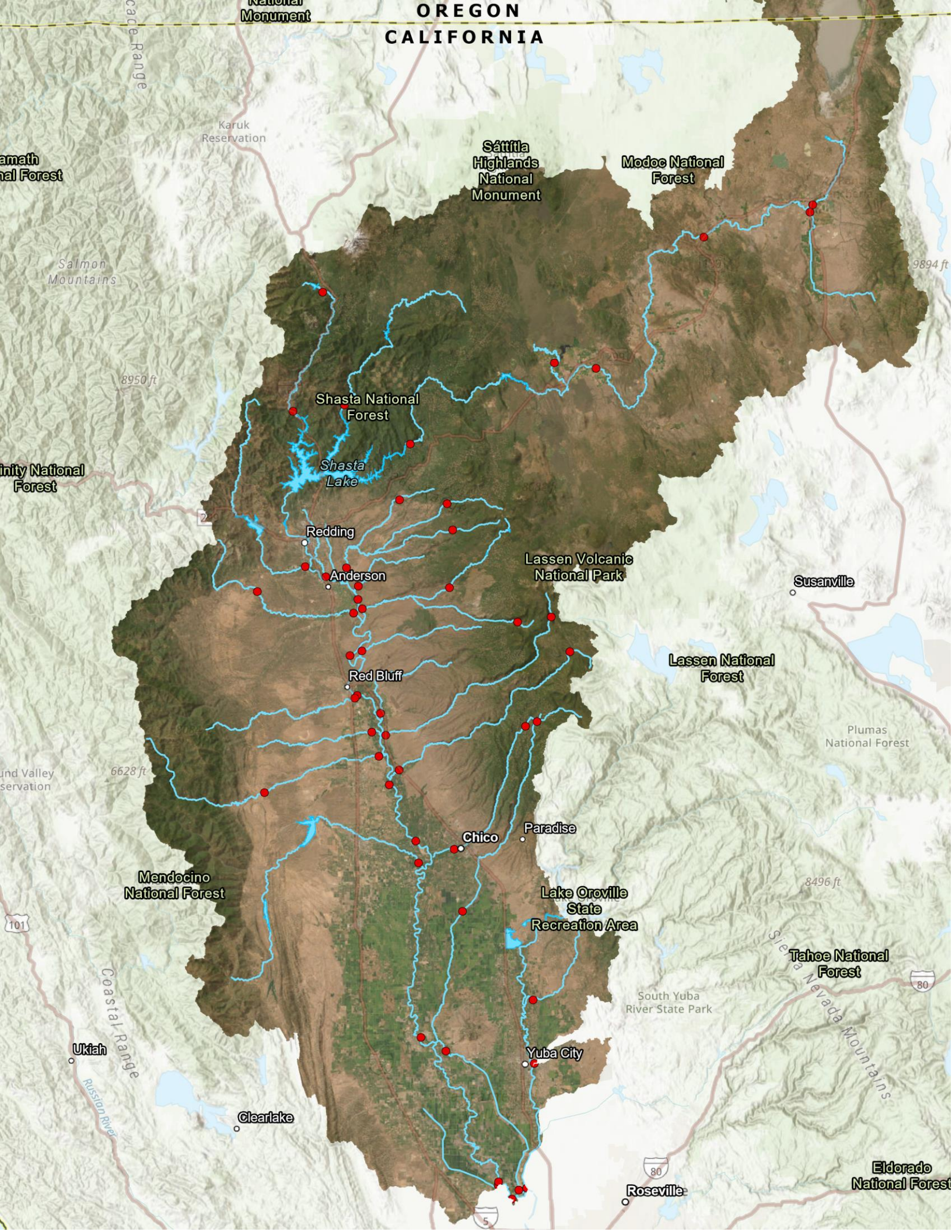
SACRAMENTO WATERSHED COORDINATED MONITORING PROGRAM FINAL REPORT May 2022 - November 2025

SWCRB Agreement 22-028-150



CALIFORNIA
NATURAL
RESOURCES
AGENCY





STATE OF CALIFORNIA
Gavin Newsom, Governor

THE NATURAL RESOURCES AGENCY
Wade Crowfoot, Secretary for Resources

DEPARTMENT OF WATER RESOURCES
Karla Nemeth, Director

Cindy Messer
Lead Deputy Director

Thomas Gibson
Lead Deputy Director

John Yarbrough
Deputy Director, State
Water Project

Paul Gosselin
Deputy Director,
Sustainable Water
Management

Delphine Hou
Deputy Director,
Statewide Energy

Joel Metzger
Deputy Director,
Statewide Water
Resources Planning and
Enterprise Project
Management

Laura Hollender
Deputy Director for
Flood Management and
Dam Safety

James Newcomb
Deputy Director of
Natural Infrastructure
and Ecosystem
Resilience

Nancy Vogel
Senior Water Policy
Advisor to the Director

Ann Carroll
General Counsel

DIVISION OF REGIONAL ASSISTANCE
Arthur Hinojosa, Jr., Manager

This report was prepared under the supervision of

Teresa Connor Manager, Northern Region
Aric Lester Manager, Watershed and Environmental Assessment Branch
Scott McReynolds Manager, Water Quality Section

by

Colt Brockman Environmental Scientist
Alicia Helfrick Environmental Scientist

Kelsi Sigurdson Environmental Scientist
John Lance..... ...Research Analyst

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ACRONYMS AND ABBREVIATIONS

Acronym / Unit	Definition
°C	degrees Celsius
µg/L	micrograms per liter
µmhos/cm	micromhos per centimeter
µS/cm	microsiemens per centimeter
Al	aluminum
AL	action level
CAL FIRE	California Department of Forestry and Fire Protection
CDFW	California Department of Fish and Wildlife
Central Valley Water Board	Central Valley Regional Water Quality Control Board
DOC	dissolved organic carbon
DO	dissolved oxygen
DWR	California Department of Water Resources
Fe	iron
FLIMS	Field and Laboratory Information Management System
FNU	formazin nephelometric units
MCL	maximum contaminant level
mg/L	milligrams per liter
mL	milliliter
MPN	most probable number
n	sample size
ND	non-detect
NH ₃	un-ionized ammonia
NH ₄ ⁺	ammonia ion
NIST	National Institute of Standards and Technology
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NMFS	National Marine Fisheries Service
NRCS	Natural Resources Conservation Service
pH	A measure of the acidity or alkalinity in a solution
QA/QC	quality assurance / quality control
RL	reporting limit
RPD	relative percent difference
SMCL	secondary maximum contaminant level
SOP	Standard Operating Procedure
SPC	specific conductance
STV	statistical threshold value

Acronym / Unit	Definition
SWAMP	Surface Water Ambient Monitoring Program
SWCMP	Sacramento Watershed Coordinated Monitoring Program
TAV	temperature accuracy verification
TDS	total dissolved solids
TKN	Total Kjeldahl nitrogen
TOC	Total organic carbon
TP	total phosphorus
TSS	total suspended solids
UC ANR	University of California Agriculture and Natural Resources
U.S. EPA	United States Environmental Protection Agency
USGS	United States Geological Survey
WDL	Water Data Library
WY	water year

FORWARD

SWCMP is a coordinated effort between the California Department of Water Resources (DWR) Northern Region Office and the Central Valley Regional Water Quality Control Board (Central Valley Water Board) to monitor and assess the ambient (environmental) water quality of the Sacramento River and its larger tributaries. Monitoring is conducted at incremental locations beginning upstream of Shasta Lake and continuing south to Sutter County.

SWCMP is designed to meet the monitoring needs of both the DWR Northern Region Office Water Quality Section and the Central Valley Water Board. SWCMP supports DWR's mission to manage water resources in cooperation with other agencies. Data collected for SWCMP supports the State Water Resources Control Board's Surface Water Ambient Monitoring Program (SWAMP), which evaluates the condition of water bodies throughout the state.

This report summarizes water chemistry, field-measured water quality, bacteriological, and continuous water temperature data across 53 monitoring stations collected for the Sacramento Watershed Coordinated Monitoring Program (SWCMP) during the monitoring period of May 2022 through November 2025 (reporting period). This report will serve as the final report under this program. Prior reports prepared under SWCMP summarize monitoring data collected during the November 2008 through August 2014 period (SWCMP 1 Report, Agreement No. 11-166-150) and the November 2014 through August 2017 period (SWCMP 2 Report, Agreement No. 11-166-150). Monitoring results collected between November 2017 through February 2022 were not compiled into a formal report because of staff resource limitations associated with the Oroville Spillway Incident and the COVID-19 pandemic. Nevertheless, all data collected during this period are publicly available through the [California Department of Water Resources \(DWR\) Water Data Library](#) (WDL).

Water quality results in this report provide baseline chemical, field-measured water quality parameters, bacteriological, and continuous water temperature information with which to compare future and past monitoring data. The data within this report can play a role in water resource management in California.

Under ongoing SWCMP agreements, DWR has collected water quality data since 2008. On September 30, 2026, the current SWCMP agreement (Agreement Number 22-028-150) (Appendix G) will be terminated early because of budgetary constraints. Following termination of the agreement, DWR will no longer collect water quality data under the SWCMP.

1 INTRODUCTION

1.1 Background

1.1.1 DWR's Northern Region Office Water Quality Program

DWR has monitored water quality throughout Northern California since its formation in 1956. Water quality data had been collected previously by DWR's water quality predecessor, the Division of Water Resources of the Department of Public Works, since the early 1900s. Water quality data collected by DWR is used by a wide range of individuals, public and private agencies, and is ultimately the foundation on which these agencies base water development planning and management decisions. Long-term water quality data can be used to identify changes in water quality over time or to determine water quality impacts from catastrophic events (e.g., flood, drought, wildfire, landslides, etc.) and human-related activities. Water quality monitoring under the SWCMP helps determine if water quality meets objectives established by the Central Valley Water Board in their Water Quality Control Plan for the Sacramento and San Joaquin River Basin (California Regional Water Quality Control Board 2019). Although continued budget reductions to DWR programs have forced the DWR Northern Region Office to scale back their monitoring efforts during the past decade, the SWCMP has allowed DWR to maintain a monitoring network in the Sacramento River watershed and accordingly help the Central Valley Water Board assess the effectiveness of regulatory actions to improve water quality conditions in those water bodies identified as *impaired*.

1.1.2 Sacramento River Watershed

The Sacramento River is the longest and largest river in California, extending 327 miles (526 kilometers) with an annual average stream flow volume of 22 million acre-feet (27 cubic kilometers) (U.S. Geological Survey 2011). The Sacramento River watershed covers 27,000-square-miles and includes the Sacramento Valley, Sacramento-San Joaquin Delta, and portions of the Coast Ranges, Cascade Ranges, Klamath Ranges, and the Sierra Nevada (California Department of Water Resources 2009a). The Feather, Yuba, American, and Pit rivers are major tributaries to the Sacramento River, although numerous creeks and smaller rivers also contribute a substantial volume of water to the Sacramento River. Several dams exist on the Sacramento River and its tributaries, which allow water storage and flood protection but also block historical migration routes of anadromous fish.

Climate varies across the Sacramento River watershed. Watershed elevations range from sea level to over 14,000 feet on Mount Shasta in the Southern Cascade Mountains. Annual precipitation ranges from 15 inches in drier portions of the Sacramento Valley to more than 80 inches in montane areas. Most precipitation in the Sacramento River watershed occurs as rain and snow November through March (California Department of Water Resources 2009a). The accumulation of snow in higher elevations during cool and moist winters helps to alleviate the predictably dry summer conditions that characterize California's Mediterranean-type climate. Cities, farms, and some natural ecosystems depend on the gradual release of water from snowmelt and are thus vulnerable to altered climate patterns under climate change.

The Sacramento River watershed is very important to California's economy. Large areas of the Sacramento Valley are dedicated to irrigated agriculture and urban development. Both agricultural and urban land-uses are concentrated in the Sacramento Valley; with Yolo, Placer, and Sacramento counties representing the most urbanized portions of the Sacramento River watershed (California Department of Water Resources 2009a). Dams on major tributaries to the Sacramento River provide flood protection and water storage, and a complex system of water diversions and canals (e.g., Anderson-Cottonwood Irrigation District, Glenn-Colusa Irrigation District, Tehama-Colusa Canal Authority, etc.) transfers water to agricultural and municipal users throughout the state. The Sacramento River watershed contributes water to the federal Central Valley Project and the California State Water Project, both of which redistribute water from Northern California reservoirs to farms and urban areas across much of the state.

1.1.3 Sacramento Watershed Coordinated Monitoring Program

To continue DWR's important water quality data collection in the face of budgetary restrictions, a coordinated monitoring program was initiated between the Central Valley Water Board and DWR's Northern Region Office to continue water quality data collection in the Sacramento River watershed. The SWCMP was designed to coincide with many of DWR's historical water quality stations, although several new stations, which are of interest to the Central Valley Water Board, have been added. Although the Sacramento River watershed continues to the Sacramento-San Joaquin Delta and includes inputs from such water bodies as Cache Creek and the American River, the southernmost limit of monitoring for the SWCMP occurs just downstream of the confluence of the Sacramento and Feather rivers, near the town of Verona in Sutter County.

DWR staff prepared the SWCMP Monitoring Plan and are responsible for coordinating and performing the sampling events, including providing

sampling equipment, recording field observations, and ensuring delivery of samples to appropriate analytical laboratories (California Department of Water Resources 2009a). The Central Valley Water Board is responsible for providing containers for their own processing of bacteria, bioassessment, and water-column toxicity samples when these are collected.

1.1.4 Water Data Library

Because of the evolving importance and scope of water quality regulations in California, the public are provided with easily accessible, current, and defensible water quality data through DWR's Water Data Library (WDL). Water-chemistry results, field-measured parameters, and continuous water-temperature data can be queried and downloaded from the WDL (<http://www.water.ca.gov/waterdatalibrary/>).

Data for samples processed by the Central Valley Water Board can be queried and downloaded from the California Environmental Data Exchange Network (CEDEN; <https://ceden.waterboards.ca.gov/>).

1.2 SWCMP Goals and Objectives

The SWCMP supports long-term water quality monitoring within the Sacramento River watershed and helps address Clean Water Act Sections 303(d) and 305(b) reporting requirements. Section 303(d) identifies impaired water bodies that do not meet water quality standards, while Section 305(b) evaluates overall surface water quality conditions to support water resource management decisions.

The primary goals of the SWCMP are to:

- Conduct ambient water quality monitoring using standardized sampling, analytical, and quality assurance and quality control (QA/QC) methods.
- Document water quality conditions in both reference and potentially impaired watersheds.
- Identify water quality problems and evaluate the effectiveness of regulatory and management programs.
- Develop long-term datasets that support trend analysis and watershed assessment.

Water quality monitoring under the SWCMP provides the data used to evaluate whether stream and river conditions are improving or degrading

over time and whether current management activities are protecting beneficial uses and aquatic habitat.

The SWCMP also supports broader statewide water management objectives, including the California Water Action Plan and the California Department of Water Resources Strategic Plan, by providing data that support watershed protection, habitat restoration, and long-term water resource management.

1.3 Anticipated Use of This Report

The purpose of this report is to describe the SWCMP water quality monitoring and summarize ambient water quality data for the Sacramento River watershed for the period of May 2022 through November 2025. SWAMP staff and other interested parties can use these data as baseline information to track changes in water quality over time. These data can be viewed in conjunction with SWAMP biological community datasets to support environmentally sound management actions.

2 MONITORING DESIGN

This section describes the monitoring design, including monitoring locations, sampling methods, and measured water quality parameters. Discrete surface water samples are collected as representative grab samples using approved field methods and equipment appropriate for site conditions and target analytes, including dip samplers and direct sample container collection methods. Samples are collected from representative locations within the waterbody while minimizing disturbance to the substrate. Samples are composited in a bulk container and homogenized, as appropriate, and filtered prior to laboratory analysis in accordance with DWR Standard Operating Procedure (SOP) DWR-1-SOP-004, *Discrete Water Quality Sample Collection*.

2.1 Monitoring Stations

Between 2022 and 2025, 53 stations were monitored for the SWCMP (Figure 2.1-1 and Table 2.1). Monitoring station selection was based on several factors including accessibility, historical data collection, and hydrography. For all station locations, safety and all-weather access were priorities. On occasion, sampling locations were modified slightly to account for access issues or staff safety and these changes were documented. Wherever possible, stations were selected that had established county, state, or U.S. Geological Survey gaging stations, as these are usually associated with historical water quality and flow data. For hydrographic considerations, stations were identified in major tributaries to the Sacramento River, excluding Cache Creek and the American River, to quantify the potential effects of specific subwatersheds (described as subregions) on Sacramento River water quality. Many stations are located at the primary discharge point of these tributaries, while some are located high in the watershed near headwater locations. Some stations are located along the mainstem of the Sacramento River, typically upstream of major tributary inputs, while other stations are paired so that a station exists above and below areas of significant human activity, such as urban development, agriculture, or point-source discharges. Monitoring stations were selected to provide representative watershed conditions. Additional information on sampling design can be found in the Surface Water Ambient Monitoring Program Quality Assurance Program Plan (State Water Resources Control Board 2022).

Figure 2-1 Sacramento River Watershed by Subregion.

This figure illustrates the locations of the 53 monitoring stations within each of the four subregions sampled between 2022 and 2025 as part of the Sacramento Watershed Coordinated Monitoring Program (SWCMP).

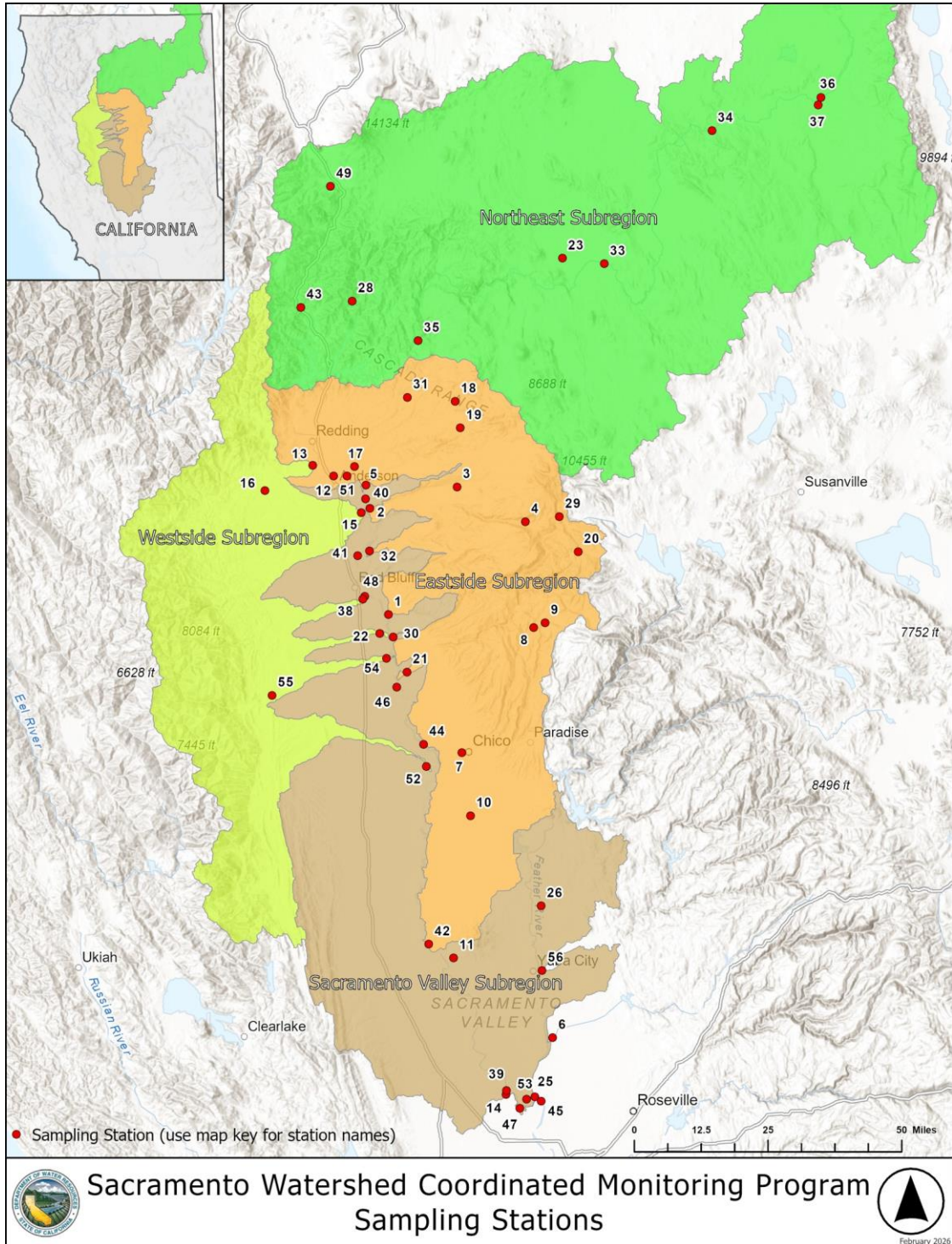


Table 2-1 SWCMP Station Reference Table.

This table (map key) corresponds to Figure 2-1 for identifying monitoring stations, and includes station names, identifiers, and associated monitoring locations sampled between 2022 and 2025 as part of the SWCMP.

Map #	Subregion	Station Name	Station Number	Longitude	Latitude
1	Eastside	Antelope Creek near mouth near Red Bluff	A0452050	-122.1168	40.1032
2	Eastside	Battle Creek at Jellys Ferry Road Bridge	A4708000	-122.1786	40.3920
3	Eastside	Battle Creek North Fork near Manton	A4712000	-121.8681	40.4471
4	Eastside	Battle Creek South Fork near Mineral	A4730000	-121.6279	40.3505
5	Eastside	Bear Creek at Parkville Road	A0408000	-122.1911	40.4548
7	Eastside	Big Chico Creek at Chico	A0425000	-121.8631	39.7272
8	Eastside	Big Chico Creek at Highway 32	A4216000	-121.6053	40.0634
9	Eastside	Butte Creek at Butte Meadows	A4150000	-121.5639	40.0754
10	Eastside	Butte Creek downstream Western Canal Siphon	A0416000	-121.8364	39.5557
12	Eastside	Churn Creek near Anderson	A0079000	-122.3068	40.4808
17	Eastside	Cow Creek near Millville	A4811000	-122.2322	40.5053
18	Eastside	Cow Creek Old above Killarc	A4844800	-121.8715	40.6792
19	Eastside	Cow Creek South at Campground	A4855500	-121.8540	40.6068
20	Eastside	Deer Creek at Deer Station	A4317700	-121.4431	40.2666
21	Eastside	Deer Creek at Highway 99E near Vina	A0432101	-122.0532	39.9471
29	Eastside	Mill Creek near Mineral	A4418000	-121.5075	40.3626
30	Eastside	Mill Creek near mouth near Los Molinos	A0442050	-122.0999	40.0430
31	Eastside	Oak Run Creek near Oak Run	A4820000	-122.0419	40.6915
32	Eastside	Paynes Creek at Paynes Crossing	A0460200	-122.1814	40.2758
51	Eastside	Stillwater Creek near Anderson	A0079500	-122.2589	40.4798
23	Northeast	Fall River at Glenburn	A1723000	-121.4811	41.0624
28	Northeast	McCloud River above Shasta Lake	A2215000	-122.2347	40.9542
33	Northeast	Pit River at Pittville	A1127000	-121.3318	41.0456
34	Northeast	Pit River near Canby	A1168000	-120.9350	41.3998
35	Northeast	Pit River near Montgomery Creek	A1102000	-122.0009	40.8450
36	Northeast	Pit River North Fork at Alturas	A1210000	-120.5386	41.4820
37	Northeast	Pit River South Fork near Alturas	A1415000	-120.5500	41.4612
43	Northeast	Sacramento River at Delta	A2130000	-122.4189	40.9382
49	Northeast	Sacramento River near Mt. Shasta	A2160000	-122.3094	41.2652

Map #	Subregion	Station Name	Station Number	Longitude	Latitude
6	Sacramento River Valley	Bear River near mouth	A6501050	-121.5608	38.9512
11	Sacramento River Valley	Butte Slough near Meridian	A0297200	-121.9014	39.1711
14	Sacramento River Valley	Colusa Basin Drain at Knights Landing	A0294710	-121.7251	38.7994
25	Sacramento River Valley	Feather River near Verona	A5101050	-121.6261	38.7911
26	Sacramento River Valley	Honcut Creek at Highway 70	A0571001	-121.5938	39.3088
39	Sacramento River Valley	Sacramento River above CBD near Knights Landing	A0223002	-121.7233	38.8093
40	Sacramento River Valley	Sacramento River at Balls Ferry	A0281500	-122.1934	40.4176
41	Sacramento River Valley	Sacramento River at Bend Bridge	A0278500	-122.2230	40.2639
42	Sacramento River Valley	Sacramento River at Colusa	A0242000	-121.9872	39.2091
44	Sacramento River Valley	Sacramento River at Hamilton City	A0263000	-121.9980	39.7511
45	Sacramento River Valley	Sacramento River at Verona	A0215000	-121.6040	38.7798
46	Sacramento River Valley	Sacramento River at Woodson Bridge	A0270000	-122.0893	39.9064
47	Sacramento River Valley	Sacramento River below Knights Landing	A0219501	-121.6783	38.7606
48	Sacramento River Valley	Sacramento River below Red Bluff	A0275890	-122.1991	40.1536
53	Sacramento River Valley	Sutter Bypass at RD-1500 Powerplant	A0292700	-121.6543	38.7852
56	Sacramento River Valley	Yuba River near mouth	A6101050	-121.5939	39.1337
13	Westside	Clear Creek near mouth near Redding	A3601000	-122.3800	40.5092
15	Westside	Cottonwood Creek near mouth	A0350500	-122.2095	40.3805
16	Westside	Cottonwood Creek North Fork near Igo	A0354500	-122.5505	40.4417
22	Westside	Elder Creek near mouth	A0332000	-122.1483	40.0522
38	Westside	Red Bank Creek upstream Tehama Colusa Canal	A02540025	-122.2068	40.1463
52	Westside	Stony Creek near mouth	A0290000	-121.9881	39.6906
54	Westside	Thomes Creek at Hall Road near Richfield	A0321800	-122.1247	39.9850
55	Westside	Thomes Creek at Paskenta	A0350000	-122.5289	39.8872

2.1.1 Subregions

For the purposes of analysis and interpretation, sampling stations were grouped into four geographic subregions within the Sacramento River watershed: the Northeast, Eastside, Sacramento Valley, and Westside subregions. These subregions reflect broad differences in watershed geography, hydrology, and land use that influence water quality and ecological conditions across the basin. Tributaries and river reaches within each subregion share similar geographic settings, drainage patterns, and watershed characteristics, allowing sampling results to be evaluated within a more consistent regional context. These subregions represent distinct portions of the Sacramento River watershed, such as mountain headwaters, valley-floor waterways, and tributaries draining the Coast Range and Cascade foothills.

The Northeast Subregion includes Fall River, McCloud River, Pit River, and the upper Sacramento River above Shasta Lake.

The Eastside Subregion includes Antelope Creek near mouth, Battle Creek, Bear Creek, Big Chico Creek, Butte Creek, Churn Creek, Cow Creek, Deer Creek, Mill Creek, Oak Run Creek, Paynes Creek, and Stillwater Creek.

The Sacramento Valley Subregion includes the lower Bear River, Butte Slough, Colusa Basin Drain, the Feather River below Lake Oroville, Honcut Creek, the Sacramento River below Shasta Dam, the Sutter Bypass, and the lower Yuba River.

The Westside Subregion includes Clear Creek, Cottonwood Creek, Elder Creek, Red Bank Creek, Stony Creek, and Thomes Creek.

A watershed summary for each of these subregions is provided in the Monitoring Results section (Chapter 4) of this report.

2.2 Sampling Methods

The SWCMP sampling design included annual quarterly monitoring conducted every February, May, August, and November. By collecting water quality samples at the same time every year, data were consistent and comparable between years. The quarterly sampling design also captured water quality conditions during winter runoff (February), spring snowmelt (May), dry-season conditions (August), and irrigation runoff periods (August and November).

Field data, which include multi-parameter water quality meter readings, water temperature data logger notes, and general field observations

(weather, flows, water characteristics, etc.), were recorded on SWAMP-compatible field sheets. These notes were useful in determining the cause of atypical results from laboratory water quality assays. Field sheets were later checked for quality assurance and then scanned to PDF format and archived electronically after being returned to the office. All habitat observations recorded on field sheets are available on the CEDEN, and field measurements of basic water quality parameters are published on the WDL. See tables 2-2 through 2-5 for all water quality parameters measured for the SWCMP.

2.3 Water Quality Parameters

Monitoring data included analytical water chemistry, field-measured water quality parameters, bacteriological indicators, and continuous water temperature monitoring.

Water chemistry included a suite of analytes tested for in-laboratory assays. Field-measured water quality parameters included water temperature, dissolved oxygen levels, turbidity, specific conductance, and pH. A subset of samples was delivered directly to the Central Valley Water Board for bacteriological analysis. Continuous temperature data were recorded by temperature data loggers at 15-minute intervals.

2.3.1 Water Chemistry

DWR analyzed a broad suite of physical, chemical, and biological parameters at its in-house Bryte Laboratory located in West Sacramento, California. For select constituents not analyzed at the Bryte Laboratory, DWR utilized a contracted analytical laboratory (Weck Laboratories, Incorporated, City of Industry, California) to perform the required analyses. In addition, DWR collected supplemental water samples for water chemistry assays that were not required under the SWCMP (Table 2-2).

During the reporting period, the Weck Laboratories contract for certain nutrient analyses concluded prior to the November 2025 quarterly sampling event. As a result, analyses for Total Organic Nitrogen and Total Ammonia were discontinued, as these parameters could not be performed by Bryte lab. However, Bryte lab was able to perform analysis of Total Kjeldahl Nitrogen for the November 2025 sampling event, a parameter that had previously been performed by the Weck lab. This transition ensured continuity in the TKN dataset, while Total Organic Nitrogen and Total Ammonia data are not available for the final quarter of the reporting period.

Water samples for chemical analyses were collected using EPA-approved sample collection methods defined in the Surface Water Ambient Monitoring Program quality assurance program plan (State Water Resources Control

Board 2022). Samples were collected from moving water, targeting representative portions of a stream. Samples were immediately placed in chilled coolers and transported to an appropriate lab within the hold-time of the sample. Results of water chemistry assays, once reviewed for completeness and accuracy, were uploaded to DWR's WDL.

This table summarizes water chemistry constituents analyzed by DWR Bryte Laboratory. Analytical period: May 2022–November 2025. It should be noted that Total Kjeldahl Nitrogen (TKN) was analyzed by Bryte only during the November 2025 quarter.

Analytes marked with an asterisk (*) represent the minimum constituents required for monitoring under the SWCMP Agreement (Agreement No. 22-028-150). In addition to these required constituents, DWR collected and analyzed a broader suite of constituents (analytes not marked with an asterisk) during each sampling event, exceeding the minimum monitoring requirements established under the agreement.

Table 2-2 Water Chemistry Constituents

Method Name	Method Title	Analyte	Units
EPA 200.8 (D)	ICP/MS Trace Elements (Dissolved)	*Dissolved Aluminum	µg/L
EPA 350.1 (D)	Ammonia, Nitrogen (Dissolved)	*Dissolved Ammonia	mg/L as N
EPA 200.8 (D)	ICP/MS Trace Elements (Dissolved)	Dissolved Antimony	µg/L
EPA 200.8 (D)	ICP/MS Trace Elements (Dissolved)	*Dissolved Arsenic	µg/L
EPA 200.8 (D)	ICP/MS Trace Elements (Dissolved)	Dissolved Barium	µg/L
EPA 200.8 (D)	ICP/MS Trace Elements (Dissolved)	Dissolved Beryllium	µg/L
EPA 200.7 (D)	ICP Metals and Trace Elements (Dissolved)	Dissolved Boron	mg/L
EPA 200.8 (D)	ICP/MS Trace Elements (Dissolved)	Dissolved Cadmium	µg/L
EPA 200.7 (D)	ICP Metals and Trace Elements (Dissolved)	Dissolved Calcium	mg/L
EPA 300.0	Inorganic Anions by Ion Chromatography	Dissolved Chloride	mg/L
EPA 200.8 (D)	ICP/MS Trace Elements (Dissolved)	Dissolved Chromium	µg/L
EPA 200.8 (D)	ICP/MS Trace Elements (Dissolved)	*Dissolved Copper	µg/L

Method Name	Method Title	Analyte	Units
Std Method 2340 B	Hardness By Calculation (Dissolved)	*Dissolved Hardness	mg/L as CaCO ₃
EPA 200.8 (D)	ICP/MS Trace Elements (Dissolved)	*Dissolved Iron	µg/L
EPA 200.8 (D)	ICP/MS Trace Elements (Dissolved)	*Dissolved Lead	µg/L
EPA 200.7 (D)	ICP Metals and Trace Elements (Dissolved)	Dissolved Magnesium	mg/L
EPA 200.8 (D)	ICP/MS Trace Elements (Dissolved)	*Dissolved Manganese	µg/L
EPA 200.8 (D)	ICP/MS Trace Elements (Dissolved)	*Dissolved Nickel	µg/L
Std Method 4500-NO ₃ F	Nitrate + Nitrite (Dissolved)	*Dissolved Nitrate + Nitrite	mg/L as N
Std Method 5310 C (D)	Organic Carbon (Dissolved) by Wet Oxidation	*Dissolved Organic Carbon	mg/L as C
EPA 365.1	Orthophosphate (Dissolved)	*Dissolved Orthophosphate	mg/L as P
EPA 200.7 (D)	ICP Metals and Trace Elements (Dissolved)	Dissolved Potassium	mg/L
EPA 200.8 (D)	ICP/MS Trace Elements (Dissolved)	Dissolved Selenium	µg/L
EPA 200.8 (D)	ICP/MS Trace Elements (Dissolved)	Dissolved Silver	µg/L
EPA 200.7 (D)	ICP Metals and Trace Elements (Dissolved)	Dissolved Sodium	mg/L
EPA 300.0	Inorganic Anions by Ion Chromatography	Dissolved Sulfate	mg/L
EPA 200.8 (D)	ICP/MS Trace Elements (Dissolved)	*Dissolved Zinc	µg/L
Std Method 2510-B	Specific Conductivity	Specific Conductance	µmhos/cm@25 °C
Std Method 2320 B	Alkalinity	*Total Alkalinity	mg/L as CaCO ₃
EPA 200.8 (T)	ICP/MS Trace Elements (Total)	Total Aluminum	µg/L
EPA 200.8 (T)	ICP/MS Trace Elements (Total)	Total Antimony	µg/L
EPA 200.8 (T)	ICP/MS Trace Elements (Total)	Total Arsenic	µg/L
EPA 200.8 (T)	ICP/MS Trace Elements (Total)	Total Barium	µg/L
EPA 200.8 (T)	ICP/MS Trace Elements (Total)	Total Beryllium	µg/L

Method Name	Method Title	Analyte	Units
EPA 200.8 (T)	ICP/MS Trace Elements (Total)	Total Cadmium	µg/L
EPA 200.8 (T)	ICP/MS Trace Elements (Total)	Total Chromium	µg/L
EPA 200.8 (T)	ICP/MS Trace Elements (Total)	Total Copper	µg/L
Std Method 2540 C (DWR Mod)	Total Dissolved Solids, DWR Modified Filtration	Total Dissolved Solids	mg/L
EPA 200.8 (T)	ICP/MS Trace Elements (Total)	Total Iron	µg/L
EPA 351.2	Total Kjeldahl Nitrogen	Total Kjeldahl Nitrogen	mg/L as N
EPA 200.8 (T)	ICP/MS Trace Elements (Total)	Total Lead	µg/L
EPA 200.8 (T)	ICP/MS Trace Elements (Total)	Total Manganese	µg/L
EPA 200.8 (T)	ICP/MS Trace Elements (Total)	Total Nickel	µg/L
Std Method 5310 C (T)	Organic Carbon (Total) by Wet Oxidation	*Total Organic Carbon	mg/L as C
EPA 365.4	Phosphorus (Total)	*Total Phosphorus	mg/L as P
EPA 200.8 (T)	ICP/MS Trace Elements (Total)	Total Selenium	µg/L
EPA 200.8 (T)	ICP/MS Trace Elements (Total)	Total Silver	µg/L
Std Method 2540 D	Total Suspended Solids	*Total Suspended Solids	mg/L
EPA 200.8 (T)	ICP/MS Trace Elements (Total)	Total Zinc	µg/L

Table 2-3 Constituents analyzed by Weck Laboratories from May 2022 through August 2025

Parameter	Units	Method	Collection Period
*Organic Nitrogen, Total	Mg/L	Various	May 2022 – August 2025
*Ammonia as N	Mg/L	EPA 350.1	May 2022 – August 2025
*Total Kjeldahl Nitrogen	Mg/L	EPA 351.2	May 2022 – August 2025

2.3.2 Field-Measured Water Quality

Field-measured water quality parameters consisted of instantaneous measurements collected in situ using portable water quality monitoring equipment (Table 2-4). A multi-parameter YSI ProDSS meter was used to

measure water temperature (degrees Celsius [$^{\circ}\text{C}$]), specific conductance (SPC; microsiemens per centimeter [$\mu\text{S}/\text{cm}$]), pH, dissolved oxygen (milligrams per liter [mg/L]), and turbidity (formazin nephelometric units [FNU]). Field data were uploaded to DWR's WDL and may be reviewed in conjunction with laboratory-analyzed water chemistry results.

Table 2-4 Water Quality Field Measurements

This table illustrates water quality field measurements recorded at the time of sample collection using a YSI ProDSS multiparameter water quality meter.

Field Parameter	Units	Instrument
*Temperature	$^{\circ}\text{C}$	YSI ProDSS
*Dissolved Oxygen	mg/L	YSI ProDSS
*Specific Conductance	$\mu\text{S}/\text{cm}$ at 25°C	YSI ProDSS
*pH	pH units	YSI ProDSS
*Turbidity	FNU	YSI ProDSS

Field parameters marked with an asterisk (*) represent the minimum constituents required for monitoring under the SWCMP Agreement (Agreement No. 22-028-150).

2.3.3 Bacteria

The presence of coliform bacteria can be used as an indicator of water sanitary condition. Coliforms are a diverse group of bacteria, and although most strains are harmless, their presence signals potential contamination from fecal pollution. *Escherichia coli* (*E. coli*), a group of coliform bacteria commonly used for water quality monitoring, are found in the intestines of people and other animals.

Bacteria samples were collected at every SWCMP station during sampling events and analyzed for water-borne *E. coli* and total coliform bacteria. Bacteria samples were collected in sterile containers supplied by the Central Valley Water Board and were delivered on the day they are collected for processing at either the Redding or Rancho Cordova Central Valley Water Board office.

Results for *E. coli* were reported as most probable number (MPN) per 100 mL. The MPN is a statistical method used to estimate the number of viable microorganisms living in a test sample. Bacteria data were uploaded to the State Water Board's CEDEN.

Table 2-5 Bacteria Indicators

This table summarizes water quality bacteria indicators collected by DWR staff and analyzed by Central Valley Regional Water Quality Control Board staff.

Parameter	Units	Method	Analyzing Entity
Total Coliform	MPN/100 mL	SM 9223B	Central Valley Water Board
<i>E. coli</i>	MPN/100 mL	SM 9223B	Central Valley Water Board

2.3.4 Continuous Temperature Data

Water temperature was continuously recorded using Onset HOB0 Pendant MX temperature data loggers deployed near the streambank and secured to fixed cables. Temperature measurements were logged at 15-minute intervals and downloaded quarterly during sampling events. Collected data were uploaded to the DWR's WDL.

3 SWCMP QUALITY ASSURANCE/ QUALITY CONTROL

The quality assurance/quality control (QA/QC) process involved multiple levels of checks and oversight that ensured accurate data collection, consistent sample collection methods, prevention of contamination, and identification of sampling errors. Adaptive management resulted in an evolving sample collection procedure, and QA/QC processes were periodically refined to report only the most accurate water quality data. The QA/QC process for SWCMP is described in detail below.

3.1 Field Data Sheet Review

Field data sheets (see Figure 3-1 for an example field sheet) were reviewed for completeness by both field personnel and the QA/QC officer. The QA/QC officer addressed and corrected discrepancies, when possible, by consulting with field personnel and by reviewing station photographs. Unexplained discrepancies were documented by field staff on site or after data review. Explanations for stations that were not sampled (e.g., dry waterbody, safety concerns, no access, etc.) and unretrieved water temperature data loggers (e.g., missing or inaccessible) were also documented on field sheets. Field measured data were entered manually into DWR's Field and Laboratory Information Monitoring System (FLIMS) database then transferred to the WDL.

Figure 3-1 Example SWAMP Field Observations Data Sheet

SWAMP Field Observations Data Sheet										Event Type	WQ	Entered in e-base (initial/date)	5/14/25	CS	Page	1	of	1	Pages					
SAMPLE COLLECTOR	FLIMS Station Code	A0290000		Station Name	Story Creek at The Nature Conservancy																			
	Personnel	C. Brockman		SWAMP Station Code	S04GLE001																			
SAMPLE SITE DESCRIPTION	Sample Time (first sample)	1020		(PST)	Agency	DWR-NRO				Date	5/13/25		Funding											
	Purpose	SWAMP Water Quality				Project	SWAMP				Group													
DEVICE INFO	Occupation Method	☒ Bank				☐ Bridge				☐ From Dock				☐ Research Vessel				☐ Other						
	Collection Location	☒ Bank				☐ Midchannel				☐ Thalweg				☐ Open Water				Record where you are standing while collecting the sample.						
	Starting Bank	☒ Left Bank				☐ Right Bank				NA				Determine while facing downstream, if sampling midchannel, select NA.				Record if there is an IMMEDIATE (within range, potentially affecting sample) hydromodification, and the location of the hydromodification relative to the sample location. If there is no hydromodification, NA is appropriate.						
	Hydromodification Type	☒ None				☐ Bridge				☐ Pipes				☐ Concrete Channel				☐ Dam						
SITE OBSERVATIONS	Hydromod Location	UpStream				Down Stream				Within Sample Boundary				☒ NA										
	GPS Device	iPhone 14				Actual Latitude								+/- ft				Record Actual GPS coordinates and note if a different device is used.						
	Datum	NAD 83				Actual Longitude								Elevation				Target Latitude: 29.08437 Target Longitude: -121.96908						
	Picture Code	None				1				2				3				4						
SITE OBSERVATIONS	Individual Bottles Collected By	Pole				☒ Hand				Pole & boater				Other				Record number of photos taken. Our standard practice is to take three pictures: upstream, downstream, & bank to bank. Describe any additional photos.						
	Dominant Land Use	☒ Forest				☐ Range				☐ Suburban/Town				☐ Urban/Industrial				☐ Other						
	Animal Presence	☒ None				☐ Wildlife				☐ Domestic				☐ Birds				Record the presence of animals, including signs such as tracks, scat or sound. State note of species, animal and number. Wildlife includes feral, fawn, deer, etc.						
	Water Color	☒ Green				☐ Yellow				☐ Brown				☐ Gray				☐ Black						
	Dominant Substrate	☒ Bedrock				☐ Concrete				☐ Boulder				☒ Gravel				☐ Sand						
	Evidence of Fire	☒ None				☐ <1 year				☐ <5 years				☐ >5 years				Describe the DOMINANT substrate type, use unknown if you can't tell.						
	Observed Flow	☒ Water Flowing				☐ Trickle				☐ Isolated Pool				☐ Dry Waterbody Bed				☐ No Observed Flow						
	Observed Channel Flow	☒ Low				☒ Normal				☐ High				☐ Flood				Record if there is visual evidence of fire at or near the sample location.						
	Water Odor	☒ None				☐ Sulfides (e.g. rotten eggs)				☐ Sewage				☐ Petroleum				☐ Manure						
	Site Odor	☒ None				☐ Sulfides (e.g. rotten eggs)				☐ Sewage				☐ Petroleum				☐ Manure						
	Other Presence	☒ None				☐ Foam				☐ Trash				☐ Oil Sheen				☐ Vascular						
	Precipitation	☒ None				☐ Fog				☐ Drizzle				☐ Rain				☐ Snow						
	Overcast (last 24 hrs)	☒ None				☐ Light				☐ Moderate to Heavy				☐ Unknown				Record if there is evidence of recent rain at the site. Light refers to light rain with no overcast runoff and Moderate/Heavy refers rain results in overcast runoff.						
	Sky Code	☒ Partly Cloudy				☐ Overcast				☐ Fog				☐ Smoky				☐ Hazy						
	Wadeability	☒ Yes				☐ No				☐ Unknown								Enter your safety wade across the water body at the point of sample. Also note if you have access to both sides of the water body.						
	Water Clarity	☒ See bottom				☐ Cloudy (>4" visibility)				☐ Murky (<4" visibility)								This section rates the clarity of the water while standing "stream side". You can use a sampling pole or wade to judge visibility.						
FIELD MEASUREMENTS	Wind Direction	N / S / E / W				Beaufort Scale				0				Use scale 0-8				Refer to scales listed on separate sheet.						
	NRODSS #	5				Date/Time of Calibration				5/12/25 0900														
	Filter Kit #	5				Measurements Collected				Subsurface														
	DO calibration completed before the first measurement of the day?																☒ N							
	Temp (°C)	SpC (µS/cm)	DO (mg/L)	pH	Turbidity (FNU)	Measurements (Units)																		
	19.1	297.7	10.33	8.39	1.13	List all decimal places displayed on handheld and report average in decimal place format below.																		
	19.1	297.8	10.34	8.39	1.15																			
	19.1	297.8	10.34	8.39	1.13																			
	19.1	298	10.34	8.39	1.14	AVG																		
	1	2	3	4	5	Reported Decimal Places																		
SAMPLES	All field data entered is complete and accurate (Initial) →																Field Lead: CS				QA Lead:			
	HOB0 Logger Status: ☒ No logger at site																							
	☒ In water ☐ Partially in water ☐ Out of water ☒ Buried ☐ Partially buried																							
	☐ Downloaded/full battery/re-deployed ☒ Downloaded/low battery																							
☐ Not turning on ☐ Missing ☐ Stuck ☐ Flows too high/couldn't access																								
☒ Replaced with a new logger (SN): 21989209																								
Additional Notes:																								
Logger fully buried in sediment																								
Logger removed 5/N: 21681827																								

3.2 Multi-parameter Water Quality Meters

YSI ProDSS multi-parameter water quality meters were calibrated and maintained in accordance with DWR-1-SOP-003, *Calibration and Maintenance for Multi-Parameter Water Quality Instruments*. Calibration procedures included routine cleaning, inspection, sensor maintenance, and verification using certified calibration standards appropriate for each parameter being measured. Instruments were calibrated prior to field use, with dissolved oxygen being calibrated daily during use, and other parameters verified or calibrated according to established calibration frequency requirements. Calibration records, standard lot numbers, expiration dates, and post-measurement checks were documented as part of routine QA/QC procedures to evaluate instrument performance and sensor drift (See Figures 3-2 and 3-3 for example pre-calibration and post-calibration forms). Temperature measurements were verified using National Institute of Standards and Technology (NIST) traceable thermometers to ensure measurement accuracy and consistency.

Figure 3-2 Example Discrete Pre-Measurement Calibration Drift Form

Discrete Pre-Measurement Calibration Drift Form

CA Department of Water Resources

This form is intended to calculate calibration drift from a previous run while calibrating for an upcoming run.

Instrument ID: NRODSS-3

Calibration Date: 05/12/25

Calibration Time: 14:45

Performed By: Sigurdson

Followed SOP version: 2.0

Run Used On: SWCMP A1W2D2

Run Start Date: 05/14/25

Verification (QC) Instruments		Calibration Standards	Lot #	Exp Date
NIST Thermometer S/N	240605665	Turbidity	24L24016066	6/1/2025
NIST Ther. Cal Due Date	08/07/26	Conductance	240826	09/01/25
NIST Barometer S/N	CP307751	pH 7	3GH0997	08/01/25
NIST Baro. Cal. Due Date	12/30/26	pH 10	241127	6/1/2026
		pH 4	44080275	07/24/26

Wiper activated during process? ☐

		Standard	Pre-Cal	Post-Cal	Cal Error	Data Rating
Specific Conductance (dry)	µS/cm	0.0	-0.6		0.6	N/A
Water Temperature	°C	18.93	18.9		0.03	Excellent
Chlorophyll in DIW	RFU	0.00	NA	NA	#VALUE!	N/A
Chlorophyll in DIW	µg/L	0.00	NA	NA	#VALUE!	N/A
Blue Green Algae in DIW	RFU	0.00	NA	NA	#VALUE!	N/A
Blue Green Algae in DIW	µg/L	0.00	NA	NA	#VALUE!	N/A
Turbidity in DIW - Low	FNU	0.0	0	0	0	Excellent
Turbidity in Std. - High	FNU	124	124.41	123.99	-0.41	
Specific Conductance in Std.	µS/cm	1000	982	1000	1.83%	Excellent
pH 7*	Units	7	7.08	7	-0.08	Excellent
pH 10*		4	4.07	4	-0.07	
pH 4		10	10.14	10.01	-0.14	
Dissolved Oxygen	%Sat	98.4%	97.2%	98.5%	1.18%	N/A
Dissolved Oxygen	mg/L	9.14	9.03	9.15	0.11	Excellent
					1.25%	

Barometric Pressure (mmHg):	747.7
Temperature in DO bucket (°C):	18.89

*pH 7 mV:	-43.1	Deltaslope (pH 7 mV - pH 10 mV)
*pH 10 mV:	-211.4	

DO %Sat = Local Baro Pressure / 7.6

Ideal range 160-180 mV, replace module if slope < 155 mV

Specific Conductance Cell Constant	5.2
ODO Gain	1.04

Calibrate depth to 0 feet ☐

Verify sufficient battery voltage ☐

Comments	
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DWR-1-FRM-050

Figure 3-3 Example Discrete Post-Measurement Calibration Drift Form

Discrete Post-Measurement Calibration Drift Form CA Department of Water Resources For sampling runs less than 14 days/month, calibration drift is documented within <u>72 hours</u> of final measurement.						
Instrument ID: <u>NRODSS-3</u>						
Post-Measurement Date: <u>05/15/25</u>		Followed SOP version: <u>2.0</u>				
Post-Measurement Time: <u>15:30</u>		Run Used On: <u>SWCMP A1W2D2</u>				
Performed By: <u>Sigurdson</u>		Run Dates (From - To): <u>05/14/25</u> <u>05/14/25</u>				

Verification (QC) Instruments		Calibration Standards	Lot #	Exp Date
NIST Thermometer S/N	240605665	Turbidity	24L24016066	6/1/2025
NIST Ther. Cal. Due Date	08/07/26	Conductance	240826	09/01/25
NIST Barometer S/N	CP307751	pH 7	3GH0997	08/01/25
NIST Baro. Cal. Due Date	12/30/26	pH 10	241127	6/1/2026
		pH 4	44080275	07/24/26

Wiper activated during process? ☐

		Post-Measurement		Calibration Error	Average Error	Data Rating
		Standard	Sonde			
Specific Conductance (dry)	µS/cm	0.0	-0.5	0.5		N/A
Water Temperature	°C	19.63	19.62	0.01		Excellent
Chlorophyll in DIW	RFU	0.00	NA	#VALUE!		N/A
Chlorophyll in DIW	µg/L	0.00	NA	#VALUE!		N/A
Blue Green Algae in DIW	RFU	0.00	NA	#VALUE!		N/A
Blue Green Algae in DIW	µg/L	0.00	NA	#VALUE!		N/A
Turbidity in DIW - Low	FNU	0.0	0.02	-0.02		Excellent
Turbidity in Std. - High	FNU	124	123.13	0.87		
Specific Conductance in Std.	µS/cm	1000	1027	-2.63%		Excellent
pH 7*	Units	7	6.94	0.06		Excellent
pH 10*		4	3.95	0.05		
pH 4		10	10	0		
Dissolved Oxygen	%Sat	98.6%	104.9%	-6.26%		N/A
Dissolved Oxygen	mg/L	9.03	9.6	-0.57		Good
				-5.89%		

Barometric Pressure (mmHg):	749.7
Temperature in DO bucket (°C):	19.62

*pH 7 mV:	-40.5	Delta slope (pH 7 mV - pH 10 mV)
*pH 10 mV:	-211.5	171

DO %Sat = Local Baro Pressure / 7.6 Ideal range 160-180 mV, replace module if slope < 155 mV

Comments	
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DWR-1-FRM-049

3.2.1 Duplicate Sample Collection

A total of five duplicate samples were collected per quarterly sampling event. Each duplicate sample was collected, filtered, transported, and submitted to the lab identically to the associated parent sample. The results were then evaluated by calculating the relative percent difference (RPD) between the normal (parent) sample and its associated duplicate value for each analyte (Figure 3-4). Lower RPD values indicate better agreement and greater analytical precision between the paired samples. When a parent sample and its associated duplicate had a RPD greater than or equal to 20 percent, the duplicate sample QA/QC check was considered to have failed for that analyte, and the accuracy of all samples collected with that duplicate were flagged for each analyte affected. Failure of the duplicate sample QA/QC check can be attributed to a variety of factors, including contaminated equipment, inconsistent sampling procedure, and heterogeneity of the waterbody being sampled.

Figure 3-4 Equation used to determine Relative Percent Difference (RPD)

$$RPD, \% = abs \left(\frac{Sample\ 1 - Sample\ 2}{\left(\frac{Sample\ 1 + Sample\ 2}{2} \right)} \right) * 100$$

3.2.2 Blank Sample Evaluation

Field blanks and equipment blanks were collected as part of routine quality control procedures to evaluate the potential for sample contamination during sample collection, processing, handling, and transport. Field blanks were prepared using laboratory-grade deionized water at the sampling site and were used to assess contamination from ambient environmental conditions and sample handling procedures. Equipment blanks were collected by processing deionized water through filter kits to verify that cleaning and decontamination procedures were effective and that equipment was free from contamination prior to use. Blank samples were collected, preserved, stored, and analyzed using the same procedures as environmental samples in accordance with DWR-1-SOP-004, *Discrete Water Quality Sample Collection*.

3.3 Data Completeness Calculation

Percent complete is a measure of the amount of good data collected compared to the maximum expected amount, which indicates the ability of the program to reliably assess water quality (California Department of Water Resources 2009b). For each analyte, the percent complete was calculated as the number of samples

that passed a QA/QC check divided by the total number of samples that should have been collected, multiplied by 100.

3.4 Continuously Recorded Water Temperature Data

Water temperature was recorded by using continuous temperature data loggers, such as an Onset Hobo Pendant MX Water Temperature Data Logger, each attached to a cable near the stream bank. Temperature was logged at 15-minute intervals and downloaded quarterly during sampling events. Under certain circumstances, such as data collection in intermittent streams or in locations subject to vandalism or theft, continuous data logging was not consistent or obtainable. All recorded temperature data were quality controlled and assessed through the time-series data management program Hydstra, a hydrology software application. Suspicious data were flagged with various quality codes (e.g., unreliable data, dry/no flow, missing data). The resulting reliable data were then uploaded to the WDL for public viewing.

All temperature loggers undergo a temperature accuracy verification (TAV) process prior to deployment in accordance with DWR-1-SOP-004 v4.0 *Thermometer Accuracy Verification*. Loggers are tested against a NIST-certified reference thermometer under controlled conditions to confirm measurement accuracy. Only loggers with readings within ± 0.2 °C of the reference thermometer are approved for field deployment. Verification results are documented and maintained as part of the program's quality assurance procedures.

3.5 Review of Water Quality Data and Laboratory Quality Control Reports

Water quality field and laboratory quality data underwent a comprehensive review and quality control process in accordance with applicable DWR SOPs and Best Practices guidance documents, including DWR-1-BST-001, *Discrete Water Quality Data Review Best Practices*; DWR-1-BST-002, *Laboratory Quality Control Data Review Best Practices*; and DWR-1-BST-005, *Outlier Detection Test Best Practices*.

Field measurements and laboratory analytical results were reviewed for completeness, accuracy, proper units, transcription errors, calibration compliance, holding times, preservation requirements, reporting limits, and consistency with expected environmental conditions. Laboratory quality control data, including laboratory reagent blanks, laboratory control samples, matrix spikes, matrix spike duplicates, and laboratory duplicates, were evaluated to assess analytical precision, accuracy, contamination, and overall laboratory performance.

Laboratory quality control reports were reviewed to monitor the laboratory's internal QA/QC process. The batch numbers and number of blanks were

documented. Each data report was carefully reviewed to ensure that RPDs were less than or equal to 20 percent, dissolved analytes were less than their respective totals, and outliers were identified. Internal laboratory quality control is available upon request.

Quality control review also included verification of instrument calibration records, post-measurement calibration checks, field blanks, equipment blanks, duplicate samples, and associated metadata and chain-of-custody documentation. Data were evaluated for potential anomalies and outliers using multiple lines of evidence, including historical trends, expected constituent ranges, and statistical screening tools. Statistical outlier evaluation included application of the Z-score method to identify values that deviate substantially from surrounding observations or expected distributions while recognizing that unusual values may represent valid environmental conditions and require further subject matter review prior to qualification or rejection.

3.6 QA/QC Methods and Tools: RStudio

All water quality chemistry data were processed and analyzed in RStudio using custom R scripts developed for this project. The scripts automated data cleaning, QA/QC review, statistical summaries, detection of outliers using Z-scores, evaluation of duplicate sample RPDs, identification of blank contamination, verification of dissolved versus total concentrations, and screening for regulatory exceedances. A random QC audit was also performed by comparing a subset of raw laboratory results to summarized outputs to verify data accuracy and integrity.

Continuous water temperature data were processed in RStudio using a custom Hydstra 7-Day Average Daily Maximum (7DADM) processing script. The script automated import of Hydstra exports, filtering of quality-assured observations, calculation of daily maximum and 7DADM temperatures, evaluation of data completeness, identification of data gaps, calculation of days exceeding United States Environmental Protection Agency (U.S. EPA) Region 10 salmonid temperature criteria (13 °C, 16 °C, 18 °C, and 20 °C), and generation of summary tables and hydrographs for reporting (U.S. EPA 2003).

Bacteria monitoring data were analyzed in RStudio using a custom script that automated data cleaning, summary table generation, completeness calculations, identification of *E. coli* single-sample maximum (STV) exceedances (>320 CFU/100 mL), and detection of statistical outliers using Z-scores. The script also calculated station-level exceedance frequencies and evaluated temporal trends in *E. coli* concentrations to support QA/QC review and regulatory screening.

Full copies of these R scripts are available upon request to DWR Northern Region Office Water Quality Section staff.

3.7 Data Validation, Archival, and Distribution

When the QA/QC process was complete, the data were made available to the public via the WDL at <http://www.water.ca.gov/waterdatalibrary/>. Currently, the WDL includes data that failed to meet all QA/QC checks because there was no ability to flag individual failed samples without removing an entire sample set. This issue was addressed by DWR staff providing a comment in the WDL under that sample set identifying which, if any, data failed to meet any QA/QC checks. An exception to this is the continuous temperature data, which DWR staff were able to QC before being posted to the WDL.

Some data analyzed by Weck Laboratory are not available on the WDL because the system Bryte Laboratory had in place to append these data to the WDL underwent system changes and can no longer be integrated. DWR Northern Region Office Water Quality Section staff will provide these data by request.

3.8 Corrective Action

Corrective action was necessary to address incorrect or missing data. When there were issues with data quality, the QA/QC officer followed up on these issues so that they were documented and corrected during future sampling efforts. When possible, the WDL was updated with relevant information involving sample quality. Corrective action includes modifications to the sample collection protocol, program design, analytical methodology, or QA/QC process.

4 MONITORING RESULTS AND DATA COMPLETENESS

This section summarizes monitoring data completeness and applicable exceedances for water quality samples collected during water years (WYs) 2022–2026. The WYs during the reporting period encompassed a broad range of hydrologic conditions from critically dry to wet. A water year classifies the 12-month period from October 1 through September 30 of the following year (California Department of Water Resources 2017). The water year is designated by the calendar year in which it ends.

During the four water years summarized in this section, hydrologic conditions in the Sacramento River watershed were highly variable. Water Year 2022 was classified as critically dry, reflecting continued drought conditions and suppressed runoff following multiple dry years. In contrast, Water Year 2023 was classified as wet, driven by a series of intense atmospheric river events that resulted in above-average precipitation, snowpack, and runoff across the watershed. Water Year 2024 was characterized by near-normal to above-normal conditions in the Sacramento River watershed, with runoff and reservoir storage remaining generally favorable following the exceptionally wet prior year. Water Year 2025 and the beginning of Water Year 2026 (monitoring concluded in November 2025) reflect near-normal conditions to date, with hydrologic responses influenced by spatial and temporal variability in precipitation across the basin.

Monitoring data completeness results are organized by watershed subregion. Each subregion is introduced with a watershed summary, followed by the corresponding monitoring data completeness, applicable regulatory exceedances, and observed trends. Completeness results include water chemistry, as well as DWR water chemistry assays not required under SWCMP, field measurements, bacteria indicators, and continuous water temperature.

A complete list of QA/QC'd laboratory analytical results, field measurements, and bacteria indicator results for all water quality parameters collected at all monitoring stations during the reporting period is provided in Appendix B.

Published water quality data (raw data) for each sample collection event are available through the Water Data Library at: <https://wdl.water.ca.gov/waterdatalibrary/WaterQualityDataLib.aspx>. To access SWCMP monitoring data, select "SAC R WS Coord. Monitoring Program" from the Project List within the search interface.

Continuous water temperature data are also available through the Water Data Library. From the main Water Data Library page, navigate to the continuous

monitoring data search interface, enter the applicable station number, choose the desired data range, and then download or view the resulting dataset.

4.1 Monitoring Data Presentation

The following subsections present monitoring results for each Subregion: Northeast, Eastside, Sacramento Valley, and Westside. For each subregion, summaries are provided for water chemistry, field measurements, bacteria indicators, data completeness (percent complete), and continuous water temperature monitoring.

Water chemistry summaries include data completeness and identification of stations and parameters that exceeded applicable regulatory benchmarks, including Maximum Contaminant Levels (MCLs), Secondary Maximum Contaminant Levels (SMCLs) (Central Valley Water Board 2023), and Aquatic Life criteria (U.S. EPA 2023), followed by a summary of observed trends. Table 2 in Appendix B lists the benchmarks and aquatic life criteria used for water quality evaluation.

Field measurement summaries include data completeness for measurements collected at the time of water quality sample collection, followed by a discussion of observed trends.

Bacteria indicator summaries include data completeness for *E. coli* and total coliform measurements, exceedances of the *E. coli* Statistical Threshold Value (STV), and a summary of observed trends. The 320 MPN/100 mL standard is a statistical threshold value (STV) that approximates the 90th percentile and is intended to be a value that should not be exceeded by more than ten percent of samples in a calendar month to protect recreational use of water (State Water Resources Control Board 2019).

Continuous water temperature summaries include data completeness, evaluation of 7-Day Average Daily Maximum (7DADM) temperatures, identification of stations exceeding applicable U.S. EPA Region 10 salmonid temperature criteria, and narrative summaries of observed conditions. U.S. EPA Region 10 recommends 7DADM temperature criteria to protect specific salmonid life stages and designated uses, including spawning and egg incubation (13 °C), core juvenile rearing (16 °C), salmonid rearing (18 °C), and migration corridors (20 °C) (U.S. EPA 2003). All data summarized in the tables have undergone quality review and include only data determined to be of acceptable quality.

Complete laboratory analytical results, field measurements, and bacteria indicators for all monitoring conducted during the reporting period are provided in Appendix B. Additional appendices containing thermograph plots (Appendix C) and quarterly continuous water temperature summaries (Appendix D) are referenced within the applicable subsections.

4.2 Northeast Subregion

The Northeast Subregion includes the Fall, McCloud, Pit, and upper Sacramento rivers upstream of Shasta Lake (Figure 4-1), draining forested and volcanic landscapes of the southern Cascade Range and Modoc Plateau (USGS 2019; University of California Agriculture and Natural Resources [UC ANR] 2020). Land use is primarily forest/public land (~60–70%), with rangeland (20–30%), limited agriculture (5–10%, mainly Fall River Valley), and minimal urban development (<5%) (UC ANR 2020).

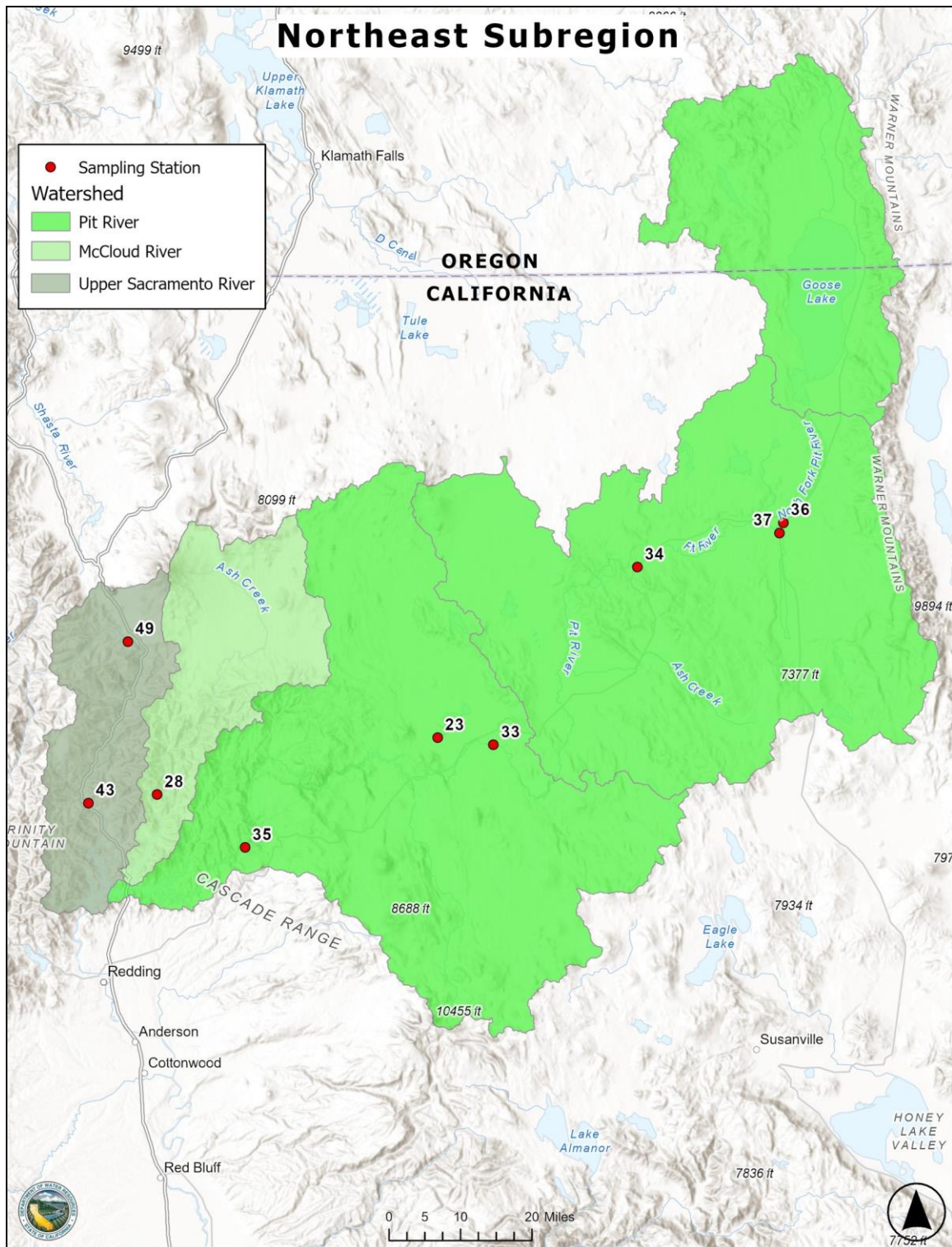
Hydrology is driven by both snowmelt and groundwater. Higher elevation basins (upper Sacramento, McCloud) are snowmelt-dominated, while Fall River is strongly spring-fed, resulting in stable flows and temperatures (USGS 2019; DWR 2023). Volcanic geology promotes groundwater recharge and sustained baseflow, particularly in the Fall River system (USGS 2019).

These watersheds support important cold-water fisheries, including salmon and steelhead downstream from Shasta Dam, as well as resident trout populations (CDFW 2021).

From WYs 2022–2025, watershed conditions were influenced by drought during WY 2022, followed by high precipitation and runoff during WY 2023 and subsequent wet periods during WYs 2024–2025 (NRCS 2022; DWR 2023b, 2024, 2025; NOAA 2023). These events increased streamflow, turbidity, and sediment transport in snowmelt-driven systems, while spring-fed systems remained relatively stable. Regional wildfire recovery (e.g., Dixie Fire) also influenced watershed conditions.

Figure 4-1 Map of the Northeast Subregion

This figure illustrates the major watersheds, and monitoring stations within the Northeast Subregion.



4.2.1 Northeast Subregion Water Chemistry

The following section presents a summary of water chemistry data completeness (Table 4-1) and regulatory water chemistry exceedances (Table 4-2).

Table 4-1 Northeast Subregion Water Chemistry Percent Complete

This table summarizes water chemistry data completeness for each monitoring station, including Station ID, Station Name, the expected and actual number of water chemistry constituents collected during the reporting period, and the resulting percent completeness.

Station ID	Station Name	Expected	Actual	Percent Complete
A1168000	Pit River at Canby	765	741	96.9
A2215000	McCloud River above Shasta Lake	765	740	96.7
A1127000	Pit River at Pittville	765	740	96.7
A2130000	Sacramento River at Delta	765	737	96.3
A2160000	Sacramento River near Mt. Shasta	765	735	96.1
A1415000	Pit River South Fork near Alturas	765	735	96.1
A1210000	Pit River North Fork at Alturas	765	727	95.0
A1723000	Fall River at Glenburn	765	711	92.9
A1102000	Pit River near Montgomery Creek	765	628	82.1

Table 4-2 Northeast Subregion Water Chemistry Exceedances

This table summarizes regulatory water chemistry exceedances for each monitoring station, including Station ID, Station Name, the number of exceedances that occurred during the reporting period, and the regulatory parameters that were exceeded.

Station ID	Station Name	Exceedances	Parameters Exceeded
A1168000	Pit River at Canby	43	Total Aluminum (MCL, SMCL); Total Iron (SMCL); Total Manganese (SMCL)
A1415000	Pit River South Fork near Alturas	43	Total Aluminum (MCL, SMCL); Total Arsenic (MCL); Total Iron (SMCL); Total Manganese (SMCL)
A1127000	Pit River at Pittville	39	Total Aluminum (MCL, SMCL); Total Iron (SMCL); Total Manganese (SMCL)
A1210000	Pit River North Fork at Alturas	33	Total Aluminum (MCL, SMCL); Total Iron (SMCL); Total Manganese (SMCL)

Station ID	Station Name	Exceedances	Parameters Exceeded
A2215000	McCloud River above Shasta Lake	9	Total Aluminum (MCL, SMCL); Total Iron (SMCL)
A1102000	Pit River near Montgomery Creek	8	Total Aluminum (MCL, SMCL); Total Iron (SMCL); Total Manganese (SMCL)
A2130000	Sacramento River at Delta	3	Total Aluminum (SMCL); Total Iron (SMCL)
A1723000	Fall River at Glenburn	2	Total Aluminum (SMCL); Total Iron (SMCL)
A2160000	Sacramento River near Mt. Shasta	1	Total Aluminum (SMCL)

Overall, the Northeast Subregion shows a clear split between high-quality spring-fed systems and more variable Pit River systems influenced by sediment and upstream inputs. Stations such as Fall River, McCloud River above Shasta Lake, and Sacramento River near Mt. Shasta consistently reflect good water quality, with low dissolved metals (often less than the laboratory reporting limit (<RL)), low nutrients, and stable major ion chemistry. Total aluminum at these sites remains low (generally <100 µg/L), indicating minimal sediment influence.

In contrast, Pit River at Canby, Pit River at Pittville, and South Fork Pit River show consistent exceedance trends for total aluminum and iron, with total aluminum reaching into the hundreds to >1,000 µg/L (e.g., ~1,810 µg/L at Canby). Dissolved aluminum is also elevated (e.g., 191–417 µg/L), indicating both particulate and dissolved contributions. These patterns are persistent across sampling events.

A downstream improvement trend is observed at Pit River near Montgomery Creek where metals decrease likely due to dilution and settling in numerous reservoirs. Nutrients remain low across all stations.

4.2.2 Northeast Field Measurements

The following section summarizes field measurement data collected during sampling events, including data completeness (Table 4-3) and observed trends during the reporting period.

Table 4-3 Northeast Subregion Field Measurements Percent Complete.

This table summarizes field measurement data completeness for each monitoring station, including Station ID, Station Name, the expected and actual number of field measurements collected during the reporting period, and the resulting percent completeness.

Station ID	Station Name	Expected	Actual	Percent Complete (%)
A1723000	Fall River	75	74	98.7
A2215000	McCloud River Above Shasta Lake	75	73	97.3
A1210000	North Fork Pit River	75	74	98.7
A1168000	Pit River at Canby	75	74	98.7
A1127000	Pit River at Pittville	75	74	98.7
A1102000	Pit River Near Montgomery Creek	75	64	85.3
A2160000	Sacramento River Near Mt. Shasta	75	74	98.7
A2130000	Sacramento River at Delta	75	74	98.7
A1415000	South Fork Pit River	75	74	98.7

Field measurements showed generally stable conditions at spring-fed sites and greater variability in the Pit River system. Fall River and McCloud River exhibited low turbidity, neutral pH, and stable specific conductance. In contrast, Pit River stations (Canby, Pittville, South Fork) periodically exhibited elevated turbidity and conductivity, particularly during higher flow conditions. These patterns align with elevated metals and indicate sediment mobilization and runoff influence in the Pit River watershed.

4.2.3 Northeast Bacteria Indicators

This section presents bacteria indicator data completeness for *E. coli* and total coliform measurements (Table 4-4), followed by exceedances of the *E. coli* Statistical Threshold Value (STV) (Table 4-5) and a summary of observed trends.

Table 4-4 Northeast Subregion Bacteria Indicators Percent Complete

This table summarizes bacteria indicator data completeness for each monitoring station, including Station ID, Station Name, the expected and actual number of bacteria indicator measurements collected during the reporting period, and the resulting percent completeness.

Station ID	Station Name	Expected	Actual	Percent Complete
A1723000	Fall River at Glenburn	30	30	100.0
A2215000	McCloud River above Shasta Lake	30	30	100.0
A1210000	Pit River North Fork at Alturas	30	30	100.0
A1168000	Pit River at Canby	30	30	100.0
A1127000	Pit River at Pittville	30	30	100.0
A2130000	Sacramento River at Delta	30	30	100.0
A1415000	Pit River South Fork near Alturas	30	30	100.0
A2160000	Sacramento River near Mt. Shasta	30	29	96.7
A1102000	Pit River near Montgomery Creek	30	24	80.0

Table 4-5 Northeast Subregion *E. coli* Exceedances

This table summarizes *E. coli* Statistical Threshold Value (STV) exceedances for each monitoring station, including Station ID, Station Name, the number of exceedances that occurred during the reporting period, and the parameters that exceeded the STV benchmark (>320 MPN/100 mL).

Station ID	Station Name	Exceedances	Parameters Exceeded
A1127000	Pit River at Pittville	1	<i>E. coli</i> (STV)
A1415000	Pit River South Fork near Alturas	2	<i>E. coli</i> (STV)

Bacteria results show STV exceedances (*E. coli* >320 MPN/100 mL) at Pit River at Pittville, and South Fork Pit River, with peak values up to ~675 MPN/100 mL. Total coliform was consistently elevated at these stations (often >2,400 MPN/100 mL) and more persistent than *E. coli*.

Exceedances were episodic and occurred during higher flow conditions (November sampling events), though the peak value ~675 MPN/100 mL occurred during an August sampling event.

4.2.4 Northeast Subregion Percent Complete

The tables below show the overall percent complete by station (Table 4-6) and the subregion (4-7) for water chemistry, field measurements, and bacteria indicators.

Table 4-6 Northeast Subregion Station Percent Complete

This table summarizes overall monitoring data completeness for each monitoring station, including Station ID, Station Name, the total expected and actual number of water chemistry, field measurement, and bacteria indicator results collected during the reporting period, and the resulting percent complete.

Station ID	Station Name	Expected	Actual	Percent Complete
A1168000	Pit River at Canby	870	844	97.0
A1127000	Pit River at Pittville	870	844	97.0
A2215000	McCloud River above Shasta Lake	870	843	96.9
A2130000	Sacramento River at Delta	870	841	96.7
A1415000	Pit River South Fork near Alturas	870	839	96.4
A2160000	Sacramento River near Mt. Shasta	870	838	96.3
A1210000	Pit River North Fork at Alturas	870	831	95.5
A1723000	Fall River at Glenburn	870	815	93.7
A1102000	Pit River near Montgomery Creek	870	716	82.3

Table 4-7 Northeast Subregion Station Percent Complete

This table summarizes overall monitoring data completeness for the Northeast Subregion, including subregion name, the total expected and actual number of water chemistry, field measurement, and bacteria indicator results collected across all monitoring stations during the reporting period, and the resulting percent completeness.

Subregion	Expected	Actual	Percent Complete
Northeast Subregion	7830	7411	94.6

4.2.5 Northeast Continuous Water Temperature

Continuous water temperature data summarized in the tables below have been reviewed and include only data determined to be of good quality. Table 4-8 summarizes overall data completeness and Table 4-9 summarizes salmonid temperature threshold exceedances.

Table 4-8 Northeast Subregion Continuous Water Temperature Percent Complete

This table summarizes continuous water temperature data completeness for each monitoring station, including Station ID, Station Name, the start date of logger deployment, the end date representing the last recorded reading during the reporting period, the resulting percent completeness, and the 7-Day Average Daily Maximum (7DADM) temperatures recorded during the reporting period.

Station ID	Station Name	Start Date	End Date	Percent Complete	Max 7DADM Temp (C)	Min 7DADM Temp (C)
A2215000	McCloud River above Shasta Lake	5/3/2022	11/4/2025	90.1	19.3	4.3
A2130000	Sacramento River at Delta	5/3/2022	11/4/2025	87.2	25.1	4.0
A2160000	Sacramento River near Mt Shasta	5/3/2022	11/4/2025	79.7	15.0	3.9
A1723000	Fall River at Glenburn	5/4/2022	11/5/2025	92.9	22.4	4.5
A1168000	Pit River near Canby	5/4/2022	11/5/2025	77.2	27.8	1.1
A1415000	Pit R South Fork near Alturas	5/4/2022	11/5/2025	75.3	29.7	1.2
A1102000	Pit River near Montgomery Creek	5/4/2022	11/5/2025	75.2	21.4	3.9
A1127000	Pit River at Pittville	5/4/2022	11/5/2025	71.0	28.4	1.3
A1210000	Pit River North Fork at Alturas	5/4/2022	11/5/2025	67.0	30	1.0

Continuous temperature percent complete ranged from 67% at the North Fork Pit River sampling station to nearly 93% at Fall River at Glenburn. The primary reason for missing data at all locations was logger batteries dying prematurely and/or logger malfunctions (water infiltration) because of field battery swaps. Staff addressed this issue by replacing loggers with low/dead batteries in the laboratory, rather than changing the batteries in the field.

Table 4-9 Northeast Subregion Continuous Water Temperature Exceedances.

This table summarizes EPA Region 10 salmonid temperature criterion exceedances based on 7-Day Average Daily Maximum (7DADM) temperatures recorded during the reporting period. The table includes Station ID, Station Name, and the number of days the calculated 7DADM exceeded the applicable salmonid temperature criteria of 13 °C, 16 °C, 18 °C, and 20 °C. Exceedances were determined by comparing daily 7DADM values to the corresponding U.S. EPA Region 10 criterion thresholds (U.S. EPA 2003).

Station ID	Station Name	Days >13 C	Days >16 C	Days >18 C	Days >20 C
A2130000	Sacramento River at Delta	470	368	280	191
A2160000	Sacramento River near Mt Shasta	344	0	0	0
A2215000	McCloud River above Shasta Lake	541	303	123	0
A1102000	Pit River near Montgomery Creek	558	402	290	94
A1127000	Pit River at Pittville	479	395	338	301
A1168000	Pit River near Canby	558	473	433	376
A1210000	Pit River North Fork at Alturas	397	345	322	267
A1415000	Pit R South Fork near Alturas	450	372	341	283
A1723000	Fall River at Glenburn	629	461	330	182

Northeast stations exhibited frequent exceedances of the 13 °C criteria, while exceedances became less common at the higher temperature thresholds of 16 °C, 18 °C, and 20 °C. Cooler, spring-fed systems such as the Sacramento River near Mt. Shasta and McCloud River above Shasta Lake appeared to experience fewer exceedances of the higher temperature criteria, whereas several Pit River stations exhibited more frequent exceedances of the 18 °C and 20 °C thresholds.

4.3 Eastside Subregion

The Eastside Subregion includes tributaries such as Antelope, Battle, Butte, Deer, Mill, and Big Chico creeks (Figure 4-2), which primarily drain rangeland, agricultural, and forested landscapes along the western foothills of the Cascades and northern Sierra Nevada (UC ANR 2019; USGS 2018). Land use is dominated by rangeland (~40–50%) and agriculture (~25–35%), with forested uplands (20–30%) and minimal urban development (<5%) (UC ANR 2019). These land uses influence runoff, sediment transport, and nutrient inputs (USGS 2018; DWR 2023).

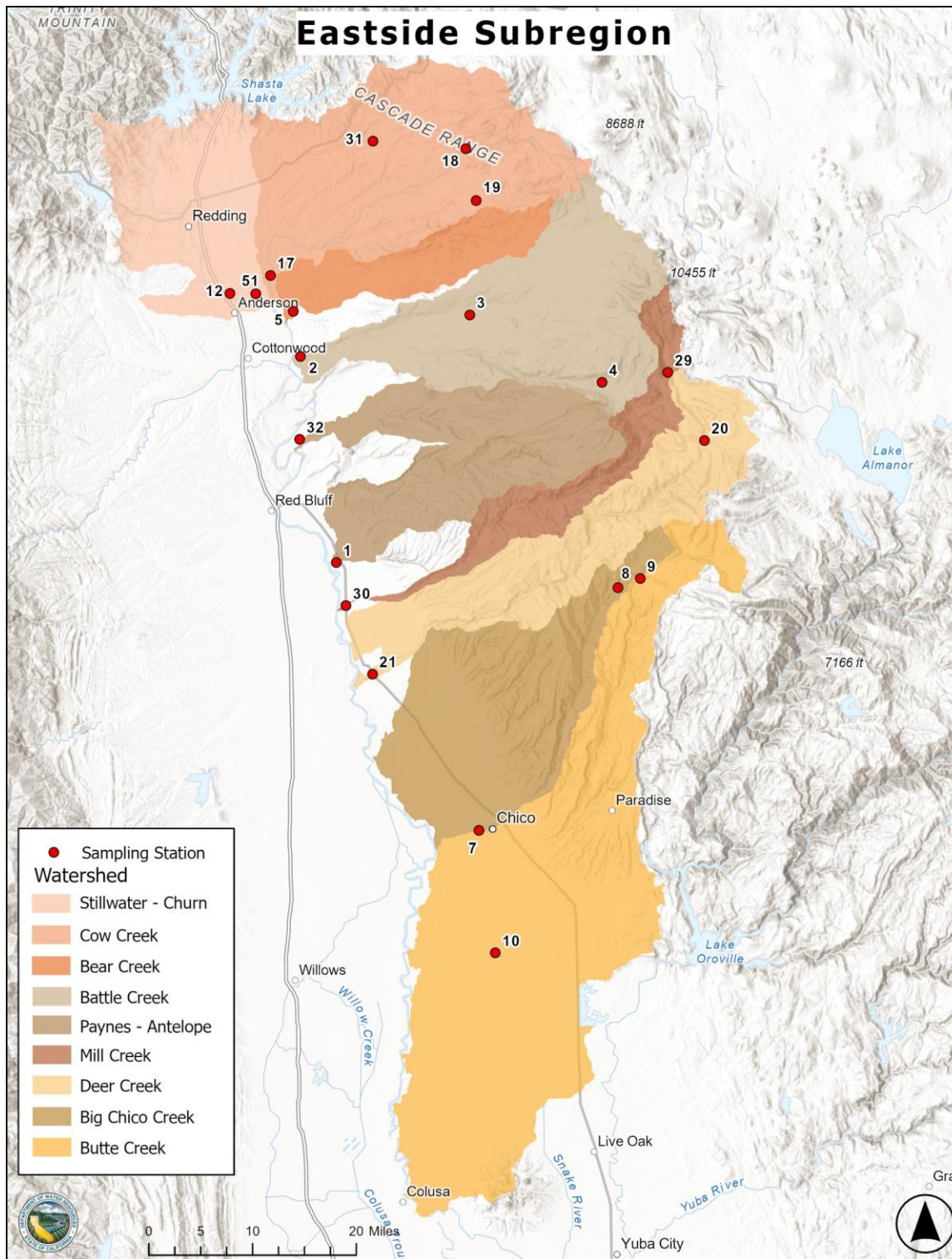
Hydrology is driven by winter precipitation and seasonal runoff, with higher elevations receiving greater precipitation and some snowmelt contribution (NRCS 2022). Several tributaries, including Battle, Butte, Deer, Mill, and Antelope creeks near their mouths, provide critical habitat for salmon and steelhead, supporting important spring-run Chinook populations (CDFW 2020).

Geology transitions from volcanic formations in the north to mixed volcanic, sedimentary, and metamorphic units in the Sierra foothills, influencing groundwater inputs, channel form, and sediment dynamics (USGS 2018; UC ANR 2019).

From WYs 2022–2025, watershed conditions were influenced by drought during WY 2022, followed by high precipitation and runoff during WY 2023 and subsequent wet periods during WYs 2024–2025 (NRCS 2022; DWR 2023b, 2024, 2025; NOAA 2023). These events increased streamflow, turbidity, and sediment transport (USGS 2023). Wildfire disturbance, such as the Park Fire (2024) and ongoing Dixie Fire recovery, also influenced watershed conditions through increased erosion and altered runoff (CAL FIRE 2024).

Figure 4-2 Map of the Eastside Subregion

This figure illustrates the major watersheds and monitoring stations within the Eastside Subregion.



4.3.1 Eastside Water Chemistry

The following section presents a summary of water chemistry data completeness (Table 4-10) and regulatory water chemistry exceedances (Table 4-11).

Table 4-10 Eastside Subregion Water Chemistry Percent Complete

This table summarizes water chemistry data completeness for each monitoring station, including Station ID, Station Name, the expected and actual number of water chemistry constituents collected during the reporting period, and the resulting percent completeness.

Station ID	Station Name	Expected	Actual	Percent Complete
A0416000	Butte Creek downstream Western Canal Siphon	765	747	97.6
A0432101	Deer Creek at Highway 99 E near Vina	765	745	97.4
A0442050	Mill Creek near mouth near Los Molinos	765	741	96.9
A4811000	Cow Creek near Millville	765	738	96.5
A0407000	Bear Creek near Anderson	306	295	96.4
A0408000	Bear Creek at Parkville Rd	459	442	96.3
A0452050	Antelope Creek near mouth	765	734	95.9
A4708000	Battle Creek at Jelly's Ferry Road Bridge	765	723	94.5
A4730000	Battle Creek South Fork near Mineral	765	702	91.8
A0425000	Big Chico Creek at Chico	765	692	90.5
A4150000	Butte Creek at Butte Meadows	765	692	90.5
A4317700	Deer Creek at Deer Station	765	692	90.5
A4216000	Big Chico Creek at Hwy 32	765	690	90.2
A4844800	Cow Creek Old above Killarc	765	688	89.9
A4855500	Cow Creek South at Campground	765	685	89.5
A4820000	Oak Run Creek near Oak Run	765	685	89.5
A4418000	Mill Creek near Mineral	765	682	89.2
A4708000	Battle Creek North Fork near Manton	765	660	86.3
A0079000	Churn Creek near Anderson	765	652	85.2
A0460200	Paynes Creek at Paynes Crossing	765	629	82.2
A0079500	Stillwater Creek near Anderson	765	334	43.7

Table 4-11 Eastside Subregion Water Chemistry Exceedances

This table summarizes regulatory water chemistry exceedances for each monitoring station, including Station ID, Station Name, the number of exceedances that occurred during the reporting period, and the regulatory parameters that were exceeded.

Station ID	Station Name	Exceedances	Parameters Exceeded
A4418000	Mill Creek near Mineral	36	Dissolved Arsenic (Aquatic); Total Aluminum (SMCL); Total Arsenic (MCL); Total Iron (SMCL); Total Manganese (SMCL)
A0442050	Mill Creek near mouth near Los Molinos	26	Total Aluminum (MCL, SMCL); Total Arsenic (MCL); Total Iron (SMCL); Total Manganese (SMCL)
A4820000	Oak Run Creek near Oak Run	23	Total Aluminum (MCL, SMCL); Total Iron (SMCL); Total Manganese (SMCL)
A0452050	Antelope Creek near mouth	19	Total Aluminum (SMCL); Total Arsenic (MCL); Total Iron (SMCL); Total Manganese (SMCL)
A4811000	Cow Creek near Millville	11	Total Aluminum (SMCL); Total Iron (SMCL)
A0416000	Butte Creek downstream Western Canal Siphon	10	Total Aluminum (SMCL); Total Iron (SMCL); Total Manganese (SMCL)
A0425000	Big Chico Creek at Chico	9	Total Aluminum (MCL, SMCL); Total Iron (SMCL); Total Manganese (SMCL)
A4844800	Cow Creek Old above Killarc	8	Total Aluminum (MCL, SMCL); Total Iron (SMCL); Total Manganese (SMCL)
A4216000	Big Chico Creek at Highway 32	7	Total Aluminum (MCL); Total Iron (SMCL); Total Manganese (SMCL)
A0460200	Paynes Creek at Paynes Crossing	7	Total Aluminum (MCLSMCL); Total Iron (SMCL); Total Manganese (SMCL)
A4708000	Battle Creek at Jelly's Ferry Road Bridge	6	Total Aluminum (MCLSMCL); Total Iron (SMCL); Total Manganese (SMCL)
A0408000	Bear Creek at Parkville Rd	6	Total Aluminum (MCLSMCL); Total Iron (SMCL); Total Manganese (SMCL)
A0079000	Churn Creek near Anderson	6	Total Aluminum (MCLSMCL); Total Iron (SMCL); Total Manganese (SMCL)

Station ID	Station Name	Exceedances	Parameters Exceeded
A0432101	Deer Creek at Highway 99 E near Vina	6	Total Aluminum (MCLSMCL); Total Iron (SMCL)
A0079500	Stillwater Creek near Anderson	6	Total Aluminum (MCLSMCL); Total Iron (SMCL); Total Manganese (SMCL)
A4708000	Battle Creek North Fork near Manton	5	Total Aluminum (SMCL); Total Iron (SMCL)
A4150000	Butte Creek at Butte Meadows	5	Total Aluminum (SMCL); Total Iron (SMCL)
A4317700	Deer Creek at Deer Station	5	Total Aluminum (MCLSMCL); Total Iron (SMCL); Total Manganese (SMCL)
A4730000	Battle Creek South Fork near Mineral	4	Total Aluminum (SMCL); Total Iron (SMCL)
A0407000	Bear Creek near Anderson	3	Total Aluminum (SMCL); Total Iron (SMCL)
A4855500	Cow Creek South at Campground	3	Total Aluminum (MCLSMCL); Total Iron (SMCL)

Overall, the Eastside Subregion reflects a transition from relatively stable upper watershed systems to more variable downstream creeks influenced by sediment transport, runoff, and watershed disturbance. Upper watershed stations such as Battle Creek, upper Deer Creek, and portions of upper Butte Creek generally exhibit lower nutrients, low dissolved metals, and stable major ion chemistry, with many dissolved metals frequently reported below RLs. In contrast, downstream systems such as Big Chico Creek, Mill Creek, Cow Creek, Oak Run Creek, and Stillwater Creek show persistent exceedance trends for total aluminum and iron associated with elevated suspended sediment during runoff events.

The strongest exceedance patterns occur at Big Chico Creek near Chico, where total aluminum reached ~33,200 µg/L and total iron reached ~14,500 µg/L during high-flow conditions, indicating substantial sediment mobilization. Elevated total aluminum was also observed at Stillwater Creek (~5,750 µg/L), Cow Creek near Killarc (~4,440 µg/L), and Mill Creek near Los Molinos (~2,490 µg/L). Dissolved aluminum concentrations were particularly elevated at Cow Creek near Millville, reaching up to ~6,600 µg/L, indicating both particulate and dissolved contributions.

Mill Creek and Oak Run Creek show recurring metals exceedances across multiple sampling events, suggesting persistent sediment-related water quality impacts. Arsenic exceedances occur intermittently at Antelope Creek near mouth and Mill Creek stations and appear localized rather than widespread throughout the subregion. Nutrients generally remain low across the Eastside Subregion despite elevated sediment-associated metals at several stations.

4.3.2 Eastside Field Measurements

The following section summarizes field measurement data collected during sampling events, including data completeness (Table 4-12) and observed trends during the reporting period.

Table 4-12 Eastside Subregion Field Measurements Percent Complete

This table summarizes field measurement data completeness for each monitoring station, including Station ID, Station Name, the expected and actual number of field measurements collected during the reporting period, and the resulting percent completeness.

Station ID	Station Name	Expected	Actual	Percent Complete
A0452050	Antelope Creek near mouth	75	75	100.0
A4708000	Battle Creek at Jellys Ferry Road Bridge	75	75	100.0
A0408000	Bear Creek at Parkville Rd	45	45	100.0
A0407000	Bear Creek near Anderson	30	30	100.0
A0416000	Butte Creek downstream Western Canal Siphon	75	75	100.0
A4811000	Cow Creek near Millville	75	75	100.0
A0442050	Mill Creek near mouth near Los Molinos	75	75	100.0
A0432101	Deer Creek at Highway 99 E near Vina	75	72	96.0
A4708000	Battle Creek North Fork near Manton	75	70	93.3
A4216000	Big Chico Creek at Highway 32	75	70	93.3
A0425000	Big Chico Creek at Chico	75	70	93.3
A4150000	Butte Creek at Butte Meadows	75	70	93.3
A4844800	Cow Creek Old above Killarc	75	70	93.3
A4855500	Cow Creek South at Campground	75	70	93.3
A4317700	Deer Creek at Deer Station	75	70	93.3
A4418000	Mill Creek near Mineral	75	70	93.3
A4820000	Oak Run Creek near Oak Run	75	70	93.3
A4730000	Battle Creek South Fork near Mineral	75	69	92.0
A0460200	Paynes Creek at Paynes Crossing	75	65	86.7
A0079000	Churn Creek near Anderson	75	63	84.0
A0079500	Stillwater Creek near Anderson	75	35	46.7

Field measurements show generally stable conditions at upstream forested and spring-influenced sites, with greater variability observed in downstream valley-transition systems. Battle Creek and upper Deer Creek stations consistently exhibit lower turbidity, neutral pH, and relatively stable specific conductance. In contrast, Big Chico Creek, Mill Creek, Cow Creek, Oak Run Creek, and Stillwater Creek periodically exhibit elevated turbidity and conductivity during higher-flow events,

corresponding closely with elevated total metals concentrations and indicating sediment mobilization and runoff influence.

Several smaller tributary stations experienced intermittent low-flow or dry conditions during late summer and fall monitoring events, limiting sample collection at some locations. Wildfire-related road closures and access restrictions also affected portions of the upper watershed monitoring network during the reporting period.

4.3.3 Eastside Bacteria Indicators

This section presents bacteria indicator data completeness for *E. coli* and total coliform measurements (Table 4-13), followed by exceedances of the *E. coli* Statistical Threshold Value (STV) (Table 4-14) and a summary of observed trends.

Table 4-13 Eastside Subregion Bacteria Indicators Percent Complete

This table summarizes the completeness of bacteria indicator data for each monitoring station, including Station ID, Station Name, the expected and actual number of bacteria indicator measurements collected during the reporting period, and the resulting percent complete.

Station ID	Station Name	Expected	Actual	Percent Complete
A0452050	Antelope Creek near mouth	30	30	100.0
A0408000	Bear Creek at Parkville Rd	18	18	100.0
A0407000	Bear Creek near Anderson	12	12	100.0
A0416000	Butte Creek downstream Western Canal Siphon	30	30	100.0
A4811000	Cow Creek near Millville	30	30	100.0
A0432101	Deer Creek at Highway 99 E near Vina	30	30	100.0
A0442050	Mill Creek near mouth near Los Molinos	30	30	100.0
A4708000	Battle Creek North Fork near Manton	30	28	93.3
A4730000	Battle Creek South Fork near Mineral	30	28	93.3
A4708000	Battle Creek at Jellys Ferry Road Bridge	30	28	93.3
A0425000	Big Chico Creek at Chico	30	28	93.3
A4844800	Cow Creek Old above Killarc	30	28	93.3
A4855500	Cow Creek South at Campground	30	28	93.3
A4418000	Mill Creek near Mineral	30	28	93.3
A4820000	Oak Run Creek near Oak Run	30	28	93.3
A4150000	Butte Creek at Butte Meadows	30	27	90.0
A4317700	Deer Creek at Deer Station	30	27	90.0
A0079000	Churn Creek near Anderson	30	26	86.7
A4216000	Big Chico Creek at Highway 32	30	25	83.3
A0460200	Paynes Creek at Paynes Crossing	30	24	80.0
A0079500	Stillwater Creek near Anderson	30	14	46.7

Table 4-14 Eastside Subregion *E. coli* Exceedances

This table summarizes *E. coli* Statistical Threshold Value (STV) exceedances for each monitoring station, including Station ID, Station Name, the number of exceedances that occurred during the reporting period, and the parameters that exceeded the STV benchmark (>320 MPN/100 mL).

Station ID	Station Name	Exceedances	Parameters Exceeded
A4820000	Oak Run Creek near Oak Run	12	<i>E. coli</i> (STV)
A0425000	Big Chico Creek at Chico	5	<i>E. coli</i> (STV)
A0452050	Antelope Creek near mouth	3	<i>E. coli</i> (STV)
A4730000	Battle Creek South Fork near Mineral	3	<i>E. coli</i> (STV)
A0408000	Bear Creek at Parkville Rd	2	<i>E. coli</i> (STV)
A0407000	Bear Creek near Anderson	2	<i>E. coli</i> (STV)
A4811000	Cow Creek near Millville	2	<i>E. coli</i> (STV)
A0442050	Mill Creek near mouth near Los Molinos	2	<i>E. coli</i> (STV)
A0460200	Paynes Creek at Paynes Crossing	2	<i>E. coli</i> (STV)
A4708000	Battle Creek at Jellys Ferry Road Bridge	1	<i>E. coli</i> (STV)
A0416000	Butte Creek downstream Western Canal Siphon	1	<i>E. coli</i> (STV)
A0079000	Churn Creek near Anderson	1	<i>E. coli</i> (STV)
A4317700	Deer Creek at Deer Station	1	<i>E. coli</i> (STV)
A0432101	Deer Creek at Highway 99 E near Vina	1	<i>E. coli</i> (STV)

Bacteria results show episodic but widespread STV exceedances (*E. coli* >320 MPN/100 mL) across the Eastside Subregion, particularly during wetter conditions and elevated flow events. The highest *E. coli* concentrations occurred at Oak Run Creek, Deer Creek at Deer Creek Station, and Big Chico Creek near Chico, each reaching approximately ~2,420 MPN/100 mL. Additional elevated concentrations were observed at Bear Creek near Anderson (~1,730 MPN/100 mL) and Cow Creek near Millville (~1,610 MPN/100 mL). Total coliform concentrations were also consistently elevated at several downstream and runoff-influenced stations, often exceeding 2,400 MPN/100 mL. Exceedances appear strongly associated with elevated turbidity and runoff conditions, indicating watershed inputs from sediment transport, livestock, wildlife, and storm-driven overland flow.

4.3.4 Eastside Subregion Percent Complete

The tables below show the overall percent complete by station (Table 4-15) and the subregion (Table 4-16) for water chemistry, field measurements, and bacteria indicators.

Table 4-15 Eastside Subregion Station Percent Complete

This table summarizes overall monitoring data completeness for each monitoring station, including Station ID, Station Name, the total expected and actual number of water chemistry, field measurement, and bacteria indicator results collected during the reporting period, and the resulting percent complete.

Station ID	Station Name	Expected	Actual	Percent Complete
A0416000	Butte Creek downstream Western Canal Siphon	870	852	97.9
A0432101	Deer Creek at Highway 99 E near Vina	870	847	97.4
A0442050	Mill Creek near mouth near Los Molinos	870	846	97.2
A4811000	Cow Creek near Millville	870	843	96.9
A0407000	Bear Creek near Anderson	348	337	96.8
A0408000	Bear Creek at Parkville Rd	522	505	96.7
A0452050	Antelope Creek near mouth	870	839	96.4
A4708000	Battle Creek at Jellys Ferry Road Bridge	870	826	94.9
A4730000	Battle Creek South Fork near Mineral	870	799	91.8
A0425000	Big Chico Creek at Chico	870	790	90.8
A4150000	Butte Creek at Butte Meadows	870	789	90.7
A4317700	Deer Creek at Deer Station	870	789	90.7
A4844800	Cow Creek Old above Killarc	870	786	90.3
A4216000	Big Chico Creek at Highway 32	870	785	90.2
A4855500	Cow Creek South at Campground	870	783	90.0
A4820000	Oak Run Creek near Oak Run	870	783	90.0
A4418000	Mill Creek near Mineral	870	780	89.7
A4708000	Battle Creek North Fork near Manton	870	758	87.1
A0079000	Churn Creek near Anderson	870	741	85.2
A0460200	Paynes Creek at Paynes Crossing	870	718	82.5
A0079500	Stillwater Creek near Anderson	870	383	44.0

Table 4-16 Eastside Subregion Percent Complete

This table summarizes overall monitoring data completeness for the Eastside Subregion, including subregion name, the total expected and actual number of water chemistry, field measurement, and bacteria indicator results collected across all monitoring stations during the reporting period, and the resulting percent completeness.

Subregion	Expected	Actual	Percent Complete
Eastside Subregion	17400	15579	89.5

4.3.5 Eastside Continuous Water Temperature

Continuous water temperature data summarized in the tables below have been reviewed and include only data determined to be of good quality. Table 4-17 summarizes overall data completeness and Table 4-18 summarizes salmonid temperature threshold exceedances.

Table 4-17 Eastside Subregion Continuous Water Temperature Percent Complete

This table summarizes continuous water temperature data completeness for each monitoring station, including Station ID, Station Name, the start date of logger deployment, the end date representing the last recorded reading during the reporting period, the resulting percent completeness, and the 7-Day Average Daily Maximum (7DADM) temperatures recorded during the reporting period.

Station ID	Station Name	Start Date	End Date	Percent Complete	Max 7DADM Temp (C)	Min 7DADM Temp (C)
A0452050	Antelope Creek near mouth near Red Bluff	5/10/2022	11/12/2025	78.8	27.6	8.0
A4708000	Battle Creek at Bridge	5/4/2022	11/5/2025	66.7	24.0	7.4
A4712000	Battle Creek North Fork near Manton	5/3/2022	11/4/2025	38.6	16.7	6.5
A4730000	Battle Creek South Fork near Mineral	5/4/2022	11/4/2025	88.7	24.7	0.2
A0408000	Bear Creek at Parkville Rd	11/7/2023	11/4/2025	75.0	34.0	5.8
A0407000	Bear Creek near Anderson	5/3/2022	11/7/2023	85.2	33.0	4.2
A0425000	Big Chico Creek at Chico	5/4/2022	11/4/2025	77.7	30.2	6.6
A4216000	Big Chico Creek at HWY 32	5/4/2022	11/4/2025	88.0	16.5	2.7
A4150000	Butte Creek at Butte Meadows	5/4/2022	11/4/2025	95.6	17.1	2.5
A0416000	Butte Creek below Western Canal	5/11/2022	11/13/2025	71.4	30.5	6.1

Station ID	Station Name	Start Date	End Date	Percent Complete	Max 7DADM Temp (C)	Min 7DADM Temp (C)
A0079000	Churn Creek near Anderson	5/3/2022	11/4/2025	60.3	24.6	7.5
A4811000	Cow Creek near Millville	5/3/2022	11/4/2025	67.9	36.2	6.3
A4844800	Old Cow Creek above Killarc	5/3/2022	11/4/2025	100.0	16.4	3.3
A4855500	Cow Creek South at Campground	5/3/2022	11/4/2025	49.1	21.0	2.9
A4317700	Deer Creek at Deer Station	5/4/2022	11/4/2025	77.6	21.2	2.5
A0432101	Deer Creek at HWY 99E near Vina	5/10/2022	11/12/2025	63.4	30.7	6.1
A4418000	Mill Creek near Mineral	5/4/2022	11/4/2025	93.7	23.6	4.8
A0442050	Mill Creek near mouth near Los Molinos	5/10/2022	11/12/2025	21.9	30.6	5.6
A4820000	Oak Run Creek near Oak Run	5/3/2022	11/4/2025	75.4	25.2	4.4
A0460200	Paynes Creek at Paynes Crossing	5/4/2022	11/5/2025	82.0	27.9	7
A0079500	Stillwater Creek near Anderson	5/3/2022	11/4/2025	39.3	31.2	6.5

Continuous temperature percent complete ranged from nearly 22% at Mill Creek near mouth near Los Molinos to 100% at Old Cow Creek above Killarc. Temperature data was difficult to consistently collect from the Mill Creek near its mouth near the Los Molinos sampling station because of extremely variable flows and channel migration between flood events. Missing data from other stations was primarily due to logger batteries dying prematurely and/or logger malfunctions (water infiltration) due to field battery swaps. Staff addressed this issue by replacing loggers with low/dead batteries, rather than changing the batteries in the field.

Table 4-18 Eastside Subregion Continuous Water Temperature Exceedances

This table summarizes EPA Region 10 salmonid temperature criterion exceedances based on 7-Day Average Daily Maximum (7DADM) temperatures recorded during the reporting period. The table includes Station ID, Station Name, and the number of days the calculated 7DADM exceeded the applicable salmonid temperature criteria of 13 °C, 16 °C, 18 °C, and 20 °C. Exceedances were determined by comparing daily 7DADM values to the corresponding U.S. EPA Region 10 criterion thresholds (U.S. EPA 2003).

Station ID	Station Name	Days >13 C	Days >16 C	Days >18 C	Days >20 C
A0452050	Antelope Creek near mouth near Red Bluff	769	559	440	351
A4708000	Battle Creek at Bridge	577	476	397	276
A4712000	Battle Creek North Fork near Manton	238	33	0	0
A4730000	Battle Creek South Fork near Mineral	415	337	209	116
A0408000	Bear Creek at Parkville Rd	388	341	318	300
A0407000	Bear Creek near Anderson	286	258	242	215
A0425000	Big Chico Creek at Chico	572	508	447	400
A4216000	Big Chico Creek at HWY 32	377	22	0	0
A4150000	Butte Creek at Butte Meadows	353	78	0	0
A0416000	Butte Creek below Western Canal	614	526	484	430
A0079000	Churn Creek near Anderson	565	499	423	359
A4811000	Cow Creek near Millville	572	511	472	426
A4844800	Old Cow Creek above Killarc	352	12	0	0

Station ID	Station Name	Days >13 C	Days >16 C	Days >18 C	Days >20 C
A4855500	Cow Creek South at Campground	225	70	42	15
A4317700	Deer Creek at Deer Station	508	345	191	40
A0432101	Deer Creek at HWY 99E near Vina	584	508	483	435
A4418000	Mill Creek near Mineral	542	419	317	181
A0442050	Mill Creek near mouth near Los Molinos	151	137	123	111
A4820000	Oak Run Creek near Oak Run	504	413	309	196
A0460200	Paynes Creek at Paynes Crossing	661	582	525	450
A0079500	Stillwater Creek near Anderson	271	226	202	189

Eastside stations exhibited frequent exceedances of the 13 °C criteria, with exceedances becoming less common at the higher temperature thresholds of 16 °C, 18 °C, and 20 °C. Higher-elevation and spring-influenced sites, such as North Fork Battle Creek, Big Chico Creek at Highway 32, Butte Creek at Butte Meadows, and Old Cow Creek above Killarc, appeared to experience relatively few exceedances of the higher temperature criteria, whereas lower-elevation streams and downstream monitoring locations generally exhibited more frequent exceedances of the 18 °C and 20 °C thresholds.

4.4 Sacramento Valley Subregion

The Sacramento Valley Subregion includes major waterways such as the Sacramento, Feather, and Yuba rivers (Figure 4-3), along with agricultural drainage systems (e.g., Colusa Basin Drain, Butte Slough) and flood bypasses (e.g., Sutter Bypass), all strongly influenced by flood control and water management infrastructure. Land use is dominated by irrigated agriculture (~65–75%), with managed wetlands (10–15%), urban areas (10–15%), and limited natural riparian habitat (<10%) (UC ANR 2019; DWR 2023).

Hydrology is highly regulated by major reservoirs (Shasta, Oroville, New Bullard's Bar) and flood control systems that control flow, convey floodwaters, and route agricultural return flows (DWR 2023). Seasonal precipitation drives winter runoff, while managed systems such as the Sutter Bypass provide flood protection and wetland habitat (NRCS 2023; UC ANR 2019).

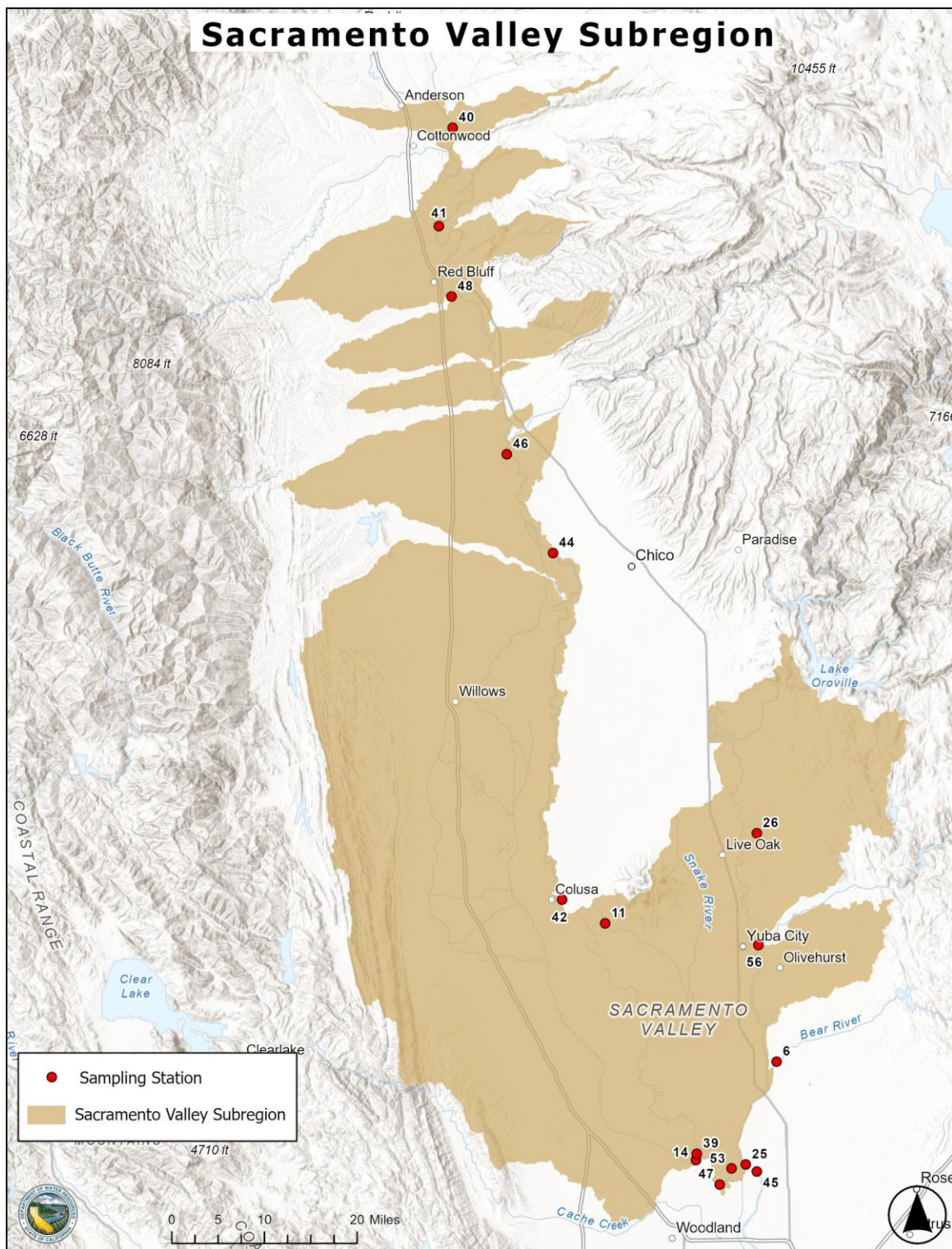
These waterways provide critical migration corridors and habitat for salmon and steelhead, particularly within the Sacramento, Feather, and Yuba rivers (CDFW 2020). Water quality is closely linked to upstream conditions, reservoir operations, and agricultural practices (USGS 2023; DWR 2023).

Geology consists primarily of alluvial deposits that support productive agricultural soils and low-gradient channels, promoting sediment deposition and floodplain inundation, though floodplain connectivity is largely managed through engineered systems (USGS 2018; UC ANR 2019; DWR 2023).

From WYs 2022–2025, watershed conditions were influenced by drought during WY 2022, followed by high precipitation and runoff during WY 2023 and subsequent wet periods during WYs 2024–2025 (NRCS 2022; DWR 2023b, 2024, 2025; NOAA 2023). Wildfire impacts in upstream watersheds (e.g., Park Fire and post-fire recovery from earlier events) also influenced sediment and runoff dynamics (CAL FIRE 2024).

Figure 4-3 Map of the Sacramento Valley Subregion

This figure illustrates the major watersheds and monitoring stations within the Sacramento Valley Subregion.



4.4.1 Sacramento Valley Water Chemistry

The following section presents a summary of water chemistry data completeness (Table 4-19) and regulatory water chemistry exceedances (Table 4-20).

Table 4-19 Sacramento Valley Subregion Water Chemistry Percent Complete

This table summarizes water chemistry data completeness for each monitoring station, including Station ID, Station Name, the expected and actual number of water chemistry constituents collected during the reporting period, and the resulting percent completeness.

Station ID	Station Name	Expected	Actual	Percent Complete
A0215000	Sacramento River at Verona	765	744	97.3
A0571001	Honcut Creek at Highway 70	765	743	97.1
A0270000	Sacramento River at Woodson Bridge	765	742	97.0
A0275890	Sacramento River below Red Bluff	765	740	96.7
A0278500	Sacramento River at Bend Bridge	765	739	96.6
A0292700	Sutter Bypass at RD-1500	765	739	96.6
A0281500	Sacramento River at Balls Ferry	765	738	96.5
A0223002	Sacramento River above CBD near Knights Landing	765	735	96.1
A5101050	Feather River near Verona	765	731	95.6
A0297200	Butte Slu near Meridian	765	726	94.9
A0263000	Sacramento River at Hamilton City	765	720	94.1
A0242000	Sacramento River at Colusa	765	718	93.9
A6101050	Yuba River near mouth	765	701	91.6
A6501050	Bear River near mouth	765	695	90.8
A0219501	Sacramento River below Knights Landing	765	682	89.2
A0294710	Colusa Basin Drain near Knights Landing	765	441	57.6

Table 4-20 Sacramento Valley Subregion Water Chemistry Exceedances

This table summarizes regulatory water chemistry exceedances for each monitoring station, including Station ID, Station Name, the number of exceedances that occurred during the reporting period, and the regulatory parameters that were exceeded.

Station ID	Station Name	Exceedances	Parameters Exceeded
A0297200	Butte Slu near Meridian	47	Total Aluminum (MCLSMCL); Total Arsenic (MCL); Total Iron (SMCL); Total Manganese (SMCL)
A0292700	Sutter Bypass at RD-1500	40	Total Aluminum (MCLSMCL); Total Iron (SMCL); Total Manganese (SMCL)

Station ID	Station Name	Exceedances	Parameters Exceeded
A0294710	Colusa Basin Drain near Knights Landing	36	Specific Conductance (SMCL); Total Aluminum (MCLSMCL); Total Dissolved Solids (SMCL); Total Iron (SMCL); Total Manganese (SMCL)
A0242000	Sacramento River at Colusa	30	Total Aluminum (MCLSMCL); Total Iron (SMCL); Total Manganese (SMCL)
A0219501	Sacramento River below Knights Landing	29	Total Aluminum (MCLSMCL); Total Iron (SMCL); Total Manganese (SMCL)
A0223002	Sacramento River above CBD near Knights Landing	27	Total Aluminum (MCLSMCL); Total Iron (SMCL); Total Manganese (SMCL)
A6501050	Bear River near mouth	25	Total Aluminum (SMCL); Total Iron (SMCL); Total Manganese (SMCL)
A0571001	Honcut Creek at Highway 70	24	Total Aluminum (SMCL); Total Iron (SMCL); Total Manganese (SMCL)
A0215000	Sacramento River at Verona	18	Total Aluminum (MCLSMCL); Total Iron (SMCL); Total Manganese (SMCL)
A5101050	Feather River near Verona	13	Total Aluminum (SMCL); Total Iron (SMCL); Total Manganese (SMCL)
A0263000	Sacramento River at Hamilton City	13	Total Aluminum (MCLSMCL); Total Iron (SMCL); Total Manganese (SMCL)
A0278500	Sacramento River at Bend Bridge	12	Total Aluminum (MCLSMCL); Total Iron (SMCL); Total Manganese (SMCL)
A0270000	Sacramento River at Woodson Bridge	11	Total Aluminum (MCLSMCL); Total Iron (SMCL)
A0281500	Sacramento River at Balls Ferry	10	Total Aluminum (MCLSMCL); Total Iron (SMCL); Total Manganese (SMCL)
A0275890	Sacramento River below Red Bluff	5	Total Aluminum (SMCL); Total Iron (SMCL)
A6101050	Yuba River near mouth	1	Total Aluminum (SMCL)

Overall, Sacramento Valley Subregion reflects generally stable water quality within the larger river corridors, with more variable conditions in lower-gradient tributaries and agricultural drainage systems influenced by suspended sediment and runoff. Mainstem Sacramento River stations generally exhibit moderate conductivity, stable major ion chemistry, and relatively low dissolved metals concentrations, while tributary and drainage systems, such as Colusa Basin Drain, Butte Slough, and Honcut Creek at Highway 70, show more frequent exceedance trends for sediment-associated metals during higher-flow conditions.

Total aluminum and iron were the most persistent exceedances throughout the subregion, with the highest concentrations observed at Sacramento River at Bend Bridge, where total aluminum reached ~7,940 µg/L and total iron reached ~9,490 µg/L during elevated flow conditions. Elevated concentrations were also observed at Sacramento River at Balls Ferry (~4,010 µg/L aluminum; ~4,080 µg/L iron) and Sacramento River at Verona (~2,350 µg/L aluminum; ~3,100 µg/L iron), indicating substantial suspended sediment transport during runoff events within the mainstem Sacramento River system. Colusa Basin Drain near Knights Landing also exhibited elevated total iron concentrations exceeding ~2,800 µg/L, reflecting sediment and agricultural drainage influences. Dissolved metals generally remained low relative to total metals throughout the subregion, indicating that exceedances were primarily particulate associated. Nutrients remained relatively low across most stations, although localized increases occurred.

4.4.2 Sacramento Valley Field Measurements

The following section summarizes field measurement data collected during sampling events, including data completeness (Table 4-21) and observed trends during the reporting period.

Table 4-21 Sacramento Valley Subregion Field Measurements Percent Complete

This table summarizes field measurement data completeness for each monitoring station, including Station ID, Station Name, the expected and actual number of field measurements collected during the reporting period, and the resulting percent completeness.

Station ID	Station Name	Expected	Actual	Percent Complete
A0297200	Butte Slu near Meridian	75	75	100.0
A5101050	Feather River near Verona	75	75	100.0
A0571001	Honcut Creek at Highway 70	75	75	100.0
A0223002	Sacramento River above CBD near Knights Landing	75	75	100.0
A0281500	Sacramento River at Balls Ferry	75	75	100.0
A0278500	Sacramento River at Bend Bridge	75	75	100.0
A0242000	Sacramento River at Colusa	75	75	100.0
A0263000	Sacramento River at Hamilton City	75	75	100.0
A0215000	Sacramento River at Verona	75	75	100.0
A0270000	Sacramento River at Woodson Bridge	75	75	100.0
A0275890	Sacramento River below Red Bluff	75	75	100.0
A0292700	Sutter Bypass at RD-1500	75	75	100.0
A6501050	Bear River near mouth	75	70	93.3
A0219501	Sacramento River below Knights Landing	75	70	93.3
A6101050	Yuba River near mouth	75	70	93.3
A0294710	Colusa Basin Drain near Knights Landing	75	45	60.0

Field measurements show generally stable conditions across the larger Sacramento River corridor, with greater variability occurring within tributary and agricultural drainage systems during higher-flow events. Mainstem Sacramento River stations typically exhibited moderate turbidity, neutral pH, and relatively stable specific conductance throughout the reporting period. In contrast, Colusa Basin Drain, Butte Slough, and Honcut Creek at Highway 70 showed periodic increases in turbidity and conductivity that correspond with elevated total metals concentrations and runoff conditions. These patterns indicate suspended sediment mobilization and agricultural drainage influences during wetter sampling events. Several smaller tributary and drainage stations experienced intermittent low-flow conditions during late summer and fall monitoring events, limiting sample collection at some locations.

4.4.3 Sacramento Valley Bacteria Indicators

This section presents bacteria indicator data completeness for *E. coli* and total coliform measurements (Table 4-22), followed by exceedances of the *E. coli* Statistical Threshold Value (STV) (Table 4-23) and a summary of observed trends.

Table 4-22 Sacramento Valley Subregion Bacteria Indicators Percent Complete

This table summarizes bacteria indicator data completeness for each monitoring station, including Station ID, Station Name, the expected and actual number of bacteria indicator measurements collected during the reporting period, and the resulting percent complete.

Station ID	Station Name	Expected	Actual	Percent Complete
A0297200	Butte Slu near Meridian	30	30	100.0
A0571001	Honcut Creek at Highway 70	30	30	100.0
A0223002	Sacramento River above CBD near Knights Landing	30	30	100.0
A0281500	Sacramento River at Balls Ferry	30	30	100.0
A0278500	Sacramento River at Bend Bridge	30	30	100.0
A0242000	Sacramento River at Colusa	30	30	100.0
A0263000	Sacramento River at Hamilton City	30	30	100.0
A0270000	Sacramento River at Woodson Bridge	30	30	100.0
A0275890	Sacramento River below Red Bluff	30	30	100.0
A0292700	Sutter Bypass at RD-1500	30	30	100.0
A5101050	Feather River near Verona	30	28	93.3
A0215000	Sacramento River at Verona	30	28	93.3
A0219501	Sacramento River below Knights Landing	30	28	93.3
A6101050	Yuba River near mouth	30	28	93.3
A6501050	Bear River near mouth	30	26	86.7
A0294710	Colusa Basin Drain near Knights Landing	30	18	60.0

Table 4-23 Sacramento Valley Subregion *E. coli* Exceedances

This table summarizes *E. coli* Statistical Threshold Value (STV) exceedances for each monitoring station, including Station ID, Station Name, the number of exceedances that occurred during the reporting period, and the parameters that exceeded the STV benchmark (>320 MPN/100 mL).

Station ID	Station Name	Exceedances	Parameters Exceeded
A0297200	Butte Slu near Meridian	2	<i>E. coli</i> (STV)
A6501050	Bear River near mouth	1	<i>E. coli</i> (STV)
A0571001	Honcut Creek at Highway 70	1	<i>E. coli</i> (STV)
A0278500	Sacramento River at Bend Bridge	1	<i>E. coli</i> (STV)
A0215000	Sacramento River at Verona	1	<i>E. coli</i> (STV)
A6101050	Yuba River near mouth	1	<i>E. coli</i> (STV)

Bacteria results show episodic STV exceedances (*E. coli* >320 MPN/100 mL) throughout the Sacramento Valley Subregion, primarily associated with elevated flow and runoff conditions. The highest *E. coli* concentrations occurred at Yuba River near its mouth (~1,414 MPN/100 mL), Sacramento River at Verona (~816 MPN/100 mL), Butte Slough near Meridian (~692 MPN/100 mL), and Honcut Creek at Highway 70 (~680 MPN/100 mL). Total coliform concentrations were also frequently elevated at tributary and agricultural drainage stations, often exceeding 2,400 MPN/100 mL during wetter sampling periods. Exceedances were generally episodic and generally correspond with increased turbidity and runoff conditions, indicating contributions from sediment transport, agricultural return flows, wildlife, and other nonpoint watershed sources.

4.4.4 Sacramento Valley Subregion Percent Complete

The tables below show the overall percent complete by station (Table 4-24) and the subregion (Table 4-25) for water chemistry, field measurements, and bacteria indicators.

Table 4-24 Sacramento Valley Subregion Station Percent Complete

This table summarizes overall monitoring data completeness for each monitoring station, including Station ID; Station Name; the total expected and actual number of water chemistry, field measurement, and bacteria indicator results collected during the reporting period; and the resulting percent complete.

Station ID	Station Name	Expected	Actual	Percent Complete
A0571001	Honcut Creek at Highway 70	870	848	97.5
A0215000	Sacramento River at Verona	870	847	97.4
A0270000	Sacramento River at Woodson Bridge	870	847	97.4
A0275890	Sacramento River below Red Bluff	870	845	97.1

Station ID	Station Name	Expected	Actual	Percent Complete
A0278500	Sacramento River at Bend Bridge	870	844	97.0
A0292700	Sutter Bypass at RD-1500	870	844	97.0
A0281500	Sacramento River at Balls Ferry	870	843	96.9
A0223002	Sacramento River above CBD near Knights Landing	870	840	96.6
A5101050	Feather River near Verona	870	834	95.9
A0297200	Butte Slu near Meridian	870	831	95.5
A0263000	Sacramento River at Hamilton City	870	825	94.8
A0242000	Sacramento River at Colusa	870	823	94.6
A6101050	Yuba River near mouth	870	799	91.8
A6501050	Bear River near mouth	870	791	90.9
A0219501	Sacramento River below Knights Landing	870	780	89.7
A0294710	Colusa Basin Drain near Knights Landing	870	504	57.9

Table 4-25 Sacramento Valley Subregion Percent Complete

This table summarizes overall monitoring data completeness by subregion, including subregion name; the total expected and actual number of water chemistry, field measurement, and bacteria indicator results collected across all monitoring stations during the reporting period; and the resulting percent completeness.

Subregion	Expected	Actual	Percent Complete
Sac Valley Subregion	13920	12945	93.0

4.4.5 Sacramento Valley Continuous Water Temperature

Continuous water temperature data summarized in the tables below have been reviewed and include only data determined to be of good quality. Table 4-26 summarizes overall data completeness and Table 4-27 summarizes salmonid temperature threshold exceedances.

Table 4-26 Sacramento Valley Subregion Continuous Water Temperature Percent Complete

This table summarizes continuous water temperature data completeness for each monitoring station, including Station ID, Station Name, the start date of logger deployment, the end date representing the last recorded reading during the reporting period, the resulting percent completeness, and the 7-Day Average Daily Maximum (7DADM) temperatures recorded during the reporting period.

Station ID	Station Name	Start Date	End Date	Percent Complete	Max 7DADM Temp (C)	Min 7DADM Temp (C)
A6501050	Bear River near mouth	5/11/2022	11/13/2025	76.5	30.2	7.2
A0297200	Butte Slough near Meridian	5/11/2022	11/13/2025	42.1	29.9	7.3
A0294710	Colusa Basin Drain near Knights Landing	5/11/2022	11/13/2025	51.7	29.1	7.5
A5101050	Feather River near Verona	5/11/2022	11/13/2025	45.5	23.5	9.2
A0571001	North Honcut Creek at Highway 70	5/11/2022	11/13/2025	79.6	28.3	7.4
A0223002	Sacramento River above CBD near Knights Landing	5/11/2022	11/13/2025	51.0	26.1	9.1
A0281500	Sacramento River at Balls Ferry	5/4/2022	11/5/2025	96.5	17.3	7.8
A0278500	Sacramento River at Bend Bridge near Red Bluff	5/4/2022	11/5/2025	45.6	17.0	9.0
A0242000	Sacramento River at Colusa	5/11/2022	11/13/2025	73.2	25.4	7.8
A0263000	Sacramento River at Hamilton City	5/10/2022	11/12/2025	77.8	24	7.7

Station ID	Station Name	Start Date	End Date	Percent Complete	Max 7DADM Temp (C)	Min 7DADM Temp (C)
A0215000	Sacramento River at Verona	5/11/2022	11/13/2025	81.0	24.5	7.9
A0270000	Sacramento River at Vina Bridge near Corning	5/10/2022	11/12/2025	92.7	20.7	7.7
A0219501	Sacramento River below Knights Landing	5/11/2022	11/13/2025	7.7	17.8	8.9
A0275890	Sacramento River below Red Bluff	5/10/2022	11/12/2025	61.0	18.9	7.5
A0292700	Sutter BP at R-D 1500 PP at Karnak	5/11/2022	11/13/2025	56.7	30.3	8.7
A6101050	Yuba River at mouth	5/11/2022	11/13/2025	21.3	20.1	10.3

Continuous temperature percent complete ranged from nearly 8% at Sacramento River below Knights Landing to nearly 97% at Sacramento River at Balls Ferry. Theft and vandalism were common issues at several monitoring stations within the Sacramento Valley Subregion. For this reason, loggers at some stations were moved to areas where access was difficult or removed completely. In addition, there were also problems with logger batteries dying prematurely and/or logger malfunctions (water infiltration) due to field battery swaps. Staff addressed this issue by replacing loggers with low/dead batteries, rather than changing the batteries in the field.

Table 4-27 Sacramento Valley Subregion Continuous Water Temperature Exceedances

This table summarizes EPA Region 10 salmonid temperature criterion exceedances based on 7-Day Average Daily Maximum (7DADM) temperatures recorded during the reporting period. This table includes Station ID, Station Name, and the number of days the calculated 7DADM exceeded the applicable salmonid temperature criteria of 13 °C, 16 °C, 18 °C, and 20 °C. Exceedances were determined by comparing daily 7DADM values to the corresponding U.S. EPA Region 10 criterion thresholds (U.S. EPA 2003).

Station ID	Station Name	Days >13 °C	Days >16 °C	Days >18 °C	Days >20 °C
A6501050	Bear River near mouth	637	568	518	470
A0297200	Butte Slough near Meridian	412	391	360	340
A0294710	Colusa Basin Drain near Knights Landing	504	471	437	409
A5101050	Feather River near Verona	406	338	263	202
A0571001	North Honcut Creek at Highway 70	758	646	582	520
A0223002	Sacramento River above CBD near Knights Landing	476	400	360	275
A0281500	Sacramento River at Balls Ferry	661	135	0	0
A0278500	Sacramento River at Bend Bridge near Red Bluff	344	14	0	0
A0242000	Sacramento River at Colusa	656	528	448	170
A0263000	Sacramento River at Hamilton City	650	505	214	122
A0215000	Sacramento River at Verona	646	498	380	273
A0270000	Sacramento River at Vina Bridge near Corning	714	509	109	26

Station ID	Station Name	Days >13 °C	Days >16 °C	Days >18 °C	Days >20 °C
A0219501	Sacramento River below Knights Landing	26	13	0	0
A0275890	Sacramento River below Red Bluff	477	52	23	0
A0292700	Sutter BP at R-D 1500 PP at Karnak	553	516	465	420
A6101050	Yuba River at mouth	226	154	117	3

Sacramento Valley stations exhibited frequent exceedances of the 13 °C criteria, with exceedances becoming less common at the higher temperature thresholds of 16 °C, 18 °C, and 20 °C. Mainstem Sacramento River sites generally appeared to experience fewer exceedances of the higher temperature criteria than many tributaries, such as North Honcut Creek, Bear River, Butte Slough, Colusa Basin Drain, and Sutter Bypass, which generally exhibited more frequent exceedances of the 18 °C and 20 °C thresholds.

4.5 Westside Subregion

The Westside Subregion includes Clear, Cottonwood, Elder, Red Bank, Stony, and Thomes creeks (Figure 4-4), draining the eastern slopes of the northern Coast Range into the Sacramento Valley (UC ANR 2020; USGS 2019). Land use is dominated by rangeland (~50–60%), with forested uplands (25–35%), limited agriculture (10–15%), and minimal development (<5%) (UC ANR 2020).

Hydrology is primarily rainfall-driven, with strong seasonal variability characterized by high winter flows and reduced or intermittent summer baseflows (NRCS 2022). Some systems, such as Stony Creek, are partially regulated by upstream reservoirs (DWR 2023).

These tributaries provide important habitat for salmon and steelhead, particularly in Clear Creek, with additional seasonal habitat in Cottonwood and Thomes creeks (CDFW 2021).

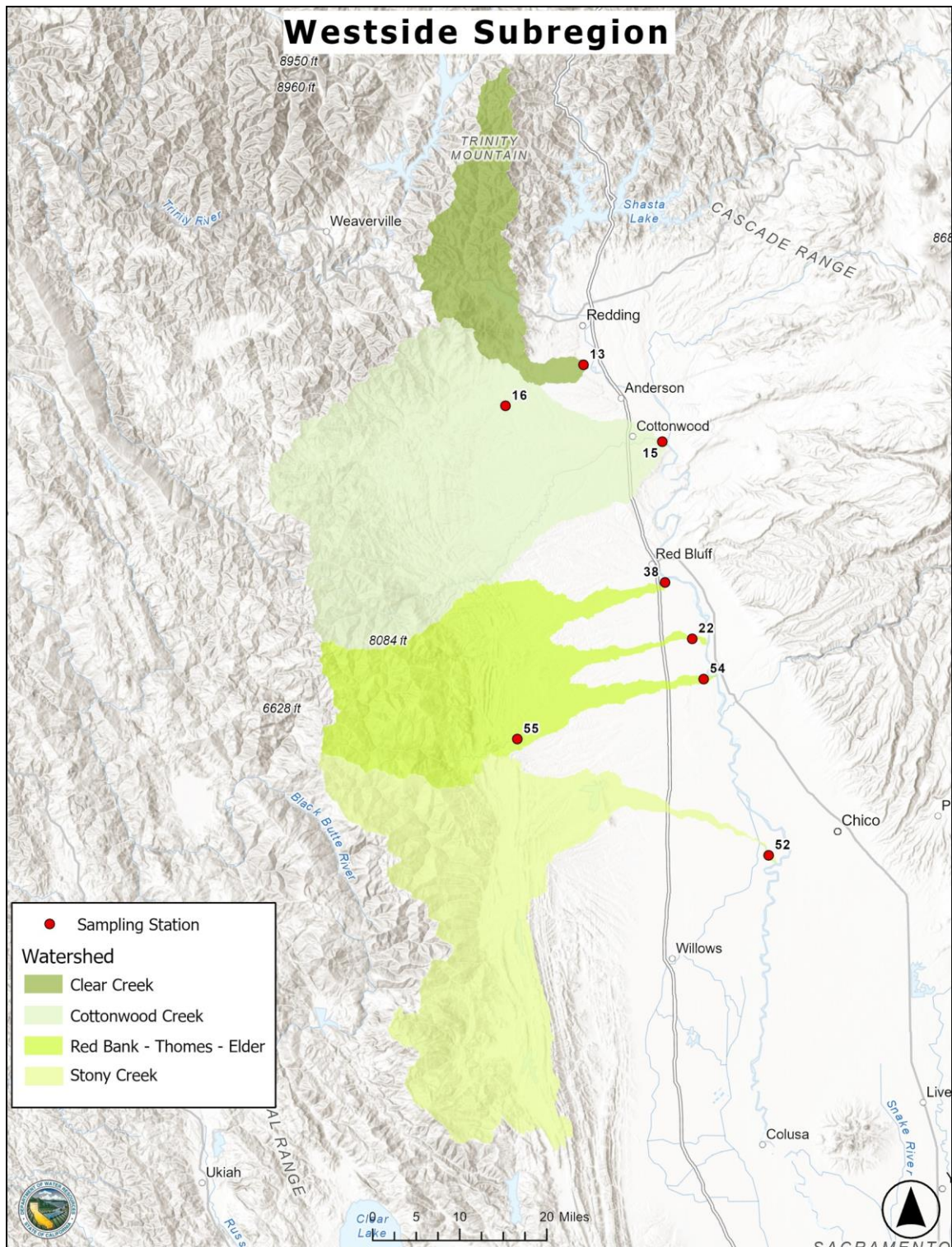
Geology is dominated by sedimentary and metamorphic formations of the Coast Range, with erosion-prone upland soils contributing to sediment transport during storm events and alluvial deposits in lower valleys (USGS 2019; UC ANR 2020).

From WYs 2022–2025, watershed conditions were influenced by drought during WY 2022, followed by high precipitation and runoff during WY 2023 and subsequent

wet periods during WYs 2024–2025 (NRCS 2022; DWR 2023b, 2024, 2025; NOAA 2023). Post-wildfire recovery in upstream Coast Range watersheds also influenced runoff and sediment dynamics.

Figure 4-4 Map of the Westside Subregion

This figure illustrates the major watersheds and monitoring stations within the Westside Subregion.



4.5.1 Westside Water Chemistry

The following section presents a summary of water chemistry data completeness (Table 4-28) and regulatory water chemistry exceedances (Table 4-29).

Table 4-28 Westside Subregion Water Chemistry Percent Complete

This table summarizes water chemistry data completeness for each monitoring station, including Station ID, Station Name, the expected and actual number of water chemistry constituents collected during the reporting period, and the resulting percent completeness.

Station ID	Station Name	Expected	Actual	Percent Complete
A0350000	Thomes Creek at Paskenta	765	755	98.7
A03601000	Clear Creek near mouth	765	744	97.3
A0352050	Cottonwood Creek at Cottonwood	306	297	97.1
A0354500	Cottonwood Creek North Fork near Igo	765	694	90.7
A0350500	Cottonwood Creek near mouth	459	390	85.0
A0290000	Stony Creek near mouth	765	603	78.8
A0321800	Thomes Creek at Hall Road near Richfield	765	351	45.9
A02540025	Red Bank Creek Upstream Tehama Colusa Canal	459	198	43.1
A0332000	Elder Creek near mouth	765	303	39.6
A0025800	Red Bank Creek at HWY 99W	306	100	32.7

Table 4-29 Westside Subregion Water Chemistry Exceedances

This table summarizes regulatory water chemistry exceedances for each monitoring station, including Station ID, Station Name, the number of exceedances that occurred during the reporting period, and the regulatory parameters that were exceeded.

Station ID	Station Name	Exceedances	Parameters Exceeded
A0290000	Stony Creek near mouth	17	Total Aluminum (MCLSMCL); Total Iron (SMCL); Total Manganese (SMCL)
A0321800	Thomes Creek at Hall Road near Richfield	15	Total Aluminum (MCLSMCL); Total Iron (SMCL); Total Manganese (SMCL)
A0354500	Cottonwood Creek North Fork near Igo	14	Total Aluminum (MCLSMCL); Total Iron (SMCL); Total Manganese (SMCL)
A0350000	Thomes Creek at Paskenta	14	Total Aluminum (MCLSMCL); Total Iron (SMCL); Total Manganese (SMCL)
A0350500	Cottonwood Creek near mouth	10	Total Aluminum (MCLSMCL); Total Iron (SMCL); Total Manganese (SMCL)
A0352050	Cottonwood Creek at Cottonwood	7	Total Aluminum (MCLSMCL); Total Iron (SMCL); Total Manganese (SMCL)

Station ID	Station Name	Exceedances	Parameters Exceeded
A02540025	Red Bank Creek Upstream Tehama Colusa Canal	6	Total Aluminum (SMCL); Total Iron (SMCL)
A03601000	Clear Creek near mouth	2	Total Aluminum (SMCL); Total Iron (SMCL)
A0332000	Elder Creek near mouth	2	Total Aluminum (SMCL); Total Iron (SMCL)

Overall, Westside Subregion reflects highly seasonal stream systems influenced by marine sedimentary geology, sediment transport, and variable runoff conditions. Streams within the subregion generally exhibit higher conductivity and hardness relative to other Sacramento River watershed subregions, particularly during low-flow conditions. Larger tributaries, including Stony Creek, Cottonwood Creek, Thomes Creek, and Red Bank Creek, show recurring exceedance trends for total aluminum and iron during winter and spring runoff events, while dissolved metals generally remain comparatively low and frequently below RLs.

The strongest exceedance patterns occur at Stony Creek near the mouth, where total aluminum reached ~6,620 µg/L during elevated flow conditions, indicating substantial sediment mobilization. Elevated total aluminum and iron concentrations were also observed at Cottonwood Creek and Red Bank Creek during runoff events, with concentrations increasing substantially during periods of elevated turbidity. Dissolved aluminum was periodically elevated at Stony Creek stations, suggesting both particulate and dissolved metal contributions. Nutrients generally remained low throughout the subregion, although conductivity and dissolved solids remained consistently elevated relative to eastern watershed tributaries because of the naturally mineralized Coast Range geology and seasonal concentration effects during lower flows. Several stations also exhibited intermittent dry conditions later in the monitoring season, limiting sample collection at some smaller tributary sites.

4.5.2 Westside Field Measurements

The following section summarizes field measurement data collected during sampling events, including data completeness (Table 4-30) and observed trends during the reporting period.

Table 4-30 Westside Subregion Field Measurements Percent Complete

This table summarizes field measurement data completeness for each monitoring station, including Station ID, Station Name, the expected and actual number of field measurements collected during the reporting period, and the resulting percent completeness.

Station ID	Station Name	Expected	Actual	Percent Complete
A0352050	Cottonwood Creek at Cottonwood	30	30	100.0
A0350000	Thomes Creek at Paskenta	75	75	100.0

Station ID	Station Name	Expected	Actual	Percent Complete
A03601000	Clear Creek near mouth	75	70	93.3
A0354500	Cottonwood Creek North Fork near Igo	75	70	93.3
A0350500	Cottonwood Creek near mouth	45	40	88.9
A0290000	Stony Creek near mouth	75	60	80.0
A0321800	Thomes Creek at Hall Road near Richfield	75	35	46.7
A02540025	Red Bank Creek Upstream Tehama Colusa Canal	45	20	44.4
A0332000	Elder Creek near mouth	75	30	40.0
A0025800	Red Bank Creek at HWY 99W	30	10	33.3

Field measurements show strong seasonal variability throughout the Westside Subregion, with elevated turbidity and runoff influence during winter and spring followed by low-flow or intermittent dry conditions during summer and fall monitoring events. Stony Creek, Cottonwood Creek, Thomes Creek, and Red Bank Creek exhibited periodic increases in turbidity and conductivity that correspond with elevated total metals concentrations and runoff-driven sediment transport. Specific conductance remained consistently higher across many Westside stations when compared with eastern watershed subregions, reflecting mineralized geology and concentrated dissolved solids during low-flow periods. Several smaller tributary stations experienced intermittent dry conditions that limited sample collection during late-season monitoring.

4.5.3 Westside Bacteria Indicators

This section presents bacteria indicator data completeness for *E. coli* and total coliform measurements (Table 4-31), followed by exceedances of the *E. coli* Statistical Threshold Value (STV) (Table 4-32) and a summary of observed trends.

Table 4-31 Westside Subregion Bacteria Indicators Percent Complete

This table summarizes bacteria indicator data completeness for each monitoring station, including Station ID, Station Name, the expected and actual number of bacteria indicator measurements collected during the reporting period, and the resulting percent complete.

Station ID	Station Name	Expected	Actual	Percent Complete
A0352050	Cottonwood Creek at Cottonwood	30	30	100.0
A0350000	Thomes Creek at Paskenta	75	75	100.0
A03601000	Clear Creek near mouth	75	70	93.3
A0354500	Cottonwood Creek North Fork near Igo	75	70	93.3
A0350500	Cottonwood Creek near mouth	45	40	88.9
A0290000	Stony Creek near mouth	75	60	80.0
A0321800	Thomes Creek at Hall Road near Richfield	75	35	46.7
A02540025	Red Bank Creek Upstream Tehama Colusa Canal	45	20	44.4
A0332000	Elder Creek near mouth	75	30	40.0
A0025800	Red Bank Creek at HWY 99W	30	10	33.3

Table 4-32 Westside Subregion *E. coli* Exceedances

This table summarizes *E. coli* Statistical Threshold Value (STV) exceedances for each monitoring station, including Station ID, Station Name, the number of exceedances that occurred during the reporting period, and the parameters that exceeded the STV benchmark (>320 MPN/100 mL).

Station ID	Station Name	Exceedances	Parameters Exceeded
A0354500	Cottonwood Creek North Fork near Igo	3	<i>E. coli</i> (STV)
A0350500	Cottonwood Creek near mouth	2	<i>E. coli</i> (STV)
A03601000	Clear Creek near mouth	1	<i>E. coli</i> (STV)
A0332000	Elder Creek near mouth	1	<i>E. coli</i> (STV)
A0025800	Red Bank Creek at HWY 99W	1	<i>E. coli</i> (STV)

Bacteria results show episodic STV exceedances (*E. coli* >320 MPN/100 mL) across the Westside Subregion, generally associated with elevated flow and turbidity conditions during wetter sampling events. Elevated *E. coli* concentrations were observed at several Stony Creek and Cottonwood Creek stations, consistent with runoff-driven sediment and fecal inputs from watershed sources including livestock, wildlife, and overland flow. Total coliform concentrations were also frequently elevated throughout the subregion, often exceeding 2,400 MPN/100 mL during higher-flow conditions. Exceedances were generally episodic and strongly associated with storm runoff and sediment mobilization rather than persistent dry-weather impairment conditions.

4.5.4 Westside Subregion Percent Complete

The tables below show the overall percent complete by station (Table 4-33) and the subregion (4-34) for water chemistry, field measurements, and bacteria indicators.

Table 4-33 Westside Subregion Station Percent Complete

This table summarizes overall monitoring data completeness for each monitoring station, including Station ID, Station Name, the total expected and actual number of water chemistry, field measurement, and bacteria indicator results collected during the reporting period, and the resulting percent complete.

Station ID	Station Name	Expected	Actual	Percent Complete
A03601000	Clear Creek near mouth	870	844	97.0
A0354500	Cottonwood Creek North Fork near Igo	870	792	91.0
A0350500	Cottonwood Creek near mouth	522	446	85.4
A0352050	Cottonwood Creek at Cottonwood	348	339	97.4
A0332000	Elder Creek near mouth	870	345	39.7

Station ID	Station Name	Expected	Actual	Percent Complete
A0025800	Red Bank Creek at HWY 99W	348	114	32.8
A02540025	Red Bank Creek Upstream Tehama Colusa Canal	522	226	43.3
A0290000	Stony Creek near mouth	870	687	79.0
A0321800	Thomes Creek at Hall Road near Richfield	870	400	46.0
A0350000	Thomes Creek at Paskenta	870	858	98.6

Table 4-34 Westside Subregion Percent Complete

This table summarizes overall monitoring data completeness by subregion, including subregion name, the total expected and actual number of water chemistry, field measurement, and bacteria indicator results collected across all monitoring stations during the reporting period, and the resulting percent completeness.

Subregion	Expected	Actual	Percent Complete
Westside Subregion	6960	5051	72.6

4.5.5 Westside Continuous Water Temperature

Continuous water temperature data summarized in the tables below have been reviewed and include only data determined to be of good quality. Table 4-35 summarizes overall data completeness and Table 4-36 summarizes salmonid temperature threshold exceedances.

Table 4-35 Westside Subregion Continuous Water Temperature Percent Complete

This table summarizes continuous water temperature data completeness for each monitoring station, including Station ID, Station Name, the start date of logger deployment, the end date representing the last recorded reading during the reporting period, the resulting percent completeness, and the 7-Day Average Daily Maximum (7DADM) temperatures recorded during the reporting period.

Station ID	Station Name	Start Date	End Date	Percent Complete	Max 7DADM Temp (C)	Min 7DADM Temp (C)
A3601000	Clear Creek near mouth near Redding	5/4/2022	11/5/2025	59.8	24.8	9.0
A0352050	Cottonwood Creek at Cottonwood	5/4/2022	11/8/2023	71.4	30.7	5.4

Station ID	Station Name	Start Date	End Date	Percent Complete	Max 7DADM Temp (C)	Min 7DADM Temp (C)
A0350500	Cottonwood Creek near mouth	11/8/2023	11/5/2025	60.2	30.9	7.2
A0354500	Cottonwood Creek North Fork near Igo	5/4/2022	11/5/2025	72.3	35.7	3.9
A0332000	Elder Creek at Gerber	5/10/2022	11/12/2025	19.3	33.1	7.9
A02540025	Red Bank C upstream Tehama Colusa Canal	11/14/2023	11/12/2025	10.0	32.0	9.5
A0290000	Stony Creek near mouth	5/10/2022	11/12/2025	60.4	32.4	9.3
A0321800	Thomes Creek at Hall Road	5/10/2022	11/12/2025	1.1	24.4	23.3
A0350000	Thomes Creek at Paskenta	5/10/2022	11/12/2025	60.7	34.6	4.6

Continuous temperature percent complete ranged from 0% at Red Bank Creek at Highway 99W near Red Bluff to 72% at Cottonwood Creek North Fork near Igo. Several of the monitoring stations were seasonally dry, and theft and vandalism were common issues. In addition, there were also problems with logger batteries dying prematurely and/or logger malfunctions (water infiltration) because of field battery swaps. Staff addressed this issue by replacing loggers with low/dead batteries, rather than changing the batteries in the field.

Table 4-36 Westside Subregion Continuous Water Temperature Exceedances

This table summarizes EPA Region 10 salmonid temperature criterion exceedances based on 7-Day Average Daily Maximum (7DADM) temperatures recorded during the reporting period. The table includes Station ID, Station Name, and the number of days the calculated 7DADM exceeded the applicable salmonid temperature criteria of 13 °C, 16 °C, 18 °C, and 20 °C. Exceedances were determined by comparing daily 7DADM values to the corresponding U.S. EPA Region 10 criterion thresholds (U.S. EPA 2003).

Station ID	Station Name	Days >13 C	Days >16 C	Days >18 C	Days >20 C
A3601000	Clear Creek near mouth near Redding	527	385	305	183
A0352050	Cottonwood Creek at Cottonwood	296	252	240	220
A0350500	Cottonwood Creek near mouth	303	269	231	222
A0354500	Cottonwood Creek North Fork near Igo	642	578	530	487
A0332000	Elder Creek at Gerber	109	84	75	67
A02540025	Red Bank C upstream Tehama Colusa Canal	20	18	18	18
A0290000	Stony Creek near mouth	558	479	453	410
A0321800	Thomes Creek at Hall Road	10	10	10	10
A0350000	Thomes Creek at Paskenta	498	444	417	390

Westside stations such as North Fork Cottonwood Creek, Stony Creek, and Thomes Creek at Paskenta generally exhibited frequent exceedances across all temperature criteria. Red Bank Creek, Elder Creek, and Thomes Creek at Hall Road experienced limited streamflow or were dry during much of the summer season, limiting evaluation of temperature criteria exceedances.

5 DISCUSSION AND CONCLUSION

5.1 Sampling Period Considerations

5.1.1 Water Years

Lower-than-average precipitation in WY 2022 contributed to reduced flows across many tributaries, particularly in upper-elevation headwaters, while WY 2023 was exceptionally wet, with above-average runoff and elevated stream flows in the Feather, Pit, Yuba, and other Sacramento River sub-watersheds. Wildfire activity created extensive burn scars that increased the potential for post-fire sediment and ash mobilization during precipitation events. Variability in flow and temperature across this period likely influenced water quality parameters and may have affected chemical concentrations.

Overall, monitoring conducted during water years 2022–2026 (Table 5-1) reflects a period of highly dynamic hydrology, with alternating dry, wet, and fire-impacted conditions that likely shaped surface water quality across the Sacramento River tributary network.

Table 5-1 Water Year Summaries

This table summarizes hydrologic conditions for Water Years (WYs) 2022 through 2026 within the Sacramento River watershed. Monitoring during WY 2026 includes data collected through November 2025, representing the beginning portion of the water year.

Water Year	Hydrologic Classification	Key Characteristics
WY 2022	Critically Dry	Low precipitation, reduced flows, low snowpack
WY 2023	Extremely Wet	High precipitation, flooding, large snowpack
WY 2024	Near Normal to Moderately Wet	Average precipitation, stable snowpack and flows
WY 2025	Mixed / Variable	Spatial variability in precipitation and runoff
WY 2026*	Near Normal (Preliminary)	Early data suggests near-average conditions

5.1.2 Wildfire Impacts on Station Access

During August 2024, multiple monitoring stations in the upper foothill and forested watersheds of Tehama, Shasta, and Butte counties experienced access limitations associated with the Park Fire. The wildfire resulted in widespread road closures, restricted access to public lands, active fire suppression operations, and unsafe field conditions throughout portions of the northern Sacramento Valley foothills and adjacent forested watersheds. Monitoring stations affected by these restrictions were concentrated within the Battle Creek, Cow Creek, Deer Creek, Mill Creek, Butte Creek, and Paynes Creek drainages, including remote sites near Manton, Mineral, Butte Meadows, Oak Run, and surrounding upland areas. These temporary

access constraints disrupted routine field monitoring activities during August 2024 because of evacuation zones, transportation limitations, smoke impacts, and safety-related closures implemented during active fire response efforts.

5.2 Wildfire Effects on Surface Water Quality

Wildfires and their post-fire landscape effects can substantially influence surface water quality across watersheds. The loss of vegetation and organic soil cover increases susceptibility to erosion, sediment transport, and ash and nutrient mobilization during subsequent precipitation events. Post-fire runoff often carries elevated loads of suspended sediments, ash, and contaminants (including nutrients such as nitrates and phosphorus, and metals bound to particulate matter), which can reduce water clarity, alter stream chemistry, and impair aquatic habitat. In burned areas, debris flows and sediment pulses can change channel morphology and introduce physical barriers to flow, affecting both water quality and aquatic organisms. Wildfires also remove riparian shade, potentially increasing water temperatures downstream, and can greatly affect aquatic habitats. Chemical byproducts from burned vegetation and materials exposed to fire suppressants may further degrade water quality and complicate drinking water treatment processes in downstream communities.

Within a burn scar (before substantial re-vegetation occurs) and especially following intense storm events, turbidity spikes, dissolved oxygen disturbances, and pH anomalies are commonly observed in streams draining these burned areas. For example, research from a 2022 wildfire in Northern California's Klamath National Forest documented extreme water quality impairments during a rain-on-wildfire event, including dissolved oxygen sags to near zero, turbidity exceedances over 1,000 FNU, and conductivity increases, with impacts propagating hundreds of miles downstream and contributing to a substantial fish kill zone (USGS 2025).

As shown in Figure 5.2-1, several notable wildfires (>5,000 acres) occurred within the Sacramento River watershed between 2021 and 2025 which had the potential to influence water quality during this reporting period. Table 5-2 summarizes the subregions affected by each fire, including the fire name, total acres burned, acres burned within each subregion, the percentage of each subregion burned, and the year the fire occurred.

Figure 5-1 Notable Wildfires within the Sacramento River Watershed

This figure illustrates the location and extent of notable (greater than 5,000 acres) wildfires that occurred within the Sacramento River watershed between 2021 and 2025.

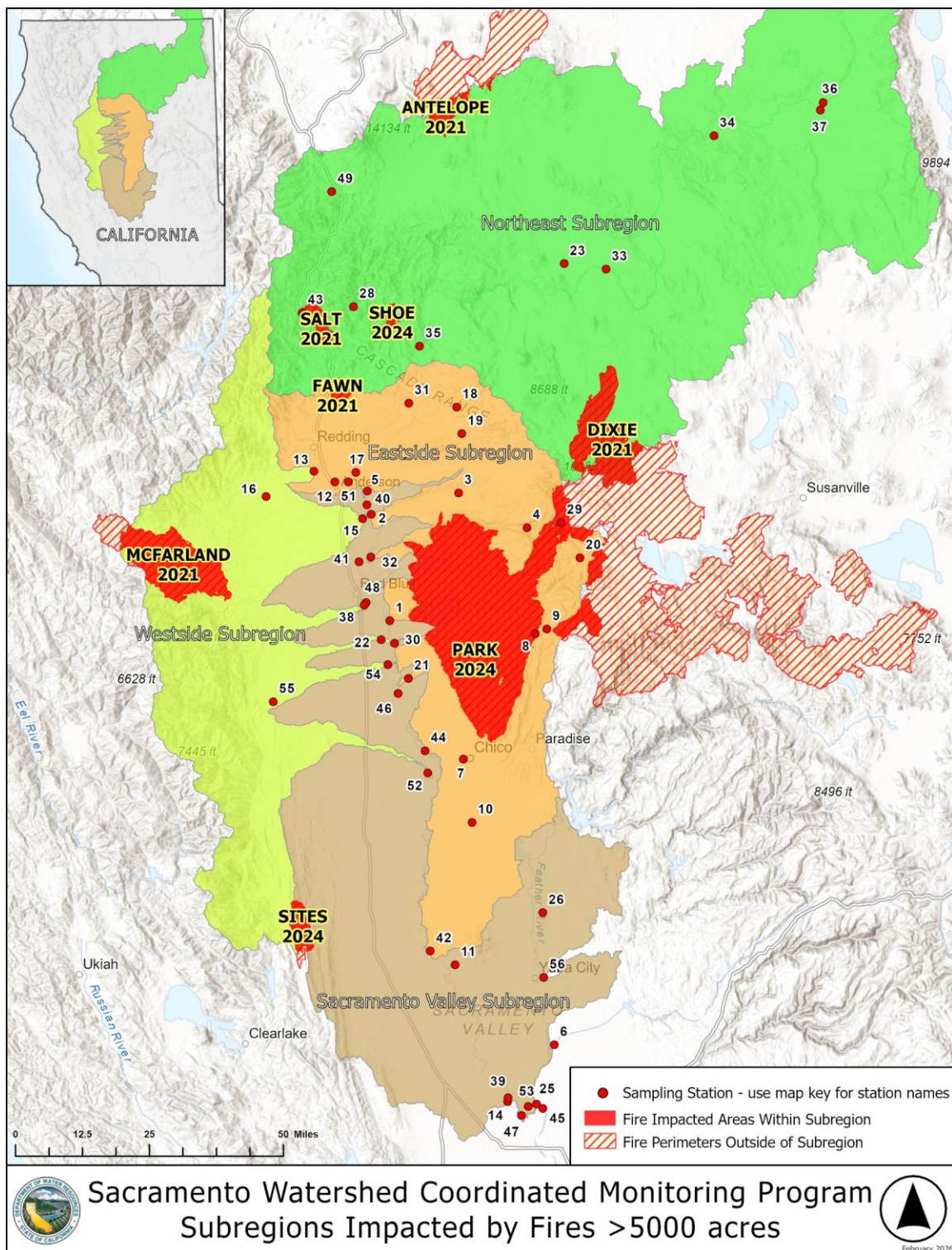


Table 5-2 Wildfires within the Sacramento River Watershed between 2021 and 2025

This table is a summary of wildfires by subregion, including fire name, total acres burned, acres within each subregion (not fire acres), percentage of the subregion affected, and year of occurrence.

SUBREGION	FIRE NAME	GIS ACRES	SUBREGION ACRES	PERCENTAGE	YEAR
Eastside	DIXIE	46642.20	1960096.23	2.38	2021
Eastside	FAWN	6520.68	1960096.23	0.33	2021
Eastside	PARK	402805.00	1960096.23	20.55	2024
Northeast	ANTELOPE	10785.40	4914793.50	0.22	2021
Northeast	BARNES	5053.42	4914793.50	0.10	2022
Northeast	DIXIE	92549.40	4914793.50	1.88	2021
Northeast	FAWN	2055.81	4914793.50	0.04	2021
Northeast	SALT	12599.10	4914793.50	0.26	2021
Northeast	SHOE	5124.03	4914793.50	0.10	2024
Sacramento Valley	PARK	26797.40	2234737.54	1.20	2024
Sacramento Valley	SITES	8599.99	2234737.54	0.38	2024
Westside	MCFARLAND	104828.00	1606940.02	6.52	2021
Westside	SITES	8271.45	1606940.02	0.51	2024

Notes: CalFire Historic Wildfire Perimeter spatial data used for analysis. Selected fires greater than or equal to 5,000 acres that overlapped the SWCMP subregions.

Collectively, these wildfire events highlight a high potential for disturbance associated with surface water quality in the Sacramento River watershed. Following wildfire, landscapes are more prone to soil instability, channel incision, and rapid mobilization of sediment and pollutants during storm events, which can lead to short- and long-term water quality degradation and stress on aquatic ecosystems. The magnitude of effects typically correlates with burn severity, storm intensity, and watershed slope and soil properties, underscoring the importance of post-fire monitoring and remediation strategies to protect water resources in Northern California.

See Appendix E for a case study on post-fire water quality following the Park Fire.

5.3 Subregion Summaries

5.3.1 Northeast Subregion

Water quality in the Northeast Subregion reflects a contrast between stable spring-fed systems and more variable Pit River sites influenced by sediment transport and upstream inputs. The Fall River at Glenburn, McCloud River above Shasta Lake, and Sacramento River near Mt. Shasta consistently exhibited low nutrients, stable

chemistry, low turbidity, and low metals concentrations, with total aluminum generally remaining below 100 µg/L. In contrast, Pit River sites near Canby, Pittville, and the South Fork Pit River showed persistent exceedances of total aluminum and iron, with total aluminum frequently reaching the hundreds to >1,000 µg/L and elevated dissolved aluminum indicating both particulate and dissolved metal contributions; concentrations generally declined downstream near Montgomery Creek, suggesting dilution and settling. Field conditions mirrored these trends, with stable low-conductivity and low-turbidity conditions at groundwater-influenced sites and elevated turbidity and conductivity within the Pit River system during higher-flow periods, consistent with sediment mobilization. Several sites experienced seasonal low-flow or intermittent dry conditions that limited sampling access late in the monitoring season. Bacteria results showed episodic *E. coli* exceedances at Pit River sites, with concentrations exceeding 320 MPN/100 mL and peaks up to ~675 MPN/100 mL, while total coliform remained consistently elevated (>2,400 MPN/100 mL), generally corresponding with wetter conditions and increased runoff.

5.3.2 Eastside Subregion

Water quality in the Eastside Subregion reflects a contrast between relatively stable upper watershed systems and more variable downstream creeks influenced by storm runoff, sediment transport, and seasonal flow conditions. Upper Battle Creek, Deer Creek, and portions of upper Butte Creek generally exhibited lower nutrients, lower conductivity, and stable chemistry, while downstream sites on Big Chico Creek, Mill Creek, Cow Creek, and Oak Run Creek showed recurring metals exceedances and elevated turbidity during high-flow periods. Total aluminum and iron were the most persistent exceedances, with the highest concentrations at Big Chico Creek near Chico, where total aluminum reached ~33,200 µg/L and total iron reached ~14,500 µg/L, indicating substantial sediment mobilization during runoff events; elevated total and dissolved aluminum at Cow Creek sites further suggested both particulate and dissolved metal contributions. Field conditions mirrored these trends, with lower turbidity at upstream forested sites and increasing turbidity and conductivity at downstream valley-transition sites. Several smaller tributaries experienced intermittent dry conditions during late-season sampling, limiting sample collection, while wildfire-related road closures and unsafe access conditions affected some upper watershed stations. Bacteria results showed episodic but widespread *E. coli* exceedances associated with wetter conditions and elevated turbidity, with the highest concentrations observed at Oak Run Creek, Deer Creek at Deer Creek Station, and Big Chico Creek near Chico (all ~2,420 MPN/100 mL), consistent with runoff-driven sediment and fecal inputs.

5.3.3 Sacramento Valley Subregion

Water quality in the Sacramento Valley Subregion generally reflected stable conditions in the larger river corridors, with more variable water quality in

agricultural drainages and lower-gradient tributaries influenced by sediment transport and runoff. Mainstem Sacramento River sites typically exhibited moderate conductivity and lower turbidity, while Butte Slough, Colusa Basin Drain, Honcut Creek at Highway 70, and other valley drainages showed recurring metals exceedances during higher-flow periods. Total aluminum and iron were the most persistent exceedances, with the highest concentrations observed at Sacramento River at Bend Bridge, where total aluminum reached ~7,940 µg/L and total iron reached ~9,490 µg/L, followed by Sacramento River at Balls Ferry (~4,010 µg/L aluminum; ~4,080 µg/L iron) and Sacramento River at Verona (~2,350 µg/L aluminum; ~3,100 µg/L iron), indicating substantial suspended sediment transport during runoff events. Elevated metals were also common at Colusa Basin Drain near Knights Landing, where total iron exceeded ~2,800 µg/L. Field conditions generally remained stable across the larger river systems, although elevated turbidity and sediment loading increased during wetter sampling events. Several smaller tributary and drainage sites experienced intermittent low-flow conditions late in the monitoring season, limiting sampling access at some locations. Bacteria results showed episodic *E. coli* exceedances associated with elevated flow and runoff conditions, with the highest concentrations occurring at Yuba River near mouth (~1,414 MPN/100 mL), Sacramento River at Verona (~816 MPN/100 mL), Butte Slough near Meridian (~692 MPN/100 mL), and Honcut Creek at Highway 70 (~680 MPN/100 mL).

5.3.4 Westside Subregion

Water quality in the Westside Subregion reflected highly seasonal stream systems influenced by sediment transport, mineralized geology, and intermittent flow conditions. Cottonwood Creek, Clear Creek, Elder Creek, Stony Creek, Thomes Creek, and Red Bank Creek generally exhibited elevated turbidity and metals concentrations during winter and spring runoff, followed by widespread low-flow or dry conditions later in the monitoring season. Total aluminum and iron were the most persistent exceedances, with particularly elevated concentrations at Stony Creek near the mouth, where total aluminum reached ~6,620 µg/L, and at Cottonwood Creek and Red Bank Creek sites during higher-flow events, indicating substantial sediment mobilization. Dissolved aluminum was also periodically elevated at Stony Creek, suggesting both dissolved and particulate metal contributions. Field conditions mirrored these trends, with elevated turbidity and conductivity during runoff periods and intermittent dry conditions limiting sample collection at several sites, particularly during summer and early fall monitoring events. Bacteria results showed episodic *E. coli* exceedances associated with wetter conditions and elevated turbidity, consistent with runoff-driven sediment inputs across the subregion.

5.4 Sacramento River Watershed Summary

Overall, water quality across the Sacramento River watershed reflected strong spatial variability driven by watershed geology, hydrology, land use, and seasonal runoff conditions. Spring-fed and higher-elevation systems within the Northeast and portions of the Eastside Subregions generally exhibited the highest water quality, characterized by low nutrients, low turbidity, stable field conditions, and consistently low metals concentrations. In contrast, lower-elevation tributaries, agricultural drainages, and runoff-influenced systems within the Eastside, Sacramento Valley, and Westside Subregions showed greater variability and more frequent exceedances of sediment-associated constituents during high-flow periods. Total aluminum and iron were the most persistent exceedances throughout the watershed, commonly increasing during winter and spring runoff events, with the highest concentrations observed in Big Chico Creek, Stony Creek, and several Sacramento River mainstem locations. Elevated turbidity and conductivity generally corresponded with downstream valley sites and storm-driven runoff conditions, while the Westside Subregion consistently exhibited higher conductivity and dissolved solids.

Bacteria indicators showed episodic but widespread *E. coli* exceedances across all subregions, typically associated with elevated flows, increased turbidity, and runoff conditions, suggesting watershed-wide influences from sediment transport, wildlife, livestock, or agricultural sources. Seasonal low-flow and intermittent dry conditions affected many smaller tributaries, particularly within the Eastside and Westside Subregions, limiting sample collection during late-season monitoring. In addition, wildfire-related access restrictions affected some upper watershed monitoring locations. Despite localized exceedances and seasonal variability, overall water quality throughout much of the Sacramento River watershed remained relatively stable in larger river corridors and spring-fed systems, with observed impairments primarily linked to runoff-driven sediment transport and associated constituent loading during wetter conditions.

5.5 Conclusion

The data in this report establish baseline field, chemical, and biological conditions across a range of hydrologic settings, including drought, high flow (wet year), and post-wildfire conditions. As such, they provide a foundation for comparing future monitoring results under varying water year types and disturbance regimes. These data also support evaluation of how climatic variability (e.g., drought and extreme precipitation) and wildfire influence water quality in the Sacramento River watershed and may contribute to identifying longer-term climate-driven trends.

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INTRODUCTION

A comprehensive quality assurance and quality control (QA/QC) review was conducted for all analytical data collected during the reporting period (May 2022–November 2025) to evaluate data usability.

QA/QC evaluation included review of laboratory blank detections, dissolved constituents reported at concentrations greater than their corresponding total constituents, duplicate sample precision, and regulatory benchmark exceedances.

Duplicate samples with a Relative Percent Difference (RPD) of 20% or greater and analytes associated with laboratory blank detections were excluded from data interpretation and trend analysis.

Results where dissolved concentrations exceeded total concentrations were retained for evaluation but identified as questionable and flagged accordingly within the dataset (Appendix B). Regulatory benchmark exceedances were also retained and included in the analysis but were assigned QA/QC flags for reference and transparency.

Tables 6-1 through 6-4 summarize QA/QC results by monitoring station with the total number of QA/QC flags received, while Tables 6-5 through 6-8 summarize QA/QC results by analyte with the percentage of QA/QC flags received. Together, these tables provide a comprehensive review of all QA/QC evaluations associated with data collected and analyzed during the reporting period.

6.1 QA/QC RESULTS BY STATION

6.1.1 Blank Detection by Station

Table 6-1. Blank Detection QC Flags by Monitoring Station.

This table summarizes monitoring stations with one or more blank detection quality control (QC) flags identified during the reporting period. The table includes the QC flag category, station name, number of flagged events, and the analytes associated with each blank detection event. Blank detection flags indicate that one or more analytes were detected in associated field blanks or equipment blanks above the laboratory reporting limit.

QC Flag	Station Name	Flagged Events	Parameters Flagged
Blank Detection	Cow Creek near Millville	13	Dissolved Nitrate + Nitrite; Dissolved Organic Carbon; Total Iron; Total Organic Carbon

QC Flag	Station Name	Flagged Events	Parameters Flagged
Blank Detection	Battle Creek North Fork near Manton	12	Dissolved Nitrate + Nitrite; Dissolved Organic Carbon; Total Iron; Total Organic Carbon
Blank Detection	Butte Slough near Meridian	12	Dissolved Iron; Dissolved Nitrate + Nitrite; Dissolved Organic Carbon; Total Iron; Total Organic Carbon
Blank Detection	Cow Creek Old above Killarc	12	Dissolved Nitrate + Nitrite; Dissolved Organic Carbon; Total Iron; Total Organic Carbon
Blank Detection	Cow Creek South at Campground	12	Dissolved Nitrate + Nitrite; Dissolved Organic Carbon; Total Iron; Total Organic Carbon
Blank Detection	Oak Run Creek near Oak Run	12	Dissolved Nitrate + Nitrite; Dissolved Organic Carbon; Total Iron; Total Organic Carbon
Blank Detection	Sacramento River at Colusa	12	Dissolved Iron; Dissolved Nitrate + Nitrite; Dissolved Organic Carbon; Total Iron; Total Organic Carbon
Blank Detection	Sacramento River above CBD near Knights Landing	12	Dissolved Iron; Dissolved Nitrate + Nitrite; Dissolved Organic Carbon; Total Iron; Total Organic Carbon
Blank Detection	Sutter Bypass at RD-1500 Powerplant	12	Dissolved Iron; Dissolved Nitrate + Nitrite; Dissolved Organic Carbon; Total Iron; Total Organic Carbon

QC Flag	Station Name	Flagged Events	Parameters Flagged
Blank Detection	Fall River at Glenburn	11	Dissolved Aluminum; Dissolved Iron; Dissolved Nitrate + Nitrite; Dissolved Organic Carbon; Total Nickel; Total Organic Carbon; Total Suspended Solids
Blank Detection	Pit River at Pittville	11	Dissolved Aluminum; Dissolved Iron; Dissolved Nitrate + Nitrite; Dissolved Organic Carbon; Total Nickel; Total Organic Carbon; Total Suspended Solids
Blank Detection	Pit River North Fork at Alturas	11	Dissolved Aluminum; Dissolved Iron; Dissolved Nitrate + Nitrite; Dissolved Organic Carbon; Total Nickel; Total Organic Carbon; Total Suspended Solids
Blank Detection	Pit River near Canby	11	Dissolved Aluminum; Dissolved Iron; Dissolved Nitrate + Nitrite; Dissolved Organic Carbon; Total Nickel; Total Organic Carbon; Total Suspended Solids
Blank Detection	Pit River South Fork near Alturas	11	Dissolved Aluminum; Dissolved Iron; Dissolved Nitrate + Nitrite; Dissolved Organic Carbon; Total Nickel; Total Organic Carbon; Total Suspended Solids

QC Flag	Station Name	Flagged Events	Parameters Flagged
Blank Detection	Battle Creek at Jellys Ferry Road Bridge	10	Dissolved Nitrate + Nitrite; Dissolved Organic Carbon; Total Aluminum; Total Copper; Total Iron; Total Phosphorus
Blank Detection	Cottonwood Creek North Fork near Igo	10	Dissolved Nitrate + Nitrite; Dissolved Organic Carbon; Total Aluminum; Total Copper; Total Iron; Total Phosphorus
Blank Detection	Clear Creek near mouth near Redding	10	Dissolved Nitrate + Nitrite; Dissolved Organic Carbon; Total Aluminum; Total Copper; Total Iron; Total Phosphorus
Blank Detection	Pit River near Montgomery Creek	10	Dissolved Aluminum; Dissolved Iron; Dissolved Nitrate + Nitrite; Dissolved Organic Carbon; Total Nickel; Total Organic Carbon; Total Suspended Solids
Blank Detection	Sacramento River at Balls Ferry	10	Dissolved Nitrate + Nitrite; Dissolved Organic Carbon; Total Aluminum; Total Copper; Total Iron; Total Phosphorus
Blank Detection	Sacramento River at Bend Bridge	10	Dissolved Nitrate + Nitrite; Dissolved Organic Carbon; Total Aluminum; Total Copper; Total Iron; Total Phosphorus

QC Flag	Station Name	Flagged Events	Parameters Flagged
Blank Detection	Sacramento River below Knights Landing	10	Dissolved Iron; Dissolved Nitrate + Nitrite; Dissolved Organic Carbon; Total Iron; Total Organic Carbon
Blank Detection	Paynes Creek at Paynes Crossing	9	Dissolved Nitrate + Nitrite; Dissolved Organic Carbon; Total Aluminum; Total Copper; Total Iron; Total Phosphorus
Blank Detection	Colusa Basin Drain at Knights Landing	8	Dissolved Iron; Dissolved Nitrate + Nitrite; Dissolved Organic Carbon; Total Iron; Total Organic Carbon
Blank Detection	Bear Creek at Parkville Rd	7	Dissolved Nitrate + Nitrite; Dissolved Organic Carbon; Total Iron
Blank Detection	McCloud River above Shasta Lake	7	Dissolved Cadmium; Dissolved Copper; Dissolved Nickel; Dissolved Nitrate + Nitrite; Dissolved Organic Carbon; Total Aluminum
Blank Detection	Sacramento River at Delta	7	Dissolved Cadmium; Dissolved Copper; Dissolved Nickel; Dissolved Nitrate + Nitrite; Dissolved Organic Carbon; Total Aluminum
Blank Detection	Sacramento River near Mt. Shasta	7	Dissolved Cadmium; Dissolved Copper; Dissolved Nickel; Dissolved Nitrate + Nitrite; Dissolved Organic Carbon; Total Aluminum
Blank Detection	Stillwater Creek near Anderson	7	Dissolved Nitrate + Nitrite; Dissolved Organic Carbon; Total Organic Carbon

QC Flag	Station Name	Flagged Events	Parameters Flagged
Blank Detection	Battle Creek South Fork near Mineral	6	Dissolved Aluminum; Dissolved Iron; Dissolved Nitrate + Nitrite; Dissolved Organic Carbon; Total Organic Carbon
Blank Detection	Bear Creek near Anderson	6	Dissolved Nitrate + Nitrite; Dissolved Organic Carbon; Total Organic Carbon
Blank Detection	Butte Creek at Butte Meadows	6	Dissolved Aluminum; Dissolved Iron; Dissolved Nitrate + Nitrite; Dissolved Organic Carbon; Total Organic Carbon
Blank Detection	Big Chico Creek at Chico	6	Dissolved Aluminum; Dissolved Iron; Dissolved Nitrate + Nitrite; Dissolved Organic Carbon; Total Organic Carbon
Blank Detection	Cottonwood Creek near mouth	6	Dissolved Organic Carbon; Total Aluminum; Total Copper; Total Iron; Total Phosphorus
Blank Detection	Deer Creek at Deer Station	6	Dissolved Aluminum; Dissolved Iron; Dissolved Nitrate + Nitrite; Dissolved Organic Carbon; Total Organic Carbon
Blank Detection	Mill Creek near Mineral	6	Dissolved Aluminum; Dissolved Iron; Dissolved Nitrate + Nitrite; Dissolved Organic Carbon; Total Organic Carbon
Blank Detection	Antelope Creek near mouth near Red Bluff	5	Dissolved Nitrate + Nitrite; Dissolved Organic Carbon
Blank Detection	Butte Creek downstream Western Canal Siphon	5	Dissolved Ammonia; Dissolved Iron; Dissolved Nitrate + Nitrite; Dissolved Organic Carbon

QC Flag	Station Name	Flagged Events	Parameters Flagged
Blank Detection	Bear River near mouth	5	Dissolved Ammonia; Dissolved Iron; Dissolved Nitrate + Nitrite; Dissolved Organic Carbon
Blank Detection	Deer Creek at Hwy 99E near Vina	5	Dissolved Nitrate + Nitrite; Dissolved Organic Carbon
Blank Detection	Feather River near Verona	5	Dissolved Ammonia; Dissolved Iron; Dissolved Nitrate + Nitrite; Dissolved Organic Carbon
Blank Detection	Mill Creek near mouth near Los Molinos	5	Dissolved Nitrate + Nitrite; Dissolved Organic Carbon
Blank Detection	Honcut Creek at Highway 70	5	Dissolved Ammonia; Dissolved Iron; Dissolved Nitrate + Nitrite; Dissolved Organic Carbon
Blank Detection	Sacramento River at Verona	5	Dissolved Ammonia; Dissolved Iron; Dissolved Nitrate + Nitrite; Dissolved Organic Carbon
Blank Detection	Sacramento River at Woodson Bridge	5	Dissolved Nitrate + Nitrite; Dissolved Organic Carbon
Blank Detection	Sacramento River below Red Bluff	5	Dissolved Nitrate + Nitrite; Dissolved Organic Carbon
Blank Detection	Yuba River near mouth	5	Dissolved Ammonia; Dissolved Iron; Dissolved Nitrate + Nitrite; Dissolved Organic Carbon
Blank Detection	Big Chico Creek at Highway 32	4	Dissolved Aluminum; Dissolved Iron; Dissolved Nitrate + Nitrite; Dissolved Organic Carbon
Blank Detection	Cottonwood Creek at Cottonwood	4	Dissolved Nitrate + Nitrite; Dissolved Organic Carbon

QC Flag	Station Name	Flagged Events	Parameters Flagged
Blank Detection	Churn Creek near Anderson	3	Dissolved Copper; Dissolved Nickel; Dissolved Organic Carbon
Blank Detection	Sacramento River at Hamilton City	3	Dissolved Organic Carbon; Total Organic Carbon
Blank Detection	Thomes Creek at Paskenta	2	Dissolved Organic Carbon; Total Organic Carbon

6.1.2 Duplicate Relative Percent Difference by Station

Table 6-2. Duplicate Relative Percent Difference (RPD) QC Flags by Monitoring Station

This table summarizes stations with one or more duplicate sample quality control (QC) flags associated with relative percent difference (RPD) values greater than 20 percent. The table includes the QC flag category, station name, number of flagged events, and analytes associated with each duplicate exceedance event. Duplicate RPD flags indicate elevated variability between parent and duplicate sample results exceeding the project QC acceptance threshold.

QC Flag	Station Name	Flagged Events	Parameters Flagged
Duplicate RPD >20	Sacramento River at Hamilton City	25	Dissolved Aluminum; Dissolved ortho-Phosphate; Total Aluminum; Total Chromium; Total Iron; Total Manganese; Total Nickel; Total Organic Carbon; Total Phosphorus; Total Suspended Solids

QC Flag	Station Name	Flagged Events	Parameters Flagged
Duplicate RPD >20	Sacramento River at Colusa	22	Dissolved Aluminum; Dissolved Iron; Dissolved Organic Carbon; Total Aluminum; Total Chromium; Total Iron; Total Kjeldahl Nitrogen; Total Manganese; Total Nickel; Total Organic Carbon; Total Organic Nitrogen; Total Phosphorus; Total Suspended Solids
Duplicate RPD >20	Fall River at Glenburn	18	Dissolved Aluminum; Dissolved Chromium; Dissolved Lead; Dissolved Nitrate + Nitrite; Total Aluminum; Total Chromium; Total Iron; Total Kjeldahl Nitrogen; Total Organic Carbon; Total Organic Nitrogen; Total Phosphorus; Total Suspended Solids
Duplicate RPD >20	Battle Creek North Fork near Manton	15	Dissolved Nitrate + Nitrite; Dissolved Organic Carbon; Dissolved Sulfate; Total Aluminum; Total Iron; Total Organic Carbon; Total Phosphorus; Total Suspended Solids
Duplicate RPD >20	Feather River near Verona	13	Dissolved Aluminum; Dissolved Iron; Dissolved Manganese; Total Aluminum; Total Copper; Total Iron; Total Manganese; Total Nickel; Total Phosphorus; Total Suspended Solids

QC Flag	Station Name	Flagged Events	Parameters Flagged
Duplicate RPD >20	Sacramento River below Red Bluff	2	Aluminum; Iron
Duplicate RPD >20	Pit River South Fork near Alturas	1	Total Suspended Solids

6.1.3 Dissolved Greater than Total by Station

Table 6-3. Dissolved Greater Than Total QC Flags by Monitoring Station

This table summarizes stations with one or more quality control (QC) flags where dissolved analyte concentrations exceeded corresponding total analyte concentrations. The table includes the QC flag category, station name, number of flagged events, and associated analytes for each occurrence. Dissolved greater than total flags indicate potentially questionable analytical results or sample variability requiring additional QA/QC review.

QC Flag	Station Name	Flagged Events	Parameters Flagged
Dissolved > Total	Mill Creek near Mineral	11	Antimony; Arsenic; Barium; Organic Carbon
Dissolved > Total	Pit River near Montgomery Creek	11	Arsenic; Organic Carbon
Dissolved > Total	Antelope Creek near mouth near Red Bluff	10	Arsenic; Barium; Nickel; Organic Carbon
Dissolved > Total	Cow Creek near Millville	10	Aluminum; Arsenic; Barium; Copper; Iron; Manganese; Organic Carbon; Zinc
Dissolved > Total	Pit River at Pittville	10	Barium; Chromium; Organic Carbon
Dissolved > Total	Pit River near Canby	10	Arsenic; Organic Carbon
Dissolved > Total	Pit River South Fork near Alturas	10	Arsenic; Nickel; Organic Carbon; Selenium; Zinc
Dissolved > Total	Big Chico Creek at Chico	9	Barium; Organic Carbon
Dissolved > Total	COW C S A CG	9	Barium; Organic Carbon
Dissolved > Total	Stony Creek near mouth	9	Arsenic; Barium; Organic Carbon
Dissolved > Total	DEER C A HWY 99E NR VINA	8	Arsenic; Barium; Organic Carbon
Dissolved > Total	PIT R NF A ALTURAS	8	Arsenic; Organic Carbon
Dissolved > Total	Thomes Creek at Paskenta	8	Arsenic; Barium; Copper; Organic Carbon

QC Flag	Station Name	Flagged Events	Parameters Flagged
Dissolved > Total	Battle Creek North Fork near Manton	7	Arsenic; Barium; Chromium; Organic Carbon
Dissolved > Total	Big Chico Creek at Highway 32	7	Barium; Organic Carbon
Dissolved > Total	Mill Creek near mouth near Los Molinos	7	Arsenic; Iron; Organic Carbon
Dissolved > Total	Sacramento River at Delta	7	Arsenic; Barium; Organic Carbon
Dissolved > Total	Cottonwood Creek North Fork near Igo	6	Barium; Organic Carbon
Dissolved > Total	Deer Creek at Deer Station	6	Barium; Organic Carbon
Dissolved > Total	Fall River at Glenburn	6	Arsenic; Chromium; Organic Carbon
Dissolved > Total	Battle Creek South Fork near Mineral	5	Barium; Organic Carbon
Dissolved > Total	Butte Creek at Butte Meadows	5	Organic Carbon
Dissolved > Total	Butte Creek downstream Western Canal Siphon	5	Organic Carbon
Dissolved > Total	Churn Creek near Anderson	5	Barium; Organic Carbon
Dissolved > Total	Cow Creek Old above Killarc	5	Organic Carbon
Dissolved > Total	Cottonwood Creek near mouth	5	Barium; Organic Carbon
Dissolved > Total	Elder Creek near mouth	5	Barium; Organic Carbon
Dissolved > Total	McCloud River above Shasta Lake	5	Organic Carbon
Dissolved > Total	Clear Creek near mouth near Redding	4	Barium; Organic Carbon
Dissolved > Total	Oak Run Creek near Oak Run	4	Organic Carbon
Dissolved > Total	Sacramento River near Mt. Shasta	4	Nickel; Organic Carbon
Dissolved > Total	Thomes Creek at Hall Road near Richfield	4	Organic Carbon
Dissolved > Total	Bear Creek at Parkville Rd	3	Barium; Organic Carbon
Dissolved > Total	Red Bank C upstream Tehama Colusa Canal	3	Barium; Organic Carbon
Dissolved > Total	Cottonwood Creek at Cottonwood	2	Barium; Manganese

QC Flag	Station Name	Flagged Events	Parameters Flagged
Dissolved > Total	Red Bank Creek at Highway 99W near Red Bluff	2	Barium; Organic Carbon
Dissolved > Total	Bear Creek near Anderson	1	Chromium
Dissolved > Total	Stillwater Creek near Anderson	1	Organic Carbon

6.1.4 Regulatory Exceedances by Station

Table 6-4. Regulatory Exceedance QC Flags by Monitoring Station

This table summarizes monitoring stations with one or more regulatory exceedance quality control (QC) flags identified during the reporting period. The table includes the QC flag category, station name, number of flagged events, and the analytes or parameters associated with each exceedance event. Exceedance flags represent measured concentrations or field values that exceeded applicable regulatory benchmarks or aquatic life criteria.

QC Flag	Station Name	Flagged Events	Parameters Flagged
Exceedance	Butte Slough near Meridian	47	Total Aluminum; Total Arsenic; Total Iron; Total Manganese
Exceedance	Sutter Bypass at RD-1500 Powerplant	40	Total Aluminum; Total Iron; Total Manganese
Exceedance	Colusa Basin Drain at Knights Landing	36	Specific Conductance; Total Aluminum; Total Dissolved Solids; Total Iron; Total Manganese
Exceedance	Mill Creek near Mineral	36	Dissolved Arsenic; Total Aluminum; Total Arsenic; Total Iron; Total Manganese
Exceedance	Sacramento River at Colusa	30	Total Aluminum; Total Iron; Total Manganese
Exceedance	Sacramento River below Knights Landing	29	Total Aluminum; Total Iron; Total Manganese
Exceedance	Mill Creek near mouth near Los Molinos	28	<i>E. coli</i> ; Total Aluminum; Total Arsenic; Total Iron; Total Manganese

QC Flag	Station Name	Flagged Events	Parameters Flagged
Exceedance	Pit River South Fork near Alturas	27	Total Aluminum; Total Iron; Total Manganese
Exceedance	Sacramento River above CBD near Knights Landing	27	Total Aluminum; Total Iron; Total Manganese
Exceedance	Bear R NR MO	25	Total Aluminum; Total Iron; Total Manganese
Exceedance	Honcut Creek at Highway 70	24	Total Aluminum; Total Iron; Total Manganese
Exceedance	Oak Run Creek near Oak Run	23	Total Aluminum; Total Iron; Total Manganese
Exceedance	Antelope Creek near mouth near Red Bluff	22	<i>E. coli</i> ; Total Aluminum; Total Arsenic; Total Iron; Total Manganese
Exceedance	Sacramento River at Verona	18	Total Aluminum; Total Iron; Total Manganese
Exceedance	Stony Creek near mouth	17	Total Aluminum; Total Iron; Total Manganese
Exceedance	THOMES C A HALL RD	15	Total Aluminum; Total Iron; Total Manganese
Exceedance	Cottonwood Creek North Fork near Igo	14	Total Aluminum; Total Iron; Total Manganese
Exceedance	Thomes Creek at Paskenta	14	Total Aluminum; Total Iron; Total Manganese
Exceedance	Feather River near Verona	13	Total Aluminum; Total Iron; Total Manganese
Exceedance	Sacramento River at Hamilton City	13	Total Aluminum; Total Iron; Total Manganese
Exceedance	Oak Run Creek near Oak Run	12	<i>E. coli</i>
Exceedance	Sacramento River at Bend Bridge	12	Total Aluminum; Total Iron; Total Manganese

QC Flag	Station Name	Flagged Events	Parameters Flagged
Exceedance	Cow Creek near Millville	11	Total Aluminum; Total Iron
Exceedance	Sacramento River at Woodson Bridge	11	Total Aluminum; Total Iron
Exceedance	Butte Creek downstream Western Canal Siphon	10	Total Aluminum; Total Iron; Total Manganese
Exceedance	Cottonwood Creek near mouth	10	Total Aluminum; Total Iron; Total Manganese
Exceedance	Sacramento River at Balls Ferry	10	Total Aluminum; Total Iron; Total Manganese
Exceedance	Big Chico Creek at Chico	9	Total Aluminum; Total Iron; Total Manganese
Exceedance	Paynes Creek at Paynes Crossing	9	<i>E. coli</i> ; Total Aluminum; Total Iron; Total Manganese
Exceedance	Cow Creek Old above Killarc	8	Total Aluminum; Total Iron; Total Manganese
Exceedance	Battle Creek at Jellys Ferry Road Bridge	7	<i>E. coli</i> ; Total Aluminum; Total Iron; Total Manganese
Exceedance	Big Chico Creek at Highway 32	7	Total Aluminum; Total Iron; Total Manganese
Exceedance	Cottonwood Creek at Cottonwood	7	Total Aluminum; Total Iron; Total Manganese
Exceedance	Deer Creek at Hwy 99E near Vina	7	<i>E. coli</i> ; Total Aluminum; Total Iron
Exceedance	Bear Creek at Parkville Rd	6	Total Aluminum; Total Iron; Total Manganese
Exceedance	Churn Creek near Anderson	6	Total Aluminum; Total Iron; Total Manganese
Exceedance	Red Bank C upstream Tehama Colusa Canal	6	Total Aluminum; Total Iron

QC Flag	Station Name	Flagged Events	Parameters Flagged
Exceedance	Stillwater Creek near Anderson	6	Total Aluminum; Total Iron; Total Manganese
Exceedance	Battle Creek North Fork near Manton	5	Total Aluminum; Total Iron
Exceedance	Butte Creek at Butte Meadows	5	Total Aluminum; Total Iron
Exceedance	Big Chico Creek at Chico	5	<i>E. coli</i>
Exceedance	Deer Creek at Deer Station	5	Total Aluminum; Total Iron; Total Manganese
Exceedance	Sacramento River below Red Bluff	5	Total Aluminum; Total Iron
Exceedance	Battle Creek South Fork near Mineral	4	Total Aluminum; Total Iron
Exceedance	Bear Creek near Anderson	3	Total Aluminum; Total Iron
Exceedance	Battle Creek South Fork near Mineral	3	<i>E. coli</i>
Exceedance	Cow Creek South at Campground	3	Total Aluminum; Total Iron
Exceedance	Cottonwood Creek North Fork near Igo	3	<i>E. coli</i>
Exceedance	Sacramento River at Delta	3	Total Aluminum; Total Iron
Exceedance	Butte Slu near Meridian	2	<i>E. coli</i>
Exceedance	Clear Creek near mouth near Redding	2	Total Aluminum; Total Iron
Exceedance	Cottonwood Creek near mouth	2	<i>E. coli</i>
Exceedance	Cow Creek near Millville	2	<i>E. coli</i>
Exceedance	Elder Creek near mouth	2	Total Aluminum; Total Iron
Exceedance	Pit River South Fork near Alturas	2	<i>E. coli</i>
Exceedance	Bear River near mouth	1	<i>E. coli</i>
Exceedance	Butte Creek downstream Western Canal Siphon	1	<i>E. coli</i>

QC Flag	Station Name	Flagged Events	Parameters Flagged
Exceedance	Churn Creek near Anderson	1	<i>E. coli</i>
Exceedance	Clear Creek near mouth	1	<i>E. coli</i>
Exceedance	Deer Creek at Deer Station	1	<i>E. coli</i>
Exceedance	Elder Creek near mouth	1	<i>E. coli</i>
Exceedance	Honcut Creek at Highway 70	1	<i>E. coli</i>
Exceedance	Pit River at Pittville	1	<i>E. coli</i>
Exceedance	Red Bank Creek at HWY 99W	1	<i>E. coli</i>
Exceedance	Sacramento River near Mt. Shasta	1	Total Aluminum
Exceedance	Sacramento River at Bend Bridge	1	<i>E. coli</i>
Exceedance	Sacramento River at Verona	1	<i>E. coli</i>
Exceedance	Stony Creek near mouth	1	<i>E. coli</i>
Exceedance	Thomes Creek at Hall Road near Richfield	1	<i>E. coli</i>
Exceedance	Yuba River near mouth	1	Total Aluminum
Exceedance	Yuba River at mouth	1	<i>E. coli</i>

6.2 QA/QC RESULTS BY ANALYTE

6.2.1 Blank Detection by Analyte

Table 6-5. Blank Detection QC Flags by Analyte

This table summarizes the frequency of blank detection quality control (QC) flags by analyte during the reporting period. The table includes the analyte name, total number of flagged events, and the percentage of samples associated with each blank detection flag. Blank detection flags indicate that analytes were detected in associated field blanks or equipment blanks above the laboratory reporting limit.

QC Flag	Analyte	Flagged Events	Percent Flagged
Blank Detection	Dissolved Organic Carbon	157	19.748

QC Flag	Analyte	Flagged Events	Percent Flagged
Blank Detection	Dissolved Nitrate + Nitrite	89	11.195
Blank Detection	Total Organic Carbon	32	4.025
Blank Detection	Dissolved Iron	30	3.774
Blank Detection	Total Iron	26	3.27
Blank Detection	Dissolved Aluminum	12	1.509
Blank Detection	Total Aluminum	10	1.258
Blank Detection	Total Copper	7	0.881
Blank Detection	Total Phosphorus	7	0.881
Blank Detection	Dissolved Ammonia	6	0.755
Blank Detection	Total Nickel	6	0.755
Blank Detection	Total Suspended Solids	6	0.755
Blank Detection	Dissolved Copper	4	0.503
Blank Detection	Dissolved Nickel	4	0.503
Blank Detection	Dissolved Cadmium	3	0.377

6.2.2 Duplicate Relative Percent Difference by Analyte

Table 6-6. Duplicate Relative Percent Difference (RPD) QC Flags by Analyte

This table summarizes the frequency of duplicate sample quality control (QC) flags associated with relative percent difference (RPD) values greater than 20 percent by analyte during the reporting period. The table includes the analyte name, total number of flagged events, and the percentage of samples associated with each duplicate exceedance flag. Duplicate RPD flags indicate elevated variability between parent and duplicate sample results exceeding the project QC acceptance threshold.

QC Flag	Analyte	Flagged Events	Percent Flagged
Duplicate RPD >20	Total Suspended Solids	13	1.635
Duplicate RPD >20	Total Aluminum	12	1.509
Duplicate RPD >20	Total Organic Carbon	10	1.258
Duplicate RPD >20	Total Phosphorus	10	1.258
Duplicate RPD >20	Total Iron	9	1.132
Duplicate RPD >20	Dissolved Aluminum	6	0.755
Duplicate RPD >20	Dissolved Organic Carbon	5	0.629
Duplicate RPD >20	Dissolved Iron	4	0.503

QC Flag	Analyte	Flagged Events	Percent Flagged
Duplicate RPD >20	Dissolved Nitrate + Nitrite	4	0.503
Duplicate RPD >20	Total Chromium	4	0.503
Duplicate RPD >20	Total Nickel	4	0.503
Duplicate RPD >20	Total Manganese	3	0.377
Duplicate RPD >20	Total Kjeldahl Nitrogen	2	0.252
Duplicate RPD >20	Total Organic Nitrogen	2	0.252
Duplicate RPD >20	Aluminum	1	0.126
Duplicate RPD >20	Dissolved Chromium	1	0.126
Duplicate RPD >20	Dissolved Lead	1	0.126
Duplicate RPD >20	Dissolved Manganese	1	0.126
Duplicate RPD >20	Dissolved Sulfate	1	0.126
Duplicate RPD >20	Dissolved ortho-Phosphate	1	0.126
Duplicate RPD >20	Iron	1	0.126
Duplicate RPD >20	Total Copper	1	0.126

6.2.3 Dissolved Greater than Total by Analyte

Table 6-7. Dissolved Greater Than Total QC Flags by Analyte

This table summarizes the frequency of quality control (QC) flags where dissolved analyte concentrations exceeded corresponding total analyte concentrations by analyte during the reporting period. The table includes the analyte name, total number of flagged events, and the percentage of samples associated with each dissolved greater than total flag. These flags indicate potentially questionable analytical results or sample variability requiring additional QA/QC review.

QC Flag	Analyte	Flagged Events	Percent Flagged
Dissolved > Total	Organic Carbon	153	19.245
Dissolved > Total	Barium	47	5.912
Dissolved > Total	Arsenic	32	4.025
Dissolved > Total	Chromium	4	0.503
Dissolved > Total	Nickel	3	0.377
Dissolved > Total	Antimony	2	0.252
Dissolved > Total	Copper	2	0.252
Dissolved > Total	Iron	2	0.252
Dissolved > Total	Manganese	2	0.252

QC Flag	Analyte	Flagged Events	Percent Flagged
Dissolved > Total	Zinc	2	0.252
Dissolved > Total	Aluminum	1	0.126
Dissolved > Total	Selenium	1	0.126

6.2.4 Regulatory Exceedances by Analyte

Table 6-8. Regulatory Exceedance QC Flags by Analyte

This table summarizes the frequency of regulatory exceedance quality control (QC) flags by analyte during the reporting period. The table includes the analyte name, total number of flagged events, and the percentage of samples associated with each exceedance flag. Exceedance flags indicate measured concentrations or field values that exceeded applicable regulatory benchmarks or aquatic life criteria.

QC Flag	Analyte	Flagged Events	Percent Flagged
Exceedance	Total Aluminum	301	37.862
Exceedance	Total Iron	224	28.176
Exceedance	Total Manganese	104	13.082
Exceedance	<i>E. coli</i>	54	6.792
Exceedance	Total Arsenic	36	4.528
Exceedance	Dissolved Arsenic	3	0.377
Exceedance	Specific Conductance	1	0.126
Exceedance	Total Dissolved Solids	1	0.126

7 Appendix B. Water Quality Results

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INTRODUCTION

This appendix presents water quality data for all stations, by subregion, collected during the reporting period (May 2022–November 2025), including associated Quality Assurance/Quality Control (QA/QC) flags and qualifiers. QA/QC annotations are included to provide transparency regarding data quality.

Results tables use formatting and abbreviations to identify flagged data and data completeness. Text formatting and abbreviations highlight QA/QC concerns, reporting limits, and incomplete or unavailable results. Refer to the Legend below (Table 7-1) for definitions and interpretation of each QA/QC flag and data qualifier.

Table 7-1. QA/QC Flags, Definitions, and Data Completeness Criteria.

This table summarizes the QA/QC flags applied to analytical and field data collected during the reporting period. The table defines how each QA/QC flag is displayed within the water quality results summary tables, describes the meaning of each flag, and identifies the criteria used to trigger the flag. This table also indicates whether flagged results were considered complete or incomplete for data completeness evaluations.

QC Flag	Display in Table	Meaning	Triggers and Completeness
Blank Exceedance	B>RL	A Field Blank or Equipment Blank was above the laboratory reporting limit	Counts as incomplete
Duplicate Exceedance	RPD>20	A Duplicate Sample had a relative percent difference of 20% or greater compared to its parent sample	Counts as incomplete
No data to report	No Data	No data available — bad calibration, missing data, container issue, or other problem	Counts as incomplete
No Access	Access	No access to station — flooding, locked gates, safety concerns, wildfire, etc.	Counts as incomplete
Dry Stream	Dry	Dry stream or insufficient flow for sampling	Counts as incomplete

7.1 WATER QUALITY THRESHOLD TABLE

The table below (Table 7-2) presents the applicable regulatory and water quality criteria used to evaluate analytical results collected during the reporting period. Criteria include maximum contaminant levels, secondary maximum contaminant levels, action levels, aquatic life criteria, and bacteria thresholds established by State and federal regulatory agencies.

Table 7-2. Regulatory Benchmarks and Aquatic Life Criteria Used for Water Quality Evaluation

This table summarizes the regulatory benchmarks and aquatic life criteria used to evaluate water quality results collected during the reporting period. Criteria include California Maximum Contaminant Levels (MCLs), Secondary Maximum Contaminant Levels (SMCLs), Action Levels (ALs), U.S. EPA aquatic life criteria, and the *Escherichia coli* (E. coli) statistical threshold value (STV). Not all U.S. EPA aquatic life criteria are included because some criteria are hardness-dependent, tissue-based, or otherwise require site-specific calculations. The table identifies the applicable analyte, regulatory category, benchmark concentration, reporting units, and source agency used for comparison against measured results.

Analyte	Criteria	Regulatory Value	Units	Source
Total Aluminum	MCL	1000	ug/L	CA State Water Resources Control Board
Total Aluminum	SMCL	200	ug/L	CA State Water Resources Control Board
Total Antimony	MCL	6	ug/L	CA State Water Resources Control Board
Total Arsenic	MCL	10	ug/L	CA State Water Resources Control Board
Total Barium	MCL	1000	ug/L	CA State Water Resources Control Board
Total Beryllium	MCL	4	ug/L	CA State Water Resources Control Board
Total Cadmium	MCL	5	ug/L	CA State Water Resources Control Board
Total Chromium	MCL	50	ug/L	CA State Water Resources Control Board

Analyte	Criteria	Regulatory Value	Units	Source
Total Nickel	MCL	100	ug/L	CA State Water Resources Control Board
Dissolved Nitrate + Nitrite	MCL	10	mg/L as N	CA State Water Resources Control Board
Total Selenium	MCL	50	ug/L	CA State Water Resources Control Board
Total Copper	SMCL	1000	ug/L	CA State Water Resources Control Board
Total Iron	SMCL	300	ug/L	CA State Water Resources Control Board
Total Manganese	SMCL	50	ug/L	CA State Water Resources Control Board
Total Silver	SMCL	100	ug/L	CA State Water Resources Control Board
Total Zinc	SMCL	5000	ug/L	CA State Water Resources Control Board
Total Dissolved Solids	SMCL	500	mg/L	CA State Water Resources Control Board
Specific Conductance	SMCL	900	uS/cm	CA State Water Resources Control Board
Field Specific Conductance	SMCL	900	uS/cm	CA State Water Resources Control Board
Dissolved Chloride	SMCL	250	mg/L	CA State Water Resources Control Board
Dissolved Sulfate	SMCL	250	mg/L	CA State Water Resources Control Board
Total Copper	AL	1300	ug/L	CA State Water Resources Control Board
Total Lead	AL	15	ug/L	CA State Water Resources Control Board

Analyte	Criteria	Regulatory Value	Units	Source
Dissolved Arsenic	Aquatic	150	ug/L	U.S. EPA Aquatic Life Criteria
Dissolved Chloride	Aquatic	230	mg/L	U.S. EPA Aquatic Life Criteria
<i>E. coli</i>	STV	320	MPN/100 mL	CA State Water Resources Control Board

Water Quality Threshold Table Abbreviations:

MCL = Maximum Contaminant Level; SMCL = Secondary Maximum Contaminant Level; AL = Action Level; STV = Statistical Threshold Value; U.S. EPA = United States Environmental Protection Agency.

7.2 LABORATORY REPORTING LIMITS

Reporting limits represent the minimum concentration at which an analyte could be reliably quantified by the analytical laboratory. Laboratory reporting limits (RL) for analytes evaluated during the reporting period are summarized below (Table 7-3).

Table 7-3. Analytical Reporting Limits for Water Quality Parameters

This table summarizes the laboratory reporting limits used for analytes evaluated during the reporting period. Values are provided with their associated reporting units for dissolved and total constituents.

Analyte	Reporting Limit	Units
Dissolved Aluminum	10	µg/L
Dissolved Ammonia	0.05	mg/L as N
Dissolved Antimony	1	µg/L
Dissolved Arsenic	1	µg/L
Dissolved Barium	5	µg/L
Dissolved Beryllium	1	µg/L
Dissolved Boron	0.1	mg/L
Dissolved Cadmium	1	µg/L
Dissolved Calcium	1	mg/L
Dissolved Chloride	1	mg/L
Dissolved Chromium	1	µg/L
Dissolved Copper	1	µg/L
Dissolved Hardness	1	mg/L as CaCO ₃
Dissolved Iron	5	µg/L

Analyte	Reporting Limit	Units
Dissolved Lead	1	µg/L
Dissolved Magnesium	1	mg/L
Dissolved Manganese	5	µg/L
Dissolved Nickel	1	µg/L
Dissolved Nitrate + Nitrite	0.05	mg/L as N
Dissolved Organic Carbon	0.5	mg/L as C
Dissolved Ortho-phosphate	0.05	mg/L as P
Dissolved Potassium	0.5	mg/L
Dissolved Selenium	1	µg/L
Dissolved Silver	1	µg/L
Dissolved Sodium	1	mg/L
Dissolved Sulfate	1	mg/L
Dissolved Zinc	5	µg/L
Specific Conductance	5	µmhos/cm@25 °C
Total Alkalinity	20	mg/L as CaCO ₃
Total Aluminum	10	µg/L
Total Antimony	1	µg/L
Total Arsenic	1	µg/L
Total Barium	5	µg/L
Total Beryllium	1	µg/L
Total Cadmium	1	µg/L
Total Chromium	1	µg/L
Total Copper	1	µg/L
Total Dissolved Solids	2.5	mg/L
Total Iron	5	µg/L
Total Lead	1	µg/L
Total Manganese	5	µg/L
Total Nickel	1	µg/L
Total Organic Carbon	0.5	mg/L as C
Total Phosphorus	0.01	mg/L as P
Total Selenium	1	µg/L
Total Silver	1	µg/L
Total Suspended Solids	2.5	mg/L
Total Zinc	5	µg/L
Total Kjeldahl Nitrogen	0.1	mg/L
Total Ammonia	0.1	mg/L
Total Organic Nitrogen	0.1	mg/L

7.3 Laboratory Reporting Limit References

California Department of Water Resources Bryte Chemical Laboratory.
Analytical Laboratory Reporting Limits and Methods. West Sacramento,
CA: California Department of Water Resources.

Weck Laboratories, Inc. Analytical Methods and Laboratory Reporting Limits
for Environmental Samples. City of Industry, CA: Weck Laboratories,
Inc.

7.4 WATER QUALITY RESULTS

The following results tables present water quality data collected during the reporting period for each subregion with QA/QC flags applied to analytical and field data. Results are organized by subregion and station, with separate tables provided for water chemistry, field measurements, and bacteria indicators for each station.

7.4.1 Northeast Subregion

A2215000 — McCloud River Above Shasta Lake

McCloud River Above Shasta Lake — Water Chemistry

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Alkalinity	mg/L as CaCO ₃	59.5	56.7	50.6	53	51.7	59.2	57.3	37	56.1	58.3	55.7	28.8	58.2	58	57.2
Dissolved Aluminum	ug/L	<RL	136	11.4	<RL	11.1	<RL	<RL	36	<RL	28.1	<RL	116	<RL	15.4	<RL
Total Aluminum	ug/L	140	7410	1120	52.2	154	84.8	B>RL	284	58.7	286	108	995	24.8	163	38.9
Dissolved Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Arsenic	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Arsenic	ug/L	<RL	<RL	<RL	<RL	<RL	1.01	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Barium	ug/L	18	9.27	8.71	21	20.8	17.3	14.6	17.1	21.1	15	12.6	14.4	21.8	16.3	14.5
Total Barium	ug/L	19	48.8	14.4	23.3	24.3	18.6	16	21.1	22.9	16.2	13.2	27.6	22	16.8	14.7
Dissolved Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Boron	mg/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Cadmium	ug/L	<RL	<RL	B>RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Calcium	mg/L	14.1	11.8	9.15	14.1	13.2	13	12.7	10.1	14.6	12.4	11.4	6.95	14.5	12.2	12.4
Dissolved Chloride	mg/L	1.3	1.4	1.39	1.24	<RL	1.3	1.53	<RL	<RL	1.41	1.66	<RL	<RL	1.19	1.54
Dissolved Chromium	ug/L	0.45	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Chromium	ug/L	0.45	2.59	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Specific Conductance	uS/cm@25 °C	127	118	108	118	108	123	122	78.2	119	119	118	59	120	120	118
Dissolved Copper	ug/L	<RL	B>RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Copper	ug/L	<RL	15.7	1.48	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	2.15	<RL	<RL	<RL
Dissolved Hardness	mg/L as CaCO ₃	49	46	39	48	43	48	47	34	48	46	44	25	49	45	47
Dissolved Iron	ug/L	<RL	53.8	15.4	20.7	13.4	16.5	24.6	23.4	9.12	22.3	41.1	76.2	6.63	15.2	23.3
Total Iron	ug/L	58	2350	270	43.7	80.7	60.1	84.7	233	59.3	123	87.4	916	27	59.8	47.7
Dissolved Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Lead	ug/L	<RL	1.09	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Magnesium	mg/L	3.33	3.94	3.87	3.01	2.36	3.73	3.7	2.09	2.89	3.74	3.89	1.74	3.09	3.61	3.93
Dissolved Manganese	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Manganese	ug/L	<RL	41.6	26	<RL	<RL	5.39	6.78	9.3	<RL	6.34	6.15	45.8	<RL	<RL	<RL
Dissolved Nickel	ug/L	<RL	B>RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Nickel	ug/L	<RL	3.01	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Nitrate + Nitrite	mg/L as N	<RL	0.08	<RL	0.1	0.05	<RL	<RL	0.07	<RL	<RL	<RL	B>RL	<RL	B>RL	0.06
Dissolved Organic Carbon	mg/L as C	1.2	B>RL	1.1	1.4	1	1.2	2.1	0.8	<RL	0.6	0.7	1	<RL	0.6	0.6
Total Organic Carbon	mg/L as C	1.2	1	0.8	1.1	1.2	0.9	2	0.8	<RL	0.7	0.7	1	<RL	0.8	0.7
Dissolved ortho-Phosphate	mg/L as P	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Phosphorus	mg/L as P	0.01	0.15	0.04	0.01	0.02	0.02	0.02	0.01	0.02	0.02	0.02	0.04	<RL	0.02	0.02
Dissolved Potassium	mg/L	0.83	1.26	1.52	0.54	<RL	1.14	1.2	<RL	<RL	1.13	1.24	<RL	0.62	1.16	1.41
Dissolved Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Sodium	mg/L	4.27	5.5	5.4	3.35	2.77	3.93	4.81	2.58	3.61	5.05	5.31	1.86	3.64	4.88	5.36
Total Dissolved Solids	mg/L	82	87	89	77	76	88	95	59	81	90	90	43	82	93	93

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Suspended Solids	mg/L	<RL	99.6	19.7	<RL	4.4	4	3.8	7.2	3.4	9.1	3.1	29.9	<RL	3.7	<RL
Dissolved Sulfate	mg/L	3.45	2.4	1.57	4.25	3.19	2.69	3.32	2.43	3.62	2.53	2.52	1.63	3.38	2.44	2.77
Dissolved Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	5.31
Total Zinc	ug/L	<RL	5.24	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Kjeldahl Nitrogen	mg/L	<RL	<RL	0.17	<RL	<RL	<RL	0.11	<RL	<RL	<RL	<RL	0.17	<RL	<RL	<RL
Total Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	No Data
Total Organic Nitrogen	mg/L	<RL	<RL	0.17	<RL	<RL	<RL	0.11	<RL	<RL	<RL	<RL	0.17	<RL	<RL	No Data

McCloud River Above Shasta Lake — Field Measurements

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Field Specific Conductance	uS/cm@25 °C	120	115.4	107	113	104	No Data	117.5	76.3	115.1	118.2	116	57.6	118.2	119.1	116
Field Dissolved Oxygen	mg/L	10.4	9.66	9.6	12.6	11.7	9.97	11.2	11.74	11.17	9.69	11.83	11.28	11.2	9.81	11.01
Field pH	pH Units	8	7.71	8	7.8	7.3	7.58	7.5	7.78	7.9	7.82	7.7	7.27	7.62	7.62	7.44
Field Water Temperature	°C	9.6	15.4	12.3	5.7	8	15.4	8.9	7.7	9.5	15.1	7.7	9.2	11	15.5	9.7
Field Turbidity	F.N.U.	0.8	78.09	0.6	1.7	4	2.08	2.96	6.35	1.62	7.3	2.34	24.38	0.31	No Data	1.9

McCloud River Above Shasta Lake — Bacteria Indicators

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Coliform, Total	MPN/100 mL	428.77	1612.73	1612.73	229.97	169.47	400.97	1612.73	240.5	699.77	624.5	234	1383.83	473.67	1468.3	376.57
E. coli	MPN/100 mL	0.33	13.87	13.53	1.73	2.07	2.07	29.4	2.4	0.67	3.13	3.93	13.77	7.9	3.13	6.97

A2130000 — Sacramento River at Delta

Sacramento River at Delta — Water Chemistry

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Alkalinity	mg/L as CaCO ₃	60	76.8	76.7	51.3	46.7	63.2	68.2	24.6	48.6	67.3	71.4	26.2	46.9	67.3	69
Dissolved Aluminum	ug/L	<RL	<RL	<RL	14.2	21.6	13.7	<RL	35.9	13.2	<RL	<RL	221	<RL	10.3	<RL
Total Aluminum	ug/L	27	11.2	15.5	37.7	60.8	15.9	B>RL	232	48.7	10.2	105	783	31.3	32.9	32.8
Dissolved Ammonia	mg/L as N	No Data	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Arsenic	ug/L	2.4	7.53	8.77	1.74	<RL	6.88	5.1	<RL	<RL	5.32	6.6	<RL	<RL	6.05	6.21
Total Arsenic	ug/L	2.6	7.55	9.22	2.01	<RL	6.66	5.02	<RL	1.05	5.6	6.87	<RL	<RL	6.22	6.31
Dissolved Barium	ug/L	8.6	10.8	10.3	10.1	6.27	10.2	11.1	13	5.48	10.1	10.4	8.86	5.28	12.1	10.5
Total Barium	ug/L	8.9	10.8	11.1	11.1	7.04	10.6	11.6	15.5	6	10.3	10.7	14.7	5.2	11.9	11.2
Dissolved Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Boron	mg/L	<RL	0.21	0.24	<RL	<RL	0.14	0.18	<RL	<RL	0.16	0.18	<RL	<RL	0.15	0.18
Dissolved Cadmium	ug/L	<RL	<RL	B>RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Calcium	mg/L	6.28	8.96	9.24	7.17	4.95	7.93	8.95	3.47	4.47	7.97	9.25	3.45	4.61	7.94	9.27
Dissolved Chloride	mg/L	No Data	7.9	8.9	2.87	1.51	5.49	7.05	<RL	1.43	5.82	7.4	<RL	1.64	6.1	7.25
Dissolved Chromium	ug/L	<RL	<RL	<RL	1.03	1.16	<RL	<RL	<RL	<RL	<RL	<RL	2.32	<RL	<RL	<RL
Total Chromium	ug/L	1.1	<RL	<RL	1.12	1.55	<RL	<RL	2.28	1.31	<RL	1.85	8.16	<RL	<RL	<RL
Specific Conductance	uS/cm@25 °C	129	175	183	116	94.9	144	159	52	98	152	167	53.2	93.6	150	160
Dissolved Copper	ug/L	<RL	B>RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Copper	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	2.09	<RL	<RL	<RL
Dissolved Hardness	mg/L as CaCO ₃	No Data	61	63	46	41	54	56	23	41	55	60	24	41	54	60
Dissolved Iron	ug/L	20	19.8	21.4	21.9	26.2	29.9	39.5	41.4	21.7	17.6	32.1	189	16.7	20	40.2
Total Iron	ug/L	63	41.6	44.3	46.7	72	43.2	73.5	290	73.5	31.6	175	912	52.1	44.6	103
Dissolved Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Magnesium	mg/L	7.49	9.4	9.69	6.91	7	8.23	8.28	3.43	7.35	8.43	8.98	3.66	7.13	8.32	9.01
Dissolved Manganese	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Manganese	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	5.09	12.5	<RL	<RL	6.02	27.1	<RL	<RL	6.4
Dissolved Nickel	ug/L	7.3	B>RL	4.13	7.04	9.84	6.02	5.38	6.54	8.79	4.79	4.79	9.7	8.45	4.25	4.96
Total Nickel	ug/L	9	5.35	4.72	7.23	10.9	6.63	6.16	10.7	11.2	5.79	7.14	25	9.57	4.83	6.41
Dissolved Nitrate + Nitrite	mg/L as N	No Data	<RL	<RL	0.19	0.09	<RL	<RL	0.09	<RL	<RL	<RL	B>RL	<RL	B>RL	0.1
Dissolved Organic Carbon	mg/L as C	1.6	B>RL	1.5	1.5	1.7	1.8	2.5	1.2	1.2	1.2	1.2	1.8	1.2	1.2	1.2
Total Organic Carbon	mg/L as C	1.7	1.7	1.7	1.5	1.5	1.6	2.6	1.2	1.2	1.2	1.2	1.6	1.3	1.2	1.3
Dissolved ortho-Phosphate	mg/L as P	No Data	<RL	<RL	0.05	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Phosphorus	mg/L as P	<RL	0.03	0.02	0.01	0.01	0.01	0.01	0.01	<RL	0.01	0.02	0.02	<RL	0.03	0.02
Dissolved Potassium	mg/L	0.53	1.11	1.22	<RL	<RL	0.69	0.97	0.52	<RL	0.9	1.07	<RL	<RL	0.79	1
Dissolved Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Sodium	mg/L	4.79	10.3	12.1	4.01	2.24	5.93	8.72	1.77	2.58	8.05	9.81	1.46	2.7	7.99	9.9
Total Dissolved Solids	mg/L	No Data	110	118	77	64	92	109	42	63	94	108	43	63	99	106

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Suspended Solids	mg/L	<RL	<RL	<RL	<RL	3	<RL	<RL	10.4	3.2	<RL	5.5	32.9	<RL	<RL	2.6
Dissolved Sulfate	mg/L	No Data	2.4	2.65	3.23	1.52	2.35	3.19	2.08	1.36	2.37	2.94	1.33	1.34	2.13	2.94
Dissolved Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	6.23	<RL	<RL	<RL
Total Kjeldahl Nitrogen	mg/L	<RL	0.14	0.15	<RL	<RL	<RL	0.16	<RL	<RL	0..24	<RL	0.13	<RL	<RL	0.12
Total Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	No Data
Total Organic Nitrogen	mg/L	<RL	0.14	0.15	<RL	<RL	<RL	0.16	<RL	<RL	0.24	<RL	0.13	<RL	<RL	No Data

Sacramento River at Delta — Field Measurements

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Field Specific Conductance	uS/cm@25 °C	122	174	177	111	91	138.5	153	55.7	95.2	152.9	164.6	52.7	91.8	150.4	157
Field Dissolved Oxygen	mg/L	10.5	9	10.7	12.5	12	9.5	10.98	10.58	11.78	9.62	11.81	11.18	11.83	9.47	10.63
Field pH	pH Units	7.83	8.21	7.9	7.8	7.7	8.06	7.36	7.51	8.01	8.38	8.07	7.5	8.03	7.88	7.65
Field Water Temperature	°C	10.1	21.5	9.7	5.8	7.5	19.4	10.8	9.1	8.4	20	8.8	8.8	10	18.9	11.5
Field Turbidity	F.N.U.	0.22	0.43	0.5	1.5	2.13	0.55	1.27	7.74	1.41	0.9	1.74	25.31	0.63	No Data	0.7

Sacramento River at Delta — Bacteria Indicators

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Coliform, Total	MPN/100 mL	920.8	2419.6	1413.6	517.2	344.8	2419.6	2419.6	866.4	461.1	665.3	686.7	2419.6	293.3	2419.6	960.6
E. coli	MPN/100 mL	2	11.9	9.7	8.6	6.3	13	70.3	10.8	4.1	5.2	6.3	18.3	2	31.3	178.2

A2160000 — Sacramento River Near Mt. Shasta

Sacramento River Near Mt. Shasta — Water Chemistry

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Alkalinity	mg/L as CaCO ₃	67.5	70.3	70.1	60.3	59.9	49.4	66.2	51.1	57.1	58.3	69.2	48.2	54.4	57.6	69.9
Dissolved Aluminum	ug/L	<RL	<RL	<RL	53.4	39.7	20	<RL	76.2	28.7	<RL	<RL	188	15.3	<RL	<RL
Total Aluminum	ug/L	29	38.2	33.7	106	70.1	41.2	B>RL	165	48.3	21.9	21.8	282	38.2	20.4	16.7
Dissolved Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Arsenic	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Arsenic	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Barium	ug/L	3.8	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Barium	ug/L	3.9	<RL	5.32	5.07	<RL	<RL	<RL	<RL	<RL	<RL	<RL	6.22	<RL	<RL	<RL
Dissolved Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Boron	mg/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Cadmium	ug/L	<RL	<RL	B>RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Calcium	mg/L	4.75	5.46	6.08	4.67	3.18	2.92	5.31	3.72	3	3.69	5.93	3.11	2.91	3.58	5.87
Dissolved Chloride	mg/L	2.84	3.24	4.4	3.27	1.49	1.51	3.37	1.74	1.18	1.92	3.62	1.39	1.08	1.75	3.85
Dissolved Chromium	ug/L	0.68	<RL	<RL	1.06	1.28	<RL	<RL	1.24	<RL	1.05	<RL	2.03	<RL	<RL	<RL
Total Chromium	ug/L	0.78	1.05	<RL	1.31	1.51	1.13	<RL	1.49	1.08	1.08	<RL	2.97	<RL	<RL	<RL
Specific Conductance	uS/cm@25 °C	140	146	154	131	116	97.4	137	103	111	114	145	97.1	103	114	146
Dissolved Copper	ug/L	<RL	B>RL	<RL	<RL	<RL	1.42	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Copper	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Hardness	mg/L as CaCO ₃	57	60	60	53	53	41	56	48	52	52	61	45	51	50	60
Dissolved Iron	ug/L	1	9.95	23.1	58.9	43.2	24	12.7	55.2	38.6	15.6	15.1	131	23	11.9	11.2
Total Iron	ug/L	40	52.2	57.9	99	74.9	47.2	27.8	116	61.4	36.9	35.8	234	47.5	34	40.6
Dissolved Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Magnesium	mg/L	10.9	11.2	10.8	10	10.9	8.22	10.4	9.41	10.7	10.5	11.1	9	10.7	9.92	11
Dissolved Manganese	ug/L	3.6	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	5.25

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Manganese	ug/L	13	37.9	22.4	5.51	5.56	11.1	10.1	6.77	<RL	12.3	12.8	14.5	<RL	14.1	24.9
Dissolved Nickel	ug/L	6.5	B>RL	3.54	8.05	12.1	8.02	4.24	10.4	11.3	7.49	3.88	13.3	10.5	6.75	3.87
Total Nickel	ug/L	7.1	6.62	4.39	8.22	13.2	9.54	4.59	11.8	12.2	9.19	4.23	18.1	11.2	7.4	5.07
Dissolved Nitrate + Nitrite	mg/L as N	0.07	0.1	0.11	0.15	<RL	0.17	0.08	0.08	<RL	0.06	0.09	B>RL	<RL	B>RL	0.08
Dissolved Organic Carbon	mg/L as C	2.3	B>RL	2.3	2.8	2.8	2.4	2.1	2.4	1.9	2	1.5	2.2	1.8	1.7	1.2
Total Organic Carbon	mg/L as C	2.6	2.3	2.3	2.9	2.7	2.4	2	2.5	2	1.8	1.5	2.2	1.8	1.8	1.3
Dissolved ortho-Phosphate	mg/L as P	<RL	<RL	<RL	0.06	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Phosphorus	mg/L as P	0.01	0.03	0.03	0.03	0.02	0.03	0.01	0.02	0.02	0.02	0.02	0.02	<RL	0.02	0.02
Dissolved Potassium	mg/L	0.82	0.72	1.25	0.86	0.52	<RL	0.95	0.66	<RL	0.52	0.95	<RL	<RL	<RL	0.99
Dissolved Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Sodium	mg/L	5.02	5.78	7.79	4.77	2.31	1.94	5.95	3.2	2.17	3.11	6.57	2.52	1.94	3.06	6.87
Total Dissolved Solids	mg/L	83	89	107	92	81	63	99	74	76	75	95	68	69	74	102

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Suspended Solids	mg/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	7.8	<RL	<RL	<RL
Dissolved Sulfate	mg/L	1.1	1.1	1.1	1.57	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Zinc	ug/L	<RL	12.8	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Kjeldahl Nitrogen	mg/L	<RL	<RL	0.15	0.17	0.17	<RL	0.16	<RL	0.12	<RL	<RL	0.11	<RL	<RL	0.19
Total Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	No Data
Total Organic Nitrogen	mg/L	<RL	<RL	0.15	0.17	0.17	<RL	0.16	<RL	0.12	<RL	<RL	0.11	<RL	<RL	No Data

Sacramento River Near Mt. Shasta — Field Measurements

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Field Specific Conductance	uS/cm@25 °C	132	141.7	105	124	110.6	92.2	135.8	99.4	107.7	112.2	142.9	95.9	101.3	111.8	143
Field Dissolved Oxygen	mg/L	10.2	10.46	11.3	12.3	11.24	10.67	9.94	11.63	10.95	10.35	10.29	11.78	11.1	10.16	9.81
Field pH	pH Units	7.9	7.95	7.8	7.9	7.9	7.82	7	7.97	8.19	8.1	8.41	7.79	8.05	7.93	7.97
Field Water Temperature	°C	8.4	10.9	8.3	4.4	7.3	10.9	12.2	5.2	8.1	11	12.3	4.4	9.3	12.4	13.2
Field Turbidity	F.N.U.	0.15	0.8	8.1	2.4	1.9	0.78	1.49	2.74	0.99	1.4	1.31	6.85	0.64	No Data	0.9

Sacramento River Near Mt. Shasta — Bacteria Indicators

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Coliform, Total	MPN/100 mL	307.6	727	2419.6	140.1	114.5	517.2	2419.6	344.8	195.6	913.9	1553.1	547.5	178.2	488.4	691
E. coli	MPN/100 mL	3.1	6.3	67.6	5.2	2	3	1	17.5	13.4	3.1	1	27.5	-1	3.1	6.3

A1415000 — South Fork Pit River

South Fork Pit River — Water Chemistry

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Alkalinity	mg/L as CaCO ₃	218	315	235	97.2	97.4	136	128	173	93.9	138	148	65.2	103	175	128
Dissolved Aluminum	ug/L	94	2240	359	235	466	140	157	120	910	45.7	230	B>RL	384	286	191
Total Aluminum	ug/L	560	11500	13600	1020	2490	364	256	930	2710	175	714	6200	2400	1510	884
Dissolved Ammonia	mg/L as N	0.06	0.88	0.14	<RL	0.15	<RL	<RL	0.07	0.11	<RL	<RL	0.06	0.07	<RL	<RL
Dissolved Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Arsenic	ug/L	28	42.7	4.9	1.23	2.31	4.04	1.5	1.91	1.41	2.35	3.73	1.13	1.76	5.74	1.69
Total Arsenic	ug/L	28	39.1	5.5	1.37	2.59	4.06	1.46	2.2	1.81	2.62	3.9	1.31	1.79	6.15	2.16
Dissolved Barium	ug/L	48	64.8	65	29.3	31.3	42.9	28.7	37.1	33.9	38.2	34.3	31.4	38.5	54.5	37.4
Total Barium	ug/L	51	152	158	35.9	52.5	45.3	29.1	46.9	56.8	44.1	37.3	77.8	59.4	66.6	48.4
Dissolved Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Boron	mg/L	0.6	1.38	0.25	<RL	<RL	0.2	<RL	<RL	<RL	0.22	<RL	<RL	<RL	0.22	<RL
Dissolved Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Calcium	mg/L	28.9	30.8	35.5	14.1	16.3	20.2	23.2	32.7	16.2	16.7	25.4	11.3	22.4	29.6	21.1
Dissolved Chloride	mg/L	22	No Data	17	4.98	3.86	7.95	2.82	4.8	3.49	9.63	4.8	3.57	3.8	6.31	4.28
Dissolved Chromium	ug/L	0.23	2.23	<RL	<RL	<RL	<RL	<RL	<RL	1.06	<RL	<RL	2.74	<RL	<RL	<RL
Total Chromium	ug/L	0.6	9.08	10.4	1.03	2.23	<RL	<RL	<RL	2.25	<RL	<RL	5.94	1.88	1.41	1.07
Specific Conductance	uS/cm@25 °C	552	881	532	232	224	319	275	397	219	322	325	161	257	369	280
Dissolved Copper	ug/L	2.2	3.38	1.96	1.06	2.28	1.98	1.29	1.01	2.35	1.24	1.34	3.44	1.46	2.17	<RL
Total Copper	ug/L	3	9.34	10.1	1.7	4.05	2.54	1.36	1.89	4.87	1.44	1.69	7.71	3.98	3.14	2.18
Dissolved Hardness	mg/L as CaCO ₃	119	99	151	62	69	84	97	135	69	73	107	48	89	118	87
Dissolved Iron	ug/L	79	1360	243	176	351	166	150	123	519	143	206	2170	336	B>RL	188
Total Iron	ug/L	480	8300	9001	822	1660	404	277	846	1650	276	607	5320	1990	1180	811
Dissolved Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Lead	ug/L	<RL	2.3	2.4	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	1.96	<RL	<RL	<RL
Dissolved Magnesium	mg/L	11.4	5.35	15.2	6.5	6.96	8.2	9.38	12.9	6.98	7.5	10.5	4.77	8.02	10.6	8.35
Dissolved Manganese	ug/L	46	84	48.7	39.2	29.4	12	10.9	44.5	19	10.2	13.2	24	43.7	24.9	19.4

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Manganese	ug/L	68	552	188	49	50.8	31.5	13.5	61.7	52.4	20.4	21.6	112	85	158	52.1
Dissolved Nickel	ug/L	<RL	5.2	2.48	<RL	1.42	1.25	<RL	<RL	1.39	1.06	1.25	2.73	1.06	1.81	<RL
Total Nickel	ug/L	<RL	B>RL	9.69	<RL	2.71	1.51	<RL	1.37	2.73	1.25	1.23	4.81	2.6	2.69	1.49
Dissolved Nitrate + Nitrite	mg/L as N	<RL	<RL	0.31	0.23	B>RL	<RL	<RL	0.09	0.35	<RL	0.06	0.27	0.16	B>RL	B>RL
Dissolved Organic Carbon	mg/L as C	B>RL	8.8	20	B>RL	14.9	14.6	B>RL	7.5	11.5	13.8	12.7	10.8	9.8	16.8	8.4
Total Organic Carbon	mg/L as C	15.3	B>RL	18.3	6.2	14.1	14.5	11	7.7	9.4	15.4	12.9	10.8	9.8	18.3	8.8
Dissolved ortho-Phosphate	mg/L as P	0.17	1.51	0.45	0.07	0.31	0.66	0.07	0.06	0.26	0.47	0.1	0.19	0.12	0.43	0.14
Total Phosphorus	mg/L as P	0.22	2.24	0.77	0.11	0.46	0.65	0.07	0.09	0.39	0.46	0.11	0.38	0.21	0.46	0.19
Dissolved Potassium	mg/L	10.3	7.95	10.7	5.2	4.91	6.01	4.61	5.93	4.04	7.21	6.97	5.16	3.78	4.93	5.07
Dissolved Selenium	ug/L	<RL	1.87	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Selenium	ug/L	<RL	1.55	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Sodium	mg/L	66.1	151	53.5	18.7	15.3	27.4	18.7	29.3	17.9	32.1	24.2	14.8	18.7	36.3	20.3
Total Dissolved Solids	mg/L	347	No Data	358	150	186	241	193	242	177	219	216	166	194	272	183

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Suspended Solids	mg/L	2.6	357	242	29.7	55.7	7.3	3.6	36.3	102	B>RL	12.8	165	93.3	59	RPD>20
Dissolved Sulfate	mg/L	31.3	No Data	18.2	11.2	8.77	15	10.7	23.7	10.5	11.3	13.5	7.44	22.9	11.3	10.1
Dissolved Zinc	ug/L	<RL	5.44	<RL	<RL	6.42	<RL	<RL	<RL	8.87	<RL	<RL	6.44	<RL	<RL	<RL
Total Zinc	ug/L	<RL	22.1	23.2	<RL	13.9	<RL	<RL	<RL	7.8	<RL	<RL	13.2	7.03	<RL	<RL
Total Kjeldahl Nitrogen	mg/L	1.3	B>RL	3.6	0.71	1.7	1.3	0.78	0.77	1.7	1.3	1	1.5	1.5	1.9	0.96
Total Ammonia	mg/L as N	<RL	0.94	0.14	<RL	0.13	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	No Data
Total Organic Nitrogen	mg/L	1.3	B>RL	3.5	0.71	1.6	1.3	0.78	0.77	1.7	1.3	1	1.5	1.5	1.9	No Data

South Fork Pit River — Field Measurements

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Field Specific Conductance	uS/cm@25 °C	465	855	508	221	216	306.8	263.3	366.4	202.9	322.8	317.9	159.7	241.6	367.1	273
Field Dissolved Oxygen	mg/L	8.8	0.88	8.9	10.5	7.1	4.5	7.8	8.48	8.08	6.1	8.29	9.67	7.4	4.73	8.1
Field pH	pH Units	8.9	8.5	7.9	7.5	7.2	7.95	7.8	7.73	7.69	8.47	7.64	7.64	7.29	8.43	7.51
Field Water Temperature	°C	13.6	16.7	2	0.7	9.7	19.5	3.2	2.7	9.5	20.5	2.8	1	12.4	19	7.7
Field Turbidity	F.N.U.	6.5	205	189	22.6	63.6	9.86	8.39	44.62	80.31	6.78	15.6	142.12	59.25	No Data	21.1

South Fork Pit River — Bacteria Indicators

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Coliform, Total	MPN/100 mL	49.53	1612.73	1612.73	1612.73	1612.73	1612.73	1468.3	613.53	1612.73	2419.6	1612.73	1612.73	1612.73	1620.77	1612.73
E. coli	MPN/100 mL	3.13	675.2	219.43	14.57	78.13	156.93	2.4	15.77	20.27	86.2	12.33	458.27	25.63	317.13	8.17

A1210000 — North Fork Pit River

North Fork Pit River — Water Chemistry

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Alkalinity	mg/L as CaCO ₃	89.2	206	168	89.3	62.8	202	135	76.6	69.4	200	145	37.5	65.2	253	125
Dissolved Aluminum	ug/L	52	13	<RL	145	135	<RL	15.8	312	177	17.2	12.5	B>RL	53	<RL	23.2
Total Aluminum	ug/L	420	518	138	489	735	182	258	814	683	205	156	10100	429	375	200
Dissolved Ammonia	mg/L as N	<RL	No Data	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Arsenic	ug/L	0.87	5.33	3.36	<RL	<RL	4.8	1.2	<RL	<RL	3.7	1.34	<RL	<RL	3.12	1.1
Total Arsenic	ug/L	0.88	5.35	3.72	<RL	<RL	4.73	1.18	<RL	<RL	3.92	1.63	1.14	<RL	3.5	1.45
Dissolved Barium	ug/L	23	44.8	32.8	29.2	14.8	45.8	31.8	24.3	15.6	37.4	24.3	13.2	14.7	34.9	26.4
Total Barium	ug/L	25	52.1	36.6	32.2	21.9	48.4	34.3	28.7	20.1	41.8	29	124	18.7	68.7	29.1
Dissolved Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Boron	mg/L	<RL	0.11	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Calcium	mg/L	17.1	33.4	29	18.7	13.4	34.8	25.7	17.1	14.7	33.8	27	7.81	14.8	47.6	25.6
Dissolved Chloride	mg/L	2.1	6.53	8.13	4.07	1.37	7.91	4.14	2.71	1.16	5.35	4.47	No Data	1.07	6.19	3.98
Dissolved Chromium	ug/L	0.24	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Chromium	ug/L	0.37	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	4.71	<RL	<RL	<RL
Specific Conductance	uS/cm@25 °C	191	454	394	213	132	464	292	176	145	442	314	92	133	549	276
Dissolved Copper	ug/L	1.5	<RL	<RL	1.15	1.29	1.17	<RL	1.31	<RL	1.31	<RL	1.83	<RL	1.24	<RL
Total Copper	ug/L	2.1	1.58	1.06	1.54	2.07	1.63	1.28	1.67	1.67	1.88	1.47	13.6	1.43	1.9	1.19
Dissolved Hardness	mg/L as CaCO ₃	66	138	123	74	50	150	101	66	55	143	106	31	55	195	99
Dissolved Iron	ug/L	110	22.4	29.7	152	119	17.5	160	345	133	58.2	94.2	54.9	75.8	B>RL	77
Total Iron	ug/L	520	518	188	595	820	289	711	898	666	377	367	9180	452	583	335
Dissolved Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	56.6	<RL
Total Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	3.14	<RL	<RL	<RL
Dissolved Magnesium	mg/L	5.66	13.3	12.4	6.59	4	15.4	8.96	5.65	4.35	14.3	9.33	2.68	4.33	18.4	8.63
Dissolved Manganese	ug/L	37	86.9	23.9	61.5	15.8	75.6	91.8	46.5	15.6	152	34.7	26	17.5	150	72.7

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Manganese	ug/L	62	141	36.5	70.5	36.6	161	116	63.2	31.9	257	54	290	26.4	269	92.3
Dissolved Nickel	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Nickel	ug/L	<RL	B>RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	4.47	<RL	<RL	<RL
Dissolved Nitrate + Nitrite	mg/L as N	<RL	No Data	0.12	0.08	B>RL	<RL	0.07	0.11	<RL	<RL	<RL	0.47	<RL	B>RL	B>RL
Dissolved Organic Carbon	mg/L as C	B>RL	4.3	5.3	B>RL	6.3	5.1	B>RL	4	4.1	7.5	3.5	6.9	4.2	5.1	3.8
Total Organic Carbon	mg/L as C	6.9	B>RL	4.9	5.3	6.2	5.4	5.4	3.7	4.4	10.2	3.7	7.3	4	9.4	4.2
Dissolved ortho-Phosphate	mg/L as P	0.06	No Data	<RL	<RL	<RL	<RL	0.07	0.06	<RL	<RL	0.08	0.11	0.05	<RL	0.06
Total Phosphorus	mg/L as P	0.06	0.16	0.06	0.05	0.06	0.14	0.07	0.05	0.06	0.29	0.05	0.47	0.03	0.22	0.05
Dissolved Potassium	mg/L	2.56	6.68	5.8	2.49	1.54	6.06	3.88	2.32	1.3	6.73	4.12	2.06	1.38	6.01	3.77
Dissolved Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Sodium	mg/L	10.1	39.9	33.3	10.4	5.42	33.3	17.5	9.91	6.1	37.3	20.6	4.37	6.17	47.9	17.8
Total Dissolved Solids	mg/L	139	305	243	146	114	316	199	140	110	296	203	No Data	109	361	186

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Suspended Solids	mg/L	7	13.1	<RL	5.9	18.6	18.5	9.3	8.5	12.6	B>RL	<RL	293	10.3	30	4.3
Dissolved Sulfate	mg/L	6.51	21	6.2	10.4	3.14	35.8	11.2	7.32	3.52	26.7	12.2	No Data	3.08	37.6	12.8
Dissolved Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	18.9	<RL	<RL	<RL
Total Kjeldahl Nitrogen	mg/L as N	0.45	B>RL	0.42	0.35	0.32	1.1	0.38	0.27	0.27	2.2	0.27	1.3	0.28	<RL	0.33
Total Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	1	No Data
Total Organic Nitrogen	mg/L	0.45	B>RL	0.42	0.35	0.32	1.1	0.38	0.27	0.27	2.2	0.27	1.3	0.28	1	No Data

North Fork Pit River — Field Measurements

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Field Specific Conductance	uS/cm@25 °C	181.8	449.6	385	134	126	447.6	278.3	170.5	140.2	442.2	310.6	91.6	130	543	271
Field Dissolved Oxygen	mg/L	8.6	5.4	10.9	12.1	9.5	7.05	9.62	10.94	9.7	5.95	10.08	11.87	9.57	6.99	8.59
Field pH	pH Units	7.7	7.64	8.4	7.8	7.7	8.25	7.99	7.93	8.05	8.11	8.09	7.55	7.42	8.06	7.32
Field Water Temperature	°C	11.3	21.4	2.7	0.3	10.6	18.9	4.7	2.3	9	18.8	4.2	0.1	10.7	18.6	8.3
Field Turbidity	F.N.U.	4.1	6.4	1.9	7.7	12.6	8.83	8.13	12.54	11.3	30.3	3.95	138.41	5.45	No Data	3.5

North Fork Pit River — Bacteria Indicators

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Coliform, Total	MPN/100 mL	1986.3	2419.6	648.8	488.4	1553.1	2419.6	2419.6	307.6	1203.3	2419.6	960.6	2419.6	1046.2	2419.6	2419.6
E. coli	MPN/100 mL	9.8	24.3	7.4	3.1	40.2	8.5	50.4	21.6	201.4	69.7	20.1	112.6	31.3	85.7	25.9

A1168000 — Pit River at Canby

Pit River at Canby — Water Chemistry

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Alkalinity	mg/L as CaCO ₃	138	99.4	98.5	106	75.7	121	146	127	82	141	155	42.6	81.7	124	141
Dissolved Aluminum	ug/L	94	29.9	<RL	540	238	19	234	621	571	10.1	275	B>RL	520	66.2	417
Total Aluminum	ug/L	540	161	203	3610	2470	69.2	876	1470	2410	73.6	2360	6010	2400	293	1810
Dissolved Ammonia	mg/L as N	<RL	<RL	<RL	0.11	<RL	<RL	<RL	0.14	<RL	0.1	0.22	0.08	0.07	<RL	0.12
Dissolved Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Arsenic	ug/L	8.4	1.62	<RL	4.55	1.35	1.95	9.51	3.97	1.38	3.76	8.91	<RL	1.4	2.67	6.24
Total Arsenic	ug/L	8.6	1.55	1.04	4.96	1.78	1.85	9.97	4.2	1.8	4.2	9.13	1.23	1.5	2.88	6.64
Dissolved Barium	ug/L	32	14.4	10.7	43.2	27.7	18.6	38.5	36.8	28.1	37.9	46.1	17.5	29.4	30.2	48.2
Total Barium	ug/L	35	14.9	12.1	72	53.7	19.3	46.3	47.7	53.3	45.9	65.8	84.6	55.3	32.8	67.5
Dissolved Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Boron	mg/L	0.32	<RL	<RL	0.15	<RL	<RL	0.39	0.15	<RL	<RL	0.28	<RL	<RL	<RL	0.24
Dissolved Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Calcium	mg/L	21.7	15.2	16.6	17.9	13.9	20.1	23.5	22.3	15	21	23.6	6.49	16.4	21	24.8
Dissolved Chloride	mg/L	19	1.84	1.96	11.5	3.06	2.76	18.9	11.9	3.37	6.44	17.6	2.17	3.13	3.41	13.4
Dissolved Chromium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Chromium	ug/L	<RL	<RL	<RL	2.68	2.15	<RL	1.01	1.4	1.98	<RL	2.29	5.36	1.54	<RL	1.93
Specific Conductance	uS/cm@25 °C	394	198	203	294	173	258	413	334	191	309	414	105	189	259	363
Dissolved Copper	ug/L	1.8	<RL	<RL	1.62	1.84	<RL	1.47	1.9	1.81	2.41	1.53	1.55	1.58	1.23	1.5
Total Copper	ug/L	2.5	<RL	<RL	4.44	4.32	1.06	2.27	2.89	4.74	3	3.34	8.3	4.1	1.56	3.57
Dissolved Hardness	mg/L as CaCO ₃	89	57	61	76	56	82	99	94	61	90	101	27	66	84	103
Dissolved Iron	ug/L	100	30.4	13.7	445	204	31.8	166	427	351	37.8	230	47.5	364	B>RL	318
Total Iron	ug/L	560	169	184	3010	2120	118	903	1410	1780	176	2030	6020	2030	320	1760
Dissolved Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	1.98	<RL	<RL	<RL
Dissolved Magnesium	mg/L	8.51	4.62	4.81	7.62	5.2	7.65	9.83	9.28	5.83	9.11	10.1	2.68	6.05	7.59	9.98
Dissolved Manganese	ug/L	120	48.5	39.9	64.9	14.9	28.3	36.1	50.5	14	19.2	39.9	93.8	15.5	19.7	24.5

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Manganese	ug/L	160	75	62.5	160	88	53.9	86.1	93.8	89.1	218	124	269	77.1	177	155
Dissolved Nickel	ug/L	<RL	<RL	<RL	2.24	<RL	<RL	1.15	1.16	<RL	1.6	1.49	1.06	<RL	1.15	1.45
Total Nickel	ug/L	<RL	B>RL	<RL	2.78	2.52	<RL	1.75	1.74	2.4	1.99	2.76	4.52	2.37	1.47	2.74
Dissolved Nitrate + Nitrite	mg/L as N	<RL	0.26	<RL	0.22	B>RL	<RL	0.12	0.25	0.25	<RL	0.25	0.21	0.16	B>RL	B>RL
Dissolved Organic Carbon	mg/L as C	B>RL	2.8	2.6	B>RL	9.8	6.7	B>RL	6.3	8.5	16.7	10.2	7.7	8.1	9.2	8.9
Total Organic Carbon	mg/L as C	8.7	B>RL	2.4	6.3	9.4	6.6	9.6	5.5	10.3	20.8	11.7	7.8	7.3	10.4	9.3
Dissolved ortho-Phosphate	mg/L as P	0.15	0.08	<RL	0.13	0.18	0.07	0.17	0.15	0.15	0.12	0.22	0.16	0.12	0.09	0.19
Total Phosphorus	mg/L as P	0.19	0.08	0.02	0.24	0.29	0.07	0.21	0.19	0.26	0.4	0.3	0.38	0.19	0.14	0.26
Dissolved Potassium	mg/L	4.49	2.7	3.47	4.43	3.07	3.62	6.88	4.77	3.18	7.04	7.5	2.85	3.17	4.31	6.5
Dissolved Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Sodium	mg/L	41.3	16.8	16.7	26.1	10.9	17.3	44.6	33.4	14.9	25.1	44.8	9.5	14.4	21.1	39
Total Dissolved Solids	mg/L	242	134	134	200	149	176	266	229	153	216	274	89	149	189	243

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Suspended Solids	mg/L	6.4	3.5	5.3	61.8	73.3	<RL	22.9	30.8	102	B>RL	38.8	160	94.2	12.6	68.7
Dissolved Sulfate	mg/L	30	2.98	3.76	20.1	6.27	9.92	31	22.8	8.4	8.5	29.5	4.71	9.68	6.23	23.9
Dissolved Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Zinc	ug/L	<RL	<RL	<RL	7.03	7.79	<RL	<RL	<RL	6.51	<RL	<RL	12.4	6.03	<RL	<RL
Total Kjeldahl Nitrogen	mg/L	0.79	B>RL	0.26	1	0.99	0.48	1.1	0.76	1.2	3.5	1.3	1.2	1.1	1.2	1.26
Total Ammonia	mg/L as N	<RL	<RL	<RL	0.12	<RL	<RL	<RL	0.13	<RL	0.11	0.19	<RL	<RL	<RL	No Data
Total Organic Nitrogen	mg/L	0.79	B>RL	0.26	0.88	0.99	0.48	1.1	0.6	1.2	3.3	1.1	1.2	1.1	1.2	No Data

Pit River at Canby — Field Measurements

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Field Specific Conductance	uS/cm@25 °C	373	197.9	196	291	165	250.4	395.7	325.1	185.1	305.9	410.8	105	184.9	257.3	356
Field Dissolved Oxygen	mg/L	7.5	2.32	8.2	11.6	9.6	5.96	9.63	10.58	9	2.27	9.81	10.65	8.74	4.65	9.16
Field pH	pH Units	8.2	7.64	8.2	7.9	7.7	8.18	8.27	8.23	8.04	8.17	8.18	7.59	7.8	7.73	7.57
Field Water Temperature	°C	15	20.9	9.2	0.9	8.9	19.4	6.1	2.8	10.2	19.2	4.9	No Data	13	20.3	8.5
Field Turbidity	F.N.U.	5.9	2.03	2.1	43.6	62	1.79	23.76	27.37	61.23	21.3	49.8	126.83	53.87	No Data	43

Pit River at Canby — Bacteria Indicators

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Coliform, Total	MPN/100 mL	2419.6	2419.6	1413.6	1732.9	2419.6	2419.6	1553.1	365.4	960.6	2419.6	665.3	2419.6	2419.6	2419.6	2419.6
E. coli	MPN/100 mL	14.6	4.1	4.1	24.6	139.6	7.5	62.4	12.2	53.8	290.9	24.3	206.4	58.6	13.4	42.8

A1127000 — Pit River at Pittville
Pit River at Pittville — Water Chemistry

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Alkalinity	mg/L as CaCO ₃	132	115	153	98.4	72.1	95.2	152	89.7	89.1	108	143	36.7	97	105	135
Dissolved Aluminum	ug/L	190	<RL	22.8	419	229	193	160	734	403	16.5	199	B>RL	261	17.2	326
Total Aluminum	ug/L	740	75.6	252	1700	1150	687	390	2130	1270	69.8	1050	6310	1440	84.9	609
Dissolved Ammonia	mg/L as N	<RL	0.11	0.33	<RL	<RL	<RL	<RL	<RL	<RL	<RL	0.28	0.06	<RL	0.05	<RL
Dissolved Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Arsenic	ug/L	2.3	<RL	2.8	2.32	<RL	2.3	2.74	1.43	1.1	<RL	2.97	<RL	1.61	<RL	2.01
Total Arsenic	ug/L	2.4	<RL	3.33	2.33	1.06	2.37	2.78	1.71	1.52	<RL	3.06	1.02	1.69	<RL	2.34
Dissolved Barium	ug/L	31	23	31.4	34.4	24.7	29.6	37.1	30.5	28.5	19.4	34.8	14.1	31.8	19	38
Total Barium	ug/L	36	22.8	32.9	42.4	35.8	32.8	40.1	41.1	42	20.2	44.1	87.7	44.5	18.6	44.2
Dissolved Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Boron	mg/L	<RL	<RL	0.11	<RL	<RL	<RL	0.15	<RL	<RL	<RL	0.13	<RL	<RL	<RL	<RL
Dissolved Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Calcium	mg/L	16.9	18.7	24.9	15.2	11.8	14.8	22.8	14.4	14.7	16.6	20.9	5.96	16.8	18.1	21.1
Dissolved Chloride	mg/L	4.1	2.6	5.99	6.41	1.92	3.48	8.67	4.6	2.8	2.58	5.83	1.37	3.26	2.57	5.33
Dissolved Chromium	ug/L	0.75	<RL	<RL	<RL	<RL	<RL	<RL	1.07	<RL	1.77	<RL	<RL	<RL	1.69	<RL
Total Chromium	ug/L	1.4	1.26	1.12	2.1	1.33	1.19	1.09	2.59	1.33	1.73	1.85	6.35	1.13	1.77	1.36
Specific Conductance	uS/cm@25 °C	286	251	371	245	153	220	358	217	198	227	339	84.4	216	234	301
Dissolved Copper	ug/L	2.3	<RL	<RL	2.03	1.62	1.32	1.74	2.34	1.49	<RL	<RL	1.43	1.89	<RL	1.51
Total Copper	ug/L	2.8	<RL	<RL	3.34	2.76	1.81	2.22	3.56	2.86	<RL	1.71	7.96	3.48	<RL	2.22
Dissolved Hardness	mg/L as CaCO ₃	82	90	125	70	52	70	111	66	65	81	107	26	72	86	100
Dissolved Iron	ug/L	220	10.7	31.2	317	187	211	135	650	261	17.2	246	52.5	256	B>RL	283
Total Iron	ug/L	800	102	235	1650	1140	779	476	2060	1160	65.2	1220	6050	1450	82	724
Dissolved Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	2.02	<RL	<RL	<RL
Dissolved Magnesium	mg/L	9.64	10.4	15.2	7.73	5.45	8.14	13.1	7.25	6.84	9.6	13.3	2.82	7.2	9.97	11.4
Dissolved Manganese	ug/L	20	118	21.8	18.8	15.2	17.1	7.76	11.4	14.8	20.2	28.3	35.2	12.5	57.3	9.31

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Manganese	ug/L	83	152	45.1	72.9	54.3	55.5	65.6	49.1	75.3	35.6	139	192	82.6	76.7	85.5
Dissolved Nickel	ug/L	2.1	<RL	<RL	1.8	1.12	1.39	1.81	1.68	1.12	<RL	<RL	1.16	1.3	<RL	1.87
Total Nickel	ug/L	2.6	B>RL	1.07	2.54	1.82	1.85	2.06	2.6	1.97	<RL	1.64	5.6	2.33	<RL	2.31
Dissolved Nitrate + Nitrite	mg/L as N	0.08	0.43	0.57	0.22	B>RL	0.11	0.08	0.28	0.17	0.27	0.23	0.27	0.14	B>RL	B>RL
Dissolved Organic Carbon	mg/L as C	B>RL	2.4	4.5	B>RL	8.9	7.5	B>RL	7.7	7.7	1.6	3.1	6.4	9.2	1	6.9
Total Organic Carbon	mg/L as C	11.1	B>RL	4.9	8.9	8	7.3	8.7	6.6	8.9	1.9	2.5	6.5	8.3	1.2	7.2
Dissolved ortho-Phosphate	mg/L as P	0.08	0.1	0.14	0.11	0.11	0.11	0.12	0.11	0.17	<RL	0.14	0.17	0.17	0.07	0.08
Total Phosphorus	mg/L as P	0.1	0.1	0.16	0.16	0.16	0.13	0.16	0.16	0.21	0.02	0.14	0.41	0.2	0.04	0.1
Dissolved Potassium	mg/L	4.28	3.84	5.3	4.26	2.38	3.59	5.98	3.88	2.86	1.94	4.74	2.69	3.32	2.93	4.7
Dissolved Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Sodium	mg/L	22.2	14.3	28.3	19	8.3	12.7	31	19.2	13.8	14.3	28.1	5.63	15.3	14.4	24.3
Total Dissolved Solids	mg/L	183	169	239	172	124	161	235	167	141	154	226	71	160	163	201

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Suspended Solids	mg/L	4	3.4	3.7	23.3	26.7	7	13.3	15.2	40	B>RL	15.3	127	34.6	<RL	12.4
Dissolved Sulfate	mg/L	10.5	10.5	24	13.7	3.41	11.1	18.9	11	7	7.09	25.1	2.95	8.98	8.69	13.8
Dissolved Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	12.9	<RL	<RL	<RL
Total Kjeldahl Nitrogen	mg/L	0.82	B>RL	1.1	0.82	0.63	0.66	0.99	0.64	0.79	0.18	0.68	1.2	0.87	0.19	0.73
Total Ammonia	mg/L as N	<RL	0.12	0.35	<RL	<RL	<RL	<RL	<RL	<RL	<RL	0.24	<RL	<RL	<RL	No Data
Total Organic Nitrogen	mg/L	0.82	B>RL	0.8	0.82	0.63	0.66	0.99	0.64	0.79	0.18	0.44	1.2	0.87	0.19	No Data

Pit River at Pittville — Field Measurements

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Field Specific Conductance	uS/cm@25 °C	272	249.2	361	232	145	212.7	340.1	211	190.7	226.5	190.7	82.8	211.1	227.4	294
Field Dissolved Oxygen	mg/L	9.7	6.82	9.3	12.2	10	9.27	10.68	10.78	9.61	8.66	9.61	12.59	9.13	7.76	9.86
Field pH	pH Units	8.3	7.7	7.8	7.8	7.9	8.18	8.37	8.25	8.17	8.6	8.17	7.74	7.94	7.74	8.04
Field Water Temperature	°C	15.9	23.6	8.6	3.3	11.7	20.6	9.2	5.4	12.8	19.4	12.8	1	16.1	19.6	11.3
Field Turbidity	F.N.U.	8.3	1.53	3.1	26	26	9.76	10.34	50.6	30.79	1.9	30.79	124.94	30.76	No Data	15.6

Pit River at Pittville — Bacteria Indicators

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Coliform, Total	MPN/100 mL	2419.6	2419.6	2419.6	504.3	1100.95	2419.6	1769.7	803.75	1077.3	2419.6	2419.6	2419.6	1251.5	2419.6	2419.6
E. coli	MPN/100 mL	9.7	15.5	576.3	7.45	55.25	48.85	21.35	48.95	27.2	17.5	58.75	143.15	30.4	9	139.6

A1723000 — Fall River
Fall River — Water Chemistry

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Alkalinity	mg/L as CaCO ₃	74.4	78.8	76.6	75.7	65.2	75	78.8	73.9	67.7	77.3	76.5	39.4	73.3	77.2	77
Dissolved Aluminum	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	23.2	RPD>20	<RL	<RL	B>RL	<RL	<RL	<RL
Total Aluminum	ug/L	85	28.7	36.2	79.6	RPD>20	23.4	42.9	90.3	60.5	RPD>20	36.8	639	RPD>20	26.5	76.9
Dissolved Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	0.07	<RL	<RL	<RL	<RL	<RL	<RL	<RL	0.06
Dissolved Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Arsenic	ug/L	7.4	6.28	6.41	7.26	5.4	8.61	6.17	5.33	6.59	6.42	6.44	1.87	5.84	6.3	6.34
Total Arsenic	ug/L	7.6	6.25	7.29	7.32	5.51	8.66	6.03	5.43	7.24	6.42	6.52	2.24	6.4	6.46	6.48
Dissolved Barium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	5.23	<RL	<RL	<RL
Total Barium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	7.84	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Boron	mg/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Calcium	mg/L	8.98	9.86	9.79	9.64	8.04	9.4	9.63	9.72	8.33	9.32	9.32	5.79	9.56	9.73	10.1
Dissolved Chloride	mg/L	3.5	3.6	3.6	3.65	2.86	3.63	3.65	3.36	3.15	3.57	3.66	1.72	3.23	3.5	3.49
Dissolved Chromium	ug/L	1.2	1.18	1.22	1.2	1.09	1.12	1.15	1.12	1.06	1.42	RPD>20	<RL	1.14	1.01	1.06
Total Chromium	ug/L	1.6	1.47	1.32	1.77	1.45	1.24	1.32	1.51	1.36	1.32	RPD>20	2.19	1.3	1.15	1.34
Specific Conductance	uS/cm@ 25 °C	155	163	162	162	134	159	163	156	142	160	159	84.1	150	159	159
Dissolved Copper	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Copper	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	1.36	<RL	<RL	<RL
Dissolved Hardness	mg/L as CaCO ₃	46	51	52	50	42	50	52	51	44	50	50	29	50	52	53
Dissolved Iron	ug/L	<RL	26.4	17.8	11.9	17.1	23.7	19.5	27.6	23.1	23.4	15.4	193	18.9	B>RL	18.4
Total Iron	ug/L	99	60.2	50.7	107	RPD>20	54.5	69.2	100.7	80.9	52.7	52.8	585	140	49.3	105
Dissolved Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	RPD>20	<RL	<RL	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Magnesium	mg/L	5.81	6.42	6.61	6.41	5.42	6.43	6.84	6.53	5.7	6.58	6.48	3.48	6.37	6.68	6.66
Dissolved Manganese	ug/L	1.8	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	5.49	<RL	<RL	<RL
Total Manganese	ug/L	5.3	<RL	<RL	5.06	<RL	<RL	<RL	<RL	<RL	<RL	<RL	14.3	5.62	<RL	6.59
Dissolved Nickel	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Nickel	ug/L	<RL	B>RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Nitrate + Nitrite	mg/L as N	<RL	RPD>20	0.07	0.12	B>RL	<RL	0.06	0.12	<RL	<RL	RPD>20	RPD>20	<RL	B>RL	B>RL
Dissolved Organic Carbon	mg/L as C	B>RL	2.1	1.6	B>RL	1.4	2.1	B>RL	0.9	0.9	1.7	1	2.4	RPD>20	1.4	0.9
Total Organic Carbon	mg/L as C	1.5	B>RL	1.6	1.4	1.3	2.1	2.1	0.8	0.9	RPD>20	RPD>20	2.3	RPD>20	1.9	1.1
Dissolved ortho-Phosphate	mg/L as P	<RL	<RL	<RL	<RL	<RL	<RL	0.06	<RL	<RL	<RL	<RL	0.05	0.06	<RL	0.06
Total Phosphorus	mg/L as P	0.05	0.05	RPD>20	0.05	0.04	0.05	0.04	0.04	0.05	0.04	0.03	0.07	0.04	0.04	0.04
Dissolved Potassium	mg/L	2.18	2.23	2.43	2.19	1.8	2.18	2.51	2.26	1.98	2.31	2.21	1.54	2.06	2.36	2.3
Dissolved Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Sodium	mg/L	11.2	12.3	12.5	10.9	9	10.1	12.8	12	11	12.4	12.3	5.45	11.6	12.5	12.5
Total Dissolved Solids	mg/L	101	111	105	108	94	113	113	109	96	109	109	65	106	109	108
Total Suspended Solids	mg/L	6.5	2.7	2.8	10.3	RPD>20	3.7	5.9	7.4	9.5	B>RL	RPD>20	18.6	12.2	2.6	8.2
Dissolved Sulfate	mg/L	1.5	1.57	1.54	2.06	1.41	1.58	1.54	1.96	1.35	1.53	1.57	1.35	1.61	1.44	1.56
Dissolved Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Kjeldahl Nitrogen	mg/L	0.19	B>RL	0.17	0.15	0.12	0.26	0.1	0.13	0.16	0.17	0.17	0.33	0.16	0.16	0.28
Total Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	0.11	<RL	<RL	<RL	<RL	<RL	<RL	<RL	No Data
Total Organic Nitrogen	mg/L	0.19	B>RL	0.17	0.15	0.12	0.26	0.21	0.13	0.16	0.17	0.17	0.33	0.16	0.16	No Data

Fall River — Field Measurements

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Field Specific Conductance	uS/cm@25 °C	147	161.2	158	153	129	152.8	154.9	148.6	138.1	159.8	156.1	82.4	146.8	158.3	156
Field Dissolved Oxygen	mg/L	10.2	9.13	9.5	10.9	11	10.7	9.4	10.45	10.32	10.68	10.47	10.19	10.71	9.73	8.45
Field pH	pH Units	8.7	8.68	7.9	8.2	7.9	9.04	8.37	8.42	8.9	8.92	8.41	7.55	8.8	8.57	7.83

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Field Water Temperature	°C	13.7	20.7	9	7.2	12.2	19.7	9	6.8	12.6	19.5	8.3	3.1	14.6	19.2	11.2
Field Turbidity	F.N.U.	2.7	0.8	1.4	77	3.3	1.98	4.39	7.92	3.98	1.95	2.69	21.16	6.94	No Data	3.5

Fall River — Bacteria Indicators

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Coliform, Total	MPN/100 mL	344.8	2419.6	435.2	49.6	107.6	1986.3	307.6	387.3	111.9	960.6	344.1	2419.6	228.2	980.4	1119.9
E. coli	MPN/100 mL	8.5	9.8	14.4	4.1	6.3	31.7	17.5	12.2	1	50.4	11	73.3	8.5	12.1	49.6

A1102000 — Pit River Near Montgomery Creek

Pit River Near Montgomery Creek — Water Chemistry

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Alkalinity	mg/L as CaCO ₃	67.7	71.3	73.4	69.6	57.5	70.2	Access	59.8	64.9	70.4	Access	48.5	67.1	68.3	72.6
Dissolved Aluminum	ug/L	60	13.9	<RL	102	58.8	<RL	Access	67.8	120	13.7	Access	B>RL	<RL	<RL	11.7
Total Aluminum	ug/L	<RL	58.4	83.4	265	314	44	Access	296	302	57.5	Access	3920	93.3	44.3	52.5
Dissolved Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL
Dissolved Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL
Total Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Arsenic	ug/L	2.9	3.62	4.01	2.79	1.66	4.52	Access	1.31	1.92	3.51	Access	<RL	2.12	2.86	2.85
Total Arsenic	ug/L	2.9	3.71	4.87	2.78	1.87	4.21	Access	1.24	2.16	3.32	Access	1.37	2.28	3.05	3.28
Dissolved Barium	ug/L	6.2	5.07	5.15	9.34	9.1	6.55	Access	7.69	9.52	6.09	Access	8.61	8.54	6.6	6.14
Total Barium	ug/L	6.1	5.3	6	10.1	12.1	7.03	Access	9.54	11.6	6.41	Access	37.6	9.84	6.81	6.62
Dissolved Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL
Total Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL
Dissolved Boron	mg/L	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL
Dissolved Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL
Total Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL
Dissolved Calcium	mg/L	10.6	10.5	10.5	11.3	9.82	10.9	Access	12.4	10.4	10.1	Access	9.35	11.3	9.8	10.5
Dissolved Chloride	mg/L	2.5	2.81	3.21	2.7	1.65	2.58	Access	1.64	1.77	2.61	Access	1.39	2.1	2.31	2.76
Dissolved Chromium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL
Total Chromium	ug/L	<RL	1.14	<RL	1.12	<RL	<RL	Access	<RL	<RL	<RL	Access	3.63	<RL	<RL	<RL
Specific Conductance	uS/cm@25 °C	143	150	158	153	119	148	Access	128	137	145	Access	106	138	141	151
Dissolved Copper	ug/L	0.6	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	Access	1.22	<RL	<RL	<RL
Total Copper	ug/L	0.58	<RL	<RL	<RL	1.06	<RL	Access	<RL	<RL	<RL	Access	6.17	<RL	<RL	<RL
Dissolved Hardness	mg/L as CaCO ₃	48	50	53	51	43	51	Access	50	47	49	Access	38	51	46	52

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Iron	ug/L	70	15.9	12.3	79.4	48.8	14.8	Access	58.7	83	13.1	Access	402	12	B>RL	14.2
Total Iron	ug/L	<RL	48.2	77	265	269	58.3	Access	252	260	50.8	Access	3440	109	50.3	66.9
Dissolved Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL
Total Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	Access	1.19	<RL	<RL	<RL
Dissolved Magnesium	mg/L	5.26	5.82	6.49	5.58	4.4	5.85	Access	4.56	5	5.79	Access	3.65	5.5	5.32	6.14
Dissolved Manganese	ug/L	12	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	Access	9.89	<RL	<RL	<RL
Total Manganese	ug/L	<RL	15.8	10.6	11.8	19.7	20.6	Access	11.1	15.7	23.5	Access	113	18.9	19.5	11
Dissolved Nickel	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL
Total Nickel	ug/L	<RL	B>RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	Access	3.34	<RL	<RL	<RL
Dissolved Nitrate + Nitrite	mg/L as N	<RL	0.36	0.09	0.25	B>RL	<RL	Access	0.15	0.07	0.08	Access	0.11	<RL	B>RL	B>RL
Dissolved Organic Carbon	mg/L as C	B>RL	1.3	1.1	B>RL	2.3	1.6	Access	1	1.9	1.3	Access	2.4	1.3	0.8	0.6
Total Organic Carbon	mg/L as C	1.7	B>RL	1	2.2	2.2	1.4	Access	0.9	2	2.6	Access	2.2	1.3	1	0.7
Dissolved ortho-Phosphate	mg/L as P	<RL	0.07	0.05	0.06	0.05	0.06	Access	<RL	0.06	0.08	Access	0.05	0.06	0.06	0.06
Total Phosphorus	mg/L as P	0.04	0.06	0.04	0.06	0.05	0.05	Access	0.03	0.07	0.04	Access	0.14	0.04	0.04	0.03
Dissolved Potassium	mg/L	1.78	1.95	2.18	1.8	1.48	1.94	Access	1.34	1.54	1.9	Access	1.25	1.66	1.73	1.95
Dissolved Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL
Dissolved Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL
Total Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL
Dissolved Sodium	mg/L	8.3	9.46	10.8	8	5.78	7.28	Access	6.31	7.94	9.13	Access	5.53	7.84	8.15	9.66
Total Dissolved Solids	mg/L	94	105	109	104	86	104	Access	93	94	105	Access	81	94	102	104
Total Suspended Solids	mg/L	2.7	<RL	3.4	5.2	7.7	<RL	Access	4.1	5.7	B>RL	Access	89	5.7	<RL	<RL
Dissolved Sulfate	mg/L	2.8	2.2	2.37	3.85	2.14	2.32	Access	3.25	2.85	2.22	Access	2.9	2.63	2.06	2.36
Dissolved Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL
Total Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	Access	8.12	<RL	<RL	<RL
Total Kjeldahl Nitrogen	mg/L	0.14	B>RL	0.12	0.26	0.23	0.14	Access	<RL	0.23	0.13	Access	0.3	0.14	0.12	0.14
Total Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	Access	<RL	<RL	<RL	No Data
Total Organic Nitrogen	mg/L	0.14	B>RL	0.12	0.26	0.23	0.14	Access	<RL	0.23	0.13	Access	0.3	0.14	0.12	No Data

Pit River Near Montgomery Creek — Field Measurements

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Field Specific Conductance	uS/cm@25 °C	136	147.8	154	144	114	142.3	Access	122.4	133.2	146	Access	99.53	136	140.9	148
Field Dissolved Oxygen	mg/L	10.8	10.29	12	13.2	11.3	10.7	Access	12.74	11.16	11.15	Access	12.93	12.13	10.93	10.81
Field pH	pH Units	8.2	8.27	8.2	7.8	7.8	8.33	Access	8.66	8.19	8.35	Access	7.42	8.34	8.2	7.73
Field Water Temperature	°C	13.5	21.3	12.6	5.6	12.1	20	Access	7.5	12.9	20.1	Access	7.7	15	20.3	11.7
Field Turbidity	F.N.U.	1.2	1.28	1.5	5.9	6.1	1.63	Access	5.74	6.01	2.1	Access	60.3	2.13	No Data	1.4

Pit River Near Montgomery Creek — Bacteria Indicators

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Coliform, Total	MPN/100 mL	137.6	2419.6	816.4	224.7	547.5	2419.6	Access	435.2	613.1	960.6	Access	2419.6	228.2	2419.6	186
E. coli	MPN/100 mL	2	6.3	3.1	1	13.4	1	Access	1	2	3.1	Access	67.7	-1	4.1	-1

7.4.2 Eastside Subregion

A4708000 — Battle Creek at Jellys Ferry Road Bridge

Battle Creek at Jellys Ferry Road Bridge — Water Chemistry

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Alkalinity	mg/L as CaCO ₃	66.6	81.6	79.6	64.8	40.5	75	77.3	52.7	51.7	77.3	76.9	28.4	54.4	75.6	70.7
Dissolved Aluminum	ug/L	<RL	<RL	<RL	34.8	30.4	<RL	<RL	66.5	47.5	<RL	<RL	448	<RL	<RL	24.5
Total Aluminum	ug/L	86	84.1	78.2	93.5	301	45.7	34.7	219	150	32	63.3	B>RL	112	45.3	108
Dissolved Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	0.07
Dissolved Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Arsenic	ug/L	1.3	1.74	1.8	1.22	<RL	1.91	1.53	<RL	<RL	1.52	1.56	<RL	<RL	1.5	1.1
Total Arsenic	ug/L	1.3	1.77	2.54	1.17	<RL	1.99	1.4	<RL	<RL	1.4	1.53	<RL	<RL	1.42	1.41
Dissolved Barium	ug/L	10	12.4	12.6	11.8	7.17	12.7	11.4	11.5	8.94	12.8	12.1	10.7	9.38	13.2	12.7
Total Barium	ug/L	11	13.2	14.2	12.5	11.2	13.2	12.3	13.4	10.1	12.4	12.7	49.8	10.8	13.1	13.5
Dissolved Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Boron	mg/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Calcium	mg/L	9.89	10.7	10.6	8.96	5.71	10.3	10.3	7.72	8.15	10.6	10.4	4.76	7.91	10.1	9.49
Dissolved Chloride	mg/L	1.72	2.22	2.54	1.88	1.09	2.01	2.15	1.48	1.29	2.12	2.44	<RL	1.13	2.11	2.35
Dissolved Chromium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	1.09	<RL	<RL	<RL
Total Chromium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	3.83	<RL	<RL	<RL
Specific Conductance	uS/cm@25 °C	137	167	167	138	82.4	154	157	110	106	156	158	58.9	110	153	145
Dissolved Copper	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Copper	ug/L	2.1	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	B>RL	<RL	<RL	<RL
Dissolved Hardness	mg/L as CaCO ₃	53	60	60	48	29	56	58	41	41	59	58	23	41	55	52
Dissolved Iron	ug/L	25	24.6	33.7	31.9	56.9	29.9	30.8	60.7	40.2	27.3	40.5	240	30.9	32.3	56.9
Total Iron	ug/L	100	77.4	94.3	93.2	225	80.1	62.9	B>RL	129	66.4	94.1	B>RL	116	75	139
Dissolved Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	1.21	<RL	<RL	<RL
Dissolved Magnesium	mg/L	6.76	8.12	8.03	6.32	3.58	7.42	7.93	5.31	5.04	7.92	7.84	2.6	5.22	7.16	6.97
Dissolved Manganese	ug/L	<RL	6	<RL	<RL	<RL	5.71	<RL	<RL	<RL	<RL	5.67	6.12	<RL	6.18	5.75
Total Manganese	ug/L	7.7	9.54	8.4	6.66	15.6	9.59	6.93	8.51	8.2	8.6	9.03	101	9.07	9.83	11.6
Dissolved Nickel	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Nickel	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	4.26	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Nitrate + Nitrite	mg/L as N	0.05	<RL	0.12	0.31	B>RL	0.06	0.09	0.24	0.08	<RL	0.1	0.16	0.06	<RL	0.12
Dissolved Organic Carbon	mg/L as C	1.1	B>RL	2.2	1.7	B>RL	1.5	1.8	1.8	1.2	B>RL	1.1	3.5	1	0.8	1.9
Total Organic Carbon	mg/L as C	1	1.4	1.8	1.5	2.1	1.5	1.6	1.7	1.3	1.1	1.2	3.3	1	0.8	2.2
Dissolved ortho-Phosphate	mg/L as P	0.06	0.07	0.08	0.06	<RL	0.06	0.09	0.05	<RL	0.07	0.08	<RL	0.06	0.06	0.08
Total Phosphorus	mg/L as P	0.04	0.05	0.07	0.04	0.03	0.04	0.04	0.03	B>RL	0.04	0.04	0.12	0.03	0.03	0.06
Dissolved Potassium	mg/L	1.93	2.3	2.56	1.88	1.21	2.33	2.42	1.6	1.86	2.4	2.37	1.34	1.65	2.11	2.27
Dissolved Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Sodium	mg/L	7.34	8.7	8.82	5.82	3.58	6.43	8.17	5.6	5.78	8.39	8.48	2.68	5.57	7.74	7.63
Total Dissolved Solids	mg/L	103	122	121	103	72	122	124	97	85	123	123	62	94	120	112
Total Suspended Solids	mg/L	3.5	3.9	3.4	2.6	10.5	2.6	<RL	4.4	5.2	3.3	2.7	133	4.6	3.2	5.5
Dissolved Sulfate	mg/L	2.1	2.13	2.26	1.98	1.45	2.02	2.09	3.18	1.59	2.2	2.29	1.03	1.69	1.98	1.89

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	25.5	<RL	<RL	<RL	<RL	<RL	<RL
Total Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	5.2	<RL	<RL	<RL
Total Kjeldahl Nitrogen	mg/L	0.12	0.11	0.11	<RL	<RL	<RL	<RL	0.12	0.13	<RL	0.15	0.47	<RL	0.14	0.27
Total Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	0.96	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	No Data
Total Organic Nitrogen	mg/L	0.12	0.11	0.11	<RL	<RL	<RL	<RL	0.12	0.13	<RL	0.15	0.47	<RL	0.14	No Data

Battle Creek at Jellys Ferry Road Bridge — Field Measurements

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Field Specific Conductance	uS/cm@25 °C	130	163	161	131	81	149	151	107	104	154	159	58	108	153	142
Field Dissolved Oxygen	mg/L	10.8	8.9	10.9	12.8	10.4	9.4	11.1	11.5	11.1	9.6	11.3	12.7	10.4	9.8	10.72
Field pH	pH Units	7.4	8	7.3	7.8	7.3	7.9	7.6	7.6	8	7.9	8	7.4	7.64	8.12	7.49
Field Water Temperature	°C	13.6	20.1	10.2	7.7	13.3	18.4	10	8.3	12.2	17.6	10.2	6.4	13.6	18.7	13.4
Field Turbidity	F.N.U.	1.6	0.8	1.5	2.5	5.9	1	1.3	3.5	2.7	1.7	1.3	65.3	2.1	1.02	2.7

Battle Creek at Jellys Ferry Road Bridge — Bacteria Indicators

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Coliform, Total	MPN/100 mL	2419.6	2419.6	2419.6	1732.9	No Data	2419.6	2419.6	1732.9	2419.6	2419.6	1986.3	2419.6	2419.6	2419.6	2419.6
E. coli	MPN/100 mL	56.5	45	129.1	17.1	No Data	36.4	275.5	42.8	66.3	17.1	44.1	142.1	33.1	23.1	325.5

A0460200 — Paynes Creek near Red Bluff

Paynes Creek near Red Bluff — Water Chemistry

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Alkalinity	mg/L as CaCO ₃	108	115	111	64.7	83.8	96.8	Access	47.7	66.2	Access	107	31.3	86	94.3	87.8
Dissolved Aluminum	ug/L	<RL	<RL	<RL	18.1	<RL	<RL	Access	50.3	18.6	Access	<RL	762	<RL	<RL	20.4
Total Aluminum	ug/L	37	623	178	37.6	124	66.2	Access	189	81.1	Access	59.3	B>RL	25.3	63.6	104
Dissolved Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Arsenic	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Arsenic	ug/L	<RL	<RL	1.25	<RL	<RL	<RL	Access	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Barium	ug/L	26	32.2	26.2	17.1	24.2	24.8	Access	13.8	13.5	Access	25	18.8	25.1	24.9	25.8
Total Barium	ug/L	26	45.3	28.1	19	28.2	26.2	Access	16.1	19.2	Access	27.1	135	27	25	27.6

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Boron	mg/L	0.38	0.48	0.44	0.13	0.24	0.37	Access	<RL	<RL	Access	0.39	<RL	0.24	0.28	0.27
Dissolved Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Calcium	mg/L	15.6	15.4	15.7	8.65	13	13.6	Access	6.86	7.44	Access	15	6.57	13.3	13.3	14.1
Dissolved Chloride	mg/L	13.4	17.5	17.4	4.94	8.26	13.9	Access	2.08	3.95	Access	15.7	<RL	8.06	11.5	11.3
Dissolved Chromium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	Access	<RL	1.34	<RL	<RL	<RL
Total Chromium	ug/L	<RL	1.45	<RL	<RL	<RL	<RL	Access	<RL	<RL	Access	<RL	11.5	<RL	<RL	<RL
Specific Conductance	uS/cm@25 °C	250	281	274	146	190	233	Access	99.7	142	Access	255	78.1	193	218	207
Dissolved Copper	ug/L	1.6	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	Access	<RL	1.24	<RL	<RL	<RL
Total Copper	ug/L	2.3	1.02	<RL	1.41	<RL	<RL	Access	<RL	<RL	Access	<RL	B>RL	<RL	<RL	1.02
Dissolved Hardness	mg/L as CaCO ₃	86	88	87	47	70	76	Access	36	40	Access	85	30	71	73	75
Dissolved Iron	ug/L	63	75.8	62.7	34.3	81.1	61.1	Access	48.4	36.5	Access	81.8	405	71.5	101	103
Total Iron	ug/L	120	415	179	63	213	169	Access	B>RL	101	Access	138	B>RL	113	180	193
Dissolved Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	Access	<RL	3.62	<RL	<RL	<RL
Dissolved Magnesium	mg/L	11.5	12	11.7	6.06	9.04	10.1	Access	4.57	5.14	Access	11.5	3.2	9.25	9.56	9.7

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Manganese	ug/L	6.7	20.8	8.93	<RL	9.95	17.4	Access	<RL	<RL	Access	12.4	10.3	7.41	13.7	7.27
Total Manganese	ug/L	12	76	15.2	5.19	21.4	28.7	Access	7.1	6.63	Access	15.8	311	9.91	20.5	19.5
Dissolved Nickel	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Nickel	ug/L	<RL	1.43	<RL	<RL	<RL	<RL	Access	<RL	<RL	Access	<RL	9.21	<RL	<RL	<RL
Dissolved Nitrate + Nitrite	mg/L as N	<RL	0.07	0.18	0.28	B>RL	0.05	Access	0.17	0.09	Access	0.21	1.55	0.23	0.08	0.2
Dissolved Organic Carbon	mg/L as C	1.7	B>RL	2.9	2	B>RL	2.1	Access	2.4	1.6	Access	1.9	2.8	1.3	1.6	4.5
Total Organic Carbon	mg/L as C	1.7	4.9	3.1	2.1	2.3	2.1	Access	2.4	1.6	Access	2	2.9	1.3	1.6	4.8
Dissolved ortho-Phosphate	mg/L as P	<RL	0.08	0.06	<RL	0.06	0.06	Access	<RL	<RL	Access	0.06	0.07	0.07	0.06	0.06
Total Phosphorus	mg/L as P	0.03	0.09	0.04	0.02	0.04	0.03	Access	0.02	B>RL	Access	0.03	0.34	0.03	0.03	0.04
Dissolved Potassium	mg/L	1.42	1.73	1.72	0.9	1.35	1.46	Access	0.92	0.83	Access	1.72	1.24	1.4	1.35	1.96
Dissolved Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Sodium	mg/L	18.5	20.9	21	7.19	11.9	13.1	Access	5.43	6.6	Access	18.4	2.72	12.7	13.9	14.2

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Dissolved Solids	mg/L	154	178	166	101	144	153	Access	85	106	Access	163	69	143	151	147
Total Suspended Solids	mg/L	2.5	20	5.3	<RL	7.7	3.7	Access	2.6	<RL	Access	<RL	318	<RL	2.7	5.4
Dissolved Sulfate	mg/L	1.21	1.4	1.9	1.11	1.38	1.41	Access	<RL	<RL	Access	1.82	1.5	1.46	1.36	1.51
Dissolved Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	Access	<RL	11.7	<RL	<RL	<RL
Total Kjeldahl Nitrogen	mg/L	0.17	0.37	0.15	<RL	0.12	0.99	Access	0.16	0.16	Access	0.1	1.4	0.15	0.12	0.32
Total Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	0.96	Access	<RL	<RL	Access	<RL	<RL	<RL	<RL	No Data
Total Organic Nitrogen	mg/L	0.17	0.37	0.15	<RL	0.12	<RL	Access	0.16	0.16	Access	0.1	1.4	0.15	0.12	No Data

Paynes Creek near Red Bluff — Field Measurements

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Field Specific Conductance	uS/cm@25 °C	236	178	265	139	187	227	Access	97	138	Access	258	76	190	219	203
Field Dissolved Oxygen	mg/L	9.6	6.8	10.5	12.7	8.8	8.4	Access	11.4	10.1	Access	10.5	12.2	9.2	8.25	10.26
Field pH	pH Units	7.6	7.8	7.2	7.8	7.4	7.9	Access	7.7	7.9	Access	8	7.5	7.63	7.82	7.5
Field Water Temperature	°C	15.5	0.8	10.3	6.9	18.9	21	Access	8.6	14.3	Access	11	7.1	16.6	21.2	14.7
Field Turbidity	F.N.U.	0.8	23.9	1.7	1	3.9	1.4	Access	2.6	1.2	Access	1	202.6	0.89	1.16	2.63

Paynes Creek near Red Bluff — Bacteria Indicators

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Coliform, Total	MPN/100 mL	2419.6	2419.6	2419.6	1732.9	No Data	2419.6	Access	1553.1	2419.6	Access	1732.9	2419.6	2419.6	2419.6	2419.6
E. coli	MPN/100 mL	290.9	166.4	248.9	38.9	No Data	35	Access	93.3	151.3	Access	83.3	435.2	111.2	41.7	1046.2

A0452050 — Antelope Creek
Antelope Creek — Water Chemistry

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Alkalinity	mg/L as CaCO ₃	44.4	56.9	113	104	55.7	65.3	119	86.9	53.9	73.8	82.3	66.6	60.8	61.9	125
Dissolved Aluminum	ug/L	270	25.4	<RL	<RL	26.5	28.2	<RL	13	81.7	26.7	26.3	49.8	30.5	42	<RL
Total Aluminum	ug/L	32	582	65.2	30.6	133	175	32.4	75.3	346	176	129	639	177	186	56
Dissolved Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Arsenic	ug/L	19	37.1	10.2	4.02	14.3	33.5	4.17	2.34	12	19	9.32	1.05	8.45	22.6	4.06
Total Arsenic	ug/L	17	43.9	11.3	4.41	14.7	27.3	4.04	2.59	12.6	19.5	10	1.18	8.9	23.7	4.14
Dissolved Barium	ug/L	16	17.1	33	35	18.8	26.2	34.5	30.2	19.9	29.9	28.2	28.2	23.5	24.5	32.8

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Barium	ug/L	14	21.6	31.5	37.2	20	28.7	34.1	29.7	21.3	31.8	30.8	28.2	23.8	25.7	33.6
Dissolved Beryllium	ug/L	16	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Boron	mg/L	0.39	0.73	0.39	0.28	0.25	0.58	0.25	0.18	0.23	0.58	0.57	0.11	0.23	0.51	0.19
Dissolved Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Calcium	mg/L	11	13.8	19.9	21.4	12	13.1	28.5	18.3	11.8	14.5	18.4	15.1	15.7	13.1	23.7
Dissolved Chloride	mg/L	10.5	22	13	15.3	9.39	18.2	18.6	10.6	8.06	20.7	24.2	6.59	10.3	17.4	14.9
Dissolved Chromium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Chromium	ug/L	<RL	1.82	<RL	<RL	<RL	<RL	<RL	<RL	1.02	1.24	<RL	1.35	<RL	<RL	<RL
Specific Conductance	uS/cm@25 °C	164	219	327	344	186	220	423	276	181	246	300	204	220	207	352
Dissolved Copper	ug/L	2.8	<RL	<RL	1.11	1.2	1.68	<RL	1.15	1.5	1.71	1.26	<RL	1.82	1.05	<RL
Total Copper	ug/L	5.1	1.03	<RL	1.26	1.39	2.12	<RL	1.26	1.81	2.13	1.49	1.55	2.02	1.26	<RL
Dissolved Hardness	mg/L as CaCO ₃	49	58	98	123	61	62	172	106	62	71	95	81	84	61	137
Dissolved Iron	ug/L	350	98.4	117	31.7	75.7	235	13.2	65.5	124	282	124	62.5	74.1	153	108
Total Iron	ug/L	110	458	217	85.4	218	443	53.8	158	333	486	249	418	212	334	185
Dissolved Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Magnesium	mg/L	5.25	5.64	11.8	16.9	7.6	7.18	24.4	14.7	7.86	8.54	12	10.4	10.8	6.9	18.9
Dissolved Manganese	ug/L	7.9	<RL	165	36.3	15.1	11.4	12.7	19.5	22.2	22.1	15	32.8	33.2	39.2	79.7
Total Manganese	ug/L	<RL	12	183	39.6	17.7	26.1	15.2	20.3	29.2	33.8	19.2	43.1	36.4	51.9	83.4
Dissolved Nickel	ug/L	<RL	<RL	1.7	2.49	1.57	2.48	2.43	2.24	1.92	3.51	2.06	1.27	1.42	1.94	2.21
Total Nickel	ug/L	<RL	1.52	1.88	2.64	1.78	2.84	2.42	2.43	2.3	3.73	2.19	1.84	1.59	2.16	2.43
Dissolved Nitrate + Nitrite	mg/L as N	<RL	B>RL	0.69	1.71	0.73	B>RL	5.26	2	0.77	0.22	1.15	1.29	1.09	0.14	1.8
Dissolved Organic Carbon	mg/L as C	4.5	2.3	2.8	2.6	3.9	8.4	2.4	B>RL	B>RL	8.4	4.9	2.3	2.8	4.6	B>RL
Total Organic Carbon	mg/L as C	4.6	2.3	2.9	2.8	4	9	2.1	3.6	4.2	8.2	5.1	2.2	2.6	4.7	4
Dissolved ortho-Phosphate	mg/L as P	<RL	0.07	0.06	0.05	<RL	0.13	0.1	0.06	<RL	0.09	0.07	<RL	0.13	0.08	0.07
Total Phosphorus	mg/L as P	0.05	0.06	0.06	0.04	0.04	0.15	0.05	0.04	0.05	0.1	0.07	0.03	0.04	0.06	0.04
Dissolved Potassium	mg/L	2.21	3	3.19	2.29	1.94	4.03	2.09	1.75	2.03	4.1	3.65	1.59	2.09	2.96	2.11
Dissolved Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Sodium	mg/L	12.1	19.2	26.5	14.6	9.34	13.4	17.7	11.6	9.33	17.3	18.4	8.21	11	15.1	16.1
Total Dissolved Solids	mg/L	123	151	193	218	131	168	269	191	131	192	197	143	158	151	242
Total Suspended Solids	mg/L	3.1	8.2	3	<RL	3	6.2	<RL	<RL	4.4	5.7	<RL	8.6	3.6	5.4	<RL
Dissolved Sulfate	mg/L	16.1	14.4	25	31.5	16.9	11.9	43.1	26.9	17.6	14.2	25.5	19.6	26.8	12.3	25.6
Dissolved Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Kjeldahl Nitrogen	mg/L	0.37	0.2	0.13	0.2	0.46	0.64	<RL	0.23	No Data	0.71	0.4	0.28	0.4	0.32	0.36
Total Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	0.13	<RL	<RL	No Data	<RL	<RL	<RL	<RL	<RL	No Data
Total Organic Nitrogen	mg/L	0.37	0.2	0.13	0.2	0.46	0.5	<RL	0.23	No Data	0.71	0.4	0.28	0.4	0.32	No Data

Antelope Creek — Field Measurements

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Field Specific Conductance	uS/cm@25 °C	159	217	309	324	177	217	417	271	180	250	296	204	214	209	350
Field Dissolved Oxygen	mg/L	10.9	8.6	6.1	10.2	8.2	7	5.2	7.9	8.5	6.4	6.9	10.2	8.3	6.23	6
Field pH	pH Units	7.3	7.6	6.6	6.7	6.9	7.3	6.5	6.6	6.8	6.9	7	6.8	6.72	6.91	6.85

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Field Water Temperature	°C	12.5	24.2	12.2	12.8	15.6	28.2	13.8	11.5	20.3	22.4	11.8	8.7	15.3	25.2	14.5
Field Turbidity	F.N.U.	4.1	5.04	6.8	0.2	3.7	4.2	1.1	1.7	3.9	4.5	2.8	4.5	3.41	4.7	4.3

Antelope Creek — Bacteria Indicators

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Coliform, Total	MPN/100 mL	2419.6	2419.6	2419.6	360.9	2419.6	2419.6	2419.6	1732.9	2419.6	2419.6	2419.6	2419.6	2419.6	2419.6	2419.6
E. coli	MPN/100 mL	461.1	90.6	166.4	28.8	159.7	248.1	461.1	191.8	122.3	101.9	275.5	107.1	178.9	123.6	325.5

A0432101 — Deer Creek at Highway 99 E near Vina

Deer Creek at Highway 99 E near Vina — Water Chemistry

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Alkalinity	mg/L as CaCO ₃	58.4	95.7	81.1	59.1	38.5	76.3	76.7	54	45.8	83.1	85.5	42.4	55	55.3	78.7
Dissolved Aluminum	ug/L	<RL	<RL	<RL	<RL	12.9	<RL	<RL	13.2	<RL	<RL	28.3	44.8	10.9	<RL	27
Total Aluminum	ug/L	<RL	41.1	65.8	21.8	104	<RL	<RL	55.2	42.9	<RL	236	1320	238	25.7	412
Dissolved Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Arsenic	ug/L	3.4	6.1	6.53	3.62	1.32	6.66	5.51	2.17	1.82	5.83	5.32	1.16	2.43	5.15	5.06
Total Arsenic	ug/L	3.5	6.58	7.57	3.85	1.43	5.45	5.58	2.38	1.9	6	5.31	1.14	2.54	5.54	5.02
Dissolved Barium	ug/L	11	17	15.2	10.4	8.31	15.9	11.2	9.67	9.64	17.2	17.5	8.33	11.7	16.2	15.3
Total Barium	ug/L	11	19.3	16	10.9	9.22	16.4	15.1	9.72	10.1	17.7	18.8	13.3	13.9	16	18
Dissolved Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Boron	mg/L	<RL	0.21	0.23	<RL	<RL	0.14	0.17	<RL	<RL	0.16	0.15	<RL	<RL	0.15	0.13
Dissolved Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Calcium	mg/L	10.1	15	11.9	9.2	6.13	11.3	11.5	8.56	8.09	12.4	13.9	7.35	9.03	12.5	11.8
Dissolved Chloride	mg/L	2.44	4.9	10.4	2.89	1.36	3.48	4.63	2.14	1.32	4.28	4.33	1.33	2.23	3.9	4.14
Dissolved Chromium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Chromium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	1.14	<RL	<RL	<RL
Specific Conductance	uS/cm@25 °C	125	203	201	129	78.2	162	169	112	92.3	175	182	87.7	113	118	167
Dissolved Copper	ug/L	1.1	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Copper	ug/L	1.4	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	1.1	<RL	<RL	<RL
Dissolved Hardness	mg/L as CaCO ₃	47	75	59	44	28	56	57	42	37	61	66	34	42	61	57
Dissolved Iron	ug/L	21	35.1	27.9	20	21.1	41.3	21.4	25.7	27.7	33	35	26.6	32.4	42.2	49.2
Total Iron	ug/L	21	84.1	83.4	33.7	77.4	71.5	45.7	54.2	67.8	57.7	160	508	174	82.8	250
Dissolved Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Magnesium	mg/L	5.3	9.06	7.23	5.21	3.18	6.66	6.9	4.94	4.02	7.35	7.58	3.87	4.77	7.16	6.72
Dissolved Manganese	ug/L	<RL	16.2	<RL	<RL	<RL	13.5	<RL	<RL	<RL	9.2	5.77	7.66	8.2	16.8	27
Total Manganese	ug/L	<RL	25.9	15.2	5.17	6.67	19.1	8.36	5.94	5.52	14.1	18.5	24.4	19.8	29.7	45.5
Dissolved Nickel	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Nickel	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	1.13	<RL	<RL	<RL
Dissolved Nitrate + Nitrite	mg/L as N	<RL	B>RL	<RL	<RL	<RL	B>RL	<RL	<RL	<RL	<RL	<RL	0.26	<RL	<RL	0.06

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Organic Carbon	mg/L as C	1.7	2.4	2.4	1.6	1.7	1.9	1.7	B>RL	B>RL	1.2	1.9	1.1	1	1.1	B>RL
Total Organic Carbon	mg/L as C	1.7	1.7	2.7	1.7	1.6	1.7	1.9	1.7	1.5	1.3	2	1.1	1.1	1.3	1.4
Dissolved ortho-Phosphate	mg/L as P	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	0.07	<RL	<RL	<RL	<RL
Total Phosphorus	mg/L as P	0.01	0.01	0.02	0.05	<RL	0.01	<RL	0.01	<RL	0.01	0.05	0.02	0.02	0.01	0.03
Dissolved Potassium	mg/L	1.4	2.53	1.89	1.22	1.06	2.04	1.92	1.17	1	2.07	2.19	0.96	1.46	2.1	1.8
Dissolved Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Sodium	mg/L	7.43	12.8	15.8	6.33	3.57	7.62	11	6.08	4.85	10.8	10.5	4.08	6.19	10.3	9.79
Total Dissolved Solids	mg/L	89	134	130	98	64	113	114	88	75	124	129	73	88	115	119
Total Suspended Solids	mg/L	2.5	3.1	4.5	<RL	3.5	<RL	<RL	<RL	<RL	<RL	4.1	19.1	6.9	<RL	9.1
Dissolved Sulfate	mg/L	1.3	2.5	3.21	1.75	<RL	1.83	2.36	1.47	<RL	2.23	3.24	1.23	1.36	2.08	2.16
Dissolved Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Kjeldahl Nitrogen	mg/L	<RL	0.11	0.16	<RL	<RL	<RL	<RL	<RL	<RL	0.14	0.1	0.11	0.18	<RL	<RL
Total Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	No Data
Total Organic Nitrogen	mg/L	<RL	0.11	0.16	<RL	<RL	<RL	<RL	<RL	<RL	0.14	0.1	0.11	0.18	<RL	No Data

Deer Creek at Highway 99 E near Vina — Field Measurements

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Field Specific Conductance	uS/cm@25 °C	121	200.6	190	121	75	159	163	110	92	176	179	87	112	169	165
Field Dissolved Oxygen	mg/L	11.7	8.28	11.4	13.3	11.3	8	11	12.3	10	9.3	11.3	12.7	10.37	8.36	12.14
Field pH	pH Units	7.1	7.6	7.2	7.1	7.7	7.4	7.2	7.2	7.5	No Data	7.9	7.3	7.38	7.37	6.89
Field Water Temperature	°C	10.8	24.1	9.2	5.8	10.5	23.5	9.5	6.9	15.9	22.1	9.5	5.5	13.7	24	12.4
Field Turbidity	F.N.U.	0.2	0.68	1.3	-0.16	1.5	0.3	0.2	0.7	0.8	No Data	4.2	10.5	4.01	2.2	7

Deer Creek at Highway 99 E near Vina — Bacteria Indicators

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Coliform, Total	MPN/100 mL	1732.9	2419.6	2419.6	344.8	1119.9	2419.6	770.1	574.8	2419.6	2419.6	2419.6	1203.3	2419.6	2419.6	1732.9
E. coli	MPN/100 mL	50.4	33.6	344.8	12.2	14.5	35	46.4	24.6	39.9	27.9	111.9	33.6	307.6	51.2	45.2

A0442050 — Mill Creek near mouth near Los Molinos

Mill Creek near mouth near Los Molinos — Water Chemistry

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Alkalinity	mg/L as CaCO ₃	38.5	58	53.8	47.2	33.9	47.9	56.3	45.1	24.5	56.2	62.1	37.4	32.3	54.6	52.5
Dissolved Aluminum	ug/L	27	11.7	17.4	14.2	27.5	14.7	14.8	25.9	57.5	10.6	85.5	46.1	38.7	16.5	30.2
Total Aluminum	ug/L	150	12.5	268	87.1	177	36.6	53.5	111	757	26.6	2490	510	1020	63.1	252
Dissolved Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Arsenic	ug/L	25	38.6	37.5	35.1	20.6	44.6	41.1	22.3	15.2	35.5	42	11.5	14.8	33	34.6
Total Arsenic	ug/L	28	41.7	43	35.5	22.3	36	40.9	22.8	21	35.8	42	11.7	16.2	35	35.2
Dissolved Barium	ug/L	12	16.9	19.4	12.5	9.01	17.2	16.2	10.9	7.93	19.9	26.8	11.6	12.7	18.8	19.4
Total Barium	ug/L	13	19.2	22.5	13.4	10.1	18.1	17.3	11.5	14.1	21.3	46.2	12.7	24.7	18.9	21.6
Dissolved Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Boron	mg/L	0.4	0.75	0.86	0.52	0.22	0.57	0.76	0.33	0.16	0.58	0.7	0.17	0.21	0.52	0.53
Dissolved Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Calcium	mg/L	10.5	14.5	14	10.4	7.34	11.3	12.6	9.84	6.19	12.9	15.6	7.95	8.45	12.2	12.6
Dissolved Chloride	mg/L	11.3	22.2	26	15.6	6.05	17.2	22.2	9.86	3.68	17.4	22.9	4.97	5.93	16.4	16.8
Dissolved Chromium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Chromium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	2.2	<RL	<RL	<RL	<RL
Specific Conductance	uS/cm@25 °C	159	222	255	178	107	183	214	146	87.9	197	227	107	112	185	192
Dissolved Copper	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Copper	ug/L	2.1	<RL	<RL	<RL	<RL	<RL	<RL	<RL	1.53	<RL	1.96	<RL	1.38	<RL	<RL
Dissolved Hardness	mg/L as CaCO ₃	42	61	59	45	30	47	54	43	25	54	61	34	34	51	53
Dissolved Iron	ug/L	21	54.6	47.1	16.8	19	43.1	26.2	24.4	27.7	48.5	36.7	28.3	22.6	78.4	36.7
Total Iron	ug/L	150	54.1	233	75	143	83.1	73.2	99.5	714	80.5	1090	231	557	137	207
Dissolved Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	1.32	<RL	<RL	<RL	<RL
Dissolved Magnesium	mg/L	3.85	6.05	5.88	4.57	2.95	4.65	5.44	4.49	2.21	5.38	5.43	3.54	3.16	4.98	5.11
Dissolved Manganese	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	8.91	<RL	5.69	13.2	10.1
Total Manganese	ug/L	6.4	<RL	14.4	<RL	6.59	7.32	<RL	<RL	30.6	7.44	153	10.2	35.3	25.6	24.8
Dissolved Nickel	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Nickel	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	1.36	<RL	1.62	<RL	1.21	1.29	<RL
Dissolved Nitrate + Nitrite	mg/L as N	<RL	B>RL	<RL	<RL	0.14	B>RL	<RL	0.1	0.26	<RL	<RL	0.27	0.14	<RL	0.08

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Organic Carbon	mg/L as C	1.5	2.6	2.8	1.3	1.4	1.4	1.4	B>RL	B>RL	1.3	2.3	1	1.1	1.1	B>RL
Total Organic Carbon	mg/L as C	1.5	1.7	2.7	1.4	1.3	1.7	1.4	1.5	1.8	1.8	2.6	1	1.1	1.2	1.1
Dissolved ortho-Phosphate	mg/L as P	<RL	<RL	<RL	<RL	<RL	0.06	<RL	<RL	<RL	0.2	0.07	<RL	<RL	<RL	<RL
Total Phosphorus	mg/L as P	0.03	0.03	0.04	0.03	0.02	0.03	0.03	0.03	0.06	0.03	0.15	0.02	0.04	0.03	0.04
Dissolved Potassium	mg/L	1.95	3.18	2.91	2.01	1.61	2.57	2.75	1.83	1.51	2.85	3.29	1.42	1.64	2.55	2.62
Dissolved Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Sodium	mg/L	11.8	19.6	22.1	12.4	7.07	12.1	18	10.7	5.8	15.6	17.9	6.82	7.58	14.2	15.3
Total Dissolved Solids	mg/L	113	148	165	126	87	135	148	112	74	140	160	87	91	134	137
Total Suspended Solids	mg/L	2.7	3.4	9.3	<RL	5.7	<RL	<RL	<RL	32.6	<RL	39	9	31.6	2.6	8.5
Dissolved Sulfate	mg/L	16.7	14.8	19.6	12.1	7.11	13	14.1	9.02	9.25	12.3	14.1	6.31	11.8	11.2	13.7
Dissolved Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Kjeldahl Nitrogen	mg/L	<RL	0.13	0.15	<RL	0.11	<RL	<RL	<RL	0.17	0.11	0.31	<RL	0.22	<RL	0.11
Total Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	No Data
Total Organic Nitrogen	mg/L	<RL	0.13	0.15	<RL	0.11	<RL	<RL	<RL	0.17	0.11	0.31	<RL	0.22	<RL	No Data

Mill Creek near mouth near Los Molinos — Field Measurements

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Field Specific Conductance	uS/cm@25 °C	154	218	243	169	103	179	208	143	88	196	223	107	110	187	190
Field Dissolved Oxygen	mg/L	12.2	10.2	11.9	13.9	11.4	9.3	11.8	12.3	10.3	10.9	11.5	12.8	11.12	8.96	12.89
Field pH	pH Units	6.9	8.3	7.3	7.8	7.8	7.9	7.5	7.5	7.7	8.1	8	7.2	7.42	7.75	7.33
Field Water Temperature	°C	9.9	24	8.4	6.4	11.6	22.5	9	7.5	15.9	21	9.4	6	12.3	23.5	12.3
Field Turbidity	F.N.U.	1.8	0.84	3.3	<RL	2.8	0.5	0.6	1.4	14.1	0.5	29.8	4.2	21.2	1	4.5

Mill Creek near mouth near Los Molinos — Bacteria Indicators

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Coliform, Total	MPN/100 mL	1203.3	2419.6	2419.6	307.6	1046.2	2419.6	866.4	579.4	2419.6	2419.6	2419.6	547.5	1986.3	2419.6	1299.7
E. coli	MPN/100 mL	38.8	82.3	613.1	4.1	21.1	95.9	22.8	27.2	45.7	579.4	222.4	22.3	67.7	57.3	69.7

A4820000 — Oak Run Creek near Oak Run

Oak Run Creek near Oak Run — Water Chemistry

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Alkalinity	mg/L as CaCO ₃	49.3	72.8	68	39.4	42.9	63.3	56.7	36.2	46.7	Access	56	24.8	52.8	59.5	62.2
Dissolved Aluminum	ug/L	44	11.6	29	76.1	85.2	13.4	26	318	116	Access	12	652	20.6	24.2	67.2
Total Aluminum	ug/L	240	175	1350	349	215	83.8	66.7	326	264	Access	70.5	873	132	138	378
Dissolved Ammonia	mg/L as N	<RL	<RL	0.07	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Arsenic	ug/L	<RL	1.18	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Arsenic	ug/L	<RL	1.47	<RL	<RL	<RL	1.29	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Barium	ug/L	14	25.3	26.2	15.2	15.2	20.3	13.2	14.4	16.1	Access	14.2	14.6	16.3	21.1	17.3
Total Barium	ug/L	16	29.1	41.1	18.2	18.5	25.2	14.6	18.1	18	Access	14.7	23.2	17.4	21.8	21.5
Dissolved Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Boron	mg/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Calcium	mg/L	9.05	12.1	10.6	6.48	6.68	10.2	9.46	6.29	8.42	Access	9.32	4.31	8.68	9.16	10.6
Dissolved Chloride	mg/L	<RL	<RL	5.01	1.27	1.02	1.04	1.09	1.05	<RL	Access	1.09	<RL	<RL	<RL	1.64
Dissolved Chromium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	1.2	<RL	<RL	<RL
Total Chromium	ug/L	1.1	<RL	3.43	1.23	<RL	<RL	<RL	1.1	<RL	Access	1.01	2.06	<RL	<RL	1.53
Specific Conductance	uS/cm@25 °C	99.2	142	158	84.9	85	124	110	73.7	92	Access	109	50.4	101	114	123
Dissolved Copper	ug/L	41	<RL	1.41	<RL	1.02	<RL	<RL	1.13	<RL	Access	<RL	1.12	<RL	1.04	<RL
Total Copper	ug/L	2.3	1.06	2.81	<RL	<RL	1.1	<RL	1.24	<RL	Access	<RL	1.98	<RL	1.06	1.19
Dissolved Hardness	mg/L as CaCO ₃	43	56	53	31	32	48	44	30	40	Access	43	20	41	43	51
Dissolved Iron	ug/L	220	627	365	110	180	444	144	221	167	Access	140	342	198	290	196
Total Iron	ug/L	520	1200	2320	429	373	937	251	411	380	Access	259	887	416	501	B>RL
Dissolved Lead	ug/L	3.7	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Magnesium	mg/L	4.84	6.28	6.55	3.68	3.71	5.48	4.93	3.49	4.51	Access	4.9	2.35	4.8	4.92	5.89
Dissolved Manganese	ug/L	29	267	96	10.4	15.3	112	13.9	8.44	14.5	Access	17.1	5.23	18.9	25.6	18.6
Total Manganese	ug/L	35	298	152	13.9	19.6	140	16.3	12.4	19.6	Access	18.6	23.5	25.5	33.7	59.1
Dissolved Nickel	ug/L	<RL	1.19	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Nickel	ug/L	<RL	1.26	2.11	<RL	<RL	1.01	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Nitrate + Nitrite	mg/L as N	<RL	B>RL	0.08	0.16	0.05	<RL	<RL	0.11	B>RL	Access	<RL	0.1	<RL	<RL	0.07

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Organic Carbon	mg/L as C	2.3	4.8	B>RL	B>RL	2.7	B>RL	B>RL	B>RL	B>RL	Access	B>RL	2.2	1.9	4.2	2.7
Total Organic Carbon	mg/L as C	2.3	4.7	10.4	B>RL	2.7	6.2	2.3	2.2	2.3	Access	1.8	2.1	1.8	4.6	3
Dissolved ortho-Phosphate	mg/L as P	<RL	<RL	0.14	<RL	<RL	0.1	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	0.06
Total Phosphorus	mg/L as P	0.04	0.07	0.27	0.02	0.04	0.12	0.01	0.02	0.03	Access	0.01	0.03	0.03	0.04	0.06
Dissolved Potassium	mg/L	0.79	1.32	4.2	0.82	0.7	1.26	1.1	0.96	0.76	Access	1.05	0.89	0.69	1.12	1.82
Dissolved Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Sodium	mg/L	4.1	5.23	5.86	2.87	2.82	3.9	4.32	3.06	3.61	Access	4.42	1.97	3.63	4.63	4.54
Total Dissolved Solids	mg/L	78	106	123	66	73	104	93	64	79	Access	91	54	82	99	98
Total Suspended Solids	mg/L	2.7	3.7	29.3	3.9	3.2	4.6	<RL	4	4.3	Access	<RL	25.1	5.1	3	16
Dissolved Sulfate	mg/L	<RL	<RL	<RL	1.02	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Kjeldahl Nitrogen	mg/L	<RL	0.44	0.9	0.19	0.21	0.48	<RL	0.17	0.2	Access	0.1	0.28	0.15	0.31	0.27
Total Ammonia	mg/L as N	0.22	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	No Data
Total Organic Nitrogen	mg/L	0.22	0.44	0.9	0.19	0.21	0.48	<RL	0.17	0.2	Access	0.1	0.28	0.15	0.31	No Data

Oak Run Creek near Oak Run — Field Measurements

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Field Specific Conductance	uS/cm@25 °C	92	139	155	80	82	121	103	68	89	Access	105	51	98	113	118
Field Dissolved Oxygen	mg/L	11.1	6.7	9.2	12.9	11.1	7.3	10.5	11.5	10.7	Access	10.9	11.5	9.91	8.57	10
Field pH	pH Units	6.5	7.2	6.4	7	7.4	7	7.2	7.2	7.3	Access	7.6	7	7.2	7.18	6.75
Field Water Temperature	°C	10.1	21.8	9.7	5.8	10.1	20.7	10	7.9	10.7	Access	9.4	9.1	12.6	18.4	12
Field Turbidity	F.N.U.	4.5	3.2	1193	8.3	6.4	2.9	2.1	7.8	4.8	Access	1.9	27.3	12.6	3.1	10.3

Oak Run Creek near Oak Run — Bacteria Indicators

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Coliform, Total	MPN/100 mL	2419.6	2419.6	2419.6	2419.6	2419.6	2419.6	2419.6	2419.6	2419.6	Access	2419.6	2419.6	2419.6	2419.6	2419.6
E. coli	MPN/100 mL	410.6	259.5	2419.6	344.8	344.8	579.4	613.1	387.3	280.9	Access	648.8	1299.7	435.2	1413.6	2419.6

A4855500 — Cow Creek South at Campground

Cow Creek South at Campground — Water Chemistry

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Alkalinity	mg/L as CaCO ₃	37.5	61.2	60.7	48	31.3	57.3	60.1	38.7	33.4	Access	62	20.4	39.1	60.8	61.2
Dissolved Aluminum	ug/L	<RL	<RL	<RL	11.9	23.1	<RL	<RL	42.2	39.4	Access	10.9	153	<RL	<RL	<RL
Total Aluminum	ug/L	42	77.2	48.5	32.4	78.1	31.2	34.6	113	93.8	Access	26	1810	26.8	25.2	29
Dissolved Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Arsenic	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Arsenic	ug/L	<RL	<RL	<RL	<RL	<RL	1.14	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Barium	ug/L	<RL	7.13	6.66	5.93	<RL	7.15	6.59	5.21	<RL	Access	7.07	<RL	<RL	7.21	6.98
Total Barium	ug/L	<RL	7.78	7.56	6.62	<RL	7.53	7.4	6.46	<RL	Access	6.86	16.7	<RL	7.45	7.32
Dissolved Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Boron	mg/L	No Data	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Calcium	mg/L	No Data	10.6	10.7	7.87	5.4	10.2	10.1	6.78	5.77	Access	11.1	3.62	7.16	10.3	11.6
Dissolved Chloride	mg/L	No Data	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Chromium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Chromium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	1.11	<RL	<RL	<RL
Specific Conductance	uS/cm@25 °C	71.5	116	117	92.7	58.7	110	115	74.4	63.9	Access	119	38.5	72.4	114	115
Dissolved Copper	ug/L	3.1	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Copper	ug/L	1.4	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	1.08	<RL	<RL	<RL
Dissolved Hardness	mg/L as CaCO ₃	No Data	45	47	35	23	44	45	30	25	Access	49	15	30	45	51
Dissolved Iron	ug/L	<RL	17.2	15.1	11.8	14.2	14.6	19.8	25.1	20.9	Access	17.1	60.4	9.28	11.7	21.7
Total Iron	ug/L	40	54.1	50.3	24.6	55.8	37.7	46.3	69.2	63.5	Access	35.4	654	23.2	39	B>RL
Dissolved Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Magnesium	mg/L	No Data	4.54	4.89	3.68	2.28	4.49	4.83	3.08	2.58	Access	5.16	1.53	3.06	4.57	5.25
Dissolved Manganese	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Manganese	ug/L	<RL	5.02	<RL	<RL	<RL	<RL	<RL	<RL	5.02	Access	<RL	38.9	<RL	<RL	5.65
Dissolved Nickel	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Nickel	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Nitrate + Nitrite	mg/L as N	<RL	B>RL	<RL	<RL	<RL	<RL	<RL	<RL	B>RL	Access	<RL	<RL	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Organic Carbon	mg/L as C	1	1.5	B>RL	B>RL	1.2	B>RL	B>RL	B>RL	B>RL	Access	B>RL	1.8	0.6	0.6	1.8
Total Organic Carbon	mg/L as C	0.7	1.3	1.5	B>RL	1.1	1.1	2.3	1.4	0.9	Access	1.3	1.7	<RL	0.7	1.8
Dissolved ortho-Phosphate	mg/L as P	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	0.05
Total Phosphorus	mg/L as P	<RL	<RL	<RL	<RL	0.01	0.01	<RL	0.01	<RL	Access	<RL	0.04	<RL	0.01	0.01
Dissolved Potassium	mg/L	No Data	1.17	1.05	0.89	0.57	1.17	1.28	0.94	0.64	Access	1.22	0.61	0.79	1.06	1.48
Dissolved Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Sodium	mg/L	No Data	4.32	4.54	3.09	2.08	3.32	3.98	3.11	2.42	Access	4.47	1.69	2.72	4.08	4.6
Total Dissolved Solids	mg/L	No Data	81	90	70	52	86	92	62	56	Access	98	40	61	88	93
Total Suspended Solids	mg/L	2.5	<RL	<RL	<RL	2.9	<RL	<RL	<RL	2.7	Access	<RL	46.4	<RL	<RL	<RL
Dissolved Sulfate	mg/L	No Data	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Kjeldahl Nitrogen	mg/L	<RL	0.16	<RL	<RL	<RL	<RL	<RL	<RL	0.1	Access	<RL	0.16	<RL	<RL	<RL
Total Ammonia	mg/L as N	<RL	<RL	0.11	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	No Data
Total Organic Nitrogen	mg/L	<RL	0.16	0.11	<RL	<RL	<RL	<RL	<RL	0.1	Access	<RL	0.16	<RL	<RL	No Data

Cow Creek South at Campground — Field Measurements

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Field Specific Conductance	uS/cm@25 °C	67	113	122	89	57	107	111	72	62	Access	119	38	71	113	114
Field Dissolved Oxygen	mg/L	12.3	10.2	11.4	13.5	12.4	10	11.4	12.2	12	Access	11.5	12.6	11.08	10.37	11.2
Field pH	pH Units	7.1	7.9	7	7.5	7.5	7.8	7.2	7.1	7.9	Access	7.6	6.7	7.36	7.74	7.16
Field Water Temperature	°C	5.6	14.3	7	3.7	5.3	13	7.4	4.8	6.1	Access	6.9	6.1	7.7	12.2	9.3
Field Turbidity	F.N.U.	4	0.6	1.4	0.8	1	0.6	1.1	1.7	1.6	Access	0.7	22	0.6	0.8	1.2

Cow Creek South at Campground — Bacteria Indicators

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Coliform, Total	MPN/100 mL	275.5	1732.9	1119.9	172.5	135.4	325.5	1553.1	365.4	307.6	Access	686.7	579.4	307.6	816.4	1732.9
E. coli	MPN/100 mL	5.2	16.1	39.3	2	2	3.1	25.6	6.3	1	Access	5.2	25.6	8.5	29.8	33.2

A4844800 — Cow Creek Old above Killarc

Cow Creek Old above Killarc — Water Chemistry

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Alkalinity	mg/L as CaCO ₃	39.5	59.3	60.7	50.9	32.3	55.5	56.4	38.7	35.6	Access	59.4	20.5	40.1	59	57.3
Dissolved Aluminum	ug/L	<RL	10.1	<RL	13.7	32.5	<RL	29.1	41.5	22.5	Access	<RL	293	<RL	<RL	50.9
Total Aluminum	ug/L	67	57.1	53	60.8	211	20.1	89.1	158	77.8	Access	30.1	4440	96.1	18.6	351
Dissolved Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Arsenic	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Arsenic	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Barium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	6.42
Total Barium	ug/L	<RL	<RL	<RL	<RL	5.01	<RL	5.85	5.2	<RL	Access	<RL	64.3	<RL	<RL	11.5
Dissolved Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Boron	mg/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Calcium	mg/L	7.1	10.3	10.5	8.3	5.58	9.42	9.28	6.82	6.28	Access	10.5	3.6	6.84	9.63	10.1
Dissolved Chloride	mg/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Chromium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	1.04	<RL	<RL	<RL	<RL
Total Chromium	ug/L	<RL	<RL	1.17	<RL	<RL	1.13	<RL	<RL	<RL	Access	1.36	3.4	<RL	<RL	1.3
Specific Conductance	uS/cm@25 °C	75.3	113	117	98.4	60.6	108	107	74	67.5	Access	114	39.3	75.4	111	108
Dissolved Copper	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Copper	ug/L	3.1	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	2.89	<RL	<RL	<RL
Dissolved Hardness	mg/L as CaCO ₃	32	46	48	38	25	43	43	31	28	Access	48	16	31	44	46
Dissolved Iron	ug/L	<RL	<RL	<RL	11.5	19.8	6.51	20.3	29.9	11.4	Access	8.56	110	<RL	<RL	32.4
Total Iron	ug/L	47	31.5	42.8	45.3	142	18.2	65.7	94.7	51.7	Access	24.3	1710	51.5	21.3	B>RL
Dissolved Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Magnesium	mg/L	3.49	5.01	5.22	4.26	2.64	4.68	4.76	3.41	3.03	Access	5.28	1.76	3.3	4.73	4.98
Dissolved Manganese	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Manganese	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	60.7	<RL	<RL	68.2
Dissolved Nickel	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Nickel	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	2.07	<RL	<RL	<RL
Dissolved Nitrate + Nitrite	mg/L as N	<RL	B>RL	<RL	0.06	<RL	0.07	<RL	0.06	B>RL	Access	<RL	<RL	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Organic Carbon	mg/L as C	0.8	1.2	B>RL	B>RL	1	B>RL	B>RL	B>RL	B>RL	Access	B>RL	1.5	<RL	<RL	2
Total Organic Carbon	mg/L as C	0.6	0.8	1.6	B>RL	1.1	0.9	1.9	1	<RL	Access	0.9	1.4	<RL	<RL	1.8
Dissolved ortho-Phosphate	mg/L as P	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	0.06	<RL	0.07	<RL	0.07
Total Phosphorus	mg/L as P	<RL	<RL	0.02	<RL	0.02	0.02	<RL	0.01	<RL	Access	<RL	0.08	0.01	0.01	0.03
Dissolved Potassium	mg/L	0.51	0.81	0.81	0.81	0.54	0.95	0.9	0.78	0.54	Access	0.81	<RL	0.6	0.86	1.1
Dissolved Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Sodium	mg/L	2.89	3.96	3.93	3.08	2.07	2.92	3.65	2.91	2.56	Access	4.06	1.61	2.78	3.68	3.91
Total Dissolved Solids	mg/L	52	79	83	69	51	78	80	59	56	Access	86	39	61	84	79
Total Suspended Solids	mg/L	2.5	<RL	<RL	<RL	6.3	<RL	2.6	2.6	<RL	Access	<RL	135	3.5	<RL	19.3
Dissolved Sulfate	mg/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Kjeldahl Nitrogen	mg/L	<RL	<RL	<RL	<RL	0.11	<RL	0.13	<RL	<RL	Access	<RL	<RL	<RL	<RL	0.15
Total Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	No Data
Total Organic Nitrogen	mg/L	<RL	<RL	<RL	<RL	0.11	<RL	0.13	<RL	<RL	Access	<RL	<RL	<RL	<RL	No Data

Cow Creek Old above Killarc — Field Measurements

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Field Specific Conductance	uS/cm@25 °C	71	110	113	94.2	59	103	103	71	66	Access	114	38	72	109	106
Field Dissolved Oxygen	mg/L	12.2	10.6	11.7	13.3	12.4	10.3	11.9	12.3	12	Access	11.5	12.9	11.02	10.45	11.45
Field pH	pH Units	7.4	8.1	7.5	7.6	7.6	8	7.6	7.5	7.5	Access	8	7.1	7.45	7.78	7.23
Field Water Temperature	°C	5.9	13.7	6.6	4.3	5.4	12.2	5.9	4.6	5.9	Access	7	5.3	7.8	11.7	8.8
Field Turbidity	F.N.U.	1.2	0.9	0.8	1.3	4	0.4	2.2	2.4	1.3	Access	0.7	61.1	7.44	0.7	8.8

Cow Creek Old above Killarc — Bacteria Indicators

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Coliform, Total	MPN/100 mL	152.9	2419.6	1732.9	209.8	159.7	410.6	2419.6	325.5	214.3	Access	547.5	920.8	206.4	201.4	2419.6
E. coli	MPN/100 mL	1	15.6	60.2	7.3	5.2	11	62	3.1	9.5	Access	3	19.9	1	9.7	198.9

A0079500 — Stillwater Creek near Anderson

Stillwater Creek near Anderson — Water Chemistry

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Alkalinity	mg/L as CaCO ₃	73.6	Dry	Dry	44.5	57.7	Dry	Dry	42.4	64.7	Dry	Dry	36.6	62.4	Dry	Dry
Dissolved Aluminum	ug/L	<RL	Dry	Dry	12.3	<RL	Dry	Dry	44.3	<RL	Dry	Dry	565	<RL	Dry	Dry
Total Aluminum	ug/L	No Data	Dry	Dry	153	49.8	Dry	Dry	430	54.5	Dry	Dry	5750	45.9	Dry	Dry
Dissolved Ammonia	mg/L as N	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry
Dissolved Antimony	ug/L	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry
Total Antimony	ug/L	No Data	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry
Dissolved Arsenic	ug/L	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry
Total Arsenic	ug/L	No Data	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	1.08	<RL	Dry	Dry
Dissolved Barium	ug/L	72	Dry	Dry	54.7	54.4	Dry	Dry	40	53.3	Dry	Dry	31.4	60.2	Dry	Dry
Total Barium	ug/L	No Data	Dry	Dry	57.9	57.4	Dry	Dry	46.5	57.8	Dry	Dry	139	61.5	Dry	Dry
Dissolved Beryllium	ug/L	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry
Total Beryllium	ug/L	No Data	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry
Dissolved Boron	mg/L	0.19	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry
Dissolved Cadmium	ug/L	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Cadmium	ug/L	No Data	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry
Dissolved Calcium	mg/L	24.7	Dry	Dry	14.3	15.2	Dry	Dry	12.1	18.4	Dry	Dry	9.86	17.6	Dry	Dry
Dissolved Chloride	mg/L	30	Dry	Dry	13.6	9.76	Dry	Dry	3.96	12.8	Dry	Dry	1.52	16.3	Dry	Dry
Dissolved Chromium	ug/L	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry
Total Chromium	ug/L	No Data	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	6.21	<RL	Dry	Dry
Specific Conductance	uS/cm@25 °C	309	Dry	Dry	190	185	Dry	Dry	122	209	Dry	Dry	91.8	211	Dry	Dry
Dissolved Copper	ug/L	1.2	Dry	Dry	<RL	<RL	Dry	Dry	1.08	<RL	Dry	Dry	1.92	<RL	Dry	Dry
Total Copper	ug/L	No Data	Dry	Dry	1.06	<RL	Dry	Dry	1.66	<RL	Dry	Dry	17	<RL	Dry	Dry
Dissolved Hardness	mg/L as CaCO ₃	94	Dry	Dry	56	58	Dry	Dry	45	71	Dry	Dry	35	68	Dry	Dry
Dissolved Iron	ug/L	<RL	Dry	Dry	13.2	16.7	Dry	Dry	54.4	10.1	Dry	Dry	541	6.28	Dry	Dry
Total Iron	ug/L	No Data	Dry	Dry	219	100	Dry	Dry	537	90.8	Dry	Dry	9010	70.1	Dry	Dry
Dissolved Lead	ug/L	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry
Total Lead	ug/L	No Data	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	3.65	<RL	Dry	Dry
Dissolved Magnesium	mg/L	7.89	Dry	Dry	4.81	4.81	Dry	Dry	3.69	6.07	Dry	Dry	2.6	5.72	Dry	Dry
Dissolved Manganese	ug/L	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	14.6	<RL	Dry	Dry
Total Manganese	ug/L	No Data	Dry	Dry	8.44	<RL	Dry	Dry	16.2	6.63	Dry	Dry	362	<RL	Dry	Dry

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Nickel	ug/L	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry
Total Nickel	ug/L	No Data	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	5.34	<RL	Dry	Dry
Dissolved Nitrate + Nitrite	mg/L as N	<RL	Dry	Dry	1.94	0.93	Dry	Dry	0.77	B>RL	Dry	Dry	0.47	0.89	Dry	Dry
Dissolved Organic Carbon	mg/L as C	1.3	Dry	Dry	B>RL	1.4	Dry	Dry	B>RL	B>RL	Dry	Dry	2.2	0.7	Dry	Dry
Total Organic Carbon	mg/L as C	1.2	Dry	Dry	B>RL	1.4	Dry	Dry	1.5	0.9	Dry	Dry	2.2	0.7	Dry	Dry
Dissolved ortho-Phosphate	mg/L as P	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry
Total Phosphorus	mg/L as P	<RL	Dry	Dry	<RL	0.02	Dry	Dry	0.01	0.02	Dry	Dry	0.24	0.01	Dry	Dry
Dissolved Potassium	mg/L	0.71	Dry	Dry	0.59	0.56	Dry	Dry	0.9	0.59	Dry	Dry	0.75	0.68	Dry	Dry
Dissolved Selenium	ug/L	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry
Total Selenium	ug/L	No Data	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry
Dissolved Silver	ug/L	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry
Total Silver	ug/L	No Data	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry
Dissolved Sodium	mg/L	23.1	Dry	Dry	9.64	9.02	Dry	Dry	5.83	12.4	Dry	Dry	2.99	12.2	Dry	Dry
Total Dissolved Solids	mg/L	165	Dry	Dry	107	115	Dry	Dry	81	135	Dry	Dry	73	130	Dry	Dry

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Suspended Solids	mg/L	2.5	Dry	Dry	6.5	3.3	Dry	Dry	9.7	3.6	Dry	Dry	299	<RL	Dry	Dry
Dissolved Sulfate	mg/L	20.1	Dry	Dry	13.9	12.8	Dry	Dry	7.89	14.3	Dry	Dry	4.77	14.7	Dry	Dry
Dissolved Zinc	ug/L	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	5.3	<RL	Dry	Dry
Total Zinc	ug/L	No Data	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	37.1	<RL	Dry	Dry
Total Kjeldahl Nitrogen	mg/L	0.11	Dry	Dry	<RL	0.22	Dry	Dry	0.16	0.12	Dry	Dry	0.66	<RL	Dry	Dry
Total Ammonia	mg/L as N	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry
Total Organic Nitrogen	mg/L	0.11	Dry	Dry	<RL	0.22	Dry	Dry	0.16	0.12	Dry	Dry	0.66	<RL	Dry	Dry

Stillwater Creek near Anderson — Field Measurements

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Field Specific Conductance	uS/cm@25 °C	297	Dry	Dry	182	197	Dry	Dry	118	209	Dry	Dry	88	208	Dry	Dry
Field Dissolved Oxygen	mg/L	11.4	Dry	Dry	13.7	8.7	Dry	Dry	10.9	11	Dry	Dry	11.4	9.81	Dry	Dry
Field pH	pH Units	8.1	Dry	Dry	7.8	7.5	Dry	Dry	7.4	7.7	Dry	Dry	7.5	7.46	Dry	Dry
Field Water Temperature	°C	17.6	Dry	Dry	9.2	15.5	Dry	Dry	11.4	18.3	Dry	Dry	11.2	20.9	Dry	Dry
Field Turbidity	F.N.U.	0.2	Dry	Dry	2.9	9.5	Dry	Dry	14.8	1.6	Dry	Dry	210	2.23	Dry	Dry

Stillwater Creek near Anderson — Bacteria Indicators

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Coliform, Total	MPN/100 mL	1119.9	Dry	Dry	2419.6	2419.6	Dry	Dry	2419.6	1203.3	Dry	Dry	2419.6	2419.6	Dry	Dry
E. coli	MPN/100 mL	38.8	Dry	Dry	32.3	77.6	Dry	Dry	101.4	24.3	Dry	Dry	298.7	113.7	Dry	Dry

A4811000 — Cow Creek near Millville

Cow Creek near Millville — Water Chemistry

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Alkalinity	mg/L as CaCO ₃	52.8	86.4	76.8	50.1	42.2	74.2	67.3	41.8	47.3	75.7	68.8	28.5	53.2	80.3	71.3
Dissolved Aluminum	ug/L	<RL	10.6	<RL	85.1	59.5	<RL	34.4	338	80.4	<RL	<RL	6600	<RL	<RL	<RL
Total Aluminum	ug/L	51	79.3	70.3	362	399	48.2	417	515	214	61.2	54.1	443	69.2	72.6	54.2
Dissolved Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Arsenic	ug/L	<RL	2.13	<RL	<RL	<RL	2.24	<RL	<RL	<RL	1.63	<RL	1.07	<RL	1.5	<RL
Total Arsenic	ug/L	<RL	2.3	<RL	<RL	<RL	2.88	<RL	<RL	<RL	1.62	<RL	<RL	<RL	1.59	<RL
Dissolved Barium	ug/L	17	34.8	23.8	22.9	14.1	24.5	25	22.3	14.7	23.6	22.8	104	16.1	25	21.3
Total Barium	ug/L	18	36.5	26.4	26.9	19.3	28.5	33.4	28	16.4	23.6	22.8	16.7	16.2	25.5	22.3
Dissolved Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Boron	mg/L	<RL	0.13	<RL	<RL	<RL	<RL	0.14	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Calcium	mg/L	11.7	15.5	14.9	11.8	8.83	13.4	13	10.2	9.98	14.1	14.5	8.24	10.6	14.7	15.7
Dissolved Chloride	mg/L	3.2	10.5	7.51	4.64	2.1	5.29	12	2.32	1.86	4.99	6.18	1.12	2.3	4.84	5.36
Dissolved Chromium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	6.52	<RL	<RL	<RL
Total Chromium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Specific Conductance	uS/cm@25 °C	122	208	184	142	99.2	165	183	106	107	165	161	69	116	171	162
Dissolved Copper	ug/L	2.8	1.63	<RL	3.34	2.01	1.18	1.23	3.12	1.01	1.04	<RL	13.2	<RL	1.24	<RL
Total Copper	ug/L	2.2	1.8	1.01	4.67	2.77	1.39	2	4.17	1.54	1.22	1.02	2.96	1.15	1.28	<RL
Dissolved Hardness	mg/L as CaCO ₃	48	69	63	47	36	57	57	40	41	62	61	33	43	63	65
Dissolved Iron	ug/L	51	31.5	59.2	96	78	41.2	110	188	63.8	44.1	64.6	5950	44.3	50.6	70.7
Total Iron	ug/L	130	105	151	384	485	127	667	517	238	116	126	414	131	149	B>RL
Dissolved Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	3.75	<RL	<RL	<RL
Total Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Magnesium	mg/L	4.48	7.32	6.36	4.25	3.31	5.8	5.84	3.49	3.87	6.42	5.9	3.12	4.02	6.4	6.3
Dissolved Manganese	ug/L	<RL	9.86	<RL	9.9	8.13	7.96	<RL	6.99	6.42	7.91	<RL	147	7.1	7.92	8.4

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Manganese	ug/L	5.9	22.8	6.62	13.4	17.5	33.1	27.8	15.7	11.2	20.3	6.26	11.6	9.07	23.5	12.2
Dissolved Nickel	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	6.27	<RL	<RL	<RL
Total Nickel	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	1.06	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Nitrate + Nitrite	mg/L as N	<RL	B>RL	<RL	0.22	<RL	<RL	0.12	0.16	B>RL	<RL	<RL	0.13	<RL	<RL	<RL
Dissolved Organic Carbon	mg/L as C	1.6	4.2	B>RL	B>RL	2.3	B>RL	B>RL	B>RL	B>RL	B>RL	B>RL	2.1	1	2.6	0.8
Total Organic Carbon	mg/L as C	1.6	4.1	2.9	B>RL	2.3	3.6	6.4	2	1.2	2.6	2.4	1.9	0.9	2.7	1.5
Dissolved ortho-Phosphate	mg/L as P	<RL	<RL	<RL	<RL	<RL	0.88	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	0.12
Total Phosphorus	mg/L as P	0.01	0.02	0.02	0.02	0.03	0.02	0.05	0.02	0.02	0.01	<RL	0.16	0.02	0.02	0.01
Dissolved Potassium	mg/L	0.83	1.96	1.28	0.83	0.73	1.43	1.92	0.88	0.65	1.32	1.13	1.04	0.76	1.32	1.08
Dissolved Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Sodium	mg/L	6.1	11.8	9.71	5.88	4.12	6.23	11.1	5.1	4.71	8.41	8.43	3.01	4.76	7.78	8.13
Total Dissolved Solids	mg/L	81	134	119	92	77	117	125	81	82	115	111	69	88	125	112

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Suspended Solids	mg/L	2.5	<RL	<RL	4.4	10.8	<RL	20.8	10.8	5.1	3.8	<RL	221	3.1	<RL	<RL
Dissolved Sulfate	mg/L	3.4	2.1	3.5	10.1	4.49	1.8	4.75	6.38	4.15	1.96	3.66	3.48	3.42	1.69	3.87
Dissolved Zinc	ug/L	31	<RL	<RL	16.5	7.95	<RL	<RL	10.9	<RL	<RL	<RL	38.4	<RL	<RL	<RL
Total Zinc	ug/L	<RL	<RL	<RL	20.4	10.1	<RL	<RL	14.9	6.04	<RL	<RL	7.37	<RL	<RL	<RL
Total Kjeldahl Nitrogen	mg/L	<RL	0.43	<RL	0.14	0.22	0.22	0.41	0.14	0.14	0.2	0.12	0.3	<RL	0.21	0.11
Total Ammonia	mg/L as N	<RL	<RL	0.26	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	No Data
Total Organic Nitrogen	mg/L	<RL	0.43	0.26	0.14	0.22	0.22	0.41	0.14	0.14	0.2	0.12	0.3	<RL	0.21	No Data

Cow Creek near Millville — Field Measurements

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Field Specific Conductance	uS/cm@25 °C	115	207	179	136	96	163	178	102	105	164	162	67	115	174	161
Field Dissolved Oxygen	mg/L	10.8	10.3	10.1	13.3	11.8	11.1	10.2	11.5	11	9.2	11.9	12	9.94	10.77	10.7
Field pH	pH Units	7.1	8.1	7.3	7.4	7.5	8.5	7.4	7.4	7.3	8.1	8.3	7	7.55	8.46	7.38
Field Water Temperature	°C	15.3	28.3	12.2	6.3	11	28.6	12.9	9.3	14	26.5	12.1	9.6	17	28.2	14.5
Field Turbidity	F.N.U.	1.6	1.3	1.6	6.8	10.7	0.5	14.1	9.7	3.7	1.5	1.6	115.2	1.6	1	35

Cow Creek near Millville — Bacteria Indicators

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Coliform, Total	MPN/100 mL	1612.73	1612.73	1612.73	1179.47	1383.83	1612.73	1612.73	1239.4	981.97	1612.73	950.6	1617.93	1612.73	1612.73	1612.73
E. coli	MPN/100 mL	77.67	73.03	178.6	68.53	227.43	16.77	1612.73	79.03	175.1	35.83	40.83	139.53	104.53	32.4	397.17

A0408000 — Bear C A Parkville Rd

Bear C A Parkville Rd — Water Chemistry

Note: This station was relocated from A0407000 — Bear Creek near Anderson after August 2023.

Analyte	Units	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Alkalinity	mg/L as CaCO ₃	98.5	43.3	53	104	94.3	25.1	68.8	102	93.1
Dissolved Aluminum	ug/L	<RL	139	174	<RL	<RL	841	<RL	<RL	<RL
Total Aluminum	ug/L	51.7	350	300	52.8	42.7	2290	45.4	70	35.5
Dissolved Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Arsenic	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Arsenic	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Barium	ug/L	11.5	9.7	9.02	16.6	12.6	8.88	11.1	14.7	12.2
Total Barium	ug/L	12.8	11.2	9.6	16.4	12.3	27.1	11.2	15.1	12.2

Analyte	Units	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Boron	mg/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Calcium	mg/L	15.7	7.61	9.07	17.4	16.9	4.43	11.4	17.1	17
Dissolved Chloride	mg/L	1.45	1.05	<RL	1.68	1.9	<RL	1.07	1.7	1.64
Dissolved Chromium	ug/L	<RL	<RL	<RL	<RL	<RL	1.03	<RL	<RL	<RL
Total Chromium	ug/L	<RL	<RL	<RL	<RL	<RL	2.8	<RL	<RL	<RL
Specific Conductance	uS/cm@25 °C	199	89.2	107	208	197	50.6	138	205	188
Dissolved Copper	ug/L	<RL	<RL	<RL	<RL	<RL	1.22	<RL	<RL	<RL
Total Copper	ug/L	<RL	1.13	<RL	<RL	<RL	3.19	<RL	<RL	<RL
Dissolved Hardness	mg/L as CaCO ₃	80	38	45	89	85	21	56	86	85
Dissolved Iron	ug/L	43.8	120	116	48.1	69.4	458	68	75.3	76.2
Total Iron	ug/L	108	276	208	119	110	1860	113	167	B>RL
Dissolved Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Magnesium	mg/L	10	4.62	5.47	11	10.5	2.32	6.67	10.5	10.4

Analyte	Units	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Manganese	ug/L	6.99	6.45	6.24	12.3	6.07	5.86	12	12.8	12
Total Manganese	ug/L	14	9.26	8.71	23.7	8.38	63.8	13.9	24.5	15.8
Dissolved Nickel	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Nickel	ug/L	<RL	<RL	<RL	<RL	<RL	2.16	<RL	<RL	<RL
Dissolved Nitrate + Nitrite	mg/L as N	<RL	0.14	B>RL	<RL	<RL	0.06	<RL	<RL	<RL
Dissolved Organic Carbon	mg/L as C	B>RL	B>RL	B>RL	B>RL	B>RL	3.5	1.1	2	1.9
Total Organic Carbon	mg/L as C	3	2.6	1.7	2.1	3	3.3	1.1	2.1	2
Dissolved ortho-Phosphate	mg/L as P	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Phosphorus	mg/L as P	<RL	0.02	0.02	0.01	<RL	0.06	0.01	0.01	0.01
Dissolved Potassium	mg/L	1.15	0.92	0.78	1.3	1.17	0.92	0.99	1.25	1.28
Dissolved Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Sodium	mg/L	6.38	3.52	3.93	7.23	6.96	1.99	4.42	6.98	6.73

Analyte	Units	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Dissolved Solids	mg/L	139	78	90	144	138	57	104	143	135
Total Suspended Solids	mg/L	<RL	<RL	<RL	2.8	<RL	64	<RL	<RL	<RL
Dissolved Sulfate	mg/L	4.61	1.64	1.95	4.71	6.29	<RL	2.91	4.46	4.64
Dissolved Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Kjeldahl Nitrogen	mg/L as N	<RL	0.18	0.15	0.15	0.13	0.39	<RL	0.12	0.15
Total Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	No Data
Total Organic Nitrogen	mg/L	<RL	0.18	0.15	0.15	0.13	0.39	<RL	0.12	No Data

Bear C A Parkville Rd — Field Measurements

Note: This station was relocated from A0407000 — Bear Creek near Anderson after August 2023.

Analyte	Units	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Field Specific Conductance	uS/cm@25 °C	191	86	104	209	198	50	18.1	207	185
Field Dissolved Oxygen	mg/L	10.4	11.8	11	7.7	11.3	12.3	9.74	9.06	10.53
Field pH	pH Units	7.8	7.5	7.7	7.5	8.1	7.3	7.77	7.9	7.49
Field Water Temperature	°C	13	9	14	23.6	11.7	9.3	18.1	26.1	13.6
Field Turbidity	F.N.U.	1.6	5.3	3	2.1	0.8	48.3	2.2	1.6	0.8

Bear C A Parkville Rd — Bacteria Indicators

Note: This station was relocated from A0407000 — Bear Creek near Anderson after August 2023

Analyte	Units	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Coliform, Total	MPN/100 mL	2419.6	866.4	2419.6	2419.6	1413.6	2419.6	2419.6	2419.6	2419.6
E. coli	MPN/100 mL	613.1	38.8	68.3	47.1	69.1	238.2	49.6	48.7	488.4

A0407000 — Bear Creek Near Anderson**Bear Creek Near Anderson — Water Chemistry**

Note: This station was relocated to A0408000 — Bear Creek at Parkville Rd after August 2023.

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023
Total Alkalinity	mg/L as CaCO ₃	74.6	134	103	52.1	52.1	108
Dissolved Aluminum	ug/L	27	<RL	<RL	138	81.7	10.1
Total Aluminum	ug/L	<RL	61.9	85.8	281	392	77.5
Dissolved Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL
Total Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Arsenic	ug/L	<RL	<RL	<RL	<RL	<RL	1.36
Total Arsenic	ug/L	<RL	<RL	<RL	<RL	<RL	2.05
Dissolved Barium	ug/L	10	19.5	12	9	8.39	17.1
Total Barium	ug/L	10	19.8	14	9.83	12	18.9
Dissolved Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL
Total Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Boron	mg/L	<RL	<RL	<RL	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023
Dissolved Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL
Total Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Calcium	mg/L	13.3	20.4	17.6	8.46	8.41	17.3
Dissolved Chloride	mg/L	1.25	2.64	1.82	1.36	1.16	1.85
Dissolved Chromium	ug/L	<RL	1.27	<RL	<RL	<RL	<RL
Total Chromium	ug/L	<RL	1.25	<RL	<RL	1.02	<RL
Specific Conductance	uS/cm@25 °C	152	269	218	112	106	220
Dissolved Copper	ug/L	<RL	<RL	<RL	<RL	<RL	<RL
Total Copper	ug/L	1.9	<RL	<RL	<RL	1.22	<RL
Dissolved Hardness	mg/L as CaCO ₃	66	111	91	44	42	91
Dissolved Iron	ug/L	36	25	24.4	99	110	47.6
Total Iron	ug/L	75	88.9	107	241	466	150
Dissolved Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL
Total Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Magnesium	mg/L	8.03	14.7	11.5	5.44	5.17	11.5
Dissolved Manganese	ug/L	<RL	15.5	<RL	5.16	9.08	12.5
Total Manganese	ug/L	<RL	23.1	6.44	7.07	21.4	32.4
Dissolved Nickel	ug/L	<RL	<RL	<RL	<RL	<RL	<RL
Total Nickel	ug/L	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Nitrate + Nitrite	mg/L as N	<RL	B>RL	<RL	0.13	<RL	0.07
Dissolved Organic Carbon	mg/L as C	1.5	3.1	B>RL	B>RL	3.2	B>RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023
Total Organic Carbon	mg/L as C	1.6	3.6	2.8	B>RL	3.3	2.9
Dissolved ortho-Phosphate	mg/L as P	<RL	<RL	<RL	<RL	<RL	<RL
Total Phosphorus	mg/L as P	<RL	0.01	0.01	0.01	0.03	0.02
Dissolved Potassium	mg/L	0.94	1.59	1.09	0.76	0.84	1.58
Dissolved Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL
Total Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL
Total Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Sodium	mg/L	5.36	9.09	7.63	3.46	3.37	6.07
Total Dissolved Solids	mg/L	97	182	143	83	86	147
Total Suspended Solids	mg/L	2.5	3.1	3.1	<RL	7.4	4.8
Dissolved Sulfate	mg/L	2.34	4.41	6.04	2.52	1.94	5.15
Dissolved Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL
Total Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL
Total Kjeldahl Nitrogen	mg/L	0.14	0.37	0.21	0.12	0.22	0.18
Total Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	0.1
Total Organic Nitrogen	mg/L	0.14	0.37	0.21	0.12	0.22	<RL

Bear Creek Near Anderson — Field Measurements

Note: This station was relocated to A0408000 — Bear Creek at Parkville Rd after August 2023.

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023
Field Specific Conductance	uS/cm@25 °C	144	266	212	107	102	218

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023
Field Dissolved Oxygen	mg/L	11.5	8.6	11.5	14.8	11.6	10.5
Field pH	pH Units	7.7	7.6	7.5	7.8	7.7	8
Field Water Temperature	°C	16.3	25	11	6	12.5	27.8
Field Turbidity	F.N.U.	0.8	0.6	1.8	4.4	10.9	1.8

Bear Creek Near Anderson — Bacteria Indicators

Note: This station was relocated to A0408000 — Bear Creek at Parkville Rd after August 2023.

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023
Coliform, Total	MPN/100 mL	2419.6	2419.6	2419.6	980.4	2419.6	2419.6
E. coli	MPN/100 mL	172	191.8	1732.9	26.6	461.1	101.2

A4708000 — Battle C NF NR Manton

Battle C NF NR Manton — Water Chemistry

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Alkalinity	mg/L as CaCO ₃	69.5	82.7	82.7	65.3	56.4	77.1	80.2	51.7	53.8	Access	76	30.8	60.1	77.5	76.1
Dissolved Aluminum	ug/L	<RL	<RL	<RL	54.9	27.3	<RL	<RL	143	85.3	Access	<RL	334	<RL	<RL	<RL
Total Aluminum	ug/L	66	RPD>20	37	119	87.5	29.3	22.7	367	185	Access	28.2	973	59.9	497	50.1
Dissolved Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Arsenic	ug/L	<RL	<RL	1.12	<RL	<RL	1.15	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Arsenic	ug/L	<RL	<RL	1.17	<RL	<RL	1.12	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Barium	ug/L	6.1	7.69	8.04	6.81	5.47	8.23	8.13	7.92	5.86	Access	8.48	6.18	5.69	6.28	8.1
Total Barium	ug/L	6.3	7.79	8.5	7.54	6.64	8.76	8.45	9.94	6.63	Access	8.01	12.5	5.75	11	8.62
Dissolved Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Boron	mg/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Calcium	mg/L	10.9	11.6	11.3	9.14	8.05	11	10.9	7.89	8.15	Access	11.1	4.99	8.47	10.3	11.4
Dissolved Chloride	mg/L	1.06	1.14	1.15	1.09	<RL	1.09	1.14	<RL	<RL	Access	1.19	<RL	<RL	<RL	1.18
Dissolved Chromium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	1.14	<RL	<RL	<RL	<RL
Total Chromium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	1.19	<RL	Access	1.13	1.31	<RL	1.86	<RL
Specific Conductance	uS/cm@25 °C	140	164	165	132	113	154	157	107	109	Access	152	63.1	119	153	149
Dissolved Copper	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Copper	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	1.11	<RL	<RL	<RL
Dissolved Hardness	mg/L as CaCO ₃	56	63	62	48	42	59	60	41	42	Access	60	24	44	55	62

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Iron	ug/L	<RL	8.67	7.69	32.5	25.6	13	14.5	86.8	48.2	Access	16.1	142	19.8	21.9	19.3
Total Iron	ug/L	75	RPD>20	33.9	79.1	83.7	37.6	33.7	223	151	Access	35.2	587	68.6	586	B>RL
Dissolved Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Magnesium	mg/L	7.06	8.3	8.2	6.18	5.24	7.57	8.03	5.05	5.21	Access	7.91	2.75	5.47	7.11	8.1
Dissolved Manganese	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Manganese	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	8.56	7.01	Access	<RL	29.4	<RL	37.1	5.02
Dissolved Nickel	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Nickel	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	1.39	<RL	<RL	<RL
Dissolved Nitrate + Nitrite	mg/L as N	0.09	B>RL	0.08	0.16	0.1	0.1	0.05	0.1	B>RL	Access	0.07	0.06	0.06	0.12	<RL
Dissolved Organic Carbon	mg/L as C	1.7	RPD>20	B>RL	B>RL	1.5	B>RL	B>RL	B>RL	B>RL	Access	B>RL	2.5	0.8	RPD>20	1.1
Total Organic Carbon	mg/L as C	1.7	RPD>20	RPD>20	B>RL	1.6	RPD>20	1.6	1.7	1.2	Access	0.6	2.6	0.8	RPD>20	1.3
Dissolved ortho-Phosphate	mg/L as P	0.05	0.06	0.06	0.06	<RL	0.07	0.07	<RL	<RL	Access	0.07	<RL	0.05	0.06	0.07
Total Phosphorus	mg/L as P	0.04	0.03	0.04	0.03	0.03	0.03	RPD>20	0.03	0.02	Access	0.03	0.03	0.02	0.03	0.03
Dissolved Potassium	mg/L	1.99	2.22	2.21	1.76	1.62	2.23	2.33	1.85	1.55	Access	2.24	1.28	1.63	2.09	2.6
Dissolved Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Sodium	mg/L	6.91	7.53	7.32	5.29	4.88	5.37	6.77	5.41	5.32	Access	6.97	3.01	5.59	7.04	7.23
Total Dissolved Solids	mg/L	104	114	124	99	92	118	126	94	92	Access	119	62	98	120	119
Total Suspended Solids	mg/L	2.5	<RL	<RL	<RL	3.3	<RL	<RL	3.5	3.6	Access	<RL	21.6	2.9	RPD>20	RPD>20
Dissolved Sulfate	mg/L	2.45	2.1	2.04	2.18	1.85	1.99	RPD>20	2.19	1.79	Access	2.4	1.38	2.3	1.94	1.83
Dissolved Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Kjeldahl Nitrogen	mg/L	<RL	<RL	<RL	0.11	0.1	<RL	<RL	0.11	0.13	Access	<RL	0.22	<RL	0.2	<RL
Total Ammonia	mg/L as N	<RL	<RL	0.1	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	No Data
Total Organic Nitrogen	mg/L	<RL	<RL	0.1	0.11	0.1	<RL	<RL	0.11	0.13	Access	<RL	0.22	<RL	0.2	No Data

Battle C NF NR Manton — Field Measurements

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Field Specific Conductance	uS/cm@25 °C	133	159	159	126	109	150	151	103	107	Access	153	62	117	151	146
Field Dissolved Oxygen	mg/L	11.6	9.9	11	12.9	12	10.1	11.2	12	11.5	Access	11.2	12.7	10.87	10.72	11.24
Field pH	pH Units	7.6	8	7.6	7.6	7.3	7.4	7.6	7.1	8.1	Access	7.5	7	7.53	7.74	7.36
Field Water Temperature	°C	8.6	13.9	9.2	6.2	7.6	13.8	9.2	6.4	8.7	Access	9.2	6.8	9.9	11.9	10.5
Field Turbidity	F.N.U.	1.4	0.59	0.7	2.3	1.6	0.4	0.8	4.8	2.8	Access	0.6	14.4	1.4	1	0.7

Battle C NF NR Manton — Bacteria Indicators

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Coliform, Total	MPN/100 mL	654.3	1378.2	868.6	472.4	286.8	436.5	1643	336.15	629.25	Access	371.9	2419.6	637.25	823.9	1643
E. coli	MPN/100 mL	10.2	11.55	30.4	3.05	12.2	8.65	35	15.35	13.35	Access	14.5	22.45	12.75	32.3	132.25

A0416000 — Butte Creek DS Western Canal Siphon

Butte Creek DS Western Canal Siphon — Water Chemistry

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Alkalinity	mg/L as CaCO ₃	51.9	81.2	56.3	47.6	29.3	73.3	65.5	46.9	36.8	71.7	70.5	37.6	44.9	74.7	68.4
Dissolved Aluminum	ug/L	<RL	10.5	<RL	<RL	18.7	<RL	<RL	19.3	<RL	<RL	<RL	33.9	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Aluminum	ug/L	97	215	239	40.4	565	96.9	27.9	372	87.5	76.6	49.7	624	108	68.4	41.1
Dissolved Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	B>RL	<RL
Dissolved Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Arsenic	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Arsenic	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Barium	ug/L	8.7	13.1	9.82	5.39	<RL	13.8	6.9	7.04	<RL	13.1	9.59	<RL	5.72	10.4	8.99
Total Barium	ug/L	9.2	13.5	10.4	5.42	8.19	14.6	7.23	8.96	<RL	14.4	10.3	8.8	5.93	11.1	9.44
Dissolved Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Boron	mg/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Calcium	mg/L	10.9	15.3	11.9	9.51	5.6	13.3	12.7	9.5	6.87	13.2	13.7	7.42	9.4	13.4	13.2
Dissolved Chloride	mg/L	1.21	1.22	1.8	1.26	<RL	1.36	1.3	1.34	<RL	1.23	1.7	1.17	1.11	1.03	1.62
Dissolved Chromium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Chromium	ug/L	<RL	1.15	<RL	<RL	1.17	<RL	<RL	1.25	<RL	<RL	<RL	2.36	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Specific Conductance	uS/cm@25 °C	109	164	124	102	60.7	147	133	100	75.3	143	147	81.9	92	148	140
Dissolved Copper	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	1.23	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Copper	ug/L	<RL	<RL	1.03	<RL	1.25	<RL	<RL	1.03	<RL	<RL	<RL	1.25	<RL	<RL	<RL
Dissolved Hardness	mg/L as CaCO ₃	47	72	52	42	24	63	56	43	30	61	62	34	42	62	59
Dissolved Iron	ug/L	25	37.6	32.2	15.7	14.6	26.3	B>RL	39.5	18	35.1	59.1	43.5	17.9	33.7	38.9
Total Iron	ug/L	120	224	243	54.2	431	149	67.3	406	102	127	140	609	113	169	101
Dissolved Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Magnesium	mg/L	4.92	8.1	5.35	4.39	2.45	7.26	5.98	4.69	3.18	6.92	6.85	3.83	4.39	6.96	6.28
Dissolved Manganese	ug/L	9.7	25.1	5.36	6.63	<RL	25.6	13.1	12.3	<RL	27.1	33.5	6.99	5.47	25.2	49.7
Total Manganese	ug/L	15	50.9	18.3	7.94	32.2	49.4	15.6	21.9	9.65	46.7	39.4	28.1	9.98	37.6	59.2
Dissolved Nickel	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Nickel	ug/L	<RL	1.01	1.06	<RL	1.26	<RL	<RL	1.29	<RL	<RL	<RL	2.43	<RL	<RL	<RL
Dissolved Nitrate + Nitrite	mg/L as N	<RL	<RL	0.07	0.12	0.25	<RL	<RL	0.23	B>RL	<RL	<RL	0.33	0.09	B>RL	<RL
Dissolved Organic Carbon	mg/L as C	2.2	B>RL	2.9	0.9	1.1	2	1.7	1	1.1	1.6	2.2	0.7	1	1.4	1.4
Total Organic Carbon	mg/L as C	2	1.7	2.7	0.9	1.1	2	1.6	1	1.3	1.7	2.1	0.7	0.9	1.4	1.6

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved ortho-Phosphate	mg/L as P	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Phosphorus	mg/L as P	0.01	0.02	0.02	<RL	0.02	0.02	<RL	0.01	<RL	<RL	0.02	0.02	<RL	<RL	0.02
Dissolved Potassium	mg/L	1.05	1.08	1.23	0.64	0.51	1.01	1.01	0.7	0.52	0.99	1.32	0.56	0.76	0.97	1.21
Dissolved Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Sodium	mg/L	3.63	4.82	4.39	2.78	1.78	3.33	4.05	3.29	2.42	4.16	4.62	2.64	3.21	4.09	4.41
Total Dissolved Solids	mg/L	74	103	83	76	50	96	92	74	58	97	96	57	70	97	95
Total Suspended Solids	mg/L	2.9	6.6	9.4	<RL	14.7	5.9	<RL	9	5	4.2	<RL	21.7	4.8	3.7	2.9
Dissolved Sulfate	mg/L	2.46	2.32	2.83	2.1	<RL	2.36	1.98	2.05	1.1	2.12	3.37	1.96	1.7	2.01	2.87
Dissolved Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Kjeldahl Nitrogen	mg/L	0.12	0.17	0.18	<RL	<RL	0.12	0.13	<RL	<RL	0.14	0.13	<RL	<RL	<RL	0.13
Total Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	No Data
Total Organic Nitrogen	mg/L	0.12	0.17	0.18	<RL	<RL	0.12	0.13	<RL	<RL	0.14	0.13	<RL	<RL	<RL	No Data

Butte Creek DS Western Canal Siphon — Field Measurements

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Field Specific Conductance	uS/cm@25 °C	106	165	120	96	59	145.1	126.3	97.3	75.1	142.3	146	81	93	150	139
Field Dissolved Oxygen	mg/L	11	6.5	11.2	13.3	10.6	6.57	11.84	11.52	9.69	7.21	10.41	12.5	10.28	6.85	9.52
Field pH	pH Units	7.5	7.4	7.7	6.9	7.2	7.37	7.93	7.68	7.33	7.5	7.52	6.9	7.18	7.5	7.68
Field Water Temperature	°C	13	23.1	9.4	5.5	11.7	24	5.7	8	15.7	21.1	9.6	6.4	14.3	22.6	13.6
Field Turbidity	F.N.U.	2.4	4.1	5.1	1.5	10.3	3.13	1.39	9.76	2.75	3.04	1.45	11.45	2.6	2.2	1.2

Butte Creek DS Western Canal Siphon — Bacteria Indicators

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Coliform, Total	MPN/100 mL	2419.6	2419.6	2419.6	365.4	2419.6	2419.6	316.9	613.1	2419.6	2419.6	2419.6	1299.7	2419.6	2419.6	2419.6
E. coli	MPN/100 mL	95.9	101.9	387.3	20.3	54.6	88	36.4	88.2	107.1	67.7	145	19.5	172.3	39.7	248.1

A4418000 — Mill Creek near Mineral

Mill Creek near Mineral — Water Chemistry

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Alkalinity	mg/L as CaCO ₃	24.1	42.8	48.8	36.4	<RL	36.4	43.9	30.6	24.5	Access	38.7	<RL	20.2	38.9	30.9
Dissolved Aluminum	ug/L	61	65	36.4	37.8	41.1	B>RL	46.8	41.7	48.5	Access	39.4	58.9	55.3	79.6	76.1

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Aluminum	ug/L	600	279	255	409	570	359	297	616	329	Access	454	735	325	184	858
Dissolved Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Antimony	ug/L	<RL	2.43	3.06	2.29	<RL	2.17	2.57	1.65	<RL	Access	3	1.36	<RL	2.1	2.1
Total Antimony	ug/L	<RL	2.38	3.3	2.28	<RL	2.18	2.7	1.66	<RL	Access	3	1.37	<RL	2.18	2.12
Dissolved Arsenic	ug/L	57	149	225	146	26.5	195	150	101	49.7	Access	191	37.4	28.8	138	114
Total Arsenic	ug/L	60	158	236	152	31	150	161	108	55.2	Access	204	43.1	31	143	130
Dissolved Barium	ug/L	11	17	16.4	13.8	8.14	16.7	14.8	11.8	9.32	Access	15.8	9.42	8.62	15.9	17.3
Total Barium	ug/L	12	16.7	18.4	14.2	12.1	17.3	15.3	13.8	10.5	Access	15.7	13.4	9.36	15.6	20.8
Dissolved Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Boron	mg/L	0.59	1.81	2.47	1.74	0.25	1.75	2.08	1.25	0.55	Access	2.35	0.42	0.29	1.51	1.93
Dissolved Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Calcium	mg/L	11.6	20.2	22.1	16.8	7.23	18.1	19.3	15	10.2	Access	20.4	7.18	8.63	17.6	18.6
Dissolved Chloride	mg/L	16.6	40	61.1	42.5	5.82	42	52.5	32.2	13.4	Access	69.2	10.2	7.73	43.5	54
Dissolved Chromium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Chromium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Specific Conductance	uS/cm@25 °C	183	361	431	337	99.1	324	371	258	151	Access	420	116	115	310	338
Dissolved Copper	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Copper	ug/L	1.5	<RL	<RL	<RL	1.48	<RL	<RL	1.26	<RL	Access	<RL	1.32	<RL	<RL	2.2
Dissolved Hardness	mg/L as CaCO ₃	40	70	77	60	25	62	69	53	36	Access	71	25	29	60	64
Dissolved Iron	ug/L	30	47	29.7	23.3	23.5	B>RL	25.3	20.6	25.1	Access	33.2	43.1	28	67.4	96.6
Total Iron	ug/L	490	283	246	337	583	374	263	532	252	Access	493	575	240	227	968
Dissolved Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Magnesium	mg/L	2.65	4.64	5.32	4.44	1.73	4.19	4.93	3.8	2.48	Access	4.82	1.77	1.9	3.91	4.29
Dissolved Manganese	ug/L	21	24.1	12.4	22.3	12.9	26.9	15.9	24.2	13.9	Access	25.6	14	12.4	20.4	48.4
Total Manganese	ug/L	26	30	19.5	26.1	25.9	32.9	19.4	28.8	18.6	Access	29.9	24.6	14.9	25.2	62.6
Dissolved Nickel	ug/L	<RL	1.82	<RL	1.63	<RL	1.41	<RL	1.56	1.04	Access	1.3	<RL	<RL	1.13	2.04
Total Nickel	ug/L	2	2.01	1.12	1.81	1.6	1.73	1.12	1.87	1.32	Access	1.73	1.59	1.16	1.26	2.71
Dissolved Nitrate + Nitrite	mg/L as N	0.23	0.06	0.08	0.33	0.62	0.09	B>RL	0.42	0.49	Access	0.07	0.47	0.32	0.09	0.12
Dissolved Organic Carbon	mg/L as C	1.2	1.4	1.3	1.2	1.9	1.1	1.1	0.9	0.9	Access	B>RL	1.2	B>RL	0.8	2.2
Total Organic Carbon	mg/L as C	1.1	1.2	1	1.3	1.3	1.2	1	0.9	0.9	Access	B>RL	1.4	0.9	0.9	2.8

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved ortho-Phosphate	mg/L as P	<RL	0.06	0.07	0.06	<RL	0.06	0.07	0.05	<RL	Access	0.06	<RL	<RL	0.06	0.06
Total Phosphorus	mg/L as P	0.05	0.11	0.13	0.09	0.05	0.1	0.1	0.08	0.05	Access	0.11	0.04	0.03	0.08	0.11
Dissolved Potassium	mg/L	2.56	5.6	6.69	4.86	1.65	5.24	5.86	4.16	2.6	Access	6.4	2.05	1.7	4.82	5.87
Dissolved Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Sodium	mg/L	13.6	35.8	47.2	31.1	6.16	28.1	39.9	25.2	13	Access	44.9	9.23	7.84	29.2	37.2
Total Dissolved Solids	mg/L	131	241	280	227	80	229	246	182	117	Access	275	88	91	217	223
Total Suspended Solids	mg/L	8.9	3.6	4	4.8	23.2	4.4	<RL	12.3	6	Access	7.3	16.3	8.3	3.2	31.8
Dissolved Sulfate	mg/L	30	34	38.4	37.3	15.1	38.2	38.7	34.6	20.9	Access	50.9	16.6	20.1	40.4	42.9
Dissolved Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Kjeldahl Nitrogen	mg/L	<RL	<RL	<RL	<RL	0.13	<RL	<RL	<RL	<RL	Access	0.11	0.13	<RL	<RL	0.27
Total Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	No Data
Total Organic Nitrogen	mg/L	<RL	<RL	<RL	<RL	0.13	<RL	<RL	<RL	<RL	Access	0.11	0.13	<RL	<RL	No Data

Mill Creek near Mineral — Field Measurements

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Field Specific Conductance	uS/cm@25 °C	175	354	423	322	96	318	361	250	147.7	Access	87	114	115	312	337
Field Dissolved Oxygen	mg/L	9.2	8.2	9.6	10.3	9.6	8	10.6	9.7	9.44	Access	9.9	10.99	9.8	8.55	11.31
Field pH	pH Units	7.9	7.7	7.5	7.8	7.5	7.8	7.9	7.5	7.8	Access	8	6.8	7.36	7.9	7.69
Field Water Temperature	°C	10.9	16.3	8.3	6.7	8.4	18.5	7.1	7.6	9.2	Access	9.6	3.8	11	17.6	8.6
Field Turbidity	F.N.U.	6.1	2.5	2.7	3.5	15	2.85	2.22	7.7	3.49	Access	4.9	9.56	4.3	1.5	15.3

Mill Creek near Mineral — Bacteria Indicators

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Coliform, Total	MPN/100 mL	488.4	1553.1	1413.6	222.4	579.4	2419.6	547.5	260.3	307.6	Access	920.8	1553.1	133.3	640.5	2419.6
E. coli	MPN/100 mL	1	55.6	22.6	4.1	3.1	58.3	20.1	4.1	7.4	Access	12	9.7	1	75.4	248.1

A4317700 — Deer Creek at Deer Station

Deer Creek at Deer Station — Water Chemistry

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Alkalinity	mg/L as CaCO ₃	34.7	48.6	45.9	33	23.2	40	41.5	28.2	29	Access	42.2	<RL	32.2	41.7	39.5
Dissolved Aluminum	ug/L	20	<RL	<RL	30.4	39.7	B>RL	11.3	64.8	47.5	Access	16.4	178	15.9	<RL	231
Total Aluminum	ug/L	48	36.4	22.7	59.6	127	45	39.4	162	119	Access	61.9	477	90.5	59.6	1050

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Arsenic	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Arsenic	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Barium	ug/L	22	36.9	35.5	26	14.5	32.4	29.5	18.1	17.5	Access	33	14.8	19.8	33.4	25
Total Barium	ug/L	22	38.1	36.6	25.9	15.8	35.3	32.2	20	18.6	Access	32.8	20.2	20.4	34.3	39.9
Dissolved Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Boron	mg/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Calcium	mg/L	5.24	6.71	6.57	4.94	3.94	5.73	6.35	4.96	4.97	Access	5.93	3.09	5.68	6.14	6.66
Dissolved Chloride	mg/L	<RL	<RL	<RL	1.22	<RL	<RL	<RL	1.05	<RL	Access	<RL	<RL	<RL	<RL	1.2
Dissolved Chromium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Chromium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	2.34
Specific Conductance	uS/cm@25 °C	68.2	93.6	90.6	66.6	45.5	78.1	81	57.3	55.7	Access	83.2	36.9	60.2	78.5	78.1

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Copper	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Copper	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	1.08	<RL	<RL	1.58
Dissolved Hardness	mg/L as CaCO ₃	23	31	31	22	16	26	28	22	21	Access	27	13	24	27	30
Dissolved Iron	ug/L	73	137	66.3	58.8	44.2	B>RL	58.4	58.6	68.2	Access	85	70.2	72	78.6	195
Total Iron	ug/L	110	200	112	84.9	111	197	100	121	145	Access	147	263	137	154	1360
Dissolved Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	2.64
Dissolved Magnesium	mg/L	2.38	3.55	3.61	2.26	1.6	2.74	3.06	2.27	2.1	Access	3	1.32	2.3	2.78	3.2
Dissolved Manganese	ug/L	10	10.1	7.6	5.14	7.13	9.6	6.29	<RL	5.44	Access	6.4	<RL	6.11	7.19	24.5
Total Manganese	ug/L	12	14.6	10.7	5.87	11	13.5	7.82	7.47	9.32	Access	8.97	16.6	8.6	10.3	88.1
Dissolved Nickel	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Nickel	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Nitrate + Nitrite	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	B>RL	0.18	0.06	Access	<RL	0.14	<RL	<RL	<RL
Dissolved Organic Carbon	mg/L as C	1.9	1.6	1.3	2.2	2.6	1.3	1.3	2	1.7	Access	B>RL	2.1	B>RL	0.8	4.5
Total Organic Carbon	mg/L as C	1.9	1.5	1.2	2.2	2.6	1.5	1.4	2	1.8	Access	B>RL	2.1	1.1	0.9	6.5
Dissolved ortho-Phosphate	mg/L as P	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Phosphorus	mg/L as P	<RL	0.02	0.06	0.01	0.01	0.02	0.01	0.01	0.01	Access	0.01	0.02	0.01	0.01	0.08
Dissolved Potassium	mg/L	1.52	2.51	2.56	1.79	0.98	2.07	2.3	1.38	1.2	Access	2.45	1.01	1.38	2.05	2.75
Dissolved Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Sodium	mg/L	3.48	5.44	5.65	3.53	2.03	3.6	4.83	3.14	2.98	Access	4.99	1.91	3.38	4.43	4.43
Total Dissolved Solids	mg/L	60	82	84	63	44	76	77	56	54	Access	76	40	57	76	73
Total Suspended Solids	mg/L	2.5	<RL	<RL	<RL	3.9	<RL	<RL	<RL	3	Access	<RL	15.1	3.3	2.6	41.1
Dissolved Sulfate	mg/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Kjeldahl Nitrogen	mg/L	0.11	0.16	<RL	<RL	<RL	<RL	<RL	<RL	0.1	Access	<RL	0.16	<RL	<RL	0.6
Total Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	No Data
Total Organic Nitrogen	mg/L	0.11	0.16	<RL	<RL	<RL	<RL	<RL	<RL	0.1	Access	<RL	0.16	<RL	<RL	No Data

Deer Creek at Deer Station — Field Measurements

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Field Specific Conductance	uS/cm@25 °C	65	91	72.5	64	44	77	79	56	54.3	Access	87	37	60	78	77
Field Dissolved Oxygen	mg/L	10.1	9.4	10.7	11.7	10.6	9.2	11.8	11.3	10.64	Access	11.1	11.42	10.71	9.72	11.46
Field pH	pH Units	7.7	7.7	7.3	7.5	7.6	7.9	7.7	7.5	7.65	Access	7.5	7.2	7.23	7.29	7.43
Field Water Temperature	°C	9	12.7	4.6	1.6	6.7	13.1	2.2	2.9	7.3	Access	5.3	1.3	10.1	12.3	7.2
Field Turbidity	F.N.U.	1.2	1.5	1.4	0.8	3	0.85	0.3	2.33	1.57	Access	1.4	12.08	1.7	1.5	21.3

Deer Creek at Deer Station — Bacteria Indicators

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Coliform, Total	MPN/100 mL	866.4	2419.6	1413.6	108.1	980.4	1413.6	275.5	162.4	313	Access	261.85	1986.3	178.5	1119.9	2419.6
E. coli	MPN/100 mL	3.1	248.9	201.4	2	2	93.2	2	7.5	3	Access	38.5	23.1	-1	86.2	2419.6

A0425000 — Big Chico Creek at Chico

Big Chico Creek at Chico — Water Chemistry

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Alkalinity	mg/L as CaCO ₃	79.2	Dry	97.6	56.4	66.1	93.9	94.1	37.5	55.3	101	99	30.1	70	92.3	74.3
Dissolved Aluminum	ug/L	<RL	Dry	<RL	<RL	<RL	B>RL	<RL	30.5	<RL	<RL	11	682	46.4	13.3	27.9

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Aluminum	ug/L	38	Dry	27.7	31.7	31	10.4	<RL	224	51.2	<RL	56	33200	351	38.7	929
Dissolved Ammonia	mg/L as N	<RL	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Antimony	ug/L	<RL	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Antimony	ug/L	<RL	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Arsenic	ug/L	<RL	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Arsenic	ug/L	<RL	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Barium	ug/L	7.6	Dry	9.8	5.79	6.8	12.3	8.57	<RL	5.03	11.1	12.6	12.2	11.6	12.4	12.2
Total Barium	ug/L	7.8	Dry	9.98	5.34	7.15	10.5	8.31	<RL	5.38	11.4	12.2	247	13.9	12.3	18.2
Dissolved Beryllium	ug/L	<RL	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Beryllium	ug/L	<RL	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Boron	mg/L	0.13	Dry	0.23	<RL	<RL	0.19	0.18	<RL	<RL	0.19	0.19	<RL	<RL	0.17	0.16
Dissolved Cadmium	ug/L	<RL	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Cadmium	ug/L	<RL	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Calcium	mg/L	12.9	Dry	17.1	10.5	12.2	15.9	16	6.81	10	17.5	18.1	6.52	13.2	17	13.8
Dissolved Chloride	mg/L	7.24	Dry	12.6	4.35	4.03	9.47	11.5	1.57	2.7	9.29	10.7	<RL	4.59	9.12	8.16
Dissolved Chromium	ug/L	<RL	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	1.24	<RL	<RL	<RL
Total Chromium	ug/L	<RL	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	32.1	<RL	<RL	1.56

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Specific Conductance	uS/cm@25 °C	185	Dry	239	134	146	217	226	79.5	120	230	236	70.9	158	214	178
Dissolved Copper	ug/L	<RL	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	1.14	<RL	<RL	1.1
Total Copper	ug/L	<RL	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	23.5	<RL	<RL	2.57
Dissolved Hardness	mg/L as CaCO ₃	61	Dry	81	49	56	76	78	32	47	82	84	27	60	78	64
Dissolved Iron	ug/L	<RL	Dry	13.4	12.2	13.8	B>RL	12.9	23.4	12.9	9.25	20.6	338	10.6	9.89	26.2
Total Iron	ug/L	42	Dry	34.3	31	40	25.8	17.5	160	50.5	16.9	51.1	14500	154	28.4	576
Dissolved Lead	ug/L	<RL	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Lead	ug/L	<RL	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	14.8	<RL	<RL	1.36
Dissolved Magnesium	mg/L	6.89	Dry	9.38	5.45	6.16	8.75	9.14	3.55	5.3	9.3	9.53	2.62	6.59	8.72	7.08
Dissolved Manganese	ug/L	<RL	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	51.9	<RL	<RL	6.78
Total Manganese	ug/L	<RL	Dry	<RL	<RL	<RL	<RL	<RL	5.66	<RL	<RL	<RL	1140	22.5	<RL	54
Dissolved Nickel	ug/L	<RL	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	1.04	<RL	<RL	<RL
Total Nickel	ug/L	<RL	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	36.9	<RL	<RL	1.36
Dissolved Nitrate + Nitrite	mg/L as N	<RL	Dry	<RL	<RL	<RL	<RL	B>RL	<RL	<RL	<RL	<RL	0.79	0.07	<RL	0.06
Dissolved Organic Carbon	mg/L as C	1.3	Dry	3.5	1.3	1.5	2.3	2.2	1.6	1	1.3	B>RL	2.3	B>RL	1.2	4.6
Total Organic Carbon	mg/L as C	1.2	Dry	3.6	1.3	1.5	2.1	2.4	1.5	1	1.4	B>RL	4.9	0.9	1.5	4.4

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved ortho-Phosphate	mg/L as P	<RL	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	0.06	0.05	<RL	<RL	0.09
Total Phosphorus	mg/L as P	0.01	Dry	0.04	0.01	0.01	<RL	0.01	0.02	<RL	No Data	0.03	0.59	0.02	<RL	0.1
Dissolved Potassium	mg/L	1.05	Dry	1.45	0.78	0.85	1.29	1.18	0.66	0.62	1.42	1.7	1.04	0.88	1.31	1.76
Dissolved Selenium	ug/L	<RL	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Selenium	ug/L	<RL	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Silver	ug/L	<RL	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Silver	ug/L	<RL	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Sodium	mg/L	10.2	Dry	16.1	6.26	6.72	11	13.9	3.61	5.65	13.7	13.8	2.04	7.57	13.1	10.8
Total Dissolved Solids	mg/L	118	Dry	159	95	107	138	153	66	92	150	156	64	116	136	122
Total Suspended Solids	mg/L	2.5	Dry	<RL	<RL	<RL	<RL	<RL	7	<RL	<RL	<RL	735	6.6	<RL	28
Dissolved Sulfate	mg/L	3.34	Dry	4.8	3.63	2.93	3.35	4.4	1.56	2.72	3.75	5.39	1.84	4.26	4.47	4.17
Dissolved Zinc	ug/L	<RL	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Zinc	ug/L	<RL	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	38.2	<RL	<RL	11.1
Total Kjeldahl Nitrogen	mg/L	<RL	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	2.8	<RL	<RL	0.41
Total Ammonia	mg/L as N	<RL	Dry	0.15	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	No Data
Total Organic Nitrogen	mg/L	<RL	Dry	0.15	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	2.8	<RL	<RL	No Data

Big Chico Creek at Chico — Field Measurements

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Field Specific Conductance	uS/cm@25 °C	176	Dry	231	128	142	215	218	100	116.6	229	233	70	153	217	176
Field Dissolved Oxygen	mg/L	9	Dry	9.8	12.3	9.3	7.3	12.7	11.5	10.77	7.5	10.7	11.29	9.81	8.17	10.86
Field pH	pH Units	7.9	Dry	7.8	7.8	7.8	7.8	7.8	7.7	7.99	8	8	7.7	7.78	8.04	7.91
Field Water Temperature	°C	16.7	Dry	11.6	6.3	17.4	23.7	4.7	9.2	12.1	23.3	10.4	10.2	15.5	22.4	14.5
Field Turbidity	F.N.U.	0.5	Dry	1	0.5	0.8	0.13	0.2	3.6	0.83	0.15	0.55	400	7	0.3	26.3

Big Chico Creek at Chico — Bacteria Indicators

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Coliform, Total	MPN/100 mL	2419.6	Dry	2419.6	313	2419.6	2419.6	686.7	529.8	2419.6	2419.6	960.6	2419.6	2419.6	2419.6	2419.6
E. coli	MPN/100 mL	166.4	Dry	2419.6	30.9	214.3	344.8	88.2	23.3	199.5	248.1	328.2	686.7	248.1	218.7	2419.6

A4216000 — Big Chico C A Hwy 32

Big Chico C A Hwy 32 — Water Chemistry

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Alkalinity	mg/L as CaCO ₃	83	97.2	89.4	65.7	66.4	93.3	94.2	50.3	67	Access	No Data	36.1	76.9	95.5	79.3
Dissolved Aluminum	ug/L	<RL	<RL	<RL	20.3	10.6	B>RL	<RL	50	26.1	Access	<RL	170	<RL	<RL	96.1

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Aluminum	ug/L	44	23	91.8	41.5	33.4	16.2	36.8	131	63.8	Access	29.1	1090	72.8	14.2	1780
Dissolved Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Arsenic	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Arsenic	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Barium	ug/L	6.4	8.21	7.57	5.17	<RL	8.09	6.68	<RL	<RL	Access	7.22	<RL	5.7	7.47	9.91
Total Barium	ug/L	6.5	8.4	8.12	<RL	5.07	7.75	7.1	<RL	5.15	Access	7.6	9.8	5.93	7.55	24
Dissolved Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Boron	mg/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Calcium	mg/L	13	16.5	15.3	10.7	11	15.2	15.8	8.94	11.6	Access	15.9	6.79	13.2	16.1	14.4
Dissolved Chloride	mg/L	<RL	1.01	1.1	<RL	<RL	<RL	1.05	<RL	<RL	Access	1.38	<RL	<RL	<RL	1.42
Dissolved Chromium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Chromium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	1.88	<RL	<RL	2.43

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Specific Conductance	uS/cm@25 °C	157	185	175	127	126	176	178	97.6	128	Access	No Data	70.9	145	180	152
Dissolved Copper	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Copper	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	1.12	<RL	<RL	1.91
Dissolved Hardness	mg/L as CaCO ₃	63	79	74	53	53	75	77	43	55	Access	78	31	63	77	69
Dissolved Iron	ug/L	<RL	13.8	16.8	15.5	12.5	B>RL	20.7	30.2	18.6	Access	27.4	74.8	10.4	17.3	76.5
Total Iron	ug/L	51	35.6	93.6	34.6	35.3	43.7	46.4	92.1	55.6	Access	53.9	529	53.5	37.5	1090
Dissolved Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Magnesium	mg/L	7.35	9.28	8.74	6.31	6.3	8.9	9.22	4.94	6.41	Access	9.29	3.39	7.4	8.98	8.01
Dissolved Manganese	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	9.72
Total Manganese	ug/L	<RL	<RL	8.08	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	39	<RL	<RL	176
Dissolved Nickel	ug/L	5	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Nickel	ug/L	5	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	1.34
Dissolved Nitrate + Nitrite	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	B>RL	<RL	<RL	Access	<RL	0.05	<RL	<RL	<RL
Dissolved Organic Carbon	mg/L as C	1.8	1.7	3.9	1.3	1.5	1.5	1.6	1.4	1	Access	1.2	1.8	B>RL	0.6	4.1
Total Organic Carbon	mg/L as C	1.7	1.4	3.5	1.1	1.7	1.4	1.9	1.4	0.8	Access	1.2	2	0.6	0.7	8.4

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved ortho-Phosphate	mg/L as P	<RL	<RL	0.05	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Phosphorus	mg/L as P	0.01	0.02	0.04	0.02	0.01	0.02	0.02	0.01	0.02	Access	0.02	0.1	0.01	0.02	0.1
Dissolved Potassium	mg/L	1.03	1.32	1.46	0.88	0.7	1.25	1.23	0.77	0.78	Access	1.39	<RL	0.79	1.09	1.58
Dissolved Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Sodium	mg/L	4.92	6.43	6.1	3.63	3.67	4.63	5.95	3.35	4.09	Access	6.25	2.29	4.54	5.84	5.64
Total Dissolved Solids	mg/L	107	123	128	93	92	127	127	78	96	Access	124	61	104	130	114
Total Suspended Solids	mg/L	2.5	<RL	5.4	<RL	<RL	<RL	<RL	<RL	<RL	Access	2.5	23	3.4	<RL	56.6
Dissolved Sulfate	mg/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Kjeldahl Nitrogen	mg/L	<RL	<RL	0.13	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	0.19	<RL	<RL	0.56
Total Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	No Data
Total Organic Nitrogen	mg/L	<RL	<RL	0.13	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	0.19	<RL	<RL	No Data

Big Chico C A Hwy 32 — Field Measurements

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Field Specific Conductance	uS/cm@25 °C	83	180	170	120	121	170	172	94	123.1	Access	178.2	71	143	179	149
Field Dissolved Oxygen	mg/L	10.4	10.1	10.7	12	11	9.7	12.2	11.1	11.07	Access	11.3	10.94	10.91	10.22	11.71
Field pH	pH Units	7.8	8	7.8	7.9	7.9	8.1	8.1	7.4	8.01	Access	8.2	7	7.73	8.01	8.1
Field Water Temperature	°C	6.2	13	6	3.6	7.9	11.9	2.2	5.5	6.3	Access	5.5	6.5	8	10.6	8.8
Field Turbidity	F.N.U.	1.1	1.2	2.6	0.9	1.6	0.12	0.25	1.8	0.75	Access	0.9	13	1.1	0.5	42.2

Big Chico C A Hwy 32 — Bacteria Indicators

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Coliform, Total	MPN/100 mL	361	1035.07	1612.73	58.17	130.87	400.9	333.13	134.73	236.4	Access	No Data	755.13	117.8	500.7	1612.73
E. coli	MPN/100 mL	1.37	3.83	33.8	1.33	1.7	7.3	-0.33	1.03	1	Access	No Data	10.23	5.03	2.07	144.5

A4150000 — Butte Creek at Butte Meadows

Butte Creek at Butte Meadows — Water Chemistry

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Alkalinity	mg/L as CaCO ₃	43.8	60.9	56.9	45.3	26.3	57.9	57.9	37.1	34	Access	60.5	24.1	36.6	59.9	54.8
Dissolved Aluminum	ug/L	<RL	<RL	<RL	<RL	27.6	B>RL	<RL	19	18.8	Access	<RL	51.7	<RL	<RL	50.3

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Aluminum	ug/L	56	61	187	41.2	588	15.4	15.6	85.3	68.3	Access	18.2	504	56.4	13.1	350
Dissolved Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Arsenic	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Arsenic	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Barium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Barium	ug/L	<RL	<RL	<RL	<RL	6.18	<RL	<RL	<RL	<RL	Access	<RL	5.95	<RL	<RL	5.73
Dissolved Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Boron	mg/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Calcium	mg/L	7.72	10.9	10.3	8.08	5.46	10.3	11	7.05	6.59	Access	10.9	4.48	7.05	10.3	9.57
Dissolved Chloride	mg/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Chromium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Chromium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	1.04

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Specific Conductance	uS/cm@25 °C	87.2	116	111	90.7	54.4	112	111	74.2	67.1	Access	116	49.4	69.5	114	103
Dissolved Copper	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Copper	ug/L	<RL	<RL	<RL	<RL	1.01	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Hardness	mg/L as CaCO ₃	33	47	45	36	23	46	49	31	28	Access	49	20	30	45	42
Dissolved Iron	ug/L	<RL	10.1	12.8	8.89	14.1	B>RL	11.8	14.2	12.6	Access	10.8	27.4	8.28	8.98	34.4
Total Iron	ug/L	45	41.4	125	29.7	308	23.6	26	53.2	46.9	Access	28.9	233	35.9	20	418
Dissolved Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Magnesium	mg/L	3.39	4.92	4.78	3.85	2.16	4.84	5.21	3.32	2.91	Access	5.17	2.03	2.97	4.65	4.42
Dissolved Manganese	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Manganese	ug/L	6.4	7.28	13.8	<RL	27	<RL	<RL	<RL	<RL	Access	<RL	19	<RL	<RL	25.2
Dissolved Nickel	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Nickel	ug/L	<RL	<RL	<RL	<RL	1.49	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Nitrate + Nitrite	mg/L as N	0.1	<RL	<RL	0.23	0.44	<RL	B>RL	0.37	0.31	Access	<RL	0.38	0.18	0.05	<RL
Dissolved Organic Carbon	mg/L as C	1.4	1.3	5.9	0.9	1.5	1.1	1.1	0.9	0.7	Access	B>RL	1.5	B>RL	<RL	1.7
Total Organic Carbon	mg/L as C	1.3	1.2	5.6	0.9	1.7	1	1.1	0.9	0.7	Access	B>RL	1.4	0.8	<RL	2.2

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved ortho-Phosphate	mg/L as P	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	0.05	<RL	<RL	<RL
Total Phosphorus	mg/L as P	0.01	0.02	0.03	0.02	0.02	0.01	0.01	<RL	<RL	Access	0.01	0.02	<RL	0.01	0.03
Dissolved Potassium	mg/L	1.09	1.29	1.7	1.04	0.72	1.31	1.42	0.85	0.72	Access	1.44	0.61	0.77	1.16	1.46
Dissolved Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Sodium	mg/L	2.72	3.74	3.61	2.55	1.62	2.87	3.71	2.6	2.23	Access	3.81	1.6	2.32	3.42	3.28
Total Dissolved Solids	mg/L	63	80	87	66	44	83	83	58	55	Access	84	41.5	53	82	76
Total Suspended Solids	mg/L	2.5	<RL	5.5	<RL	17.4	<RL	<RL	<RL	<RL	Access	<RL	10.5	<RL	<RL	17.1
Dissolved Sulfate	mg/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Kjeldahl Nitrogen	mg/L	<RL	<RL	0.13	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	0.3
Total Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	No Data
Total Organic Nitrogen	mg/L	<RL	<RL	0.13	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	No Data

Butte Creek at Butte Meadows — Field Measurements

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Field Specific Conductance	uS/cm@25 °C	159	112	108	85.9	53	108	108	72	65.3	Access	87	49	68	113	101
Field Dissolved Oxygen	mg/L	10.5	9.9	10.6	11.9	11	9.9	11.9	11.3	11.03	Access	11.3	11.19	11.37	10.6	11.89
Field pH	pH Units	8	7.5	7.7	7.7	7.5	7.6	7.9	7.6	7.73	Access	8	7.2	7.37	7.41	7.79
Field Water Temperature	°C	7	9.9	5.1	2.4	4.1	9	2	3.5	4.3	Access	4.4	3.5	5.9	8.1	6.6
Field Turbidity	F.N.U.	1.3	1.3	3.3	0.4	9.9	0.1	0.05	0.8	0.75	Access	0.56	6.49	1	0.3	8.5

Butte Creek at Butte Meadows — Bacteria Indicators

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Coliform, Total	MPN/100 mL	261.3	727	2419.6	90.6	325.5	307.6	325.5	172.3	137.6	Access	727	727	156.5	290.9	2419.6
E. coli	MPN/100 mL	-1	20.1	76.7	4.1	3.1	16.1	3	4.1	2	Access	4.1	8.6	1	14.6	261.3

A4730000 — Battle Creek SF NR Mineral

Battle Creek SF NR Mineral — Water Chemistry

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Alkalinity	mg/L as CaCO ₃	22.6	35.6	31.4	27.5	<RL	30	32.4	24.8	22.4	Access	33.2	<RL	<RL	32.3	27
Dissolved Aluminum	ug/L	25	10.3	<RL	30.1	50.4	B>RL	13.1	55.8	55.6	Access	10.1	171	21.4	<RL	172

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Aluminum	ug/L	67	29.9	13.2	60	135	37.9	28.8	132	108	Access	23.8	492	65.1	38.5	407
Dissolved Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Arsenic	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Arsenic	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Barium	ug/L	5.2	7.96	6.42	6.93	<RL	6.94	6.15	6.11	<RL	Access	6.82	5.42	<RL	7.58	7.94
Total Barium	ug/L	5.3	8.02	7.05	6.59	5.81	7.23	6.32	6.84	5.44	Access	6.73	8.78	<RL	7.74	9.99
Dissolved Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Boron	mg/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Calcium	mg/L	4.28	6.75	6.57	5.44	3.42	5.32	6.4	5.3	4.4	Access	6.39	2.95	3.64	6.14	5.5
Dissolved Chloride	mg/L	<RL	<RL	<RL	1.26	<RL	<RL	<RL	1.05	<RL	Access	<RL	<RL	<RL	<RL	1.03
Dissolved Chromium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Chromium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Specific Conductance	uS/cm@25 °C	48.8	75.4	71.9	65.9	39.2	61.9	71.1	55	46.4	Access	72.7	32.5	38.4	65.4	57.6
Dissolved Copper	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Copper	ug/L	1.3	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Hardness	mg/L as CaCO ₃	18	28	28	23	14	22	27	22	18	Access	27	12	15	25	23
Dissolved Iron	ug/L	46	246	92.2	55.9	32.1	B>RL	84.6	49.5	40.8	Access	102	70.2	36	166	175
Total Iron	ug/L	90	325	147	78.8	103	170	120	93.5	88.4	Access	139	225	70	249	510
Dissolved Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Magnesium	mg/L	1.71	2.73	2.7	2.4	1.41	2.13	2.67	2.22	1.79	Access	2.66	1.19	1.36	2.37	2.36
Dissolved Manganese	ug/L	5.4	11.4	11.3	5.97	<RL	8.19	8.96	<RL	<RL	Access	7.94	<RL	<RL	10.2	16.9
Total Manganese	ug/L	6.9	16	13	6.72	6.16	12.5	10.7	5.06	6.01	Access	9.45	11.8	5.3	20.2	38.9
Dissolved Nickel	ug/L	<RL	1.02	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Nickel	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	1.4
Dissolved Nitrate + Nitrite	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	B>RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	0.07
Dissolved Organic Carbon	mg/L as C	2.1	2.4	1.5	2.1	2.7	2.3	1.7	2	1.6	Access	B>RL	2.2	B>RL	1.8	4.9
Total Organic Carbon	mg/L as C	2.2	2.2	1.5	2.2	2.4	2.3	1.7	2	1.6	Access	B>RL	2.3	1.5	1.8	5.6

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved ortho-Phosphate	mg/L as P	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Phosphorus	mg/L as P	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	0.02	0.01	<RL	0.02
Dissolved Potassium	mg/L	0.8	1.11	1.02	0.8	0.54	1.63	1.09	0.78	0.72	Access	1.21	0.61	0.58	1.24	1.71
Dissolved Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Dissolved Sodium	mg/L	2.05	3.26	3.12	2.41	1.75	2.27	2.99	2.54	2.19	Access	3.16	1.4	1.82	2.94	2.57
Total Dissolved Solids	mg/L	45	64	71	57	40	65	71	50	47	Access	69	34.5	39.5	63	56
Total Suspended Solids	mg/L	2.5	<RL	<RL	<RL	3.7	<RL	<RL	<RL	<RL	Access	<RL	10.5	<RL	<RL	6.2
Dissolved Sulfate	mg/L	1.7	2.71	6.75	3.62	1.24	1.46	3.34	2.36	1.54	Access	3.17	1.39	1.04	1.76	2.38
Dissolved Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL
Total Kjeldahl Nitrogen	mg/L	<RL	0.14	<RL	<RL	<RL	<RL	<RL	0.12	<RL	Access	<RL	0.14	<RL	0.14	0.38
Total Ammonia	mg/L as N	0.11	<RL	<RL	0.12	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	No Data
Total Organic Nitrogen	mg/L	0.11	0.14	<RL	0.12	<RL	<RL	<RL	0.12	<RL	Access	<RL	0.14	<RL	0.14	No Data

Battle Creek SF NR Mineral — Field Measurements

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Field Specific Conductance	uS/cm@25 °C	47	75	70.3	63	38	61	69	54	45.3	Access	85	32	38	66	56
Field Dissolved Oxygen	mg/L	9.2	7.7	10.3	11.9	10	8.2	11.6	10.9	9.76	Access	10.5	11.52	9.75	8.67	10.98
Field pH	pH Units	7.9	7.7	7.2	7.2	7.7	7.5	7.6	7.7	7.42	Access	7.6	6.9	6.77	7.54	7.13
Field Water Temperature	°C	10	19.9	5.2	1.6	7.5	18.5	2.1	3.4	7.9	Access	6.2	1.9	10.4	18.1	7.3
Field Turbidity	F.N.U.	1.1	0.97	1.2	0.6	2.7	0.63	0.01	1.16	1.31	Access	0.71	No Data	1.1	1.3	6.9

Battle Creek SF NR Mineral — Bacteria Indicators

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Coliform, Total	MPN/100 mL	687.9	2419.6	622.1	142.45	268.4	1732.9	209.45	167.45	435.2	Access	422.9	2202.95	318.4	605.85	2419.6
E. coli	MPN/100 mL	51.1	633.05	57.95	0.5	3.6	359.1	6.35	4.1	20.75	Access	6.9	11.5	1	118.75	834.6

A0079000 — Churn Creek near Anderson

Churn Creek near Anderson — Water Chemistry

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Alkalinity	mg/L as CaCO ₃	78	Dry	Dry	66.8	78.2	65.8	65	47.7	80.3	71.8	66.7	25.4	75.1	72	65.9
Dissolved Aluminum	ug/L	<RL	Dry	Dry	<RL	<RL	<RL	<RL	53.3	<RL	<RL	<RL	548	<RL	<RL	<RL
Total Aluminum	ug/L	56	Dry	Dry	45.1	78.9	11.2	B>RL	329	11.4	<RL	<RL	1940	<RL	<RL	12.6

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Ammonia	mg/L as N	<RL	Dry	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Antimony	ug/L	<RL	Dry	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Antimony	ug/L	<RL	Dry	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Arsenic	ug/L	<RL	Dry	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Arsenic	ug/L	<RL	Dry	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Barium	ug/L	39	Dry	Dry	35.8	41	21.3	21.6	21.3	37.1	23.6	21.7	13.6	28.9	25.2	19.9
Total Barium	ug/L	40	Dry	Dry	38.8	45.2	23.1	23.2	24.7	37.9	23.3	20.9	33.7	28.2	24.4	20.2
Dissolved Beryllium	ug/L	<RL	Dry	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Beryllium	ug/L	<RL	Dry	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Boron	mg/L	<RL	Dry	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Cadmium	ug/L	<RL	Dry	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Cadmium	ug/L	<RL	Dry	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Calcium	mg/L	15.8	Dry	Dry	16.1	17.7	11.6	10.3	10.7	16.3	11.4	10.7	5.73	13.9	11.5	10.4
Dissolved Chloride	mg/L	18.9	Dry	Dry	20.7	17.9	4.48	3.15	4.34	15.2	3.1	2.4	1.36	8.87	2.81	2.22
Dissolved Chromium	ug/L	<RL	Dry	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Chromium	ug/L	<RL	Dry	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	3.75	<RL	<RL	<RL
Specific Conductance	uS/cm@25 °C	237	Dry	Dry	238	245	169	153	123	228	161	149	61.3	196	158	142

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Copper	ug/L	<RL	Dry	Dry	1.26	1.2	<RL	<RL	1.51	<RL	<RL	<RL	1.61	<RL	<RL	<RL
Total Copper	ug/L	1.7	Dry	Dry	1.3	1.31	<RL	<RL	1.8	<RL	<RL	<RL	5.73	<RL	<RL	<RL
Dissolved Hardness	mg/L as CaCO ₃	79	Dry	Dry	73	80	60	55	46	76	60	57	24	71	59	55
Dissolved Iron	ug/L	30	Dry	Dry	17.5	35.2	12.4	16.2	69.2	27.6	17	21.6	459	13.9	17.8	36.2
Total Iron	ug/L	150	Dry	Dry	66	158	34.7	74.1	461	47.2	40.1	48.9	2870	34.6	39.5	67.2
Dissolved Lead	ug/L	<RL	Dry	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Lead	ug/L	<RL	Dry	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	1.46	<RL	<RL	<RL
Dissolved Magnesium	mg/L	9.56	Dry	Dry	8.04	8.62	7.55	7.03	4.75	8.59	7.62	7.24	2.38	8.81	7.47	7.1
Dissolved Manganese	ug/L	26	Dry	Dry	<RL	<RL	<RL	<RL	<RL	<RL	5.06	<RL	5.53	<RL	5.55	5.19
Total Manganese	ug/L	25	Dry	Dry	<RL	7.37	<RL	<RL	13.3	<RL	5.33	5.04	104	<RL	6.02	5.3
Dissolved Nickel	ug/L	<RL	Dry	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Nickel	ug/L	<RL	Dry	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	3.07	<RL	<RL	<RL
Dissolved Nitrate + Nitrite	mg/L as N	0.24	Dry	Dry	0.73	0.99	1.49	0.84	0.43	0.18	0.49	0.4	B>RL	1.25	B>RL	0.33
Dissolved Organic Carbon	mg/L as C	2	Dry	Dry	2.8	2.3	1.7	1.6	2.1	1.6	1	0.7	2.9	0.7	1	0.7
Total Organic Carbon	mg/L as C	2	Dry	Dry	2.8	2.4	1.8	1.6	2.1	1.7	1.2	0.7	2.6	0.7	1.1	0.8
Dissolved ortho-Phosphate	mg/L as P	<RL	Dry	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Phosphorus	mg/L as P	0.01	Dry	Dry	0.02	0.03	<RL	<RL	0.04	<RL	<RL	<RL	0.1	<RL	0.05	0.01
Dissolved Potassium	mg/L	0.8	Dry	Dry	0.78	0.79	0.53	<RL	0.7	<RL	<RL	<RL	0.79	<RL	<RL	0.64
Dissolved Selenium	ug/L	<RL	Dry	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Selenium	ug/L	<RL	Dry	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Silver	ug/L	<RL	Dry	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Silver	ug/L	<RL	Dry	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Sodium	mg/L	12.1	Dry	Dry	14.1	14.2	7.27	7.69	6.35	13.4	8.27	7.67	2.59	9.74	7.92	7.29
Total Dissolved Solids	mg/L	134	Dry	Dry	134	149	111	107	83	133	107	99	49	124	107	97
Total Suspended Solids	mg/L	6	Dry	Dry	<RL	3.4	<RL	<RL	4.6	<RL	<RL	<RL	70	<RL	<RL	<RL
Dissolved Sulfate	mg/L	10.7	Dry	Dry	14.8	12.9	6.06	5.33	5.53	10.4	5.16	4.73	2.52	7.08	4.5	4
Dissolved Zinc	ug/L	<RL	Dry	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Zinc	ug/L	<RL	Dry	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	14.1	<RL	<RL	<RL
Total Kjeldahl Nitrogen	mg/L	<RL	Dry	Dry	0.21	0.17	0.17	0.1	0.16	0.16	0.1	<RL	0.41	<RL	<RL	<RL
Total Ammonia	mg/L as N	0.13	Dry	Dry	0.22	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	No Data
Total Organic Nitrogen	mg/L	0.13	Dry	Dry	<RL	0.17	0.17	0.1	0.16	0.16	0.1	<RL	0.41	<RL	<RL	No Data

Churn Creek near Anderson — Field Measurements

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Field Specific Conductance	uS/cm@25 °C	228	Dry	Dry	226	237	162.2	147.4	120.2	222.5	161	147.4	60.7	194.1	158.1	141
Field Dissolved Oxygen	mg/L	9.8	Dry	Dry	14.5	10.2	13.7	9.45	10.56	13.31	9.3	8.99	10.06	13.28	8.85	6.89
Field pH	pH Units	6.9	Dry	Dry	5.6	7.4	7.1	6.91	7.71	8.23	6.6	6.99	7.41	7.17	6.82	6.73
Field Water Temperature	°C	18	Dry	Dry	9	16.4	20.6	15.3	10.9	18.3	18.1	15	11	19	20.4	15.7
Field Turbidity	F.N.U.	1.94	Dry	Dry	1.7	1.9	2.7	1.2	12.81	0.11	0.5	0.48	70.15	0.07	No Data	0.3

Churn Creek near Anderson — Bacteria Indicators

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Coliform, Total	MPN/100 mL	2419.6	Dry	Dry	2419.6	2419.6	2419.6	2419.6	2419.6	1356.65	2419.6	2419.6	2419.6	2202.95	2419.6	2419.6
E. coli	MPN/100 mL	28.65	Dry	Dry	26.15	66.3	39.55	32.05	318.2	16.55	41.65	46.5	762.5	132.6	64.9	176.6

7.4.3 Sacramento Valley Subregion

A6101050 — Yuba River at Mouth

Yuba River at Mouth — Water Chemistry

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Alkalinity	mg/L as CaCO ₃	35.1	41.7	42.5	35.7	23.7	Access	34.5	34.5	25.8	35.7	38.2	31.8	24.4	36.2	38.3
Dissolved Aluminum	ug/L	<RL	<RL	<RL	12.8	18.6	Access	<RL	40.1	12.5	<RL	<RL	50.4	10.2	<RL	<RL
Total Aluminum	ug/L	220	41.3	47.1	75.1	176	Access	44.7	179	54.7	34.2	17.4	239	63.5	73.8	113
Dissolved Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL	<RL	<RL	B>RL	<RL
Dissolved Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Arsenic	ug/L	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Arsenic	ug/L	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Barium	ug/L	13	12.5	14.3	11.4	9.19	Access	12.2	12.8	9.13	11.4	13	9.73	9.37	11.6	14.3
Total Barium	ug/L	15	12.9	13.7	12.2	11.5	Access	12.7	14.7	9.73	12.2	13.4	12.2	9.78	12.2	15.6
Dissolved Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Boron	mg/L	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Calcium	mg/L	8.58	10.6	10.9	7.95	5.87	Access	7.99	8.43	5.88	8.24	8.92	7.54	5.96	7.98	8.96
Dissolved Chloride	mg/L	1.95	1.05	1.5	1.46	1.63	Access	1.12	1.62	1.51	<RL	1.19	1.08	1.73	<RL	1.24
Dissolved Chromium	ug/L	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Chromium	ug/L	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Specific Conductance	uS/cm@25 °C	83.4	91.9	98.5	81.2	54.2	Access	76.4	82.1	58.9	75.7	84.1	70.9	56	77.1	83.6
Dissolved Copper	ug/L	<RL	1.19	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Copper	ug/L	1.2	<RL	<RL	<RL	1.39	Access	<RL	1.29	<RL	<RL	<RL	1.24	<RL	<RL	1.1
Dissolved Hardness	mg/L as CaCO ₃	33	40	42	32	22	Access	31	34	23	31	35	30	22	31	35
Dissolved Iron	ug/L	23	13.3	17.4	25.9	21.9	Access	B>RL	68.6	22.5	15.5	37.2	45.7	20	12.3	31.5
Total Iron	ug/L	310	61.9	84	108	220	Access	64.3	241	85.4	62.7	70.4	266	81.5	109	186
Dissolved Lead	ug/L	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Lead	ug/L	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Magnesium	mg/L	2.91	3.33	3.65	3	1.81	Access	2.75	3.14	1.95	2.61	3.09	2.63	1.83	2.72	3.17
Dissolved Manganese	ug/L	<RL	<RL	<RL	<RL	<RL	Access	6.02	9.92	<RL	<RL	9.3	<RL	<RL	<RL	11.7
Total Manganese	ug/L	9.8	6.6	7.45	7.49	11.9	Access	7.03	19.6	6.72	5.84	9.82	14.2	6.2	6.8	14.1
Dissolved Nickel	ug/L	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Nickel	ug/L	<RL	<RL	<RL	<RL	1.3	Access	<RL	1.51	<RL	<RL	<RL	1.41	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Nitrate + Nitrite	mg/L as N	<RL	<RL	<RL	<RL	<RL	Access	<RL	0.1	B>RL	<RL	<RL	0.06	<RL	B>RL	<RL
Dissolved Organic Carbon	mg/L as C	1.7	B>RL	1.7	1.6	1.5	Access	1.4	2	1.4	1.1	1.1	1.4	1.1	1.1	1.2
Total Organic Carbon	mg/L as C	1.7	1.1	1.6	1.4	1.4	Access	1.3	2	1.3	1.1	1	1.3	1.2	1.2	1.1
Dissolved ortho-Phosphate	mg/L as P	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Phosphorus	mg/L as P	0.01	<RL	<RL	<RL	<RL	Access	<RL	0.01	<RL	<RL	<RL	0.01	<RL	<RL	0.02
Dissolved Potassium	mg/L	<RL	<RL	0.57	0.56	<RL	Access	<RL	0.59	<RL	<RL	<RL	<RL	<RL	<RL	0.6
Dissolved Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Silver	ug/L	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Silver	ug/L	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Sodium	mg/L	3.02	2.46	2.86	2.1	2.04	Access	2.12	2.84	2.27	2.01	2.41	2.17	2.32	1.95	2.48
Total Dissolved Solids	mg/L	56	60	61	54	41	Access	51	56	40	50	56	51	42	49	53
Total Suspended Solids	mg/L	11.8	<RL	2.7	3.6	7.3	Access	<RL	4	4.2	2.7	<RL	53.1	3.7	5.8	5.7
Dissolved Sulfate	mg/L	3.2	3.12	3.8	3.53	2.02	Access	2.93	4.08	1.91	2.62	3.39	2.82	1.99	2.55	3.46

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	Access	7.21	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	Access	8.52	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Kjeldahl Nitrogen	mg/L	<RL	<RL	<RL	<RL	<RL	Access	0.11	0.14	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	No Data
Total Organic Nitrogen	mg/L	<RL	<RL	<RL	<RL	<RL	Access	0.11	0.14	<RL	<RL	<RL	<RL	<RL	<RL	No Data

Yuba River at Mouth — Field Measurements

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Field Specific Conductance	uS/cm@25 °C	81	91	96	100	53	Access	72.5	79.4	58.7	73.5	84	69	56	76	83
Field Dissolved Oxygen	mg/L	10.9	9.7	10.6	12.2	11.5	Access	10.87	11.19	10.99	9.87	10.4	12.4	11.41	9.88	9.81
Field pH	pH Units	7.5	7.8	7.8	7.4	7.4	Access	7.79	7.57	7.51	7.37	7.6	7.3	6.87	7.53	7.5
Field Water Temperature	°C	13.7	14.2	10.9	6.9	10.4	Access	10	9.6	12.9	14.9	12.2	8	12.4	15.4	14
Field Turbidity	F.N.U.	6.2	1.9	1.4	3.3	5.6	Access	2.06	7.86	6.42	7	0.96	6.72	6.4	29.5	6.7

Yuba River at Mouth — Bacteria Indicators

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Coliform, Total	MPN/100 mL	2419.6	2419.6	2419.6	261.3	1046.2	Access	770.1	727	1046.2	1046.2	2419.6	980.4	488.4	1553.1	2419.6
E. coli	MPN/100 mL	218.7	13.2	37.4	16.1	14.5	Access	6.3	29.2	65	16	13.2	19.5	8.6	24.6	1413.6

A0215000 — Sacramento River At Verona

Sacramento River At Verona — Water Chemistry

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Alkalinity	mg/L as CaCO ₃	48.6	49	55.8	56.6	40.3	50.1	58.4	63.6	40.5	43.6	53.8	62.4	44.1	44.5	59.5
Dissolved Aluminum	ug/L	<RL	<RL	20	21.9	28.7	<RL	<RL	58.3	18.4	<RL	<RL	442	21.4	<RL	13
Total Aluminum	ug/L	210	165	2350	595	387	191	185	958	191	123	156	755	451	105	142
Dissolved Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	B>RL	<RL
Dissolved Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Arsenic	ug/L	<RL	<RL	1.11	<RL	<RL	1.13	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Arsenic	ug/L	1.1	<RL	2.07	1.18	<RL	1.05	1.1	1.34	<RL	<RL	1.02	1.2	<RL	<RL	1.07
Dissolved Barium	ug/L	17	16.2	30	22.9	14.6	17.9	19.5	23.4	14.7	13.7	18.3	35.4	15.3	13.3	21.4
Total Barium	ug/L	19	18	47.9	28.6	19.4	20.3	22.5	37.7	17.2	15.8	20.3	44.5	18.6	14.3	23.4
Dissolved Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Boron	mg/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Calcium	mg/L	10.6	10.3	12.4	11.4	8.19	10	11.4	11.2	8.24	8.55	11.2	13.5	9.51	8.57	12.5
Dissolved Chloride	mg/L	3.9	2.4	17.7	7.44	1.88	2.74	4.82	4.98	2.26	1.44	6.82	15.8	3.62	1.44	8.8
Dissolved Chromium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	1.31	<RL	<RL	<RL
Total Chromium	ug/L	<RL	1.01	6.48	1.89	1.47	<RL	<RL	3.05	<RL	<RL	<RL	2.54	<RL	<RL	<RL
Specific Conductance	uS/cm@25 °C	121	111	203	154	90.7	115	152	170	95	92.8	131	202	106	95.2	155
Dissolved Copper	ug/L	1.3	<RL	1.32	1.33	1.13	<RL	1.07	1.77	<RL	<RL	<RL	5.26	1.03	<RL	<RL
Total Copper	ug/L	1.8	1.1	7.11	2.8	2.37	1.42	1.48	4.69	1.52	<RL	1.28	7.38	2.06	<RL	1.42
Dissolved Hardness	mg/L as CaCO ₃	46	43	52	53	34	44	51	51	35	36	49	67	41	36	58
Dissolved Iron	ug/L	48	34.3	80.6	61.8	32	21.7	B>RL	136	31.1	18.8	52.5	433	31.6	23.3	131
Total Iron	ug/L	370	200	3100	1010	593	310	326	1640	328	203	291	1440	554	174	435
Dissolved Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Lead	ug/L	<RL	<RL	1.65	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Magnesium	mg/L	4.81	4.26	5.21	5.86	3.4	4.56	5.52	5.63	3.53	3.63	5.13	8.05	4.27	3.53	6.42
Dissolved Manganese	ug/L	11	5.62	46.3	14	<RL	5.89	9.44	10.7	19	<RL	7.04	15.6	<RL	<RL	12.2
Total Manganese	ug/L	23	14.9	109	31.7	23.1	24.4	22.5	38.5	33.7	13.1	18.2	29.2	25.5	11.4	26.2
Dissolved Nickel	ug/L	<RL	<RL	1.14	1.16	<RL	<RL	<RL	1.31	<RL	<RL	<RL	2.96	<RL	<RL	<RL
Total Nickel	ug/L	<RL	1.06	8.21	2.64	2.33	1.42	1.37	4.19	1.58	1.09	1.33	3.93	1.94	<RL	1.42
Dissolved Nitrate + Nitrite	mg/L as N	0.1	<RL	0.57	0.23	0.14	0.1	0.27	0.21	B>RL	<RL	0.55	0.68	0.09	B>RL	0.24

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Organic Carbon	mg/L as C	2.7	B>RL	4.1	2.4	1.6	2	2.6	2.8	1.8	1.5	2	7.8	1.3	1.9	2.3
Total Organic Carbon	mg/L as C	2.5	1.8	4.1	2.7	1.6	2.1	2.7	4	2	1.5	2.2	7	1.4	1.6	2.3
Dissolved ortho-Phosphate	mg/L as P	<RL	<RL	0.1	<RL	<RL	<RL	0.07	<RL	<RL	<RL	0.19	0.12	<RL	<RL	0.08
Total Phosphorus	mg/L as P	0.04	0.03	0.23	0.06	0.03	0.04	0.14	0.1	0.05	0.01	0.22	0.18	0.03	0.01	0.08
Dissolved Potassium	mg/L	1.28	0.89	4.01	1.27	0.87	0.88	1.76	1.47	0.74	0.82	2.01	3	0.78	0.69	1.84
Dissolved Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Sodium	mg/L	5.8	4.63	16.2	6.98	3.64	4.2	6.92	6.87	4.1	3.53	9.31	12.6	5.19	3.49	9.28
Total Dissolved Solids	mg/L	72	69	116	94	65	71	88	86	64	61	93	138	70	56	96
Total Suspended Solids	mg/L	8.3	5.6	119	15.2	19.4	10.4	6	27.6	13.6	6.1	6.5	19.8	20.3	8.5	7.3
Dissolved Sulfate	mg/L	4.3	2.9	10.4	6.56	2.91	3.1	4.9	5.03	2.93	2.4	5.74	8.48	3.96	2.11	4.97
Dissolved Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Zinc	ug/L	<RL	<RL	15	<RL	<RL	<RL	<RL	5.32	<RL	17.1	<RL	8.6	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Kjeldahl Nitrogen	mg/L	0.2	0.15	0.47	0.25	0.19	0.14	0.23	0.37	<RL	0.11	0.25	0.77	0.12	0.1	0.26
Total Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	No Data
Total Organic Nitrogen	mg/L	0.2	0.15	0.47	0.25	0.19	0.14	0.23	0.37	<RL	0.11	0.25	0.77	0.12	0.1	No Data

Sacramento River At Verona — Field Measurements

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Field Specific Conductance	uS/cm@25 °C	116	109	207	153	89	110.4	127.4	136.6	86.8	91.9	141	201	106	93	163
Field Dissolved Oxygen	mg/L	9.7	7.7	8.9	10.8	10.1	8.63	10.96	10.08	9.65	9.2	10.07	8.5	9.85	9.33	8.7
Field pH	pH Units	7.6	7.2	7.5	7.4	7.6	7.62	7.94	7.55	7.56	7.66	7.57	7.4	7.33	7.78	7.37
Field Water Temperature	°C	16.2	22.1	11.6	8.4	15.8	21.3	9.5	10.6	17.5	19.9	12	9.8	17.5	19.9	14.9
Field Turbidity	F.N.U.	4.5	2.6	50.5	20	11.2	4.89	4.35	25.3	5.96	3.1	2.68	32.4	8.4	3.5	4.4

Sacramento River At Verona — Bacteria Indicators

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Coliform, Total	MPN/100 mL	2419.6	2419.6	2419.6	2419.6	2419.6	1011.2	2419.6	1986.3	1413.6	1203.3	-88	2419.6	2419.6	2419.6	2419.6
E. coli	MPN/100 mL	137.6	9.6	816.4	10.9	44.1	13.4	7.5	28.5	25.3	4.1	-88	50.4	31.3	10.7	90.9

A0571001 — North Honcut Creek

North Honcut Creek — Water Chemistry

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Alkalinity	mg/L as CaCO ₃	43.5	95.1	53.8	78.7	54.7	58.5	43.3	70	53.5	52.8	65.2	54	61.3	57.9	53
Dissolved Aluminum	ug/L	20	<RL	22.1	34.6	26.5	12.5	27.5	70.4	29	<RL	11.3	199	17.1	<RL	14.3
Total Aluminum	ug/L	120	98.8	356	536	160	105	171	263	115	74.4	94.3	407	170	99.4	95.1
Dissolved Ammonia	mg/L as N	<RL	<RL	<RL	<RL	0.18	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	B>RL	<RL
Dissolved Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Arsenic	ug/L	<RL	1.07	<RL	<RL	1.25	<RL	<RL	<RL	<RL	<RL	<RL	<RL	1.07	1.06	1.32
Total Arsenic	ug/L	<RL	1.34	1.39	1.31	1.6	<RL	<RL	<RL	<RL	1.12	1.01	<RL	1.33	1.42	1.45
Dissolved Barium	ug/L	11	23.2	18.1	18.6	13.4	12.9	13.4	19.2	12.6	13.5	14.6	15.3	13	17	14.2
Total Barium	ug/L	11	24.3	20.6	22.9	15.1	14.1	14.7	21.8	13.6	15.3	15.5	18.5	14	18.2	15.9
Dissolved Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Boron	mg/L	<RL	<RL	<RL	0.11	<RL	<RL	<RL	<RL	<RL	<RL	0.5	<RL	<RL	<RL	<RL
Dissolved Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Calcium	mg/L	9.76	17.2	12.1	14.4	11.5	11	8.72	13.2	10.4	10.5	12.9	9.96	12.6	11.3	10.4
Dissolved Chloride	mg/L	3.8	6.5	5.25	10.7	5.6	3.5	2.73	7.86	4.64	1.74	5.51	4.62	6.82	2.14	3.86
Dissolved Chromium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Chromium	ug/L	<RL	<RL	1.1	1.59	<RL	<RL	<RL	<RL	<RL	<RL	<RL	1.48	<RL	<RL	<RL
Specific Conductance	uS/cm@25 °C	110	216	151	230	150	133	101	189	136	115	161	144	169	126	126
Dissolved Copper	ug/L	7.5	<RL	1.79	1.53	1.04	<RL	1.63	2.35	1.18	<RL	1.34	2.6	2.48	<RL	1.2
Total Copper	ug/L	8.1	<RL	3.56	3	1.51	1.07	2.42	2.96	1.49	1.04	1.62	3.92	3.16	1.19	1.54
Dissolved Hardness	mg/L as CaCO ₃	42	83	53	78	54	51	38	69	50	46	60	53	62	50	45
Dissolved Iron	ug/L	110	180	183	142	102	136	B>RL	356	83.6	185	176	357	101	266	393
Total Iron	ug/L	320	530	1220	1540	454	436	1090	1020	282	531	405	1130	420	772	728
Dissolved Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Magnesium	mg/L	4.21	9.7	5.57	10.1	6.25	5.73	3.88	8.84	5.91	4.74	6.63	6.72	7.45	5.4	4.71
Dissolved Manganese	ug/L	15	23.8	54.6	70.5	16	23.5	9.95	50.8	18.5	19.2	16.4	35.4	21.8	52.6	47.9
Total Manganese	ug/L	34	50.7	128	95.4	43.2	51.2	19.7	64.2	42.9	46.3	37.8	47.2	48.9	74.2	77.6
Dissolved Nickel	ug/L	<RL	<RL	1.45	1.11	<RL	<RL	<RL	1.34	<RL	<RL	<RL	1.3	<RL	<RL	<RL
Total Nickel	ug/L	<RL	<RL	2.13	1.64	<RL	<RL	<RL	1.8	<RL	<RL	<RL	1.63	<RL	1.1	1.01
Dissolved Nitrate + Nitrite	mg/L as N	<RL	<RL	<RL	0.29	0.19	<RL	<RL	0.25	B>RL	<RL	<RL	0.32	0.08	B>RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Organic Carbon	mg/L as C	2.5	B>RL	4.8	3.5	2.4	2.5	3.7	5	2.3	2.1	4.1	3.3	2.4	3.2	4.1
Total Organic Carbon	mg/L as C	2.3	3	5.1	3.5	2.3	2.5	3.7	5	2.3	2.2	4.1	3.4	2.3	3.2	3.8
Dissolved ortho-Phosphate	mg/L as P	<RL	<RL	<RL	<RL	0.22	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	0.05
Total Phosphorus	mg/L as P	0.03	0.04	0.09	0.04	0.23	0.02	0.08	0.04	0.03	0.02	0.03	0.04	0.02	0.03	0.06
Dissolved Potassium	mg/L	0.76	0.71	2.46	1.18	1.09	0.6	1.63	1.73	0.67	<RL	2.41	1.47	0.64	0.71	1.63
Dissolved Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Sodium	mg/L	4.95	11.3	7.04	11.9	7.17	4.75	3.92	11	6.63	3.72	7.08	7.77	10.4	4.52	5.39
Total Dissolved Solids	mg/L	74	131	98	145	97	88	72	122	85	72	103	99	108	77	85
Total Suspended Solids	mg/L	4.9	4.9	15.2	14.1	8.5	5.7	3.2	6.1	5.8	4.5	3.4	10.5	7.3	5.4	4.8
Dissolved Sulfate	mg/L	4.45	5.6	10.2	17.7	9.86	4.31	3.12	11.2	7.31	3.24	7.58	8.62	13.5	3.37	4.87
Dissolved Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Kjeldahl Nitrogen	mg/L	0.19	0.26	0.49	0.37	0.38	0.13	0.28	0.32	0.13	0.2	0.3	0.35	0.21	0.24	0.36
Total Ammonia	mg/L as N	<RL	<RL	<RL	<RL	0.18	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	No Data
Total Organic Nitrogen	mg/L	0.19	0.26	0.49	0.37	0.2	0.13	0.28	0.32	0.13	0.2	0.3	0.35	0.21	0.24	No Data

North Honcut Creek — Field Measurements

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Field Specific Conductance	uS/cm@25 °C	107	214	146	216	148	130.9	95.8	184.2	136.1	114.5	161	143	172	127	126
Field Dissolved Oxygen	mg/L	10.8	7.6	10.3	11.5	8	7.82	10.39	10.42	8.07	7.96	9.23	11.3	9.52	7.62	8.24
Field pH	pH Units	7.6	7.6	7.5	7.4	7.5	7.46	7.6	7.5	7.59	7.28	7.33	7.1	7.23	7.44	7.32
Field Water Temperature	°C	13.8	21.3	10.5	8	20.6	22.9	7.7	10.8	21.7	21.5	10.7	8.1	17.4	22.5	14.7
Field Turbidity	F.N.U.	4.4	29	21.7	24.5	8.9	4.43	8.65	11.16	4	4.1	3.71	16.55	4.9	6	4.3

North Honcut Creek — Bacteria Indicators

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Coliform, Total	MPN/100 mL	1612.73	1612.73	1612.73	1612.73	1612.73	1612.73	1612.73	1383.83	1612.73	1612.73	747.87	1612.73	1612.73	1612.73	1612.73
E. coli	MPN/100 mL	291.57	41.8	201.1	50.1	679.9	265.63	81.63	72.67	99.57	51.47	0.83	50.13	139.83	111.57	259.43

A5101050 — Feather River Near Verona

Feather River Near Verona — Water Chemistry

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Alkalinity	mg/L as CaCO ₃	44	47.3	50	39.8	33.3	38.8	42.2	44.5	34.1	41.5	45.5	39.2	34.1	41.7	43.3
Dissolved Aluminum	ug/L	130	<RL	<RL	RPD>20	26.6	<RL	<RL	49.2	14.5	<RL	<RL	84.9	<RL	<RL	<RL
Total Aluminum	ug/L	<RL	217	67.3	690	237	RPD>20	118	RPD>20	209	90.4	52.4	235	113	70.5	RPD>20
Dissolved Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	0.06	<RL	<RL	B>RL	<RL
Dissolved Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Arsenic	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Arsenic	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Barium	ug/L	16	15.8	16.4	15.7	11.8	14.2	14.7	18.3	11.9	12.7	15	13.4	12.1	12.9	15.5
Total Barium	ug/L	17	17.2	16.3	23.6	15.9	15.9	16.5	27.4	14.3	15	16.2	16.8	12.8	13.4	16.7
Dissolved Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Boron	mg/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Calcium	mg/L	10.1	10.1	10.3	8.39	6.88	7.95	8.68	9.52	7.15	8.11	9.51	8.21	7.54	8.23	8.81
Dissolved Chloride	mg/L	2.3	1.8	1.84	2.64	1.39	1.31	2.23	2.46	1.38	1.07	2.08	1.38	2.59	1.17	1.86
Dissolved Chromium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Chromium	ug/L	<RL	1.11	<RL	2.17	1.03	<RL	<RL	1.84	<RL	<RL	<RL	1.2	<RL	<RL	<RL
Specific Conductance	uS/cm@25 °C	105	104	112	97.9	71.7	82.7	97.7	109	75.5	88.6	103	87.5	79.8	86.4	94.9
Dissolved Copper	ug/L	1.3	<RL	<RL	<RL	<RL	<RL	1.11	1.63	<RL	<RL	<RL	1.16	<RL	<RL	<RL
Total Copper	ug/L	1.3	1.28	<RL	2.88	1.51	1.09	1.01	RPD>20	1.43	1.21	<RL	1.96	<RL	<RL	1.03
Dissolved Hardness	mg/L as CaCO ₃	43	42	43	36	28	33	37	41	29	34	40	35	32	34	37
Dissolved Iron	ug/L	37	32.3	30.2	RPD>20	29.3	26.5	B>RL	142	34.5	21.9	45.3	103	25.8	24.7	140
Total Iron	ug/L	230	268	132	1010	346	RPD>20	222	1020	365	163	150	398	166	130	398
Dissolved Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Magnesium	mg/L	4.4	4.01	4.26	3.73	2.68	3.09	3.78	4.21	2.77	3.28	4.01	3.53	3.24	3.28	3.74
Dissolved Manganese	ug/L	6	<RL	<RL	43.8	<RL	<RL	5.55	RPD>20	19.1	<RL	5.46	<RL	<RL	<RL	11.6
Total Manganese	ug/L	16	15.6	8.59	65.6	19.3	15.5	11.4	RPD>20	31.1	11.6	9.68	15.8	10.8	8.85	20.1
Dissolved Nickel	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	1.11	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Nickel	ug/L	<RL	1.27	<RL	3.17	1.74	1.16	<RL	RPD>20	1.66	1.02	<RL	1.62	<RL	<RL	<RL
Dissolved Nitrate + Nitrite	mg/L as N	0.1	<RL	0.1	0.12	0.12	0.11	0.19	0.16	B>RL	<RL	0.16	0.15	0.08	B>RL	0.14

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Organic Carbon	mg/L as C	2.4	B>RL	2.2	1.9	1.5	1.9	2	2.5	1.6	1.4	1.6	1.8	1.3	1.6	1.5
Total Organic Carbon	mg/L as C	2.1	1.8	2.1	1.8	1.7	1.9	2	2.5	1.4	1.5	1.6	1.7	1.2	1.6	1.6
Dissolved ortho-Phosphate	mg/L as P	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Phosphorus	mg/L as P	0.03	0.02	0.02	0.04	0.02	0.02	0.02	RPD>20	0.03	0.01	0.02	0.02	0.01	RPD>20	0.03
Dissolved Potassium	mg/L	1.15	0.65	1.13	0.85	0.71	0.82	1.18	1.32	0.62	0.88	1.14	0.92	0.65	0.68	1.08
Dissolved Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Sodium	mg/L	4.12	4	4.05	3.11	2.6	2.32	3.63	4.16	2.86	3.06	3.82	3.23	3.25	3.04	3.51
Total Dissolved Solids	mg/L	64	64	67	66	51	57	61	67	53	55	65	52	54	54	59
Total Suspended Solids	mg/L	6.7	4.8	<RL	30.3	15.1	12.4	3.2	18.7	20.6	RPD>20	<RL	9.3	6.2	4.9	7.7
Dissolved Sulfate	mg/L	3.4	2.64	3.1	4.03	1.84	1.95	2.97	3.53	2.11	2.12	3.1	2.6	2.8	1.99	2.58
Dissolved Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Kjeldahl Nitrogen	mg/L	0.21	0.16	<RL	0.18	0.11	<RL	0.16	0.22	<RL	0.14	0.14	0.16	0.11	<RL	0.17
Total Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	No Data
Total Organic Nitrogen	mg/L	0.21	0.16	<RL	0.18	0.11	<RL	0.16	0.22	<RL	0.14	0.14	0.16	0.11	<RL	No Data

Feather River Near Verona — Field Measurements

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Field Specific Conductance	uS/cm@25 °C	102	104	109	92	70.3	80.8	93	102.3	72.7	87.8	101	83	81	87	94
Field Dissolved Oxygen	mg/L	9.9	8.3	10.2	11.3	10.6	8.85	11.32	9.46	9.93	9.37	10.5	11.6	10.08	9.49	10.03
Field pH	pH Units	7.8	7.8	7.9	6.9	7.5	7.62	7.95	7.46	7.6	7.74	7.71	7.7	7.37	7.81	7.58
Field Water Temperature	°C	16.1	21.4	11.8	7.9	14.4	20.6	9.8	10.8	16.8	19.9	12.3	9.5	17.4	19.7	14.6
Field Turbidity	F.N.U.	5.9	5.7	2.8	11.5	8.8	5.2	8.84	12.2	19.28	2.9	4.1	25	4.6	8.4	3.7

Feather River Near Verona — Bacteria Indicators

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Coliform, Total	MPN/100 mL	2419.6	2419.6	2419.6	2419.6	2202.95	2419.6	2419.6	2419.6	1378.2	931.3	-88	2419.6	2076.25	893.6	2419.6
E. coli	MPN/100 mL	42.85	6.9	23.8	9.6	47.8	11.45	10.4	56.5	24.15	4.65	-88	29	12.65	12.1	71.2

A6501050 — Bear River Near Mouth

Bear River Near Mouth — Water Chemistry

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Alkalinity	mg/L as CaCO ₃	49.4	61.3	49.8	32.2	55.4	52.5	43.8	Access	52.8	53.2	57.9	35.3	50.7	57.3	47.2
Dissolved Aluminum	ug/L	21	13.4	10.8	32.7	50.9	19.3	31.7	Access	44.2	13.4	21	237	39.5	23.2	83.5
Total Aluminum	ug/L	150	130	86.4	336	219	186	495	Access	216	310	160	405	317	169	264
Dissolved Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL	B>RL	<RL
Dissolved Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Arsenic	ug/L	<RL	<RL	<RL	<RL	<RL	1.28	<RL	Access	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Arsenic	ug/L	<RL	<RL	1.15	<RL	<RL	1.2	<RL	Access	1.03	<RL	<RL	<RL	<RL	1.03	<RL
Dissolved Barium	ug/L	22	31	26.7	17	26	34.2	24.4	Access	25.1	32.5	31.2	18.8	23	32.7	26.4
Total Barium	ug/L	25	31.7	26.1	20.3	29.8	36.6	31.4	Access	28.3	37.8	33.5	23.1	25.3	35	30.3
Dissolved Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Boron	mg/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Calcium	mg/L	11.2	13.2	11.3	7.15	11.6	10.6	9.23	Access	10.5	10.9	12.3	7.84	11.1	11.5	10.1
Dissolved Chloride	mg/L	10	14.2	14	4.81	5.85	6.17	7.66	Access	5.34	4.73	9.19	4.17	5.5	4.82	5.77
Dissolved Chromium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Chromium	ug/L	<RL	<RL	<RL	1.13	<RL	<RL	1.41	Access	<RL	1.13	<RL	1.33	<RL	<RL	<RL
Specific Conductance	uS/cm@25 °C	151	177	167	95.8	143	130	129	Access	133	127	158	98.8	128	132	123
Dissolved Copper	ug/L	2.3	1.3	1.56	1.47	2.05	1.48	1.6	Access	1.6	1.06	1.29	2.66	2	1.08	1.54
Total Copper	ug/L	2.7	1.56	1.62	2.25	2.7	2.06	3.78	Access	2.43	2.16	1.63	3.58	2.78	1.48	2.38
Dissolved Hardness	mg/L as CaCO ₃	53	60	50	33	55	48	42	Access	50	48	57	36	51	52	45
Dissolved Iron	ug/L	88	99.2	119	78.3	111	238	B>RL	Access	133	151	135	327	130	202	344
Total Iron	ug/L	350	295	343	560	578	784	1190	Access	607	885	506	951	629	655	947
Dissolved Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Magnesium	mg/L	6.15	6.65	5.4	3.63	6.26	5.27	4.55	Access	5.69	5.08	6.26	3.96	5.7	5.56	4.83
Dissolved Manganese	ug/L	16	20.4	10.6	10.1	26.6	50.4	18.1	Access	28.9	44.3	16	10.7	37.4	37.2	21.3
Total Manganese	ug/L	34	32.2	17.8	22.1	57.2	64.6	38.1	Access	51.8	75.5	25.2	24.4	52.8	49.6	40.8
Dissolved Nickel	ug/L	<RL	1.07	1.1	1.42	1.16	1.18	1.4	Access	1.18	1.09	1.31	1.62	<RL	1.09	1.28
Total Nickel	ug/L	<RL	1.25	1.27	2.11	1.64	1.62	2.34	Access	1.76	1.98	1.56	2.25	1.49	1.5	1.91
Dissolved Nitrate + Nitrite	mg/L as N	<RL	<RL	<RL	0.25	0.13	<RL	<RL	Access	B>RL	<RL	<RL	0.35	<RL	B>RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Organic Carbon	mg/L as C	3.8	B>RL	4.2	2.3	2.8	3.9	4.1	Access	2.9	3.2	4.4	3.4	2.5	3.4	3.7
Total Organic Carbon	mg/L as C	3.9	3.5	4.1	2.3	2.6	3.8	4	Access	2.8	3.4	4.5	3.4	2.4	4	3.7
Dissolved ortho-Phosphate	mg/L as P	<RL	<RL	0.1	<RL	<RL	0.06	<RL	Access	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Phosphorus	mg/L as P	0.04	0.06	0.13	0.03	0.05	0.08	0.05	Access	0.05	0.04	0.03	0.04	0.03	0.04	0.06
Dissolved Potassium	mg/L	1.48	1.46	3.47	1.04	1.36	1.53	3.13	Access	1.1	1.25	3.07	1.59	1.06	1.15	3.49
Dissolved Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Sodium	mg/L	7.69	10.2	9.51	3.64	5.64	4.45	5.35	Access	5.75	5.25	6.8	4.4	5.7	4.62	5
Total Dissolved Solids	mg/L	93	105	101	64	87	88	78	Access	83	82	99	70	82	82	79
Total Suspended Solids	mg/L	5.2	3.6	2.8	8	11.2	9.5	20.3	Access	12.7	21.8	4.9	10.7	12.7	9.7	12.5
Dissolved Sulfate	mg/L	7.21	3.9	6.81	4.57	6.06	2.69	5.53	Access	5.03	2.74	5.84	4.74	5.42	2.3	4.43
Dissolved Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	6.12	Access	<RL	<RL	<RL	<RL	<RL	<RL	<RL

Total Kjeldahl Nitrogen	mg/L	0.31	0.27	0.25	0.16	0.33	0.33	0.37	Access	0.2	0.34	0.35	0.35	0.26	0.25	0.33
Total Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL	<RL	No Data
Total Organic Nitrogen	mg/L	0.31	0.27	0.25	0.16	0.33	0.33	0.37	Access	0.2	0.34	0.35	0.35	0.26	0.25	No Data

Bear River Near Mouth — Field Measurements

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Field Specific Conductance	uS/cm@25 °C	147	175	163	90	142	128.1	124.1	Access	129.4	126.4	157	98	131	133	124
Field Dissolved Oxygen	mg/L	10.5	7.5	10.7	12	7.2	6.35	4.54	Access	7.27	7.07	9.07	11.1	9.13	7.01	9.36
Field pH	pH Units	7.7	7.6	7.7	7.4	7.4	7.19	7.51	Access	7.34	7.17	7.47	7.6	7.42	7.29	7.34
Field Water Temperature	°C	14.9	23.4	10.6	7	24.6	26.2	7.4	Access	23.5	22.6	10.5	8.5	19.6	23.4	15.2
Field Turbidity	F.N.U.	5.9	2.85	3.6	15	9.2	82.19	157.43	Access	10.75	14.29	5.36	17.25	10	8.6	11.4

Bear River Near Mouth — Bacteria Indicators

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Coliform, Total	MPN/100 mL	2419.6	2419.6	2419.6	2419.6	2419.6	2419.6	2419.6	Access	2419.6	2419.6	-88	1732.9	2419.6	2419.6	2419.6
E. coli	MPN/100 mL	228.2	41	185	12.2	167	117.8	61.7	Access	248.9	13.9	-88	36.8	290.9	135.4	579.4

A0275890 — Sacramento River Below Red Bluff

Sacramento River Below Red Bluff — Water Chemistry

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Alkalinity	mg/L as CaCO ₃	66.2	65.3	66.5	66	54.4	53.4	57.7	60.1	56.6	55.8	57.9	54.9	50.8	54.6	61.2
Dissolved Aluminum	ug/L	<RL	<RL	<RL	13.7	155	27.2	38.7	22.4	26.1	19.2	16.6	60.6	50.2	57.9	59.2
Total Aluminum	ug/L	53	81.2	158	151	31.6	99.4	96.1	259	143	72.9	94	909	297	157	97.2
Dissolved Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Arsenic	ug/L	1.5	1.72	2.08	1.44	1.07	1.59	1.13	1.09	1.1	1.14	<RL	1.24	<RL	1.07	<RL
Total Arsenic	ug/L	1.6	1.92	2.74	1.47	1.04	1.2	1.12	1.19	<RL	1.27	<RL	1.43	1.01	1.12	1.19
Dissolved Barium	ug/L	19	13.4	15.5	20.9	20.6	15.2	15.5	18.5	18.4	14.5	14.3	19	16.3	14.8	16.4
Total Barium	ug/L	19	16.2	16.9	23.2	18.6	16.4	15.9	20.7	19.4	15.3	15.1	24.7	17.7	14.9	17
Dissolved Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Boron	mg/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Calcium	mg/L	12.4	11.6	11.3	13.6	11.6	10.8	10.6	11.8	11.1	10.7	10.7	10.9	11	10.1	11.9
Dissolved Chloride	mg/L	3.4	2.82	3.24	4.6	2.4	2.28	2.59	2.51	1.96	1.91	2.39	2.11	2.04	1.71	3.19
Dissolved Chromium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Chromium	ug/L	<RL	1.11	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	1.15	2.28	<RL	<RL	<RL
Specific Conductance	uS/cm@25 °C	149	144	150	173	135	120	128	142	128	120	126	124	116	117	137
Dissolved Copper	ug/L	1.6	1.04	<RL	2.09	4.7	1.43	1.24	2.24	2.25	1.17	<RL	1.84	2.52	1.08	<RL
Total Copper	ug/L	1.9	1.31	1.23	3.61	3.33	1.74	1.36	3.51	3.14	1.54	1.34	5.3	3.38	1.3	1.19
Dissolved Hardness	mg/L as CaCO ₃	56	53	52	62	50	46	48	53	48	47	49	47	47	44	54
Dissolved Iron	ug/L	21	14.6	15.2	21.2	234	30	34.7	24.8	26.1	22	23.3	61.7	51.2	57.1	47.9
Total Iron	ug/L	85	75.2	160	202	36.2	115	115	328	158	90.3	112	1020	282	188	123
Dissolved Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Magnesium	mg/L	6.07	5.87	5.75	6.88	4.99	4.69	5.17	5.71	4.92	4.92	5.47	4.92	4.72	4.53	5.85
Dissolved Manganese	ug/L	<RL	<RL	<RL	6.39	12.7	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Manganese	ug/L	5.3	5.39	9.1	11.2	<RL	<RL	<RL	13.5	8.69	<RL	5.22	28.9	8.76	5.16	5.62
Dissolved Nickel	ug/L	<RL	<RL	<RL	<RL	1.27	1.04	1.1	<RL	<RL	1.12	1.23	<RL	<RL	1.2	1.09
Total Nickel	ug/L	<RL	<RL	<RL	<RL	<RL	1.31	1.26	1.81	1.16	1.42	1.71	3.27	1.35	1.42	1.26
Dissolved Nitrate + Nitrite	mg/L as N	<RL	B>RL	0.14	0.33	0.17	B>RL	0.17	0.2	0.07	0.07	0.13	0.14	0.09	0.1	0.15

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Organic Carbon	mg/L as C	2	1.7	1.7	1.5	1.7	1.9	1.5	B>RL	B>RL	1.4	1.3	1.3	1.1	1.5	B>RL
Total Organic Carbon	mg/L as C	2	1.6	1.8	1.4	1.5	1.8	1.4	1.2	1.5	1.3	1.3	1.1	1.1	1.6	1.4
Dissolved ortho-Phosphate	mg/L as P	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	0.15	<RL	<RL	<RL	<RL	<RL
Total Phosphorus	mg/L as P	0.02	0.03	0.05	0.03	0.02	0.02	0.03	0.03	0.03	0.4	0.03	0.04	0.02	0.02	0.03
Dissolved Potassium	mg/L	1.32	1.31	1.41	1.24	1.19	1.04	1.06	1.09	1.05	1.03	1.01	1.12	1.08	0.98	1.28
Dissolved Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Sodium	mg/L	8.09	7.8	7.99	7.14	5.71	4.59	5.6	6.37	5.72	5.49	5.56	6.26	5.54	5.08	6.62
Total Dissolved Solids	mg/L	96	93	96	117	93	84	82	93	87	84	88	89	81	80	93
Total Suspended Solids	mg/L	<RL	3	6.4	4.9	9.3	<RL	<RL	9.6	10.6	<RL	<RL	30.4	6.9	3.1	<RL
Dissolved Sulfate	mg/L	4.21	4	3.4	12.1	8.4	3.78	3.94	6.79	4.64	3.45	3.52	4.54	4.87	3.35	3.93
Dissolved Zinc	ug/L	<RL	<RL	<RL	<RL	8.17	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Zinc	ug/L	<RL	<RL	<RL	5.84	<RL	<RL	<RL	5.45	<RL	<RL	<RL	10.1	5.67	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Kjeldahl Nitrogen	mg/L	0.16	B>RL	0.12	<RL	0.14	<RL	<RL	<RL	<RL	0.14	0.14	0.12	0.14	0.1	0.1
Total Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	No Data
Total Organic Nitrogen	mg/L	0.16	0.2	0.12	<RL	0.14	<RL	<RL	<RL	<RL	0.14	0.14	0.12	0.14	0.1	No Data

Sacramento River Below Red Bluff — Field Measurements

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Field Specific Conductance	uS/cm@25 °C	144	139	142	163	130	117	125	141	128	196	124	123	113	116	135
Field Dissolved Oxygen	mg/L	12.5	12.5	10.7	12.7	11	10.9	11.7	11.4	10.7	12.1	11	12.5	10.89	10.96	12.79
Field pH	pH Units	8	8.7	7.4	7.9	7.9	7.3	7.5	6.5	7.9	7.6	8	7.6	7.56	7.45	7.52
Field Water Temperature	°C	13.2	17.3	11.8	9.5	12.6	15.3	10.7	9.5	17.7	14.5	11.9	8.9	13.5	14.3	12.7
Field Turbidity	F.N.U.	1.3	1.6	2.5	2.7	6.6	3.1	3.2	6.9	3.2	1.8	1.6	33.4	5.09	4.3	3

Sacramento River Below Red Bluff — Bacteria Indicators

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Coliform , Total	MPN/100 mL	397.17	1612.73	1323.87	140.17	746.27	514.13	295.33	528.5	675.2	454.3	844.17	942.07	1612.73	1095	653.27
E. coli	MPN/100 mL	5.4	5.37	35.33	1.7	12.9	12.67	8.53	8.6	14.93	13.4	21.93	17.43	40.53	13.53	20.67

A0270000 — Sacramento River At Vina (Woodson Bridge)

Sacramento River At Vina (Woodson Bridge) — Water Chemistry

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Alkalinity	mg/L as CaCO ₃	66.6	65.9	67.6	69.1	55.8	55.3	58.6	62.3	57	55.9	58.5	55.5	52.1	79.6	61.7
Dissolved Aluminum	ug/L	<RL	<RL	<RL	15.7	28.5	<RL	27.4	25.4	24.4	20.9	19.2	71.3	48	63.3	43
Total Aluminum	ug/L	74	82.4	201	169	363	120	90.8	331	160	67.7	291	1470	318	157	117
Dissolved Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Arsenic	ug/L	2.3	1.86	3.22	1.97	1.47	7.06	1.81	1.37	1.88	1.15	1.56	1.33	1.24	1.2	2.09
Total Arsenic	ug/L	2.5	1.92	4.01	2.31	1.81	1.37	1.87	1.42	2.09	1.29	1.66	1.55	1.4	1.34	2.08
Dissolved Barium	ug/L	19	16.2	15.8	22.8	18.6	16.6	11.7	19.9	19.2	14.9	15.1	19.8	17.2	15.4	18.3
Total Barium	ug/L	20	17.9	18.2	25.3	22.7	17.8	17	22.8	21.4	16.1	17.8	30.8	20.1	15.7	18.8
Dissolved Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Boron	mg/L	<RL	<RL	<RL	<RL	<RL	0.14	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Calcium	mg/L	12.9	11.5	11.6	14.6	11.1	11.4	11.3	12.6	12	10.8	11	11.2	10.7	10.2	11.7
Dissolved Chloride	mg/L	3.8	3.02	4	4.69	2.52	2.29	3.11	2.76	2.24	1.93	2.84	2.17	2.23	1.78	3.87
Dissolved Chromium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Chromium	ug/L	<RL	<RL	<RL	<RL	1.25	<RL	<RL	1.22	<RL	<RL	1.07	3.61	<RL	<RL	<RL
Specific Conductance	uS/cm@25 °C	153	147	155	185	136	125	134	147	131	121	131	126	120	166	143
Dissolved Copper	ug/L	3.3	<RL	<RL	1.79	2.58	<RL	<RL	2.08	1.82	1.1	1.08	1.81	2.35	1.06	<RL
Total Copper	ug/L	4.4	1.36	1.22	3	4.6	1.77	1.3	3.44	2.67	1.41	1.46	6.17	3.66	1.26	1.08
Dissolved Hardness	mg/L as CaCO ₃	58	53	54	65	48	57	51	57	52	47	51	49	45	45	54
Dissolved Iron	ug/L	21	15.1	14.1	24.9	35.5	68.4	22.9	29.4	25.2	22.6	22.3	74.2	48.3	58.2	39.1
Total Iron	ug/L	110	85.5	215	225	516	140	111	432	174	88.9	215	1730	371	168	127
Dissolved Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Magnesium	mg/L	6.14	5.87	5.96	6.85	4.81	6.81	5.6	6.15	5.41	4.91	5.75	5.09	4.47	4.64	6.01
Dissolved Manganese	ug/L	<RL	<RL	<RL	6.51	<RL	19	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Manganese	ug/L	7.4	7.23	11.1	12.8	18.3	5.84	5.22	16.7	11	<RL	17.4	49.1	12.4	5.52	7.9
Dissolved Nickel	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	1.13	1.2	<RL	<RL	1.1	1.1
Total Nickel	ug/L	<RL	<RL	<RL	1.04	1.96	1.28	1.22	2.11	1.16	1.39	1.7	4.86	1.56	1.38	1.26
Dissolved Nitrate + Nitrite	mg/L as N	<RL	B>RL	0.16	0.31	0.17	B>RL	0.17	0.23	0.1	0.06	0.17	0.16	0.09	0.1	0.17

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Organic Carbon	mg/L as C	2.1	1.7	1.7	1.5	1.5	1.8	1.8	B>RL	B>RL	1.2	1.6	1.1	1.1	1.8	B>RL
Total Organic Carbon	mg/L as C	2.1	1.7	1.7	1.4	1.5	1.9	1.7	1.3	1.5	1.2	1.6	1.1	1.1	1.6	1.3
Dissolved ortho-Phosphate	mg/L as P	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Phosphorus	mg/L as P	0.01	0.02	0.05	0.03	0.03	0.02	0.01	0.03	0.02	0.02	0.04	0.05	0.03	0.03	0.03
Dissolved Potassium	mg/L	1.3	1.28	1.5	1.26	0.99	2.04	1.11	1.1	1.16	1.03	1.01	1.18	0.9	1.14	1.28
Dissolved Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Sodium	mg/L	8.27	7.76	8.67	7.12	5.41	7.66	6.31	6.63	6.14	5.42	5.85	6.07	5.25	5.25	6.86
Total Dissolved Solids	mg/L	100	92	99	118	91	87	90	98	90	84	86	90	83	80	97
Total Suspended Solids	mg/L	4	3.6	6.2	5.4	17.3	2.8	<RL	14.3	8	<RL	8.3	57.9	10.6	2.8	3
Dissolved Sulfate	mg/L	4.9	3.81	3.74	12.5	7.69	3.8	4.34	6.41	5.6	3.53	3.81	5.02	5.48	3.46	4.66
Dissolved Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Zinc	ug/L	<RL	<RL	<RL	<RL	7.3	<RL	<RL	<RL	5.73	<RL	<RL	11.4	5.34	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Kjeldahl Nitrogen	mg/L	0.15	B>RL	0.22	<RL	0.12	<RL	<RL	<RL	0.11	0.17	0.11	0.13	0.13	<RL	<RL
Total Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	No Data
Total Organic Nitrogen	mg/L	0.15	0.17	0.22	<RL	0.12	<RL	<RL	<RL	0.11	0.17	0.11	0.13	0.13	<RL	No Data

Sacramento River At Vina (Woodson Bridge) — Field Measurements

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Field Specific Conductance	uS/cm@25 °C	148	143.6	147	174	131	121	130	145	131	119	129	126	117	118	142
Field Dissolved Oxygen	mg/L	10.7	9.2	10.2	12	10.7	10.1	10.7	11.4	9.8	11.3	10.7	12.2	10.44	10.25	11.76
Field pH	pH Units	7.7	7.9	7.3	7.2	7.8	7	7.1	6.9	7.4	7.7	7.7	7.4	7.4	7.23	6.95
Field Water Temperature	°C	13.1	18.3	11.3	8.5	12.5	14.5	10.5	9.5	16.3	14.6	11.3	8.6	13.2	14.4	12.7
Field Turbidity	F.N.U.	1.5	1.2	1.9	3.5	10.5	3.2	2	7.5	4.2	2.1	4.1	35.9	6.41	3.8	3.3

Sacramento River At Vina (Woodson Bridge) — Bacteria Indicators

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Coliform, Total	MPN/100 mL	1062.05	2419.6	1699.95	331.4	796.75	1083.1	483.35	630.95	1167.2	1046.2	1573.25	2419.6	2419.6	1811.45	903.3
E. coli	MPN/100 mL	28.4	9.75	50.5	11.15	37.85	17.9	8.65	14.8	30.9	25.7	46.55	30.65	69.3	16.35	26.55

A0281500 — Sacramento River at Balls Ferry

Sacramento River At Balls Ferry — Water Chemistry

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Alkalinity	mg/L as CaCO ₃	63.5	65.9	66.9	56.9	52.7	54.2	54.9	51.6	51.7	55	57.3	32.5	48.7	53.6	54.8
Dissolved Aluminum	ug/L	<RL	<RL	<RL	25.7	42.6	40.4	59.3	35.7	42.3	20.6	26	539	61.4	66.1	139
Total Aluminum	ug/L	34	109	46.1	125	146	151	108	370	139	110	116	B>RL	214	203	357
Dissolved Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Arsenic	ug/L	1.5	1.64	2.04	1.45	1.27	1.49	1.08	1.08	<RL	1.07	<RL	<RL	1.03	1.09	<RL
Total Arsenic	ug/L	1.6	1.71	2.91	1.57	1.53	1.57	1.05	1.19	1.03	1.08	1.06	1.11	<RL	1.12	1.11
Dissolved Barium	ug/L	18	16.5	14.6	17.6	16.7	15.8	14.9	16.6	15.5	14.4	14.1	14.5	15.2	14.7	14.3
Total Barium	ug/L	19	17.7	15.8	18.5	18.9	16.8	16.7	20.4	16.9	14.9	15.4	64.2	17.5	14.7	17.6
Dissolved Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Boron	mg/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Calcium	mg/L	11.8	11.6	11.6	10.4	9.58	10.2	10.2	9.88	10.2	10.4	11.1	6.8	9.75	10	9.57
Dissolved Chloride	mg/L	3	2.75	2.81	3.42	2.16	2.04	2.16	2.24	1.6	1.77	1.99	1.33	1.87	1.57	2.01
Dissolved Chromium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Chromium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	4.54	<RL	<RL	<RL
Specific Conductance	uS/cm@25 °C	144	146	149	138	118	121	123	120	115	119	123	77.2	108	115	118
Dissolved Copper	ug/L	4.8	1.04	<RL	2.78	3.41	1.45	1.07	2.43	3.15	1.19	1.09	2.15	2.62	2.72	<RL
Total Copper	ug/L	4.9	1.38	<RL	4.72	4.72	1.97	1.37	4	4.44	1.66	1.41	B>RL	3.61	1.33	2.06
Dissolved Hardness	mg/L as CaCO ₃	52	52	53	46	41	44	46	44	43	45	48	29	41	43	44
Dissolved Iron	ug/L	43	21.4	13.3	19.2	39.6	40.4	47.6	34.8	32.5	25.3	37.7	347	59.9	71.5	107
Total Iron	ug/L	100	99	56.2	162	161	175	116	B>RL	143	150	127	B>RL	230	178	437
Dissolved Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	2.27	<RL	<RL	<RL
Dissolved Magnesium	mg/L	5.59	5.68	5.75	4.92	4.21	4.56	4.99	4.76	4.34	4.52	4.98	2.83	4.12	4.33	4.88
Dissolved Manganese	ug/L	9.7	5.43	<RL	6.78	8.46	<RL	<RL	<RL	<RL	<RL	<RL	9.12	<RL	<RL	12.4
Total Manganese	ug/L	12	7.16	5.54	10.7	9.49	6.33	5.45	14.8	7.73	7.03	5.76	103	7.24	<RL	20.5
Dissolved Nickel	ug/L	<RL	<RL	<RL	<RL	<RL	1.19	1.26	<RL	1.09	1.35	1.4	<RL	<RL	1.3	1.29
Total Nickel	ug/L	<RL	<RL	<RL	<RL	1.03	1.47	1.46	1.57	1.37	1.46	1.53	4.31	1.32	1.42	1.84
Dissolved Nitrate + Nitrite	mg/L as N	<RL	0.1	0.14	0.26	B>RL	0.17	0.18	0.19	0.08	0.1	0.13	0.21	0.07	0.12	0.16

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Organic Carbon	mg/L as C	1.3	B>RL	1.6	1.5	B>RL	1.8	2	1.3	1	B>RL	1.5	2.2	1.2	1.6	1.5
Total Organic Carbon	mg/L as C	1.3	2.4	1.5	1.5	1.5	1.7	1.9	1.2	1	1.3	1.4	2.1	1.2	1.6	1.5
Dissolved ortho-Phosphate	mg/L as P	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Phosphorus	mg/L as P	0.02	0.03	0.04	0.04	0.02	0.05	0.01	0.03	B>RL	0.02	0.02	0.12	0.02	0.03	0.04
Dissolved Potassium	mg/L	1.26	1.34	1.55	1.13	1.05	1.16	1.04	1.08	0.94	0.85	0.9	0.9	0.88	0.99	0.89
Dissolved Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Sodium	mg/L	7.62	7.4	7.93	6.16	5.46	4.52	5.47	5.89	5.34	5.06	5.45	3.32	4.96	4.91	4.89
Total Dissolved Solids	mg/L	85	89	95	90	83	88	84	85	77	82	83	65	77	80	73
Total Suspended Solids	mg/L	<RL	<RL	<RL	3.2	4.5	4.2	<RL	11.1	4.9	4.9	<RL	124	4.2	<RL	14.3
Dissolved Sulfate	mg/L	4.23	3.9	3.53	5.36	4.15	3.86	3.67	4.98	3.94	3.62	3.63	3.74	3.92	3.35	3.01
Dissolved Zinc	ug/L	<RL	<RL	<RL	6.2	7.18	<RL	<RL	<RL	5.71	<RL	<RL	<RL	<RL	<RL	<RL
Total Zinc	ug/L	<RL	<RL	<RL	9.44	9.53	<RL	<RL	7.97	8.4	<RL	<RL	17.1	8.82	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Kjeldahl Nitrogen	mg/L	0.18	0.14	0.1	<RL	0.15	0.13	<RL	0.12	0.1	<RL	<RL	0.31	0.11	<RL	0.13
Total Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	No Data
Total Organic Nitrogen	mg/L	0.18	0.14	0.1	<RL	0.15	0.13	<RL	0.12	0.1	<RL	<RL	0.31	0.11	<RL	No Data

Sacramento River At Balls Ferry — Field Measurements

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Field Specific Conductance	uS/cm@25 °C	136	296	145	131	115	116	118	116	112	117	124	76	105	114	116
Field Dissolved Oxygen	mg/L	10.4	8.6	10	12.3	10.5	10.8	10.7	10.8	10.8	10.4	10.6	11.4	10.6	10.54	11.02
Field pH	pH Units	7.6	8.1	7.1	7.6	6.9	7.5	7	7.4	7.7	7.2	7.7	7.3	7.52	7.52	7.31
Field Water Temperature	°C	13.7	27	12.7	7.7	11.7	10.6	9.7	9.5	12.7	11.8	10.6	8.4	12.5	11.8	12.2
Field Turbidity	F.N.U.	0.9	0.35	1	7.5	3.8	2.8	2.6	4.9	4.3	5.3	2	149.3	4.05	3.91	10.3

Sacramento River At Balls Ferry — Bacteria Indicators

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Coliform, Total	MPN/100 mL	2419.6	2419.6	1046.2	461.1	1553.1	1299.7	2419.6	1553.1	1986.3	870.4	770.1	2419.6	1553.1	816.4	2419.6
E. coli	MPN/100 mL	19.9	85.7	44.3	23.3	42	24.3	82	52	34.5	31.3	32.3	151.5	34.1	10.8	113.7

A0278500 — Sacramento River at Bend Bridge

Sacramento River At Bend Bridge — Water Chemistry

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Alkalinity	mg/L as CaCO ₃	66.2	66.1	67.9	66.4	54.7	55.6	57.2	58.8	54.9	56.5	58.5	35.2	52.1	55.2	58.1
Dissolved Aluminum	ug/L	<RL	<RL	<RL	26.2	41.8	33.9	45.5	39.3	30	21	20.7	760	47.8	66.9	118
Total Aluminum	ug/L	58	82.8	69.1	227	371	145	114	1550	140	96.8	96.5	B>RL	187	242	206
Dissolved Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Arsenic	ug/L	1.5	1.71	2.02	1.31	1.11	1.49	1.1	<RL	<RL	1.13	1.13	<RL	<RL	1.03	<RL
Total Arsenic	ug/L	1.6	1.79	2.9	1.37	1.5	1.49	1.03	1.14	1.03	1.11	1.04	1.3	<RL	1.07	<RL
Dissolved Barium	ug/L	18	14.7	14.5	22.4	17.6	15.6	15.4	20.8	16.3	15	14.4	19.4	16.8	14.9	14.9
Total Barium	ug/L	19	16.3	16.3	23.6	23	17	16.9	36.1	18.3	15.8	15.2	127	18.9	16.1	16.1
Dissolved Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Boron	mg/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Calcium	mg/L	11.7	11.4	11.4	12.5	10.5	10.4	10.4	12	10.9	11.5	11	7.26	10.5	10.1	10.4
Dissolved Chloride	mg/L	3.2	2.8	2.94	4.12	2.24	2.08	2.52	2.36	1.72	1.85	2.24	1.09	2.16	1.63	2.47
Dissolved Chromium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	1.69	<RL	<RL	<RL
Total Chromium	ug/L	<RL	<RL	<RL	1.02	1.37	<RL	<RL	3.89	<RL	<RL	<RL	15.6	<RL	<RL	<RL
Specific Conductance	uS/cm@25 °C	149	146	151	167	123	124	128	139	122	122	126	81.2	116	118	126
Dissolved Copper	ug/L	3.2	1.06	<RL	2.29	2.9	1.38	1.05	1.91	2.67	1.21	<RL	2.56	2.13	1.15	<RL
Total Copper	ug/L	4	1.32	1.04	3.79	4.53	1.93	1.35	5.49	3.84	1.66	1.67	B>RL	2.98	1.6	1.23
Dissolved Hardness	mg/L as CaCO ₃	53	52	52	57	45	45	47	53	47	50	50	31	45	43	48
Dissolved Iron	ug/L	22	15.2	12.3	28.5	39.5	34.1	39.6	46.9	25.3	24.2	24.9	566	52.9	61.8	83.5
Total Iron	ug/L	86	69.4	74.9	281	485	174	126	B>RL	152	129	106	B>RL	204	259	175
Dissolved Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	1.1	<RL	<RL	<RL	<RL	<RL
Total Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	4.33	<RL	<RL	<RL
Dissolved Magnesium	mg/L	5.69	5.74	5.79	6.34	4.65	4.56	5.15	5.63	4.8	5.08	5.44	3.07	4.62	4.42	5.31
Dissolved Manganese	ug/L	<RL	<RL	<RL	6.31	<RL	<RL	<RL	<RL	<RL	<RL	<RL	10.3	<RL	<RL	<RL
Total Manganese	ug/L	7.1	<RL	5.22	13.9	17.8	6.86	5.24	49.7	8.55	6.78	5.1	247	6.92	7.46	5.65
Dissolved Nickel	ug/L	<RL	<RL	<RL	<RL	<RL	1.1	1.11	1.05	<RL	1.3	1.34	2.02	<RL	1.27	1.27
Total Nickel	ug/L	<RL	<RL	<RL	1.12	2	2.57	1.27	5.78	1.3	1.58	1.49	23.3	1.22	1.62	1.45
Dissolved Nitrate + Nitrite	mg/L as N	<RL	0.07	0.14	0.36	B>RL	0.14	0.18	0.26	0.08	0.1	0.14	0.21	0.11	0.12	0.19

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Organic Carbon	mg/L as C	1.3	B>RL	1.5	1.7	B>RL	1.8	2	1.5	0.9	B>RL	1.3	3.4	1.2	1.5	1.3
Total Organic Carbon	mg/L as C	1.4	1.6	1.5	1.6	1.6	1.8	1.8	1.3	1.1	1.2	1.3	3.3	1.2	1.6	1.5
Dissolved ortho-Phosphate	mg/L as P	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	0.07	<RL	<RL	<RL
Total Phosphorus	mg/L as P	0.01	0.03	0.04	0.04	0.03	0.03	0.02	0.06	B>RL	0.02	0.02	0.33	0.03	0.03	0.03
Dissolved Potassium	mg/L	1.19	1.31	1.53	1.21	1.1	1.11	0.98	1.08	1.03	1.08	0.99	1.21	0.97	0.95	1.03
Dissolved Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Sodium	mg/L	7.43	7.43	7.98	6.71	5.48	4.47	5.44	6.18	5.53	5.77	5.53	2.95	5.26	5.01	5.53
Total Dissolved Solids	mg/L	89	93	95	104	84	82	89	95	81	82	86	67	82	80	83
Total Suspended Solids	mg/L	2.9	<RL	2.8	5.9	13.6	3.7	<RL	51.9	6.9	<RL	<RL	342	4.8	7.6	<RL
Dissolved Sulfate	mg/L	4.21	3.8	3.5	7.99	4.43	3.81	3.86	6.74	4.42	3.59	3.62	3.41	4.32	3.31	3.32
Dissolved Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Zinc	ug/L	<RL	<RL	<RL	6.29	9.12	<RL	<RL	10.3	6.09	<RL	<RL	29.9	5.07	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Kjeldahl Nitrogen	mg/L	0.14	0.15	<RL	<RL	0.11	0.11	<RL	0.16	<RL	<RL	0.7	0.12	<RL	<RL	0.12
Total Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	No Data
Total Organic Nitrogen	mg/L	0.14	0.15	<RL	<RL	0.11	0.11	<RL	0.16	<RL	<RL	0.7	0.12	<RL	<RL	No Data

Sacramento River At Bend Bridge — Field Measurements

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Field Specific Conductance	uS/cm@25 °C	140	141	146	159	120	118	123	134	121	119	127	79	114	117	124
Field Dissolved Oxygen	mg/L	10.6	9.8	10	12.3	10.2	10.4	10.9	10.9	10.6	10.3	10.8	11.1	10.16	10.04	11.07
Field pH	pH Units	8.1	8.1	7.3	7.7	7.2	7.6	7.6	7.6	7.7	7.5	7.8	7.4	7.89	7.47	7.31
Field Water Temperature	°C	14.9	15.9	12.9	7.9	12.8	12.5	10.5	9.5	12.7	12.4	10.9	8.8	13.9	12.2	12.5
Field Turbidity	F.N.U.	1.3	1.1	1.5	8.5	9.4	4.2	2.7	30.4	4.1	2.3	1.9	264.1	4.1	3.75	3.2

Sacramento River At Bend Bridge — Bacteria Indicators

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Coliform, Total	MPN/100 mL	649.35	950.6	655.33	435.13	1209.3	918.47	1612.73	1277.4	1612.73	1010.53	514.13	1612.73	1468.3	760.7	1612.73
E. coli	MPN/100 mL	6.8	5.67	51.43	10.77	15.65	16.13	99.53	94.2	22.47	20.93	20.5	560.6	18.57	12.13	88.23

A0263000 — Sacramento River at Hamilton City

Sacramento River At Hamilton City — Water Chemistry

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Alkalinity	mg/L as CaCO ₃	66.8	66.1	67.3	70.7	54.9	56.4	60.4	63.6	59.8	57.4	61.1	56.1	53.6	56.3	63.4
Dissolved Aluminum	ug/L	<RL	<RL	<RL	RPD>20	35.6	RPD>20	44.3	30.4	21.9	17.6	17.6	84.9	53.4	48.2	43.9
Total Aluminum	ug/L	50	58.3	58.6	210	418	150	89.7	RPD>20	RPD>20	81.8	276	1960	430	153	RPD>20
Dissolved Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Arsenic	ug/L	2.4	1.84	3.11	2.13	1.46	1.34	1.99	1.27	1.64	1.31	1.94	1.24	1.28	1.18	2.03
Total Arsenic	ug/L	2.5	2	3.36	2.34	1.73	1.84	1.86	1.57	1.68	1.27	2.08	1.68	1.48	1.31	2.04
Dissolved Barium	ug/L	19	15.1	16	24.6	19.9	13.1	15.5	21.8	19.7	14.3	15.9	20.6	16.8	14.2	17.5
Total Barium	ug/L	19	17.3	15.7	26.2	24.4	17.3	16	25.5	20.3	15.8	18.4	36.8	19.5	15.6	18.9
Dissolved Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Boron	mg/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Calcium	mg/L	12.7	11.5	11.9	15.6	10.9	8.92	11.7	12.7	12	10.8	11.1	11.1	11	9.9	11.5

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Chloride	mg/L	4	3.04	4.13	5.54	2.66	2.36	3.49	2.78	2.41	2.16	3.22	2.16	2.04	1.85	4.27
Dissolved Chromium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Chromium	ug/L	<RL	<RL	<RL	<RL	1.46	<RL	<RL	RPD>20	<RL	<RL	<RL	4.88	<RL	<RL	<RL
Specific Conductance	uS/cm@25 °C	155	146	156	187	136	125	137	148	136	123	135	127	121	121	146
Dissolved Copper	ug/L	1.6	1.24	<RL	1.73	2.67	1.24	1.07	2.01	1.86	1.16	<RL	1.74	2.23	1.02	1.06
Total Copper	ug/L	1.8	1.47	<RL	2.73	4.44	1.82	1.26	3.7	2.51	1.41	1.64	7.42	3.49	1.25	1.19
Dissolved Hardness	mg/L as CaCO ₃	56	53	55	69	47	39	53	57	52	47	51	49	47	43	53
Dissolved Iron	ug/L	27	20.4	16.6	18.2	44.2	26.6	38.1	33.9	27.7	20.9	26.9	94.7	53.7	50.9	37.6
Total Iron	ug/L	100	75.6	86.5	280	629	183	108	RPD>20	RPD>20	RPD>20	301	2440	418	RPD>20	RPD>20
Dissolved Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Magnesium	mg/L	5.93	5.92	6.06	7.36	4.89	4.07	5.73	6.18	5.46	4.82	5.65	5.08	4.7	4.45	5.92
Dissolved Manganese	ug/L	<RL	<RL	<RL	8.1	9.02	<RL	<RL	8.32	9.58	<RL	7.46	7.31	<RL	<RL	7.75
Total Manganese	ug/L	6.8	<RL	<RL	14.4	22.1	6.81	5.02	RPD>20	13.1	<RL	14.4	67.3	13.7	5.51	11.2
Dissolved Nickel	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	1.07	1.08	<RL	<RL	<RL	1.05
Total Nickel	ug/L	<RL	<RL	<RL	1.16	2.26	1.28	1.04	2.87	1.04	1.28	1.77	6.57	1.63	RPD>20	1.25
Dissolved Nitrate + Nitrite	mg/L as N	<RL	<RL	0.15	0.32	0.17	0.17	0.12	0.25	0.07	0.05	0.14	0.16	0.08	0.07	0.16

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Organic Carbon	mg/L as C	2.2	2.3	B>RL	1.6	2	1.9	1.8	1.4	1.4	1.3	1.5	1.2	1.1	1.6	1.5
Total Organic Carbon	mg/L as C	2.1	B>RL	RPD>20	1.8	1.7	2	1.7	1.4	1.3	1.4	RPD>20	1.1	1.1	1.6	RPD>20
Dissolved ortho-Phosphate	mg/L as P	<RL	<RL	<RL	<RL	<RL	<RL	<RL	RPD>20	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Phosphorus	mg/L as P	0.02	0.02	0.04	0.03	0.03	0.03	RPD>20	RPD>20	RPD>20	0.02	0.03	0.07	0.03	0.02	0.03
Dissolved Potassium	mg/L	1.51	1.46	1.69	1.27	1.18	0.87	1.19	1.12	1.09	1.04	1.05	1.1	1.12	1.02	1.26
Dissolved Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Sodium	mg/L	8.27	7.97	9.25	7.75	5.98	3.95	6.95	6.68	6.28	5.73	6.57	6.05	5.54	5.23	6.95
Total Dissolved Solids	mg/L	101	88	97	128	93	83	86	98	91	87	90	90	82	79	91
Total Suspended Solids	mg/L	<RL	<RL	RPD>20	7.3	20.7	6.6	<RL	RPD>20	5.7	<RL	RPD>20	73.7	RPD>20	RPD>20	RPD>20
Dissolved Sulfate	mg/L	4.94	3.63	3.8	13.2	8.41	3.8	4.45	6.5	5.68	3.58	4	4.91	5.54	3.21	4.69
Dissolved Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Zinc	ug/L	<RL	<RL	<RL	<RL	6.48	<RL	<RL	<RL	<RL	<RL	<RL	13.6	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Kjeldahl Nitrogen	mg/L	0.13	0.15	0.14	<RL	<RL	<RL	<RL	<RL	<RL	0.23	0.11	0.14	0.13	<RL	0.12
Total Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	No Data
Total Organic Nitrogen	mg/L	0.13	0.15	0.14	<RL	<RL	<RL	<RL	<RL	<RL	0.23	0.11	0.14	0.13	<RL	No Data

Sacramento River At Hamilton City — Field Measurements

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Field Specific Conductance	uS/cm@25 °C	152	145	152	175	131	120.4	131.9	142.7	133.9	121.3	132.2	124.7	119	120	144
Field Dissolved Oxygen	mg/L	11	9.4	10.6	12.2	10.6	10.38	11.93	11.16	11	11.52	10.98	11.88	10.83	11.22	11.32
Field pH	pH Units	8.4	8.4	7.9	8.2	7.8	7.32	8.59	7.81	8.38	8.19	8.15	7.85	7.99	8	8.09
Field Water Temperature	°C	15.9	21.5	11.2	9.7	13.9	17.4	11.5	10	18.7	16.4	11.6	8.8	14.2	16.4	13.8
Field Turbidity	F.N.U.	1	0.3	0.9	4.3	11.3	3.47	2.89	10.13	4.08	2.41	4.01	37.73	9.1	3.9	1.47

Sacramento River At Hamilton City — Bacteria Indicators

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Coliform, Total	MPN/100 mL	1277.4	2419.6	1612.73	267.43	481.6	1612.73	485.27	1010.53	497.17	331.6	1048.5	1612.73	1612.73	1154.93	481.6
E. coli	MPN/100 mL	9.57	9.43	204.83	2.73	22.27	14.03	17.63	13.87	12.7	9.1	42.8	24.37	42.53	8.97	9.93

A0242000 — Sacramento River at Colusa

Sacramento River At Colusa — Water Chemistry

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Alkalinity	mg/L as CaCO ₃	66.9	65.8	66.9	77.3	55.5	58.6	63.3	68.8	65.5	58.1	63	59.8	55.7	57.3	69.2
Dissolved Aluminum	ug/L	<RL	<RL	<RL	10.9	32.3	25.6	25.5	RPD>20	11.3	11.8	12.7	124	RPD>20	41.8	35.1
Total Aluminum	ug/L	430	RPD>20	354	621	1010	295	207	1700	475	148	RPD>20	1930	905	282	307
Dissolved Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Arsenic	ug/L	2.4	1.88	2.84	1.96	1.7	1.93	1.83	1.15	1.81	1.34	1.76	1.23	1.37	1.44	1.86
Total Arsenic	ug/L	2.6	2.08	2.98	2.21	2.22	2.12	1.87	1.6	2.07	1.54	1.91	1.71	1.61	1.41	2.01
Dissolved Barium	ug/L	21	16.2	17.4	28	18.9	18.5	18	26.3	22.7	15.7	17.4	20.8	17.8	15.9	22.8
Total Barium	ug/L	24	22.5	20	34.5	32	21.1	19.9	42.2	29.4	18.1	19.8	39.9	24.5	18.4	24.8
Dissolved Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Boron	mg/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Calcium	mg/L	13.1	11.1	11.8	15.8	11	11.9	11.8	13.7	13.1	10.8	11.6	12.2	11.6	10.5	14.6
Dissolved Chloride	mg/L	4.02	3.3	4.3	5.95	2.64	2.67	3.43	3.53	2.67	2.13	3.49	2.55	2.32	2.01	5.03
Dissolved Chromium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Chromium	ug/L	1.4	RPD>20	1.18	2.04	3.2	1.11	1.07	5.04	1.55	<RL	RPD>20	5.28	1.5	<RL	1.07
Specific Conductance	uS/cm@25 °C	158	147	157	203	128	134	148	164	153	127	144	137	126	124	166
Dissolved Copper	ug/L	1.4	1.1	<RL	1.36	1.97	1.29	1.02	1.79	1.53	1.13	<RL	1.89	1.94	1.15	<RL
Total Copper	ug/L	2.6	2.07	1.43	3.28	5.22	2.38	1.87	6	3.74	1.71	1.52	6.73	4.29	1.7	1.82
Dissolved Hardness	mg/L as CaCO ₃	59	52	54	71	47	51	54	61	58	48	53	53	50	46	68
Dissolved Iron	ug/L	25	18.2	15	21.4	33.3	B>RL	26.5	B>RL	20.3	14.8	22.3	RPD>20	RPD>20	40.1	36.9
Total Iron	ug/L	580	RPD>20	437	855	1520	406	345	2330	734	B>RL	RPD>20	2620	953	343	424
Dissolved Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Magnesium	mg/L	6.41	6.01	6.07	7.55	4.83	5.26	6.03	6.62	6.04	5.05	5.91	5.48	5.03	4.72	7.62
Dissolved Manganese	ug/L	<RL	<RL	<RL	10.9	<RL	<RL	6.86	9.59	16.8	<RL	5.62	5.32	<RL	<RL	15.1
Total Manganese	ug/L	17	14.3	14.7	31.9	40.4	15.6	14.1	58.9	35.9	8.69	RPD>20	65.3	26.2	11.2	26.5
Dissolved Nickel	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	1.02	<RL	<RL	<RL	1.08	<RL	<RL	<RL
Total Nickel	ug/L	<RL	RPD>20	1.5	2.84	4.87	1.74	1.57	7.42	2.8	1.38	RPD>20	7.27	3.08	1.52	1.92
Dissolved Nitrate + Nitrite	mg/L as N	<RL	<RL	0.17	0.38	B>RL	B>RL	B>RL	0.25	0.13	<RL	0.17	0.17	0.11	0.07	0.24

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Organic Carbon	mg/L as C	B>RL	1.7	1.4	1.4	RPD>20	B>RL	B>RL	1.7	B>RL	1.3	1.3	1.4	1.1	1.4	1.3
Total Organic Carbon	mg/L as C	B>RL	1.7	RPD>20	B>RL	1.6	1.6	1.6	1.6	1.4	1.7	1.4	1.4	1.1	1.4	1.3
Dissolved ortho-Phosphate	mg/L as P	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	0.06
Total Phosphorus	mg/L as P	0.04	0.03	RPD>20	0.05	0.05	0.04	0.04	RPD>20	0.04	0.02	0.04	0.08	0.04	0.03	0.04
Dissolved Potassium	mg/L	1.33	1.29	1.63	1.35	1.01	1.09	1.22	1.16	1.12	1.08	1.05	1.21	1.14	1.01	1.3
Dissolved Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Sodium	mg/L	8.62	8.26	9.23	7.69	5.59	5.13	7.07	7.07	6.65	5.66	6.91	6.41	5.94	5.37	8.35
Total Dissolved Solids	mg/L	98	91	101	123	90	90	93	103	100	87	92	91	88	87	104
Total Suspended Solids	mg/L	16.2	9.8	RPD>20	20.8	42.3	14.2	8.8	75.4	27.8	12.5	8.3	65.1	30.5	11.5	14.8
Dissolved Sulfate	mg/L	5.24	4	3.9	11.8	5.15	4.32	6.18	7.35	6.84	3.76	4.69	5.48	5.41	3.83	6.55
Dissolved Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Zinc	ug/L	<RL	<RL	<RL	<RL	8.06	<RL	<RL	8.42	5.16	<RL	<RL	11.8	5.39	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Kjeldahl Nitrogen	mg/L	RPD>20	0.2	0.11	<RL	0.16	0.15	0.11	0.18	<RL	0.14	0.11	0.16	0.17	0.12	0.15
Total Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	No Data
Total Organic Nitrogen	mg/L	RPD>20	0.2	0.11	<RL	0.16	0.15	0.11	0.18	<RL	0.14	0.11	0.16	0.17	0.12	No Data

Sacramento River At Colusa — Field Measurements

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Field Specific Conductance	uS/cm@25 °C	154	144.4	149	190	126	130	143	161	152	125	141	135	124.4	124.5	164
Field Dissolved Oxygen	mg/L	10.1	8.6	10.3	11.7	9.4	9.3	10.9	10.9	8.9	10.1	10.5	10.4	9.93	9.48	9.97
Field pH	pH Units	7.6	8.2	7.7	7.6	7.5	7.9	7.7	7.2	7.4	8.2	8	7.5	7.51	7.59	7.49
Field Water Temperature	°C	15.6	22.9	11.1	9	17	19.9	11.7	9.8	20.1	18.9	11.6	8.5	15.3	18.8	14.2
Field Turbidity	F.N.U.	5.5	3.6	3.9	14.6	21	6.3	4.2	39.1	9.8	4.3	3.8	72.7	15.82	5.95	7

Sacramento River At Colusa — Bacteria Indicators

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Coliform, Total	MPN/100 mL	1612.73	1612.73	1612.73	298.43	1468.3	1612.73	117.53	1179.47	560.6	464.93	1612.73	1612.73	1468.3	1617.53	307.53
E. coli	MPN/100 mL	6.07	4.67	20.17	8.5	26.27	7.3	6.33	29.57	6.87	3.87	13.13	51.77	24.23	7.4	12.2

A0297200 — Butte Slu Near Meridian

Butte Slu Near Meridian — Water Chemistry

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Alkalinity	mg/L as CaCO ₃	126	148	146	124	57	128	136	86.3	72.5	111	123	58.1	86.3	123	130
Dissolved Aluminum	ug/L	<RL	<RL	<RL	46.1	28.7	<RL	<RL	162	30.6	<RL	<RL	154	20	15.4	<RL
Total Aluminum	ug/L	800	459	384	1410	634	332	241	1580	768	502	383	1580	863	507	320
Dissolved Ammonia	mg/L as N	0.11	<RL	<RL	<RL	0.05	<RL	<RL	0.06	0.09	<RL	<RL	<RL	0.07	<RL	<RL
Dissolved Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Arsenic	ug/L	4.5	8.91	8.96	2.61	2.44	3.97	4.7	1.73	2.37	2.73	3.62	1.13	3.18	3.03	3.97
Total Arsenic	ug/L	5.6	10.2	11	3.71	3.18	4.54	5.82	2.63	3.18	3.02	4.28	1.6	3.74	3.37	4.74
Dissolved Barium	ug/L	54	56.1	59.5	50.3	23.1	56.8	48.9	42.4	31.2	50.6	44.2	22.2	35.3	57.4	52.1
Total Barium	ug/L	62	76	60.7	67.6	32.6	64.2	61.2	56.5	41.8	58.8	50.7	37	43	63.3	57.7
Dissolved Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Boron	mg/L	<RL	<RL	0.11	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Calcium	mg/L	24	27.7	26	19.2	9.76	20.7	21.8	14.3	12.5	18.8	20.3	12.1	16.6	20.4	22
Dissolved Chloride	mg/L	24	14	35	8.08	2.54	3.51	11.6	4.32	4.74	2.61	9.23	2.53	9.26	3.29	7.67
Dissolved Chromium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Chromium	ug/L	2.4	1.71	1.15	3.61	1.98	1.08	<RL	4.17	2.3	1.6	1.18	4.54	2.37	1.57	1.13
Specific Conductance	uS/cm@25 °C	333	335	433	281	124	268	307	192	163	227	279	136	208	250	287
Dissolved Copper	ug/L	1.4	1.12	<RL	2.33	1.01	1.38	<RL	3.21	<RL	1.38	1.05	2.07	1.43	1.31	1.72
Total Copper	ug/L	3	1.95	1.63	5.25	2.41	2.2	1.59	6.44	3.56	2.69	1.78	5.92	3.25	2.51	2.43
Dissolved Hardness	mg/L as CaCO ₃	120	140	135	101	47	107	116	74	62	96	106	53	81	103	114
Dissolved Iron	ug/L	25	<RL	72.1	115	67.5	B>RL	341	B>RL	63.3	56.5	267	145	47	85.3	590
Total Iron	ug/L	1200	446	727	2060	1080	602	1050	2480	1330	B>RL	1030	2170	1180	872	1470
Dissolved Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	1.1	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Magnesium	mg/L	14.6	17.1	17.1	12.8	5.55	13.4	15	9.28	7.38	11.9	13.5	5.47	9.51	12.7	14.3
Dissolved Manganese	ug/L	330	64.2	26.4	50.5	69.9	26.5	129	24.1	159	23.1	70.8	8.02	157	31.9	117
Total Manganese	ug/L	450	274	72	98.4	126	63.1	161	53.5	239	74.8	110	52.9	217	74.3	157
Dissolved Nickel	ug/L	2.1	1.41	1.5	2.91	1.26	1.92	2.37	3.33	1.4	1.91	2.38	1.21	1.5	1.87	3.11
Total Nickel	ug/L	4.4	2.49	2.61	5.99	3.31	3.14	3.25	6.47	4.51	3.42	3.4	5.86	3.7	3.47	4.39
Dissolved Nitrate + Nitrite	mg/L as N	0.08	<RL	<RL	0.07	B>RL	B>RL	B>RL	0.12	0.1	0.06	<RL	0.17	0.11	<RL	0.06

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Organic Carbon	mg/L as C	B>RL	3.5	6.2	5.5	2.6	B>RL	B>RL	6.1	B>RL	3.4	5.9	1.7	2.4	3.6	7.2
Total Organic Carbon	mg/L as C	B>RL	3.4	5.9	B>RL	2.5	5.3	6.8	5.9	3	2.4	5.8	1.6	2.6	4.4	7.8
Dissolved ortho-Phosphate	mg/L as P	0.07	0.14	0.07	0.06	0.07	0.09	0.11	0.07	0.06	0.06	0.07	<RL	0.06	0.08	0.12
Total Phosphorus	mg/L as P	0.11	0.17	0.12	0.11	0.09	0.09	0.17	0.15	0.11	0.07	0.13	0.07	0.09	0.08	0.2
Dissolved Potassium	mg/L	1.87	1.68	2.82	2.26	0.88	1.39	2.86	2.26	1.02	1.36	2.97	1.26	1.44	1.2	3.56
Dissolved Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Sodium	mg/L	18.6	17	32.6	12.2	4.68	8.66	16.6	9.34	7.35	8.66	14.5	6.36	11.9	10.2	13.7
Total Dissolved Solids	mg/L	192	188	241	165	84	161	184	129	105	145	170	92	130	155	179
Total Suspended Solids	mg/L	21.3	10.9	12.6	26	24.5	19.5	12	30.2	18.7	21.7	15.2	42.1	29.1	20.7	17
Dissolved Sulfate	mg/L	6.9	5.74	14.1	7.62	2.55	4.77	6.74	4.47	3.07	4.45	7.02	5.49	6.32	4.41	6.56
Dissolved Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Zinc	ug/L	<RL	<RL	<RL	5.85	<RL	<RL	<RL	7.41	5.03	<RL	<RL	8.85	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Kjeldahl Nitrogen	mg/L	0.58	0.38	0.43	0.63	0.29	0.41	0.51	0.59	0.43	0.36	0.52	0.18	0.43	0.37	0.63
Total Ammonia	mg/L as N	0.11	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	No Data
Total Organic Nitrogen	mg/L	0.47	0.38	0.43	0.63	0.29	0.41	0.51	0.59	0.43	0.36	0.52	0.18	0.43	0.37	No Data

Butte Slu Near Meridian — Field Measurements

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Field Specific Conductance	uS/cm@25 °C	328	332.5	417	263	123	263	297	188	165	227	274	133	210.5	254.4	285
Field Dissolved Oxygen	mg/L	7.8	8.3	7.9	9.4	6.6	4.9	6.8	7	5.8	6.2	7.5	9.9	6.92	5.24	5.34
Field pH	pH Units	7	7.7	6.9	7.1	7.1	7.3	7	6.9	7.1	7.1	7.4	7.5	7.24	7.12	6.99
Field Water Temperature	°C	16.8	25.8	11.4	9.3	20.4	25.7	13.4	11.3	23.1	23.8	12.2	8.2	18.9	25.2	16.2
Field Turbidity	F.N.U.	15.1	8.6	9.7	32.8	18	12.7	10.5	45.9	15.7	18.5	9	51.2	27.29	24.67	10

Butte Slu Near Meridian — Bacteria Indicators

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Coliform, Total	MPN/100 mL	2419.6	1769.75	2419.6	2419.6	2419.6	2419.6	2419.6	2419.6	2419.6	2419.6	2419.6	2419.6	2419.6	2419.6	2419.6
E. coli	MPN/100 mL	284.45	3.1	194.7	59.8	151.6	56.4	107.1	36.65	38.85	49.75	583.45	79.6	45.4	60.65	691.6

A0292700 — Sutter Bypass At RD-1500

Sutter Bypass At RD-1500 — Water Chemistry

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Alkalinity	mg/L as CaCO ₃	163	162	216	156	207	142	138	75.2	88	129	133	59.5	142	141	139
Dissolved Aluminum	ug/L	<RL	<RL	<RL	30	11.1	<RL	11.6	80.4	29	<RL	14	135	11	<RL	<RL
Total Aluminum	ug/L	140	21.3	57.4	1220	1550	420	329	1020	576	395	945	1990	974	355	537
Dissolved Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	0.05
Dissolved Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Arsenic	ug/L	6.6	7.27	5.68	3.29	8.2	5.24	3.1	1.13	3.11	3.58	3.04	1.01	3.47	4.15	3.78
Total Arsenic	ug/L	7	8.3	5.79	4.7	9.08	6.19	4.04	2.02	3.96	3.98	3.86	1.62	4.11	4.5	4.77
Dissolved Barium	ug/L	55	56.6	98.9	58	71.1	58.3	51.6	27.1	38.7	52.4	51.3	22.9	56.8	56.1	50.4
Total Barium	ug/L	58	62.5	93.3	71.9	101	63.2	62.1	42.1	48.8	60.5	63.4	42.4	69.1	58.6	57.4
Dissolved Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Boron	mg/L	<RL	0.2	0.29	<RL	0.17	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Calcium	mg/L	27.9	29.9	41.1	24.1	34.8	22.9	23.2	11.4	14.9	21.2	21.3	12.3	24.3	23.1	22.9
Dissolved Chloride	mg/L	24	48	106	14.5	55.8	6.22	13.2	3.52	7.97	5.55	10.6	2.64	18.9	7.02	10.2
Dissolved Chromium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Chromium	ug/L	<RL	<RL	<RL	3.22	4.81	1.28	1.08	3.19	1.72	1.36	2.58	5.58	2.53	1.02	1.7
Specific Conductance	uS/cm@25 °C	391	492	803	366	637	301	317	177	208	274	303	138	340	296	306
Dissolved Copper	ug/L	1.9	<RL	<RL	2.04	2.5	1.13	1.55	2	1.59	1.06	1.79	2.07	2.3	1.15	1.41
Total Copper	ug/L	2.3	<RL	<RL	4.69	5.98	2.34	2.65	4.37	3.61	2.2	4.1	6.73	4.85	2.07	3.24
Dissolved Hardness	mg/L as CaCO ₃	148	151	215	131	191	121	125	54	77	113	115	54	127	120	121
Dissolved Iron	ug/L	<RL	10.4	14.4	59.1	11.8	B>RL	175	B>RL	45.4	28.6	148	135	18.4	31	243
Total Iron	ug/L	250	40.1	79.1	1810	2390	805	848	1550	1080	B>RL	1610	2760	1400	605	1250
Dissolved Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Magnesium	mg/L	18.9	18.6	27.4	17.3	25.3	15.6	16.3	6.25	9.6	14.5	15	5.58	16.2	15.2	15.6
Dissolved Manganese	ug/L	80	62.8	9.89	71.3	23.4	106	55.6	18.8	96.9	66.6	66.3	8.05	33.3	52.5	64.1
Total Manganese	ug/L	100	70	13.6	131	282	162	110	50	202	113	190	71	249	99.7	186
Dissolved Nickel	ug/L	<RL	<RL	1.02	2.79	2.54	1.64	2.38	1.65	1.61	1.46	2.73	1.18	1.86	1.48	2.65
Total Nickel	ug/L	<RL	1.05	1.21	5.77	8.42	3.23	3.49	4.94	4.07	2.92	5.58	7.3	4.77	2.61	4.78
Dissolved Nitrate + Nitrite	mg/L as N	<RL	<RL	<RL	0.13	B>RL	B>RL	B>RL	0.18	0.07	<RL	<RL	0.2	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Organic Carbon	mg/L as C	B>RL	3.2	5	5.4	4.3	B>RL	B>RL	3.2	B>RL	3.4	5.8	1.8	3.4	3.5	6.1
Total Organic Carbon	mg/L as C	B>RL	3.2	5.5	B>RL	3.9	5.3	6.8	3.4	3.6	3.3	5.6	3.5	3.1	3.4	5.9
Dissolved ortho-Phosphate	mg/L as P	0.11	0.12	0.09	0.08	0.17	0.1	0.08	<RL	0.07	0.07	0.1	<RL	0.07	0.09	0.11
Total Phosphorus	mg/L as P	0.12	0.11	0.09	0.15	0.26	0.12	0.18	0.1	0.12	0.09	0.15	0.08	0.12	0.1	0.16
Dissolved Potassium	mg/L	1.36	0.63	4.32	2.37	1.34	1.28	3.73	1.29	1.18	1.25	3.94	1.34	1.89	1.09	4.11
Dissolved Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Sodium	mg/L	22.9	44.9	76.1	16.4	51.7	10.8	17.2	6.47	10.8	11.8	15	6.44	20.3	13.6	15.4
Total Dissolved Solids	mg/L	216	270	434	207	363	179	190	93	126	167	183	93	199	177	188
Total Suspended Solids	mg/L	3.5	<RL	<RL	30	61.2	20	17	25.4	31.4	16.9	33.3	57.8	35.6	15.7	28.1
Dissolved Sulfate	mg/L	5.7	4.2	8.7	10.8	23	5.65	6.27	5.35	5.4	5.54	7.38	5.7	8.24	5.37	5.6
Dissolved Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Zinc	ug/L	<RL	<RL	<RL	5.75	7.9	<RL	<RL	5.04	<RL	<RL	<RL	11.4	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Kjeldahl Nitrogen	mg/L	0.31	0.26	0.25	0.64	0.72	0.43	0.46	0.3	0.43	0.38	0.61	0.19	0.77	0.37	0.6
Total Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	No Data
Total Organic Nitrogen	mg/L	0.31	0.26	0.25	0.64	0.72	0.43	0.46	0.3	0.43	0.38	0.61	0.19	0.77	0.37	No Data

Sutter Bypass At RD-1500 — Field Measurements

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Field Specific Conductance	uS/cm@25 °C	381	484.3	767	341	613	263	306	173	208	273	297	136	338.3	300.5	302
Field Dissolved Oxygen	mg/L	5.5	2.49	7.1	8.7	7.4	2.9	5.9	8.5	4.8	4.1	7.2	10	5.93	4.83	6.02
Field pH	pH Units	7	4.99	7.1	7.3	7.8	7.3	7	7.1	7.1	7.2	7.5	7.5	7.45	7.23	7.18
Field Water Temperature	°C	16.4	23	11.5	9.3	23.8	27	13.2	11.1	22.8	24.7	12.2	8.6	20.8	25.7	16.4
Field Turbidity	F.N.U.	8.3	1.89	0.8	30.1	38.3	12.7	9.9	34.2	22.8	11.3	24.3	65.8	31.05	14.43	15.2

Sutter Bypass At RD-1500 — Bacteria Indicators

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Coliform, Total	MPN/100 mL	2419.6	2419.6	2419.6	2419.6	2419.6	2419.6	2419.6	2419.6	2419.6	2419.6	2419.6	2419.6	2419.6	2419.6	2419.6
E. coli	MPN/100 mL	36.9	24.6	248.1	14.5	60.2	21.3	63.1	34.1	23.1	33.2	82	86	123.6	16.1	73.3

A0223002 — Sacramento River Above Colusa Basin Drain

Sacramento River Above Colusa Basin Drain — Water Chemistry

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Alkalinity	mg/L as CaCO ₃	69.8	64.3	70.1	81.7	57.8	62.9	65.2	70.8	63.7	62.1	64.9	60.4	56.9	59.5	75
Dissolved Aluminum	ug/L	<RL	<RL	<RL	13.5	31	24	20.3	78.3	13.8	11.5	12.1	146	50.5	44.9	40.2
Total Aluminum	ug/L	560	477	180	781	887	294	199	1690	802	214	193	2320	1280	307	337
Dissolved Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Arsenic	ug/L	2.4	2.3	2.46	1.89	1.76	2.12	1.79	1.4	1.62	1.51	1.63	1.24	1.5	1.45	1.97
Total Arsenic	ug/L	2.3	2.57	2.7	2.29	2.22	2.22	1.95	1.89	2.04	1.79	1.69	1.8	1.66	1.56	2.22
Dissolved Barium	ug/L	20	16.2	18.4	29.7	19.9	20	20	27.4	23.3	18.1	18.6	22.7	18.8	17.5	25.2
Total Barium	ug/L	25	21.7	20.7	38.3	31.7	22	23.3	41.9	32.3	20.1	20.5	45.2	29.1	19.7	28.3
Dissolved Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Boron	mg/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Calcium	mg/L	12.9	11.3	11.7	15.8	11.3	12.1	12.2	14.2	12.6	11.1	11.7	12.5	11	11	15.1
Dissolved Chloride	mg/L	4.3	3.72	4.12	6.21	2.81	3.02	3.74	4.04	2.84	2.32	3.17	2.87	2.48	2.01	5.45
Dissolved Chromium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	1.02	<RL	<RL	<RL
Total Chromium	ug/L	1.7	1.75	<RL	2.42	2.89	1.06	<RL	5.11	2.51	1.08	1.08	6.27	2.92	<RL	1.06
Specific Conductance	uS/cm@25 °C	161	148	159	206	133	143	148	172	146	134	145	144	128	127	177
Dissolved Copper	ug/L	1.9	1.32	<RL	1.38	1.84	1.34	1.1	1.88	1.42	1.14	1.09	2.04	2.12	1.16	1.16
Total Copper	ug/L	5.5	2.38	1.28	3.54	4.79	2.31	1.7	6.38	4.95	1.95	1.58	7.61	4.9	1.86	2.32
Dissolved Hardness	mg/L as CaCO ₃	59	54	55	72	49	53	56	65	55	50	55	55	48	48	70
Dissolved Iron	ug/L	20	17.9	11.9	28.1	33.3	B>RL	27.9	B>RL	19.9	14.1	25.1	140	51.8	45.8	94.5
Total Iron	ug/L	710	430	217	1060	1360	398	284	2390	1260	B>RL	259	3160	1460	374	531
Dissolved Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	1.11	<RL	<RL	<RL
Dissolved Magnesium	mg/L	6.41	6.25	6.14	7.87	5.05	5.64	6.2	7.1	5.77	5.3	6.16	5.79	5.02	5.08	7.85
Dissolved Manganese	ug/L	<RL	<RL	<RL	5.1	<RL	<RL	<RL	6.04	23.8	<RL	<RL	<RL	<RL	<RL	7.93
Total Manganese	ug/L	22	17.2	9.5	33.1	36.2	16	11.5	58.9	53.8	12.5	9.52	76.6	35.9	12.8	25.4
Dissolved Nickel	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	1.18	<RL	<RL	<RL	1.19	<RL	<RL	<RL
Total Nickel	ug/L	2.1	1.71	<RL	3.33	4.16	1.6	1.26	7.73	4.27	1.43	1.23	8.38	4.11	1.41	1.98
Dissolved Nitrate + Nitrite	mg/L as N	<RL	<RL	0.1	0.37	B>RL	B>RL	B>RL	0.28	0.1	<RL	0.16	0.2	0.11	0.06	0.25

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Organic Carbon	mg/L as C	B>RL	2	1.7	1.9	1.4	B>RL	B>RL	1.9	B>RL	1.4	1.4	1.6	1.3	1.5	2.1
Total Organic Carbon	mg/L as C	B>RL	1.5	1.8	B>RL	1.3	2	1.7	1.8	1.6	1.4	1.3	1.6	1.2	1.5	1.8
Dissolved ortho-Phosphate	mg/L as P	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	0.05
Total Phosphorus	mg/L as P	0.04	0.04	0.04	0.06	0.06	0.04	0.05	0.09	0.08	0.03	0.03	0.09	0.06	0.03	0.05
Dissolved Potassium	mg/L	1.57	1.44	1.6	1.39	1.19	1.11	1.22	1.24	1.02	1.13	1.1	1.28	1.12	1.06	1.47
Dissolved Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Sodium	mg/L	8.54	9.17	8.99	8.12	5.92	5.85	7.1	8.13	6.45	6.14	6.6	7.16	6.21	5.7	8.61
Total Dissolved Solids	mg/L	102	92	95	123	91	94	96	107	94	86	95	99	90	84	113
Total Suspended Solids	mg/L	21.3	11.8	6	26.2	45.5	12.9	9.5	61.2	57	9.8	6.6	75	39.3	10.6	16.3
Dissolved Sulfate	mg/L	5.3	4.1	3.84	10.2	5.41	4.85	4.98	8.31	6.25	4.17	4.63	6.23	5.65	3.8	6.57
Dissolved Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Zinc	ug/L	<RL	<RL	<RL	<RL	7.52	<RL	<RL	8.38	6.63	<RL	<RL	14.6	6.82	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Kjeldahl Nitrogen	mg/L	0.2	0.14	<RL	0.2	0.16	0.1	0.1	0.2	0.18	<RL	<RL	0.18	0.16	0.14	0.21
Total Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	No Data
Total Organic Nitrogen	mg/L	0.2	0.14	<RL	0.2	0.16	0.1	0.1	0.2	0.18	<RL	<RL	0.18	0.16	0.14	No Data

Sacramento River Above Colusa Basin Drain — Field Measurements

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Field Specific Conductance	uS/cm@25 °C	157	146.4	151	193	131	140	143	168	146	132	142	141	126	127.4	175
Field Dissolved Oxygen	mg/L	9.8	8.28	10.6	11.5	9.1	8.8	10.7	10.9	8.7	9.6	10.5	10.3	9.56	9.12	9.53
Field pH	pH Units	7.5	8.12	7.3	7.2	7.7	7.8	7.6	7.6	7.7	7.8	8	7.6	7.67	7.73	7.55
Field Water Temperature	°C	16.5	24.7	11.5	9.7	18.4	21.9	11.9	10.1	21	20.5	11.8	8.6	17.1	20.4	14.8
Field Turbidity	F.N.U.	8.1	5.19	2.7	18.9	18.3	6.5	4.3	42.1	15.2	4.9	3.7	64.1	22.17	5.39	8.4

Sacramento River Above Colusa Basin Drain — Bacteria Indicators

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Coliform, Total	MPN/100 mL	2419.6	2419.6	2419.6	648.8	1986.3	2419.6	216.25	2419.6	920.8	1553.1	2419.6	2419.6	1986.3	2419.6	461.1
E. coli	MPN/100 mL	5.2	1	36.8	13.4	42.8	48.9	23.75	34.1	8.4	10.7	34.5	93.3	50.4	14.8	6.3

A0294710 — Colusa Basin Drain Near Knights Landing

Colusa Basin Drain Near Knights Landing — Water Chemistry

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Alkalinity	mg/L as CaCO ₃	Access	Dry	Dry	231	184	255	192	123	Dry	243	191	Dry	Dry	242	220
Dissolved Aluminum	ug/L	Access	Dry	Dry	14.8	11.7	<RL	34.5	233	Dry	<RL	<RL	Dry	Dry	<RL	<RL
Total Aluminum	ug/L	Access	Dry	Dry	1910	1240	1560	334	2080	Dry	1750	1440	Dry	Dry	1700	920
Dissolved Ammonia	mg/L as N	Access	Dry	Dry	<RL	0.08	<RL	No Data	0.07	Dry	<RL	0.17	Dry	Dry	<RL	0.09
Dissolved Antimony	ug/L	Access	Dry	Dry	<RL	<RL	<RL	<RL	<RL	Dry	<RL	<RL	Dry	Dry	<RL	<RL
Total Antimony	ug/L	Access	Dry	Dry	<RL	<RL	<RL	<RL	<RL	Dry	<RL	<RL	Dry	Dry	<RL	<RL
Dissolved Arsenic	ug/L	Access	Dry	Dry	2.09	3.92	5.09	2.57	2.16	Dry	3.82	3.36	Dry	Dry	3.71	4.51
Total Arsenic	ug/L	Access	Dry	Dry	2.91	4.66	6.19	3.13	2.74	Dry	4.05	3.88	Dry	Dry	4.29	5.14
Dissolved Barium	ug/L	Access	Dry	Dry	99.4	70.3	88.7	81.6	61.6	Dry	87	80.2	Dry	Dry	91.1	90.5
Total Barium	ug/L	Access	Dry	Dry	119	97	113	101	83.1	Dry	110	102	Dry	Dry	110	104
Dissolved Beryllium	ug/L	Access	Dry	Dry	<RL	<RL	<RL	<RL	<RL	Dry	<RL	<RL	Dry	Dry	<RL	<RL
Total Beryllium	ug/L	Access	Dry	Dry	<RL	<RL	<RL	<RL	<RL	Dry	<RL	<RL	Dry	Dry	<RL	<RL
Dissolved Boron	mg/L	Access	Dry	Dry	0.33	0.35	0.34	0.21	0.14	Dry	0.29	0.19	Dry	Dry	0.28	0.23
Dissolved Cadmium	ug/L	Access	Dry	Dry	<RL	<RL	<RL	<RL	<RL	Dry	<RL	<RL	Dry	Dry	<RL	<RL
Total Cadmium	ug/L	Access	Dry	Dry	<RL	<RL	<RL	<RL	<RL	Dry	<RL	<RL	Dry	Dry	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Calcium	mg/L	Access	Dry	Dry	43	27.2	36.6	31.7	19.7	Dry	35.1	31.7	Dry	Dry	34.2	35.1
Dissolved Chloride	mg/L	Access	Dry	Dry	34.7	20.3	17.8	20	11.3	Dry	14.9	22.1	Dry	Dry	15.4	24.5
Dissolved Chromium	ug/L	Access	Dry	Dry	<RL	<RL	<RL	<RL	1.04	Dry	<RL	<RL	Dry	Dry	<RL	<RL
Total Chromium	ug/L	Access	Dry	Dry	6.22	4.28	5.03	1.18	5.82	Dry	5.9	4.4	Dry	Dry	5.18	3.13
Specific Conductance	uS/cm@25 °C	Access	Dry	Dry	904	512	601	524	328	Dry	552	555	Dry	Dry	545	602
Dissolved Copper	ug/L	Access	Dry	Dry	2.26	1.93	1.26	1.81	3.29	Dry	1.15	2.35	Dry	Dry	1.19	1.8
Total Copper	ug/L	Access	Dry	Dry	5.67	3.91	4.46	2.52	6.05	Dry	4.94	5.29	Dry	Dry	4.64	4.08
Dissolved Hardness	mg/L as CaCO ₃	Access	Dry	Dry	240	147	200	172	100	Dry	191	172	Dry	Dry	183	193
Dissolved Iron	ug/L	Access	Dry	Dry	24	21.5	B>RL	84.8	B>RL	Dry	23.2	166	Dry	Dry	27.1	259
Total Iron	ug/L	Access	Dry	Dry	2640	1830	2410	658	2810	Dry	B>RL	2380	Dry	Dry	2660	1880
Dissolved Lead	ug/L	Access	Dry	Dry	<RL	<RL	<RL	<RL	<RL	Dry	<RL	<RL	Dry	Dry	<RL	<RL
Total Lead	ug/L	Access	Dry	Dry	<RL	<RL	<RL	<RL	<RL	Dry	<RL	<RL	Dry	Dry	<RL	<RL
Dissolved Magnesium	mg/L	Access	Dry	Dry	32.1	19.2	26.3	22.5	12.3	Dry	25.2	22.6	Dry	Dry	23.7	25.6
Dissolved Manganese	ug/L	Access	Dry	Dry	119	88.2	63.4	47.5	12.5	Dry	45.8	72.5	Dry	Dry	44.9	91.8
Total Manganese	ug/L	Access	Dry	Dry	212	267	181	180	65.1	Dry	169	192	Dry	Dry	165	209
Dissolved Nickel	ug/L	Access	Dry	Dry	3.75	2.94	2.45	2.59	3.56	Dry	2.05	3.25	Dry	Dry	1.95	2.98
Total Nickel	ug/L	Access	Dry	Dry	11.5	8.77	10.6	4.26	9.91	Dry	10.4	8.83	Dry	Dry	9.47	7.5
Dissolved Nitrate + Nitrite	mg/L as N	Access	Dry	Dry	0.33	B>RL	B>RL	No Data	0.39	Dry	0.06	0.12	Dry	Dry	0.07	0.12

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Organic Carbon	mg/L as C	Access	Dry	Dry	6.9	6.1	B>RL	B>RL	7.6	Dry	5	9.2	Dry	Dry	4.9	9.7
Total Organic Carbon	mg/L as C	Access	Dry	Dry	B>RL	6.1	7.9	7.7	7.1	Dry	5.1	9.3	Dry	Dry	4.8	9.7
Dissolved ortho-Phosphate	mg/L as P	Access	Dry	Dry	0.14	0.12	0.14	No Data	0.14	Dry	0.13	0.15	Dry	Dry	0.14	0.22
Total Phosphorus	mg/L as P	Access	Dry	Dry	0.17	0.2	0.21	0.15	0.24	Dry	0.2	0.25	Dry	Dry	0.19	0.3
Dissolved Potassium	mg/L	Access	Dry	Dry	2.6	2.09	1.15	4.13	3.49	Dry	1.23	5.27	Dry	Dry	0.85	5.46
Dissolved Selenium	ug/L	Access	Dry	Dry	<RL	<RL	<RL	<RL	<RL	Dry	<RL	<RL	Dry	Dry	<RL	<RL
Total Selenium	ug/L	Access	Dry	Dry	<RL	<RL	<RL	<RL	<RL	Dry	<RL	<RL	Dry	Dry	<RL	<RL
Dissolved Silver	ug/L	Access	Dry	Dry	<RL	<RL	<RL	<RL	<RL	Dry	<RL	<RL	Dry	Dry	<RL	<RL
Total Silver	ug/L	Access	Dry	Dry	<RL	<RL	<RL	<RL	<RL	Dry	<RL	<RL	Dry	Dry	<RL	<RL
Dissolved Sodium	mg/L	Access	Dry	Dry	91.1	50.6	51.7	45.7	28	Dry	50.8	46.7	Dry	Dry	47.2	55.9
Total Dissolved Solids	mg/L	Access	Dry	Dry	542	311	363	318	203	Dry	330	341	Dry	Dry	329	380
Total Suspended Solids	mg/L	Access	Dry	Dry	45.3	37.1	60	15.1	24.4	Dry	61.5	49.1	Dry	Dry	64.8	40.3
Dissolved Sulfate	mg/L	Access	Dry	Dry	169	45.4	38.1	48.9	23.5	Dry	32.2	64.9	Dry	Dry	31.2	62.8
Dissolved Zinc	ug/L	Access	Dry	Dry	<RL	<RL	<RL	<RL	<RL	Dry	<RL	<RL	Dry	Dry	<RL	<RL
Total Zinc	ug/L	Access	Dry	Dry	7.34	6.79	6.96	<RL	8.84	Dry	7.96	5.89	Dry	Dry	7.29	5.93

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Kjeldahl Nitrogen	mg/L	Access	Dry	Dry	0.9	0.83	0.71	0.88	0.79	Dry	0.64	1.4	Dry	Dry	0.54	0.97
Total Ammonia	mg/L as N	Access	Dry	Dry	<RL	<RL	<RL	<RL	<RL	Dry	<RL	0.15	Dry	Dry	<RL	No Data
Total Organic Nitrogen	mg/L	Access	Dry	Dry	0.9	0.83	0.71	0.88	0.79	Dry	0.64	1.2	Dry	Dry	0.54	No Data

Colusa Basin Drain Near Knights Landing — Field Measurements

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Field Specific Conductance	uS/cm@25 °C	Access	Dry	Dry	847	503	595	518	322	Dry	552	547	Dry	Dry	556	594
Field Dissolved Oxygen	mg/L	Access	Dry	Dry	10.2	4	4.5	7.6	7.4	Dry	5.2	6.6	Dry	Dry	4.87	5.1
Field pH	pH Units	Access	Dry	Dry	7.8	7.5	7.5	7.4	7.4	Dry	7.5	7.6	Dry	Dry	7.53	7.38
Field Water Temperature	°C	Access	Dry	Dry	9.4	23	27.5	13.6	11.4	Dry	24.7	12.2	Dry	Dry	25.7	16.3
Field Turbidity	F.N.U.	Access	Dry	Dry	42	34.1	37.1	10.2	57.5	Dry	33.3	27.8	Dry	Dry	36.07	23.9

Colusa Basin Drain Near Knights Landing — Bacteria Indicators

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Coliform, Total	MPN/100 mL	Access	Dry	Dry	2419.6	2419.6	2419.6	1986.3	2419.6	Dry	2419.6	816.4	Dry	Dry	2419.6	2419.6
E. coli	MPN/100 mL	Access	Dry	Dry	13.4	25.6	14.8	298.7	58.3	Dry	47.9	8.5	Dry	Dry	36.9	156.5

A0219501 — Sacramento River Below Knights Landing

Sacramento River Below Knights Landing — Water Chemistry

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Alkalinity	mg/L as CaCO ₃	69.5	65.5	69.6	85.5	58.1	80.1	Access	71.1	63.4	74.5	73.8	59.8	56.1	74.2	90.2
Dissolved Aluminum	ug/L	<RL	<RL	<RL	12.2	32	20.2	Access	34	15.1	10.8	20.8	137	55	35.3	37.1
Total Aluminum	ug/L	550	314	160	973	619	364	Access	1790	477	364	302	2150	1410	326	584
Dissolved Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Arsenic	ug/L	2.3	2.25	2.57	1.92	1.65	2.44	Access	1.38	1.61	1.72	1.82	1.18	1.52	1.61	2.27
Total Arsenic	ug/L	2.6	2.39	2.71	2.3	2.12	2.69	Access	1.88	1.95	1.94	1.98	1.68	1.75	1.78	2.4
Dissolved Barium	ug/L	20	16.8	18.5	31.7	19.7	26.2	Access	26.8	22.3	23	21.7	22.9	19	23.7	31.9
Total Barium	ug/L	25	21.3	19.1	41.5	29.3	29.5	Access	43.1	27.9	27.1	25.9	43.2	31.6	25.3	38.1
Dissolved Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Boron	mg/L	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Calcium	mg/L	12.9	11	12	16.6	10.8	13.9	Access	14.2	12.5	12.9	12.9	12.5	11	13	16.2
Dissolved Chloride	mg/L	4.4	3.5	4.22	7	2.75	4.22	Access	4.07	2.52	3.12	4.22	2.88	2.67	2.89	7.32
Dissolved Chromium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	1.03	<RL	<RL	<RL
Total Chromium	ug/L	1.6	1.45	<RL	3.09	2.16	1.34	Access	5.43	1.59	1.47	1.13	5.85	3.26	1.09	1.77
Specific Conductance	uS/cm@25 °C	162	148	160	225	134	183	Access	172	145	168	175	142	129	161	223
Dissolved Copper	ug/L	1.4	1.36	<RL	1.37	1.75	1.31	Access	1.8	1.51	1.21	1.1	2	1.95	1.19	1.25
Total Copper	ug/L	3.1	2.06	1.28	4.26	3.77	2.51	Access	6.65	3.66	2.35	1.94	7.12	5.36	1.85	3.05
Dissolved Hardness	mg/L as CaCO ₃	59	52	56	76	47	65	Access	65	55	60	62	55	48	60	78
Dissolved Iron	ug/L	22	14.8	12.6	26.1	35.9	B>RL	Access	B>RL	20.5	17.9	38.6	135	56.9	41.1	110
Total Iron	ug/L	730	285	210	1390	960	524	Access	2590	762	B>RL	431	2920	1640	422	936
Dissolved Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Magnesium	mg/L	6.44	6.03	6.25	8.5	4.88	7.36	Access	7.08	5.71	6.76	7.12	5.81	5.08	6.61	9.09
Dissolved Manganese	ug/L	<RL	<RL	<RL	8.03	<RL	6.94	Access	<RL	10.2	5.27	6.38	<RL	<RL	5.1	17
Total Manganese	ug/L	23	12.8	9.76	44.6	25.8	28.8	Access	62.1	33	23.8	21.8	70.8	41.9	19.4	51.3
Dissolved Nickel	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	1.11	<RL	<RL	1.15
Total Nickel	ug/L	2.2	1.25	<RL	4.32	3.03	2.3	Access	8.44	2.74	2.24	1.9	7.73	4.54	1.68	3.34
Dissolved Nitrate + Nitrite	mg/L as N	<RL	<RL	0.09	0.37	B>RL	B>RL	Access	0.28	0.1	0.05	0.18	0.2	0.1	0.07	0.23

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Organic Carbon	mg/L as C	B>RL	1.6	1.6	1.8	1.5	B>RL	Access	2	B>RL	1.7	1.9	1.7	1.2	2.6	2.6
Total Organic Carbon	mg/L as C	B>RL	1.5	1.4	B>RL	1.4	2.2	Access	1.8	1.5	1.8	1.9	1.6	1.3	1.7	2.4
Dissolved ortho-Phosphate	mg/L as P	<RL	<RL	<RL	0.05	<RL	0.05	Access	<RL	<RL	0.17	0.05	<RL	<RL	<RL	0.07
Total Phosphorus	mg/L as P	0.05	0.03	0.04	0.07	0.04	0.05	Access	0.09	0.05	0.44	0.04	0.09	0.06	0.04	0.09
Dissolved Potassium	mg/L	1.63	1.42	1.5	1.43	1.09	1.08	Access	1.16	1.09	0.97	1.36	1.29	1	1.19	1.75
Dissolved Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Sodium	mg/L	8.7	8.45	9.29	9.96	5.87	9.52	Access	8.14	6.35	9.42	9.16	7.12	6.29	9.09	12.7
Total Dissolved Solids	mg/L	101	88	72	133	88	117	Access	111	96	107	109	99	90	103	139
Total Suspended Solids	mg/L	22.1	9.3	5.8	37.8	27.1	16.2	Access	72.7	36	15	10.4	67	61.8	11	27.6
Dissolved Sulfate	mg/L	5.33	4.01	3.83	14.2	5.53	7.68	Access	8.28	6.15	6.16	8.32	6.25	5.74	5.46	12
Dissolved Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Zinc	ug/L	<RL	<RL	<RL	5.52	5.25	<RL	Access	9.48	<RL	<RL	<RL	11.6	7.62	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Kjeldahl Nitrogen	mg/L	0.2	0.13	<RL	0.25	0.13	0.21	Access	0.2	0.12	0.13	0.18	0.24	0.31	0.17	0.29
Total Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL	<RL	<RL	<RL	No Data
Total Organic Nitrogen	mg/L	0.2	0.13	<RL	0.25	0.13	0.21	Access	0.2	0.12	0.13	0.18	0.24	0.31	0.17	No Data

Sacramento River Below Knights Landing — Field Measurements

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Field Specific Conductance	uS/cm@25 °C	158	146	151	209	131	179	Access	168	144	167	171	141	127.1	162.4	220
Field Dissolved Oxygen	mg/L	9.8	8.45	10.6	11.4	9.1	8.5	Access	10.9	8.8	93	10.4	10.2	9.49	8.76	9.35
Field pH	pH Units	7.8	8.11	7.4	7.5	7.7	7.7	Access	7.7	7.5	7.9	7.9	7.6	7.61	7.74	7.5
Field Water Temperature	°C	17.2	25	11.8	9.9	18.6	22.8	Access	10.1	20.7	20.8	12.1	8.6	17.4	21	15.1
Field Turbidity	F.N.U.	8.6	3.05	2.8	22.9	23.5	12	Access	55	17.4	8	5.5	65.1	26.26	7.52	12.8

Sacramento River Below Knights Landing — Bacteria Indicators

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Coliform, Total	MPN/100 mL	1011.2	2419.6	2419.6	579.4	2419.6	2419.6	Access	1732.9	579.4	1732.9	2419.6	2419.6	1732.9	2419.6	980.4
E. coli	MPN/100 mL	15.8	1	47.3	16.9	23.1	35.9	Access	30.5	10.9	14.8	11	150	47.3	9.8	37.9

7.4.4 Westside Subregion

A0352050 — Cottonwood Creek at Cottonwood

Cottonwood Creek at Cottonwood — Water Chemistry

Note: This station was relocated to A0350500 — Cottonwood Creek near mouth after August 2023.

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023
Total Alkalinity	mg/L as CaCO ₃	113	134	141	115	77.2	117
Dissolved Aluminum	ug/L	<RL	<RL	<RL	14.3	31.6	<RL
Total Aluminum	ug/L	34	<RL	154	568	2370	74.2
Dissolved Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL
Total Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Arsenic	ug/L	<RL	1.2	<RL	<RL	<RL	1.16
Total Arsenic	ug/L	<RL	1.26	1.19	<RL	1.03	1.33
Dissolved Barium	ug/L	62	62.9	57	47.2	31.7	57.2
Total Barium	ug/L	65	59.8	61.7	52.8	64.5	59.1
Dissolved Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL
Total Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Boron	mg/L	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL
Total Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Calcium	mg/L	25.8	26.3	28	26.7	17.6	21.6
Dissolved Chloride	mg/L	8.3	10.1	18.2	7.98	2.84	7.76
Dissolved Chromium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023
Total Chromium	ug/L	<RL	<RL	<RL	2.06	8.47	<RL
Specific Conductance	uS/cm@25 °C	263	299	343	306	181	266
Dissolved Copper	ug/L	2.9	<RL	<RL	<RL	<RL	<RL
Total Copper	ug/L	2.6	<RL	<RL	1.47	4.75	<RL
Dissolved Hardness	mg/L as CaCO ₃	113	128	142	120	72	104
Dissolved Iron	ug/L	<RL	8.88	20.4	17.8	36.3	16
Total Iron	ug/L	63	9.85	173	677	3480	168
Dissolved Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL
Total Lead	ug/L	<RL	<RL	<RL	<RL	1.12	<RL
Dissolved Magnesium	mg/L	11.7	15.1	17.4	12.9	6.87	12.2
Dissolved Manganese	ug/L	6.6	26.8	8.53	14.3	<RL	35
Total Manganese	ug/L	9.2	26.6	13.5	31.6	89.3	61.5
Dissolved Nickel	ug/L	<RL	1.02	<RL	<RL	<RL	1.15
Total Nickel	ug/L	<RL	<RL	<RL	2.5	10.5	1.52
Dissolved Nitrate + Nitrite	mg/L as N	<RL	<RL	<RL	0.58	B>RL	<RL
Dissolved Organic Carbon	mg/L as C	2.3	B>RL	2.2	2	B>RL	3.2
Total Organic Carbon	mg/L as C	2.3	2.8	2.2	2.5	2.2	3.2
Dissolved ortho-Phosphate	mg/L as P	<RL	<RL	<RL	<RL	<RL	0.06
Total Phosphorus	mg/L as P	<RL	0.02	0.02	0.04	0.09	0.03
Dissolved Potassium	mg/L	0.89	1.33	1.15	0.94	0.77	1.41
Dissolved Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL
Total Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023
Dissolved Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL
Total Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Sodium	mg/L	9.2	10.9	12.4	8.77	4.55	8.21
Total Dissolved Solids	mg/L	141	174	179	166	107	149
Total Suspended Solids	mg/L	<RL	<RL	<RL	15.1	90.4	4.6
Dissolved Sulfate	mg/L	9.41	5.7	7.9	21	8.6	8.2
Dissolved Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL
Total Zinc	ug/L	<RL	<RL	<RL	<RL	8.73	<RL
Total Kjeldahl Nitrogen	mg/L	0.12	0.23	0.11	0.1	0.16	0.23
Total Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL
Total Organic Nitrogen	mg/L	0.12	0.23	0.11	0.1	0.16	0.23

Cottonwood Creek at Cottonwood — Field Measurements

Note: This station was relocated to A0350500 — Cottonwood Creek near mouth after August 2023.

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023
Field Specific Conductance	uS/cm@25 °C	250	295.6	332	291	173	258
Field Dissolved Oxygen	mg/L	10.1	8.59	10.5	12.6	9.3	7.2
Field pH	pH Units	7.8	8.08	7.8	7.9	7.7	7.5
Field Water Temperature	°C	17.4	27	11.6	6.5	17.5	25.1
Field Turbidity	F.N.U.	0.8	0.46	3	10.5	70.2	1.6

Cottonwood Creek at Cottonwood — Bacteria Indicators

Note: This station was relocated to A0350500 — Cottonwood Creek near mouth after August 2023.

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023
Coliform, Total	MPN/100 mL	2419.6	2419.6	2076.25	868.6	2419.6	2419.6
E. coli	MPN/100 mL	113.1	74.05	71.85	17.8	197.2	8.1

A0350500 — Cottonwood Creek Near Mouth

Cottonwood Creek Near Mouth — Water Chemistry

Note: This station was relocated from A0352050 — Cottonwood Creek at Cottonwood after August 2023.

Analyte	Units	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Alkalinity	mg/L as CaCO ₃	118	91.3	112	110	Access	60.7	107	109	119
Dissolved Aluminum	ug/L	<RL	61.5	<RL	<RL	Access	434	<RL	<RL	<RL
Total Aluminum	ug/L	19.1	4490	141	39.6	Access	B>RL	59.7	44.7	156
Dissolved Ammonia	mg/L as N	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL
Dissolved Antimony	ug/L	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL
Total Antimony	ug/L	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL
Dissolved Arsenic	ug/L	<RL	<RL	<RL	1.05	Access	<RL	<RL	<RL	<RL
Total Arsenic	ug/L	<RL	<RL	<RL	<RL	Access	1.44	<RL	<RL	<RL
Dissolved Barium	ug/L	52.5	37.2	46	52.5	Access	29.7	50	54	63.5
Total Barium	ug/L	55.9	83	48.2	52.3	Access	162	53.3	52	67.5
Dissolved Beryllium	ug/L	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL

Analyte	Units	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Beryllium	ug/L	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL
Dissolved Boron	mg/L	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL
Dissolved Cadmium	ug/L	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL
Total Cadmium	ug/L	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL
Dissolved Calcium	mg/L	24.2	21.9	24.7	19.7	Access	13.6	25.1	19.4	26.7
Dissolved Chloride	mg/L	13.6	2.75	4.24	6.07	Access	1.53	5.96	7.2	20.3
Dissolved Chromium	ug/L	<RL	<RL	<RL	<RL	Access	1.89	<RL	<RL	<RL
Total Chromium	ug/L	<RL	11.8	<RL	<RL	Access	30.9	<RL	<RL	<RL
Specific Conductance	uS/cm@25 °C	288	222	260	245	Access	141	247	241	312
Dissolved Copper	ug/L	<RL	1.02	<RL	<RL	Access	1.96	<RL	<RL	<RL
Total Copper	ug/L	<RL	8.84	<RL	<RL	Access	B>RL	<RL	<RL	<RL
Dissolved Hardness	mg/L as CaCO ₃	117	94	109	98	Access	58	107	95	125
Dissolved Iron	ug/L	22.4	80.8	13	32.2	Access	448	16	35.2	39.5
Total Iron	ug/L	71.7	B>RL	210	115	Access	B>RL	117	134	354
Dissolved Lead	ug/L	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL
Total Lead	ug/L	<RL	1.63	<RL	<RL	Access	4.98	<RL	<RL	<RL
Dissolved Magnesium	mg/L	13.7	9.64	11.6	11.9	Access	5.86	10.8	11.2	14.2
Dissolved Manganese	ug/L	16.9	6.98	12.5	32.3	Access	11.6	9.02	28.1	33.2

Analyte	Units	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Manganese	ug/L	22.9	141	20	41.8	Access	365	12.7	35.6	65
Dissolved Nickel	ug/L	<RL	1.22	<RL	1.31	Access	2.48	<RL	1.29	<RL
Total Nickel	ug/L	<RL	16.7	1.35	1.48	Access	43.8	1.01	1.43	1.64
Dissolved Nitrate + Nitrite	mg/L as N	0.2	0.56	0.17	0.17	Access	0.32	0.11	0.1	0.08
Dissolved Organic Carbon	mg/L as C	2.3	2.1	1.1	B>RL	Access	3.1	1.2	2.1	1.4
Total Organic Carbon	mg/L as C	2.4	2	1.1	2.4	Access	3.1	1	2.1	1.7
Dissolved ortho-Phosphate	mg/L as P	<RL	<RL	<RL	0.07	Access	0.05	<RL	<RL	0.08
Total Phosphorus	mg/L as P	0.01	0.15	B>RL	0.03	Access	0.42	0.02	0.03	0.04
Dissolved Potassium	mg/L	1.34	1.11	0.81	1.37	Access	1.1	0.89	1.16	1.41
Dissolved Selenium	ug/L	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL
Total Selenium	ug/L	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL
Dissolved Silver	ug/L	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL
Total Silver	ug/L	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL
Dissolved Sodium	mg/L	11.7	7.22	7.71	9.52	Access	4.2	8.03	9.61	14.1
Total Dissolved Solids	mg/L	165	137	152	152	Access	97	147	148	177

Analyte	Units	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Suspended Solids	mg/L	<RL	147	5.4	<RL	Access	453	3.2	4.2	11.1
Dissolved Sulfate	mg/L	9.01	16.1	15.2	6.82	Access	6.99	11.2	5.49	9.53
Dissolved Zinc	ug/L	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	<RL
Total Zinc	ug/L	<RL	16.2	<RL	<RL	Access	37.6	<RL	<RL	<RL
Total Kjeldahl Nitrogen	mg/L as N	0.13	0.25	<RL	0.26	Access	0.67	<RL	0.19	0.2
Total Ammonia	mg/L as N	<RL	<RL	<RL	<RL	Access	<RL	<RL	<RL	No Data
Total Organic Nitrogen	mg/L	0.13	0.25	<RL	0.26	Access	0.67	<RL	0.19	No Data

Cottonwood Creek Near Mouth — Field Measurements

Note: This station was relocated from A0352050 — Cottonwood Creek at Cottonwood after August 2023.

Analyte	Units	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Field Specific Conductance	uS/cm@25 °C	277	215	255	247	Access	136	243	232	307
Field Dissolved Oxygen	mg/L	9	11.1	10	7	Access	11.8	9.45	6.9	8.47
Field pH	pH Units	7.2	7.8	7.9	7.3	Access	7.7	7.81	6.94	7.34
Field Water Temperature	°C	13.7	8.6	16	23.3	Access	7.9	18	23.2	15.3
Field Turbidity	F.N.U.	1.8	91.4	4	1.6	Access	294.6	2	3.3	4.1

Cottonwood Creek Near Mouth — Bacteria Indicators

Note: This station was relocated from A0352050 — Cottonwood Creek at Cottonwood after August 2023.

Analyte	Units	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Coliform, Total	MPN/100 mL	1553.1	2419.6	1986.35	2419.6	Access	2419.6	2419.6	2419.6	2419.6
E. coli	MPN/100 mL	9.1	138.75	74.85	28.8	Access	387.3	63.95	22.95	923.45

A0354500 — Cottonwood Creek NF At Igo

Cottonwood Creek NF At Igo — Water Chemistry

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Alkalinity	mg/L as CaCO ₃	67.7	85.9	73	54.2	49.2	78.8	74.3	48.4	57.6	74.5	74.2	40.5	Access	78	63.7
Dissolved Aluminum	ug/L	<RL	14.3	11.3	35.1	12.2	<RL	<RL	68.2	<RL	<RL	13.1	344	Access	<RL	40.5
Total Aluminum	ug/L	37	41.9	167	801	126	35.1	25.8	1570	71.3	23.6	156	B>RL	Access	22.6	3880
Dissolved Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL
Dissolved Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL
Total Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL
Dissolved Arsenic	ug/L	<RL	1.44	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL
Total Arsenic	ug/L	<RL	1.58	1.01	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	1.29
Dissolved Barium	ug/L	22	28.6	23.4	19.9	15.4	23.9	20.1	16.8	18.1	23	21.4	15.4	Access	27.4	28.4
Total Barium	ug/L	22	30.4	25.5	25	18.8	24.9	22.3	30	19.2	23	23.3	57.1	Access	26.4	89

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL
Total Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL
Dissolved Boron	mg/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL
Dissolved Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL
Total Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL
Dissolved Calcium	mg/L	16.7	21.9	17.5	12.9	10.9	17.4	15.6	12.3	13	16.7	17	9.65	Access	18.4	19
Dissolved Chloride	mg/L	7.7	24.3	15.4	3.05	1.68	7.61	9.13	1.31	1.84	10.8	10.4	1.04	Access	17.2	17.3
Dissolved Chromium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	1.07	Access	<RL	<RL
Total Chromium	ug/L	<RL	<RL	<RL	1.38	<RL	<RL	<RL	3.3	<RL	<RL	<RL	9.87	Access	<RL	8.7
Specific Conductance	uS/cm@25 °C	178	254	207	149	113	192	182	126	133	186	185	101	Access	213	217
Dissolved Copper	ug/L	5.7	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL
Total Copper	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	2.28	<RL	<RL	<RL	B>RL	Access	<RL	5.41
Dissolved Hardness	mg/L as CaCO ₃	64	80	65	52	41	69	62	49	52	66	68	39	Access	69	74
Dissolved Iron	ug/L	29	75.1	58.5	46.2	27.1	61.6	82.7	63	27.7	41.8	90.9	221	Access	84.8	139
Total Iron	ug/L	77	155	179	642	147	127	139	B>RL	98.4	82.8	266	B>RL	Access	137	4900
Dissolved Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL
Total Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	1.98	Access	<RL	4.61
Dissolved Magnesium	mg/L	5.48	6.25	5.18	4.7	3.4	6.17	5.53	4.53	4.76	5.94	6.12	3.61	Access	5.54	6.43

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Manganese	ug/L	6.4	29	<RL	44.1	5.45	14.9	5.46	7.58	<RL	11.5	6.55	7.6	Access	21.7	5.26
Total Manganese	ug/L	8.7	46.4	10.8	64.4	12.1	22.1	6.96	40	8.47	18.4	13.7	103	Access	25.1	348
Dissolved Nickel	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	1.02	Access	<RL	<RL
Total Nickel	ug/L	<RL	<RL	<RL	1.19	<RL	<RL	<RL	3.52	<RL	<RL	<RL	10.3	Access	<RL	8.21
Dissolved Nitrate + Nitrite	mg/L as N	<RL	<RL	<RL	0.08	B>RL	<RL	<RL	0.14	<RL	<RL	<RL	0.11	Access	<RL	0.11
Dissolved Organic Carbon	mg/L as C	2.2	B>RL	3.2	1.5	B>RL	3.2	2.6	1.7	0.9	B>RL	2.6	2.1	Access	2.3	5.2
Total Organic Carbon	mg/L as C	2	3.3	3.5	1.6	1.3	3.1	2.9	1.5	1	2.4	2.7	2	Access	2.4	8.8
Dissolved ortho-Phosphate	mg/L as P	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL
Total Phosphorus	mg/L as P	0.02	0.03	0.02	0.05	0.02	0.02	<RL	0.04	B>RL	0.02	0.03	0.15	Access	0.02	0.21
Dissolved Potassium	mg/L	1.34	2	2.03	1.13	0.91	1.65	1.6	1.04	1.13	1.52	1.63	1.16	Access	1.48	2.1
Dissolved Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL
Total Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL
Dissolved Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL
Total Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL
Dissolved Sodium	mg/L	8.81	16.7	11.4	4.98	3.58	7.63	9.15	4.66	5.01	9.61	9.71	3.68	Access	11.8	12

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Dissolved Solids	mg/L	103	154	111	96	82	120	112	88	91	117	120	77	Access	134	139
Total Suspended Solids	mg/L	<RL	<RL	<RL	18.4	4	2.6	<RL	47.9	2.9	4.9	4	152	Access	<RL	275
Dissolved Sulfate	mg/L	7.3	3.3	4.1	12.5	5.43	5.41	3.49	11.9	7.03	3.79	3.8	7.32	Access	3.11	15.2
Dissolved Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	<RL
Total Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	5.67	<RL	6.41	<RL	14.9	Access	<RL	18.2
Total Kjeldahl Nitrogen	mg/L	0.13	0.34	0.24	<RL	<RL	0.22	0.11	0.13	<RL	0.2	0.11	0.27	Access	0.13	1.64
Total Ammonia	mg/L as N	<RL	<RL	<RL	0.27	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	Access	<RL	No Data
Total Organic Nitrogen	mg/L	0.13	0.34	0.24	<RL	<RL	0.22	0.11	0.13	<RL	0.2	0.11	0.27	Access	0.13	No Data

Cottonwood Creek NF At Igo — Field Measurements

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Field Specific Conductance	uS/cm@25 °C	168	253.4	200	136	108	188	175	122	130	187	186	98	Access	212	209
Field Dissolved Oxygen	mg/L	10.3	9.1	11.4	13	10	9.3	11.8	11.6	10.3	9.1	11.6	12	Access	10.02	10.3
Field pH	pH Units	8	8.3	7.8	7.8	7.8	8.2	8	7.7	8.1	8.2	8.2	7.7	Access	7.28	8.01
Field Water Temperature	°C	16.9	1.4	10.1	6.6	18.1	24.8	9.3	8.4	15	26.4	10	8.6	Access	23	13.8
Field Turbidity	F.N.U.	0.7	28.4	1.9	12.8	2.8	0.9	1.9	28.4	1.4	0.6	3.7	89	Access	7.4	106

Cottonwood Creek NF At Igo — Bacteria Indicators

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Coliform, Total	MPN/100 mL	2419.6	2419.6	2419.6	410.6	1986.3	2419.6	870.4	1553.1	829.7	2419.6	2419.6	2419.6	Access	2419.6	2419.6
E. coli	MPN/100 mL	165.8	74.3	435.2	7.3	43.5	88.2	601.5	111.2	18.1	82	172.3	83.6	Access	298.7	2419.6

A03601000 — Clear Creek Near Mouth
Clear Creek Near Mouth — Water Chemistry

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Alkalinity	mg/L as CaCO ₃	48.3	49.2	51.9	37.2	37.1	35.8	48.4	36.9	35.4	40.5	44.6	31.7	36.9	40	44.5
Dissolved Aluminum	ug/L	<RL	<RL	<RL	27.4	10.9	<RL	<RL	35.5	<RL	<RL	<RL	124	<RL	<RL	<RL
Total Aluminum	ug/L	32	33.1	60.4	122	53.5	23.8	41.6	183	59	23.3	28.6	B>RL	32.7	18.5	83.5
Dissolved Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Arsenic	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Arsenic	ug/L	<RL	<RL	1.2	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Barium	ug/L	11	10.5	9.22	12.4	13.4	11.9	9.71	11.1	13.9	10.8	8.71	10.2	12.8	11.9	10
Total Barium	ug/L	11	10.9	10.5	14	15.8	12.6	11.3	13	14.2	10.9	9.34	17.5	14	10.9	11
Dissolved Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Boron	mg/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Calcium	mg/L	7.37	7.01	7.39	7.05	7.09	6.54	6.54	7.22	7.38	6.82	6.08	6.21	6.99	6.87	6.17
Dissolved Chloride	mg/L	3.72	3.01	3.13	4.97	3.67	2.33	3.04	3.99	2.63	2.24	2.59	2.09	3.05	2.53	3.68
Dissolved Chromium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Chromium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	2.11	<RL	<RL	<RL
Specific Conductance	uS/cm@25 °C	114	114	118	105	97.9	86.4	109	96.9	88.8	90.8	98.2	76.3	88.8	90.8	101
Dissolved Copper	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Copper	ug/L	<RL	<RL	<RL	1.07	<RL	<RL	<RL	1.11	1.07	<RL	<RL	B>RL	<RL	<RL	<RL
Dissolved Hardness	mg/L as CaCO ₃	47	47	49	35	33	31	43	34	33	37	55	29	32	36	40
Dissolved Iron	ug/L	30	24.7	15.3	55.7	43	28.3	29.7	45.4	38.9	23	27.4	86.2	42	42.7	46.7
Total Iron	ug/L	92	64.1	103	196	106	70.4	105	B>RL	117	59.9	76	B>RL	109	80.4	185
Dissolved Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Magnesium	mg/L	6.9	7.19	7.47	4.26	3.68	3.59	6.38	3.88	3.49	4.93	6.56	3.18	3.55	4.68	6.05
Dissolved Manganese	ug/L	6.2	5.11	8.3	11.6	9.68	6.22	8.92	6.18	6.88	<RL	5.1	<RL	7.24	6.73	8.09

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Manganese	ug/L	9.7	7.49	37.5	14.7	12.1	8.05	19.3	11.5	9.93	6.54	8.88	33.2	9.59	8.31	15.3
Dissolved Nickel	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	1.27	<RL	<RL	1.02	1.97	<RL	<RL	<RL	1.98
Total Nickel	ug/L	<RL	1.03	<RL	<RL	<RL	<RL	1.64	<RL	<RL	1.11	2.13	2.01	<RL	<RL	2.35
Dissolved Nitrate + Nitrite	mg/L as N	<RL	<RL	0.06	0.18	B>RL	<RL	0.08	0.11	<RL	<RL	0.05	0.08	<RL	<RL	0.08
Dissolved Organic Carbon	mg/L as C	1.6	B>RL	1.8	1.6	B>RL	1.5	1.9	1.6	1	B>RL	1.8	1.4	1.1	1.4	1.5
Total Organic Carbon	mg/L as C	1.6	1.7	1.9	1.6	1.6	1.5	1.9	No Data	1.3	1.5	1.8	1.4	1.4	1.3	2
Dissolved ortho-Phosphate	mg/L as P	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Phosphorus	mg/L as P	<RL	<RL	0.09	0.03	0.01	<RL	<RL	0.01	B>RL	<RL	<RL	0.03	0.01	<RL	0.02
Dissolved Potassium	mg/L	0.53	<RL	<RL	0.56	0.59	0.58	0.52	0.63	0.56	0.59	<RL	0.58	<RL	<RL	0.56
Dissolved Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Sodium	mg/L	4.09	3.54	3.5	4.12	4.4	3.02	3.39	5.34	4.4	3.28	2.95	3.6	4.06	3.44	3.24
Total Dissolved Solids	mg/L	65	63	66	61	68	55	66	77	60	55	60	55	62	56	61

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Suspended Solids	mg/L	<RL	<RL	2.7	2.8	<RL	<RL	<RL	5.4	2.9	<RL	<RL	33.6	<RL	<RL	4.9
Dissolved Sulfate	mg/L	3.84	2.7	2.53	4.77	4.63	4.03	2.76	4.64	4.45	3.24	2.24	3.32	4.02	2.92	2.11
Dissolved Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Kjeldahl Nitrogen	mg/L	0.13	0.13	0.11	<RL	0.11	<RL	<RL	<RL	<RL	<RL	<RL	0.14	<RL	<RL	0.16
Total Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	No Data
Total Organic Nitrogen	mg/L	0.13	0.13	0.11	<RL	0.11	<RL	<RL	<RL	<RL	<RL	<RL	0.14	<RL	<RL	No Data

Clear Creek Near Mouth — Field Measurements

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Field Specific Conductance	uS/cm@25 °C	108	111	114	100	No Data	84	104	94	86	90	99	75	86	91	100
Field Dissolved Oxygen	mg/L	11.6	10.1	11	12.9	No Data	10.3	11.1	11.5	10.8	10.3	11.4	11.9	10.83	10.42	10.82
Field pH	pH Units	7.7	8.1	7.7	7.5	No Data	7.5	7.2	7.4	7.6	7.6	7.8	7.4	7.61	7.05	7.9
Field Water Temperature	°C	13.3	17.6	12.4	7.5	No Data	17.1	11.6	9.4	14.6	18	11.2	9.4	14.5	17.8	12.5
Field Turbidity	F.N.U.	0.7	<RL	1.1	3.9	No Data	0.4	1.2	4	1.3	0.7	0.7	17.7	0.82	0.6	2.45

Clear Creek Near Mouth — Bacteria Indicators

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Coliform, Total	MPN/100 mL	435.2	2419.6	2419.6	365.4	488.4	980.4	1732.9	648.8	1413.6	2419.6	920.8	980.4	689.3	1299.7	2419.6
E. coli	MPN/100 mL	6.3	34.1	64.4	5.1	12.2	9.6	101.9	22.8	8.5	17.1	28.5	32.7	4.1	31.8	613.1

A0332000 — Elder Creek Near Mouth

Elder Creek Near Mouth — Water Chemistry

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Alkalinity	mg/L as CaCO ₃	Dry	Dry	Dry	161	115	Dry	Dry	148	135	Dry	Dry	133	159	Dry	Dry
Dissolved Aluminum	ug/L	Dry	Dry	Dry	<RL	<RL	Dry	Dry	10.3	<RL	Dry	Dry	17.5	<RL	Dry	Dry
Total Aluminum	ug/L	Dry	Dry	Dry	23.4	87.2	Dry	Dry	134	24.9	Dry	Dry	510	24.1	Dry	Dry
Dissolved Ammonia	mg/L as N	Dry	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry
Dissolved Antimony	ug/L	Dry	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry
Total Antimony	ug/L	Dry	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry
Dissolved Arsenic	ug/L	Dry	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry
Total Arsenic	ug/L	Dry	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry
Dissolved Barium	ug/L	Dry	Dry	Dry	62.8	43.1	Dry	Dry	58	57.7	Dry	Dry	52.3	67.5	Dry	Dry
Total Barium	ug/L	Dry	Dry	Dry	64.6	45.3	Dry	Dry	56.5	59.2	Dry	Dry	51.8	67.3	Dry	Dry

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Beryllium	ug/L	Dry	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry
Total Beryllium	ug/L	Dry	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry
Dissolved Boron	mg/L	Dry	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry
Dissolved Cadmium	ug/L	Dry	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry
Total Cadmium	ug/L	Dry	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry
Dissolved Calcium	mg/L	Dry	Dry	Dry	30	20.7	Dry	Dry	28.2	23.7	Dry	Dry	25.5	30.6	Dry	Dry
Dissolved Chloride	mg/L	Dry	Dry	Dry	16	6.11	Dry	Dry	7.12	8.21	Dry	Dry	5.05	2.42	Dry	Dry
Dissolved Chromium	ug/L	Dry	Dry	Dry	2.12	1.27	Dry	Dry	1.79	1.28	Dry	Dry	1.48	1.27	Dry	Dry
Total Chromium	ug/L	Dry	Dry	Dry	2.27	1.57	Dry	Dry	2.32	1.44	Dry	Dry	4.02	<RL	Dry	Dry
Specific Conductance	uS/cm@25 °C	Dry	Dry	Dry	399	262	Dry	Dry	337	302	Dry	Dry	297	367	Dry	Dry
Dissolved Copper	ug/L	Dry	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry
Total Copper	ug/L	Dry	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	1.7	<RL	Dry	Dry
Dissolved Hardness	mg/L as CaCO ₃	Dry	Dry	Dry	171	111	Dry	Dry	158	133	Dry	Dry	138	172	Dry	Dry
Dissolved Iron	ug/L	Dry	Dry	Dry	6.69	9.85	Dry	Dry	14.4	5.33	Dry	Dry	28.6	<RL	Dry	Dry
Total Iron	ug/L	Dry	Dry	Dry	33.4	134	Dry	Dry	205	28.2	Dry	Dry	800	35.3	Dry	Dry
Dissolved Lead	ug/L	Dry	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry
Total Lead	ug/L	Dry	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry
Dissolved Magnesium	mg/L	Dry	Dry	Dry	23.4	14.5	Dry	Dry	21.3	17.9	Dry	Dry	18	23.3	Dry	Dry

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Manganese	ug/L	Dry	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry
Total Manganese	ug/L	Dry	Dry	Dry	<RL	<RL	Dry	Dry	5.53	<RL	Dry	Dry	17.5	<RL	Dry	Dry
Dissolved Nickel	ug/L	Dry	Dry	Dry	1.19	<RL	Dry	Dry	1.13	<RL	Dry	Dry	1.17	<RL	Dry	Dry
Total Nickel	ug/L	Dry	Dry	Dry	1.22	1.41	Dry	Dry	2.05	<RL	Dry	Dry	4.88	<RL	Dry	Dry
Dissolved Nitrate + Nitrite	mg/L as N	Dry	Dry	Dry	0.28	0.11	Dry	Dry	0.26	<RL	Dry	Dry	0.18	<RL	Dry	Dry
Dissolved Organic Carbon	mg/L as C	Dry	Dry	Dry	3.1	1.9	Dry	Dry	2	1.5	Dry	Dry	1.6	1	Dry	Dry
Total Organic Carbon	mg/L as C	Dry	Dry	Dry	2.9	1.9	Dry	Dry	2	1.5	Dry	Dry	1.5	1	Dry	Dry
Dissolved ortho-Phosphate	mg/L as P	Dry	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry
Total Phosphorus	mg/L as P	Dry	Dry	Dry	<RL	0.01	Dry	Dry	0.02	<RL	Dry	Dry	0.02	0.01	Dry	Dry
Dissolved Potassium	mg/L	Dry	Dry	Dry	0.74	0.81	Dry	Dry	0.82	0.68	Dry	Dry	0.73	0.87	Dry	Dry
Dissolved Selenium	ug/L	Dry	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry
Total Selenium	ug/L	Dry	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry
Dissolved Silver	ug/L	Dry	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry
Total Silver	ug/L	Dry	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry
Dissolved Sodium	mg/L	Dry	Dry	Dry	11.4	6.52	Dry	Dry	8.82	8.07	Dry	Dry	7.59	12	Dry	Dry

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Dissolved Solids	mg/L	Dry	Dry	Dry	224	146	Dry	Dry	195	173	Dry	Dry	170	209	Dry	Dry
Total Suspended Solids	mg/L	Dry	Dry	Dry	<RL	4	Dry	Dry	3.7	<RL	Dry	Dry	15.7	<RL	Dry	Dry
Dissolved Sulfate	mg/L	Dry	Dry	Dry	20.5	12.1	Dry	Dry	19.9	11.8	Dry	Dry	17.1	18	Dry	Dry
Dissolved Zinc	ug/L	Dry	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry
Total Zinc	ug/L	Dry	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry
Total Kjeldahl Nitrogen	mg/L	Dry	Dry	Dry	<RL	<RL	Dry	Dry	<RL	0.16	Dry	Dry	<RL	<RL	Dry	Dry
Total Ammonia	mg/L as N	Dry	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry
Total Organic Nitrogen	mg/L	Dry	Dry	Dry	<RL	<RL	Dry	Dry	<RL	0.16	Dry	Dry	<RL	<RL	Dry	Dry

Elder Creek Near Mouth — Field Measurements

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Field Specific Conductance	uS/cm@25 °C	Dry	Dry	Dry	374	250	Dry	Dry	316.3	297	Dry	Dry	291.4	359	Dry	Dry
Field Dissolved Oxygen	mg/L	Dry	Dry	Dry	11.7	10.4	Dry	Dry	11.72	8.91	Dry	Dry	12.38	9.88	Dry	Dry
Field pH	pH Units	Dry	Dry	Dry	8.3	8.2	Dry	Dry	8.33	8.33	Dry	Dry	8.38	8.3	Dry	Dry
Field Water Temperature	°C	Dry	Dry	Dry	5.9	14.7	Dry	Dry	8.2	20.8	Dry	Dry	5.3	16	Dry	Dry
Field Turbidity	F.N.U.	Dry	Dry	Dry	0.27	3.3	Dry	Dry	4.27	1.5	Dry	Dry	11.94	0.9	Dry	Dry

Elder Creek Near Mouth — Bacteria Indicators

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Coliform, Total	MPN/100 mL	Dry	Dry	Dry	248.1	1986.3	Dry	Dry	456.9	1011.2	Dry	Dry	1203.3	2419.6	Dry	Dry
E. coli	MPN/100 mL	Dry	Dry	Dry	18.7	816.4	Dry	Dry	65.7	148.3	Dry	Dry	50.4	272.3	Dry	Dry

A0025800 — Red Bank Creek at HWY 99W

Red Bank Creek at HWY 99W — Water Chemistry

Note: This station was relocated to A02540025 — Red Bank C US TCC after August 2023.

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023
Total Alkalinity	mg/L as CaCO ₃	Dry	Dry	Dry	195	205	Dry
Dissolved Aluminum	ug/L	Dry	Dry	Dry	<RL	<RL	Dry
Total Aluminum	ug/L	Dry	Dry	Dry	11.3	33.9	Dry
Dissolved Ammonia	mg/L as N	Dry	Dry	Dry	<RL	<RL	Dry
Dissolved Antimony	ug/L	Dry	Dry	Dry	<RL	<RL	Dry
Total Antimony	ug/L	Dry	Dry	Dry	<RL	<RL	Dry
Dissolved Arsenic	ug/L	Dry	Dry	Dry	<RL	<RL	Dry
Total Arsenic	ug/L	Dry	Dry	Dry	<RL	<RL	Dry
Dissolved Barium	ug/L	Dry	Dry	Dry	52.1	57	Dry
Total Barium	ug/L	Dry	Dry	Dry	54.1	56.8	Dry
Dissolved Beryllium	ug/L	Dry	Dry	Dry	<RL	<RL	Dry
Total Beryllium	ug/L	Dry	Dry	Dry	<RL	<RL	Dry
Dissolved Boron	mg/L	Dry	Dry	Dry	<RL	<RL	Dry
Dissolved Cadmium	ug/L	Dry	Dry	Dry	<RL	<RL	Dry

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023
Total Cadmium	ug/L	Dry	Dry	Dry	<RL	<RL	Dry
Dissolved Calcium	mg/L	Dry	Dry	Dry	50.4	47.2	Dry
Dissolved Chloride	mg/L	Dry	Dry	Dry	11.2	6.92	Dry
Dissolved Chromium	ug/L	Dry	Dry	Dry	<RL	<RL	Dry
Total Chromium	ug/L	Dry	Dry	Dry	<RL	<RL	Dry
Specific Conductance	uS/cm@25 °C	Dry	Dry	Dry	531	506	Dry
Dissolved Copper	ug/L	Dry	Dry	Dry	<RL	<RL	Dry
Total Copper	ug/L	Dry	Dry	Dry	<RL	<RL	Dry
Dissolved Hardness	mg/L as CaCO ₃	Dry	Dry	Dry	239	225	Dry
Dissolved Iron	ug/L	Dry	Dry	Dry	6.23	5.29	Dry
Total Iron	ug/L	Dry	Dry	Dry	18.8	52	Dry
Dissolved Lead	ug/L	Dry	Dry	Dry	<RL	<RL	Dry
Total Lead	ug/L	Dry	Dry	Dry	<RL	<RL	Dry
Dissolved Magnesium	mg/L	Dry	Dry	Dry	27.5	26.1	Dry
Dissolved Manganese	ug/L	Dry	Dry	Dry	<RL	<RL	Dry
Total Manganese	ug/L	Dry	Dry	Dry	<RL	<RL	Dry
Dissolved Nickel	ug/L	Dry	Dry	Dry	<RL	<RL	Dry
Total Nickel	ug/L	Dry	Dry	Dry	<RL	<RL	Dry
Dissolved Nitrate + Nitrite	mg/L as N	Dry	Dry	Dry	2.01	0.69	Dry
Dissolved Organic Carbon	mg/L as C	Dry	Dry	Dry	2.8	2.7	Dry
Total Organic Carbon	mg/L as C	Dry	Dry	Dry	3.1	2.4	Dry

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023
Dissolved ortho-Phosphate	mg/L as P	Dry	Dry	Dry	<RL	<RL	Dry
Total Phosphorus	mg/L as P	Dry	Dry	Dry	0.02	0.02	Dry
Dissolved Potassium	mg/L	Dry	Dry	Dry	1.02	1.16	Dry
Dissolved Selenium	ug/L	Dry	Dry	Dry	<RL	<RL	Dry
Total Selenium	ug/L	Dry	Dry	Dry	<RL	<RL	Dry
Dissolved Silver	ug/L	Dry	Dry	Dry	<RL	<RL	Dry
Total Silver	ug/L	Dry	Dry	Dry	<RL	<RL	Dry
Dissolved Sodium	mg/L	Dry	Dry	Dry	14.7	14.9	Dry
Total Dissolved Solids	mg/L	Dry	Dry	Dry	322	297	Dry
Total Suspended Solids	mg/L	Dry	Dry	Dry	<RL	<RL	Dry
Dissolved Sulfate	mg/L	Dry	Dry	Dry	57	49	Dry
Dissolved Zinc	ug/L	Dry	Dry	Dry	<RL	<RL	Dry
Total Zinc	ug/L	Dry	Dry	Dry	<RL	<RL	Dry
Total Kjeldahl Nitrogen	mg/L	Dry	Dry	Dry	<RL	0.11	Dry
Total Ammonia	mg/L as N	Dry	Dry	Dry	<RL	<RL	Dry
Total Organic Nitrogen	mg/L	Dry	Dry	Dry	<RL	0.11	Dry

Red Bank Creek at HWY 99W — Field Measurements

Note: This station was relocated to A02540025 — Red Bank C US TCC after August 2023.

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023
Field Specific Conductance	uS/cm@25 °C	Dry	Dry	Dry	501	487	Dry
Field Dissolved Oxygen	mg/L	Dry	Dry	Dry	12.9	10.4	Dry

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023
Field pH	pH Units	Dry	Dry	Dry	8.4	8.3	Dry
Field Water Temperature	°C	Dry	Dry	Dry	5.8	15.7	Dry
Field Turbidity	F.N.U.	Dry	Dry	Dry	<RL	1.6	Dry

Red Bank Creek at HWY 99W — Bacteria Indicators

Note: This station was relocated to A02540025 — Red Bank C US TCC after August 2023.

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023
Coliform, Total	MPN/100 mL	Dry	Dry	Dry	248.9	2419.6	Dry
E. coli	MPN/100 mL	Dry	Dry	Dry	34.5	435.2	Dry

A02540025 — Red Bank Creek Upstream Tehama Colusa Canal

Red Bank Creek Upstream Tehama Colusa Canal — Water Chemistry

Note: This station was relocated from A0025800 — Red Bank C A HWY 99W after August 2023.

Analyte	Units	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Alkalinity	mg/L as CaCO ₃	Dry	185	168	Dry	118	187	Dry	Dry	Dry
Dissolved Aluminum	ug/L	Dry	<RL	<RL	Dry	29.8	11.7	Dry	Dry	Dry
Total Aluminum	ug/L	Dry	250	37.5	Dry	257	747	Dry	Dry	Dry
Dissolved Ammonia	mg/L as N	Dry	<RL	<RL	Dry	<RL	<RL	Dry	Dry	Dry
Dissolved Antimony	ug/L	Dry	<RL	<RL	Dry	<RL	<RL	Dry	Dry	Dry
Total Antimony	ug/L	Dry	<RL	<RL	Dry	<RL	<RL	Dry	Dry	Dry
Dissolved Arsenic	ug/L	Dry	<RL	<RL	Dry	1.23	<RL	Dry	Dry	Dry
Total Arsenic	ug/L	Dry	<RL	<RL	Dry	1.23	<RL	Dry	Dry	Dry

Analyte	Units	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Barium	ug/L	Dry	52.1	52.2	Dry	42.4	50.6	Dry	Dry	Dry
Total Barium	ug/L	Dry	52.1	51.2	Dry	46.4	51.4	Dry	Dry	Dry
Dissolved Beryllium	ug/L	Dry	<RL	<RL	Dry	<RL	<RL	Dry	Dry	Dry
Total Beryllium	ug/L	Dry	<RL	<RL	Dry	<RL	<RL	Dry	Dry	Dry
Dissolved Boron	mg/L	Dry	<RL	<RL	Dry	<RL	<RL	Dry	Dry	Dry
Dissolved Cadmium	ug/L	Dry	<RL	<RL	Dry	<RL	<RL	Dry	Dry	Dry
Total Cadmium	ug/L	Dry	<RL	<RL	Dry	<RL	<RL	Dry	Dry	Dry
Dissolved Calcium	mg/L	Dry	46	36.6	Dry	19.2	45.6	Dry	Dry	Dry
Dissolved Chloride	mg/L	Dry	4.47	6.39	Dry	6.64	3.06	Dry	Dry	Dry
Dissolved Chromium	ug/L	Dry	<RL	<RL	Dry	1.66	<RL	Dry	Dry	Dry
Total Chromium	ug/L	Dry	1.46	<RL	Dry	2.2	3.1	Dry	Dry	Dry
Specific Conductance	uS/cm@25 °C	Dry	453	428	Dry	278	437	Dry	Dry	Dry
Dissolved Copper	ug/L	Dry	<RL	<RL	Dry	1.91	<RL	Dry	Dry	Dry
Total Copper	ug/L	Dry	1.15	<RL	Dry	2.35	1.93	Dry	Dry	Dry
Dissolved Hardness	mg/L as CaCO ₃	Dry	213	186	Dry	88	210	Dry	Dry	Dry
Dissolved Iron	ug/L	Dry	13.8	9.62	Dry	36.6	18.5	Dry	Dry	Dry
Total Iron	ug/L	Dry	394	52	Dry	308	1220	Dry	Dry	Dry
Dissolved Lead	ug/L	Dry	<RL	<RL	Dry	<RL	<RL	Dry	Dry	Dry
Total Lead	ug/L	Dry	<RL	<RL	Dry	<RL	<RL	Dry	Dry	Dry

Analyte	Units	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Magnesium	mg/L	Dry	23.8	22.9	Dry	9.74	23.4	Dry	Dry	Dry
Dissolved Manganese	ug/L	Dry	<RL	<RL	Dry	<RL	<RL	Dry	Dry	Dry
Total Manganese	ug/L	Dry	13.6	6.14	Dry	5.9	27.9	Dry	Dry	Dry
Dissolved Nickel	ug/L	Dry	<RL	<RL	Dry	1.49	<RL	Dry	Dry	Dry
Total Nickel	ug/L	Dry	1.49	<RL	Dry	1.79	3.7	Dry	Dry	Dry
Dissolved Nitrate + Nitrite	mg/L as N	Dry	1.22	<RL	Dry	0.52	0.65	Dry	Dry	Dry
Dissolved Organic Carbon	mg/L as C	Dry	2.6	1.6	Dry	4	1.6	Dry	Dry	Dry
Total Organic Carbon	mg/L as C	Dry	2.3	1.6	Dry	3.9	1.6	Dry	Dry	Dry
Dissolved ortho-Phosphate	mg/L as P	Dry	0.06	<RL	Dry	0.1	<RL	Dry	Dry	Dry
Total Phosphorus	mg/L as P	Dry	0.04	0.02	Dry	0.08	0.04	Dry	Dry	Dry
Dissolved Potassium	mg/L	Dry	1.11	0.77	Dry	1.74	0.91	Dry	Dry	Dry
Dissolved Selenium	ug/L	Dry	<RL	<RL	Dry	<RL	<RL	Dry	Dry	Dry
Total Selenium	ug/L	Dry	<RL	<RL	Dry	<RL	<RL	Dry	Dry	Dry
Dissolved Silver	ug/L	Dry	<RL	<RL	Dry	<RL	<RL	Dry	Dry	Dry
Total Silver	ug/L	Dry	<RL	<RL	Dry	<RL	<RL	Dry	Dry	Dry
Dissolved Sodium	mg/L	Dry	12.9	16.4	Dry	22.7	12.1	Dry	Dry	Dry

Analyte	Units	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Dissolved Solids	mg/L	Dry	267	256	Dry	183	261	Dry	Dry	Dry
Total Suspended Solids	mg/L	Dry	9.4	<RL	Dry	5.6	29.3	Dry	Dry	Dry
Dissolved Sulfate	mg/L	Dry	45.1	51.4	Dry	14.5	43	Dry	Dry	Dry
Dissolved Zinc	ug/L	Dry	<RL	<RL	Dry	<RL	<RL	Dry	Dry	Dry
Total Zinc	ug/L	Dry	<RL	<RL	Dry	<RL	<RL	Dry	Dry	Dry
Total Kjeldahl Nitrogen	mg/L as N	Dry	0.1	<RL	Dry	0.31	0.19	Dry	Dry	Dry
Total Ammonia	mg/L as N	Dry	<RL	<RL	Dry	<RL	<RL	Dry	Dry	Dry
Total Organic Nitrogen	mg/L	Dry	0.1	<RL	Dry	0.31	0.19	Dry	Dry	Dry

Red Bank Creek Upstream Tehama Colusa Canal — Field Measurements

Note: This station was relocated from A0025800 — Red Bank C A HWY 99W after August 2023.

Analyte	Units	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Field Specific Conductance	uS/cm@25 °C	Dry	436.9	423.7	Dry	270.3	430.4	Dry	Dry	Dry
Field Dissolved Oxygen	mg/L	Dry	11.29	7.35	Dry	9.19	11.86	Dry	Dry	Dry
Field pH	pH Units	Dry	8.3	8.13	Dry	8.02	8.38	Dry	Dry	Dry
Field Water Temperature	°C	Dry	8.9	21.5	Dry	11.6	6.1	Dry	Dry	Dry
Field Turbidity	F.N.U.	Dry	7	1.19	Dry	11.05	27.21	Dry	Dry	Dry

Red Bank Creek Upstream Tehama Colusa Canal — Bacteria Indicators

Note: This station was relocated from A0025800 — Red Bank C A HWY 99W after August 2023.

Analyte	Units	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Coliform, Total	MPN/100 mL	Dry	721.5	2419.6	Dry	2419.6	2419.6	Dry	Dry	Dry
E. coli	MPN/100 mL	Dry	59.4	105	Dry	218.7	70.3	Dry	Dry	Dry

A0290000 — Stony Creek Near Mouth

Stony Creek Near Mouth — Water Chemistry

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Alkalinity	mg/L as CaCO ₃	Dry	Dry	Dry	109	107	132	138	102	118	135	151	90.3	124	132	145
Dissolved Aluminum	ug/L	Dry	Dry	Dry	12.3	13	<RL	<RL	83.5	<RL	<RL	<RL	261	<RL	<RL	<RL
Total Aluminum	ug/L	Dry	Dry	Dry	1680	352	234	36.4	3280	53.8	51.8	24.6	6620	46.2	19.8	<RL
Dissolved Ammonia	mg/L as N	Dry	Dry	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Antimony	ug/L	Dry	Dry	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Antimony	ug/L	Dry	Dry	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Arsenic	ug/L	Dry	Dry	Dry	<RL	<RL	2.59	1.2	<RL	<RL	2.24	1.04	<RL	<RL	2.03	1.31
Total Arsenic	ug/L	Dry	Dry	Dry	1.36	<RL	3.09	1.15	1.48	<RL	2.43	<RL	2.05	<RL	2.06	1.39
Dissolved Barium	ug/L	Dry	Dry	Dry	60.6	57	75.7	77.2	60.3	68.8	76.1	87.6	55.3	73.8	79.7	89.7
Total Barium	ug/L	Dry	Dry	Dry	81	63.5	77.1	75.7	97.2	70.5	81.1	88.8	118	73.2	78.9	94.5

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Beryllium	ug/L	Dry	Dry	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Beryllium	ug/L	Dry	Dry	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Boron	mg/L	Dry	Dry	Dry	0.11	<RL	0.12	0.16	<RL	<RL	<RL	0.13	<RL	0.11	0.12	0.14
Dissolved Cadmium	ug/L	Dry	Dry	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Cadmium	ug/L	Dry	Dry	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Calcium	mg/L	Dry	Dry	Dry	29.3	26.3	30.8	33.1	24.1	27.5	31	34.7	21.8	30.9	30.7	34.1
Dissolved Chloride	mg/L	Dry	Dry	Dry	15.4	8.93	10.8	12.3	10	8.21	9.48	12.5	9.05	16.4	10.8	13
Dissolved Chromium	ug/L	Dry	Dry	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	1.56	<RL	<RL	<RL
Total Chromium	ug/L	Dry	Dry	Dry	5.41	1.69	<RL	<RL	11.6	<RL	<RL	<RL	21.4	<RL	<RL	<RL
Specific Conductance	uS/cm@25 °C	Dry	Dry	Dry	306	282	313	329	265	288	317	358	235	301	315	353
Dissolved Copper	ug/L	Dry	Dry	Dry	1.37	1.08	<RL	<RL	1.88	<RL	<RL	<RL	2.46	<RL	<RL	<RL
Total Copper	ug/L	Dry	Dry	Dry	4.67	2.09	1.33	<RL	7.69	1.16	<RL	<RL	14.9	<RL	<RL	<RL
Dissolved Hardness	mg/L as CaCO ₃	Dry	Dry	Dry	126	111	130	142	106	118	133	151	95	129	130	146
Dissolved Iron	ug/L	Dry	Dry	Dry	14.3	9.97	11.1	9.21	109	6.38	5.17	7.93	350	6.02	6.25	5.5
Total Iron	ug/L	Dry	Dry	Dry	2350	560	434	53.1	4980	57.7	97.6	41.2	10400	70.3	34.9	16.2
Dissolved Lead	ug/L	Dry	Dry	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Lead	ug/L	Dry	Dry	Dry	<RL	<RL	<RL	<RL	1.7	<RL	<RL	<RL	3.52	<RL	<RL	<RL
Dissolved Magnesium	mg/L	Dry	Dry	Dry	12.8	11	12.8	14.4	11.1	11.9	13.4	15.6	9.76	12.7	13	14.8

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Manganese	ug/L	Dry	Dry	Dry	<RL	<RL	6.47	<RL	5.07	<RL	<RL	<RL	8.44	<RL	<RL	<RL
Total Manganese	ug/L	Dry	Dry	Dry	51.6	15.9	56.7	5.81	116	<RL	9.61	5.58	209	<RL	5.16	<RL
Dissolved Nickel	ug/L	Dry	Dry	Dry	1.24	<RL	<RL	<RL	1.81	<RL	<RL	<RL	2.39	<RL	<RL	<RL
Total Nickel	ug/L	Dry	Dry	Dry	7.5	2.68	1.81	<RL	18.3	<RL	<RL	<RL	31.7	<RL	<RL	<RL
Dissolved Nitrate + Nitrite	mg/L as N	Dry	Dry	Dry	0.62	0.17	<RL	<RL	0.31	<RL	<RL	<RL	0.19	<RL	<RL	<RL
Dissolved Organic Carbon	mg/L as C	Dry	Dry	Dry	3.2	2.8	3.7	2.3	3.8	1.6	2	1.4	3.3	1.3	1.9	1.4
Total Organic Carbon	mg/L as C	Dry	Dry	Dry	2.8	2.5	2.9	2.6	3.5	1.6	2	1.4	3.2	1.3	2.4	1.5
Dissolved ortho-Phosphate	mg/L as P	Dry	Dry	Dry	<RL	<RL	<RL	<RL	0.05	<RL	<RL	<RL	0.06	<RL	<RL	<RL
Total Phosphorus	mg/L as P	Dry	Dry	Dry	0.08	0.03	0.03	<RL	0.17	<RL	0.01	0.01	0.24	<RL	<RL	<RL
Dissolved Potassium	mg/L	Dry	Dry	Dry	1.15	1.07	1.3	1.23	1.15	1.07	1.1	1.11	1.19	1.05	1.1	1.04
Dissolved Selenium	ug/L	Dry	Dry	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Selenium	ug/L	Dry	Dry	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Silver	ug/L	Dry	Dry	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Silver	ug/L	Dry	Dry	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Sodium	mg/L	Dry	Dry	Dry	11.5	9.95	9.93	13.4	11.1	11.4	12.1	14.1	10.3	12.4	12.8	14.3

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Dissolved Solids	mg/L	Dry	Dry	Dry	187	159	197	179	154	162	183	202	143	166	178	193
Total Suspended Solids	mg/L	Dry	Dry	Dry	41.8	14.4	10	<RL	140	<RL	3.5	<RL	242	<RL	<RL	<RL
Dissolved Sulfate	mg/L	Dry	Dry	Dry	19.6	17.8	15.8	16.9	16.1	17.2	16.9	20.6	13.2	12.2	16.6	19.3
Dissolved Zinc	ug/L	Dry	Dry	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Zinc	ug/L	Dry	Dry	Dry	5.94	<RL	<RL	<RL	12.6	<RL	<RL	<RL	25.3	<RL	<RL	<RL
Total Kjeldahl Nitrogen	mg/L	Dry	Dry	Dry	0.2	0.14	0.2	<RL	0.37	<RL	0.17	0.11	0.51	<RL	0.11	<RL
Total Ammonia	mg/L as N	Dry	Dry	Dry	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	No Data
Total Organic Nitrogen	mg/L	Dry	Dry	Dry	0.2	0.14	0.2	<RL	0.37	<RL	0.17	0.11	0.51	<RL	0.11	No Data

Stony Creek Near Mouth — Field Measurements

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Field Specific Conductance	uS/cm@25 °C	Dry	Dry	Dry	289	267	306	316	255	286.1	316.6	349.8	229	298	319	349
Field Dissolved Oxygen	mg/L	Dry	Dry	Dry	11.9	10	9.3	11.42	11.15	9.62	10.81	11.12	11.63	10.34	10.14	11.31
Field pH	pH Units	Dry	Dry	Dry	8	8.1	8.18	8.48	8.05	8.27	8.48	8.44	8.1	8.39	8.4	8.31
Field Water Temperature	°C	Dry	Dry	Dry	7.4	16	25.3	13.5	10	22.5	24.1	11.6	7.9	19.1	27.5	16.1
Field Turbidity	F.N.U.	Dry	Dry	Dry	60	15.6	10.7	1.74	113.64	2.15	2.79	1.29	267.67	1.1	0.6	0.95

Stony Creek Near Mouth — Bacteria Indicators

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Coliform, Total	MPN/100 mL	Dry	Dry	Dry	2419.6	2419.6	1467.95	2076.25	2419.6	1624.65	2419.6	852.7	2419.6	644	2419.6	816.4
E. coli	MPN/100 mL	Dry	Dry	Dry	11.9	16.05	27.55	18.65	65.4	31.45	24.2	75.2	435.85	37.7	25.5	20.9

A0321800 — Thomes Creek at Hall Road
Thomes Creek At Hall Road — Water Chemistry

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Alkalinity	mg/L as CaCO ₃	87.4	Dry	Dry	90.8	76.7	Dry	Dry	103	75.4	Dry	Dry	88.5	94.4	Dry	Dry
Dissolved Aluminum	ug/L	<RL	Dry	Dry	10.3	20.3	Dry	Dry	20.2	10.8	Dry	Dry	37.5	<RL	Dry	Dry
Total Aluminum	ug/L	28	Dry	Dry	512	1290	Dry	Dry	920	353	Dry	Dry	2190	325	Dry	Dry
Dissolved Ammonia	mg/L as N	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry
Dissolved Antimony	ug/L	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry
Total Antimony	ug/L	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry
Dissolved Arsenic	ug/L	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry
Total Arsenic	ug/L	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry
Dissolved Barium	ug/L	41	Dry	Dry	39.5	31.7	Dry	Dry	41.8	35	Dry	Dry	35.8	42.9	Dry	Dry
Total Barium	ug/L	43	Dry	Dry	44.4	45.6	Dry	Dry	49.3	39.2	Dry	Dry	52.3	44.2	Dry	Dry

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Beryllium	ug/L	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry
Total Beryllium	ug/L	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry
Dissolved Boron	mg/L	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry
Dissolved Cadmium	ug/L	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry
Total Cadmium	ug/L	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry
Dissolved Calcium	mg/L	27.4	Dry	Dry	28.8	21.4	Dry	Dry	30.4	21.6	Dry	Dry	26.9	31.2	Dry	Dry
Dissolved Chloride	mg/L	2.85	Dry	Dry	3.05	1.85	Dry	Dry	2.52	1.39	Dry	Dry	2.14	9.56	Dry	Dry
Dissolved Chromium	ug/L	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry
Total Chromium	ug/L	<RL	Dry	Dry	1.99	5.05	Dry	Dry	3.55	1.46	Dry	Dry	7.95	<RL	Dry	Dry
Specific Conductance	uS/cm@25 °C	204	Dry	Dry	236	186	Dry	Dry	255	179	Dry	Dry	221	225	Dry	Dry
Dissolved Copper	ug/L	1.6	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry
Total Copper	ug/L	<RL	Dry	Dry	1.79	3.39	Dry	Dry	2.55	1.42	Dry	Dry	5.13	1.39	Dry	Dry
Dissolved Hardness	mg/L as CaCO ₃	90	Dry	Dry	101	76	Dry	Dry	113	78	Dry	Dry	99	109	Dry	Dry
Dissolved Iron	ug/L	<RL	Dry	Dry	12.3	23	Dry	Dry	23.8	10.7	Dry	Dry	54.2	5.66	Dry	Dry
Total Iron	ug/L	44	Dry	Dry	783	2130	Dry	Dry	1420	432	Dry	Dry	3540	492	Dry	Dry
Dissolved Lead	ug/L	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry
Total Lead	ug/L	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry
Dissolved Magnesium	mg/L	5.16	Dry	Dry	7.04	5.54	Dry	Dry	9.01	5.92	Dry	Dry	7.64	7.44	Dry	Dry

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Manganese	ug/L	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry
Total Manganese	ug/L	<RL	Dry	Dry	17.8	46.2	Dry	Dry	34.2	14.1	Dry	Dry	72.4	12.3	Dry	Dry
Dissolved Nickel	ug/L	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry
Total Nickel	ug/L	<RL	Dry	Dry	2.58	7.02	Dry	Dry	4.91	2.12	Dry	Dry	10.1	1.7	Dry	Dry
Dissolved Nitrate + Nitrite	mg/L as N	<RL	Dry	Dry	0.47	0.45	Dry	Dry	0.39	0.16	Dry	Dry	0.28	<RL	Dry	Dry
Dissolved Organic Carbon	mg/L as C	2.6	Dry	Dry	1.9	2.1	Dry	Dry	1.7	1.5	Dry	Dry	1.2	1.1	Dry	Dry
Total Organic Carbon	mg/L as C	2.5	Dry	Dry	1.8	6.1	Dry	Dry	1.6	1.6	Dry	Dry	1.2	1	Dry	Dry
Dissolved ortho-Phosphate	mg/L as P	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry
Total Phosphorus	mg/L as P	<RL	Dry	Dry	0.03	0.05	Dry	Dry	0.04	0.02	Dry	Dry	0.06	0.01	Dry	Dry
Dissolved Potassium	mg/L	0.87	Dry	Dry	0.75	0.74	Dry	Dry	0.77	0.6	Dry	Dry	0.79	0.9	Dry	Dry
Dissolved Selenium	ug/L	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry
Total Selenium	ug/L	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry
Dissolved Silver	ug/L	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry
Total Silver	ug/L	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry
Dissolved Sodium	mg/L	4.5	Dry	Dry	4.31	3.25	Dry	Dry	5.34	3.39	Dry	Dry	4.92	4.78	Dry	Dry

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Dissolved Solids	mg/L	114	Dry	Dry	143	112	Dry	Dry	146	104	Dry	Dry	130	129	Dry	Dry
Total Suspended Solids	mg/L	<RL	Dry	Dry	14.2	56	Dry	Dry	33.4	22.9	Dry	Dry	83.7	11.5	Dry	Dry
Dissolved Sulfate	mg/L	11.3	Dry	Dry	19	13.2	Dry	Dry	20.8	12.6	Dry	Dry	19	18.3	Dry	Dry
Dissolved Zinc	ug/L	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry
Total Zinc	ug/L	<RL	Dry	Dry	<RL	5.36	Dry	Dry	<RL	<RL	Dry	Dry	8.16	<RL	Dry	Dry
Total Kjeldahl Nitrogen	mg/L	0.14	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	0.14	<RL	Dry	Dry
Total Ammonia	mg/L as N	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry
Total Organic Nitrogen	mg/L	0.14	Dry	Dry	<RL	<RL	Dry	Dry	<RL	<RL	Dry	Dry	0.14	<RL	Dry	Dry

Thomes Creek At Hall Road — Field Measurements

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Field Specific Conductance	uS/cm@25 °C	199	Dry	Dry	222	177	Dry	Dry	245.5	175.4	Dry	Dry	216.2	220	Dry	Dry
Field Dissolved Oxygen	mg/L	10.7	Dry	Dry	11.4	10.7	Dry	Dry	11.67	9.34	Dry	Dry	12.39	10.15	Dry	Dry
Field pH	pH Units	8.1	Dry	Dry	8	7.9	Dry	Dry	8.12	8.1	Dry	Dry	8.13	8.19	Dry	Dry
Field Water Temperature	°C	13.8	Dry	Dry	5.8	12.3	Dry	Dry	8.2	17.9	Dry	Dry	4.8	15.9	Dry	Dry
Field Turbidity	F.N.U.	0.5	Dry	Dry	17.5	36	Dry	Dry	25.72	14.95	Dry	Dry	73.84	9.2	Dry	Dry

Thomes Creek At Hall Road — Bacteria Indicators

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Coliform, Total	MPN/100 mL	2419.6	Dry	Dry	328.2	816.4	Dry	Dry	574.8	2419.6	Dry	Dry	1299.7	960.6	Dry	Dry
E. coli	MPN/100 mL	32.3	Dry	Dry	16.1	410.6	Dry	Dry	27.9	73.3	Dry	Dry	33.1	80.1	Dry	Dry

A0350000 — Thomes Creek At Paskenta
Thomes Creek At Paskenta — Water Chemistry

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Alkalinity	mg/L as CaCO ₃	64.1	106	121	77.9	64.6	125	140	90.5	61.3	133	157	80.3	82.6	122	95
Dissolved Aluminum	ug/L	<RL	<RL	<RL	11.7	27.4	<RL	<RL	18.7	17.7	<RL	<RL	39	<RL	<RL	<RL
Total Aluminum	ug/L	160	<RL	83.9	601	819	<RL	11.4	642	451	12.3	<RL	2070	296	<RL	72.5
Dissolved Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Antimony	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Arsenic	ug/L	<RL	1.88	<RL	<RL	<RL	2.04	<RL	<RL	<RL	1.72	<RL	<RL	<RL	1.92	<RL
Total Arsenic	ug/L	<RL	1.98	<RL	<RL	<RL	2.14	<RL	<RL	<RL	1.65	<RL	1.13	<RL	2.08	<RL
Dissolved Barium	ug/L	39	79.7	73.3	30.6	26.7	66.2	68	37.1	27.8	73.6	75.5	33.1	38.1	76.2	47.6
Total Barium	ug/L	41	85.1	72.7	37.1	37.5	70.9	69	39.8	36	75.5	78.7	48.6	38.4	73.8	52.2
Dissolved Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Beryllium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Boron	mg/L	<RL	0.18	0.17	<RL	<RL	0.11	0.16	<RL	<RL	<RL	0.16	<RL	<RL	0.16	0.11
Dissolved Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Cadmium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Calcium	mg/L	21.8	37.7	44.4	22.6	17.3	35.6	45.9	26.6	16.7	35.5	48.6	25.3	27.4	37.7	30.1
Dissolved Chloride	mg/L	2.3	13	15.4	2.15	1.56	8.62	12.1	1.93	1.18	11.6	16.5	1.86	2.47	16.5	5.94
Dissolved Chromium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Chromium	ug/L	<RL	<RL	<RL	2.13	3.71	<RL	<RL	2.45	1.8	<RL	<RL	6.75	<RL	<RL	<RL
Specific Conductance	uS/cm@25 °C	162	301	354	201	158	331	368	225	147	358	423	205	203	355	249
Dissolved Copper	ug/L	<RL	2.91	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	1.04	<RL	<RL	<RL
Total Copper	ug/L	1.1	2.68	<RL	1.82	2.58	<RL	<RL	2.13	1.81	<RL	<RL	5.59	1.42	<RL	1.34
Dissolved Hardness	mg/L as CaCO ₃	69	123	144	80	63	136	166	100	62	154	185	93	96	151	102
Dissolved Iron	ug/L	<RL	8.1	13.1	16.1	31.9	14.7	10.3	24.3	15.4	6.67	8.94	55.9	8.29	7.72	11.7
Total Iron	ug/L	260	22.7	112	909	1380	28.6	28.9	1020	496	27.2	19.5	3460	455	18.3	127
Dissolved Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Lead	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	1.11	<RL	<RL	<RL
Dissolved Magnesium	mg/L	3.51	7.11	7.98	5.63	4.92	11.5	12.4	8.25	4.93	15.8	15.5	7.35	6.75	13.7	6.42
Dissolved Manganese	ug/L	<RL	6.15	8.25	<RL	<RL	6.1	5.74	<RL	<RL	<RL	<RL	<RL	6.72	<RL	12

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Manganese	ug/L	8	12.1	13.1	19.4	25.7	14.8	6.82	21.4	15.8	6.22	<RL	64.7	15.3	7.46	21.8
Dissolved Nickel	ug/L	<RL	<RL	1.56	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Nickel	ug/L	<RL	<RL	<RL	2.74	4.57	<RL	<RL	3.09	2.14	<RL	<RL	8.54	1.61	<RL	1.03
Dissolved Nitrate + Nitrite	mg/L as N	0.21	<RL	<RL	0.39	0.41	<RL	<RL	0.33	0.25	<RL	<RL	0.23	<RL	<RL	<RL
Dissolved Organic Carbon	mg/L as C	2.1	2.3	B>RL	2	1.8	2.7	2.3	1.6	1.6	1.7	1.5	1.2	1.4	1.8	1.7
Total Organic Carbon	mg/L as C	2.1	B>RL	2.9	1.9	2.3	2.9	2.2	1.6	1.6	1.8	1.2	1.3	1.2	1.8	1.8
Dissolved ortho-Phosphate	mg/L as P	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Phosphorus	mg/L as P	0.03	<RL	<RL	0.03	0.04	0.01	<RL	0.05	0.02	<RL	<RL	0.1	0.01	<RL	0.02
Dissolved Potassium	mg/L	0.77	1.18	0.87	0.72	0.85	1.09	0.93	0.7	0.62	1	0.98	0.78	0.77	1.11	0.81
Dissolved Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Selenium	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Silver	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Dissolved Sodium	mg/L	3.7	11.9	12.8	3.54	2.93	7.66	11.2	4.63	2.8	10.4	13.1	4.5	4.55	12.7	7.28
Total Dissolved Solids	mg/L	94	169	199	115	93	183	207	133	85	220	253	122	117	213	138

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Total Suspended Solids	mg/L	<RL	<RL	4.3	16.5	32.2	<RL	<RL	25.6	20.5	<RL	<RL	151	10.8	<RL	5.7
Dissolved Sulfate	mg/L	11.1	20	30	17.3	11.4	26.6	31.2	19.7	10.7	38.7	42.2	19.4	17.6	38.5	19.8
Dissolved Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Total Zinc	ug/L	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	8.64	<RL	<RL	<RL
Total Kjeldahl Nitrogen	mg/L	0.11	0.15	<RL	<RL	<RL	0.19	<RL	<RL	<RL	0.15	0.12	0.14	<RL	0.11	0.12
Total Ammonia	mg/L as N	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	No Data
Total Organic Nitrogen	mg/L	0.11	0.15	<RL	<RL	<RL	0.19	<RL	<RL	<RL	0.15	0.12	0.14	<RL	0.11	No Data

Thomes Creek At Paskenta — Field Measurements

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Field Specific Conductance	uS/cm@25 °C	143	293	344	189	151	306	351.2	215.7	138.6	358.1	413.2	197	196	361	246
Field Dissolved Oxygen	mg/L	11.4	8.6	10.9	12.6	11	9.3	11	11.74	9.98	9.36	11.66	12.42	10.76	8.84	10.84
Field pH	pH Units	8	8.2	7.9	8	7.9	8.2	8.55	8.18	8.24	8.45	8.25	8.13	8.2	8.43	8.05
Field Water Temperature	°C	9.8	23.7	8.6	4.5	106	25.3	10.9	7.7	15.4	24.2	9.3	4.7	13	27.8	12
Field Turbidity	F.N.U.	0.96	0.2	8.6	17.2	35	10.7	0.93	18.01	22.21	0.63	0.52	74.25	11	0.57	6.7

Thomes Creek At Paskenta — Bacteria Indicators

Analyte	Units	May 2022	Aug 2022	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Coliform, Total	MPN/100 mL	2419.6	—	2419.6	307.6	325.5	2419.6	1046.2	435.2	686.7	870.4	866.4	648.8	1732.9	960.6	791.5
E. coli	MPN/100 mL	9.7	—	261.3	8.6	6.3	108.6	71.2	8.5	70.6	58.1	98.7	12.1	52	88	66.3

8 Appendix C. Continuous Water Temperature Thermographs

8.1 Introduction

Continuous water temperature data displayed in the figures below were collected at SWCMP monitoring stations by Onset Hobo Pendant Temperature Loggers in 15-minute intervals. Data have been reviewed and include only data determined to be “good” quality. Gaps reflect lost or missing loggers, logger malfunctions, dead batteries, or dry/no flow conditions. Reasons for missing/bad data are noted in the Continuous Water Temperature Quarterly Summary Tables in Appendix D.

8.2 Data Presentation

Continuous water temperature data are presented as thermographs organized by subregion and monitoring station. Thermographs were generated in R Studio using quality-assured temperature data exported from Hydstra following quality assurance and quality control review. Temperature scales (Y-axis) may vary among stations to accommodate differences in thermal regimes throughout the Sacramento River watershed. Thermographs display daily 7-Day Average Daily Maximum (7DADM) temperatures and include horizontal reference lines representing EPA Region 10 salmonid temperature criteria, where applicable: spawning, egg incubation, and fry emergence (13 °C); core juvenile rearing (16 °C); salmonid rearing (18 °C); and migration corridor (20 °C) (U.S. EPA 2003).

8.3 Northeast Subregion Thermographs

Figure 8-1. Fall River at Glenburn Thermograph

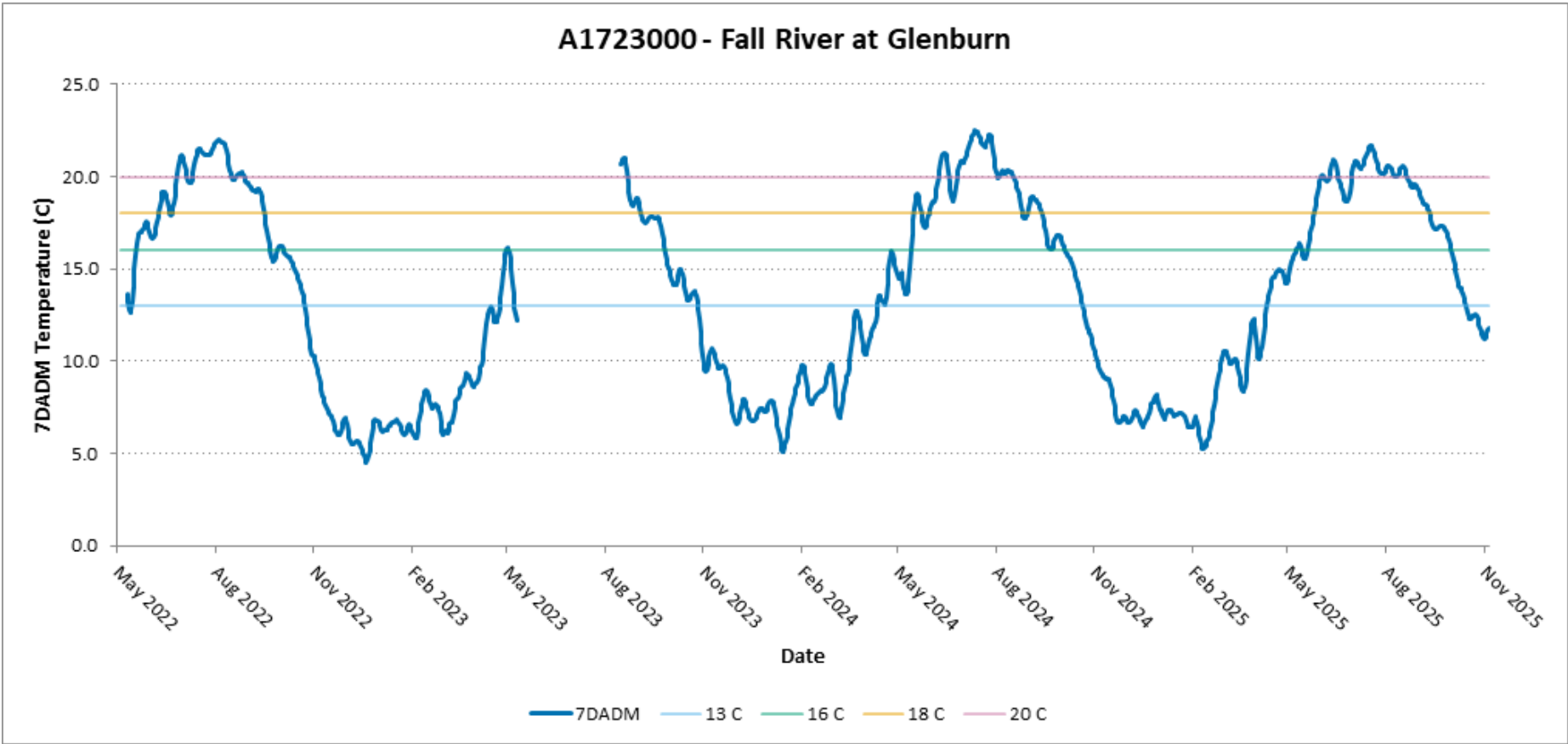


Figure 8-2. McCloud River above Shasta Lake Thermograph

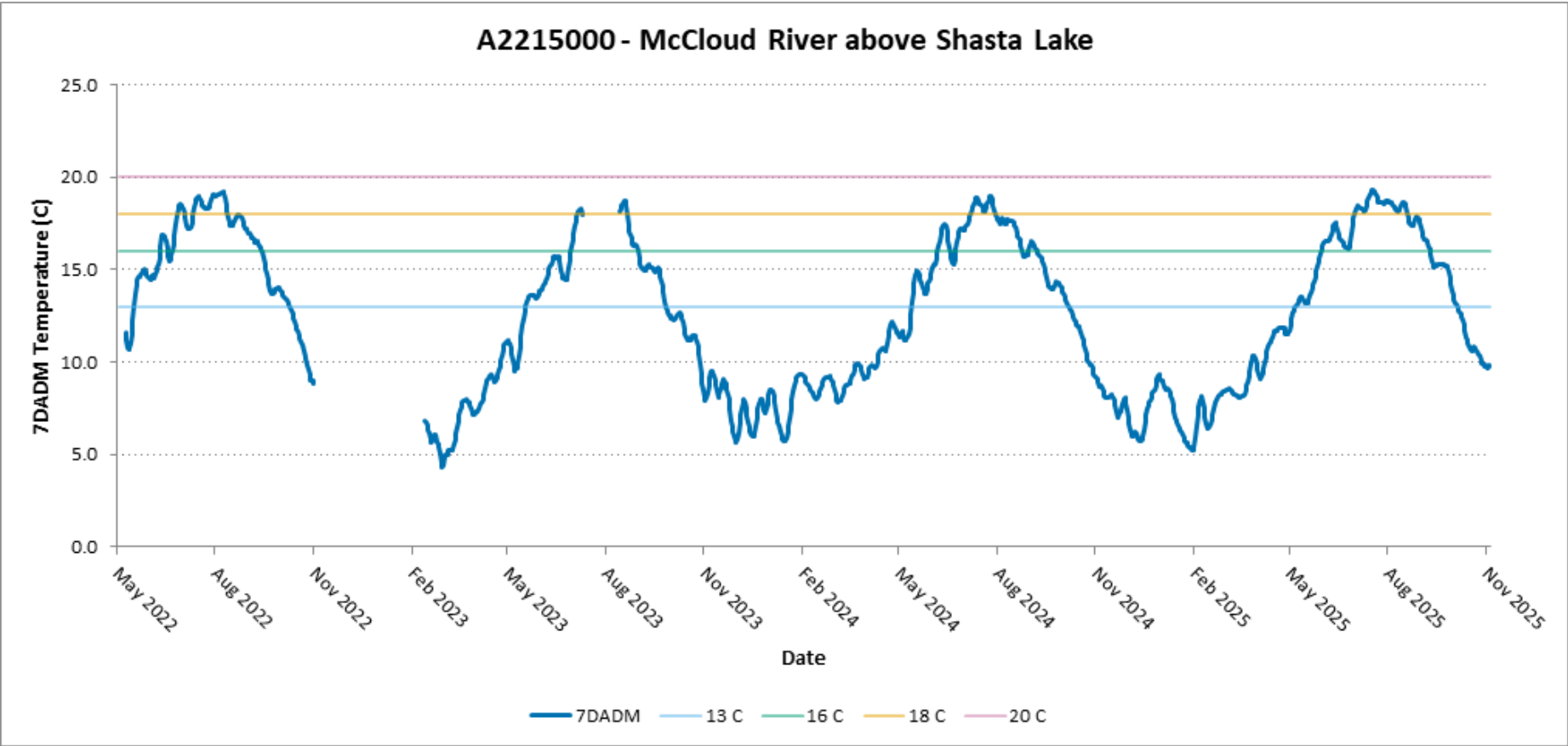


Figure 8-3. Pit River at Pittville Thermograph

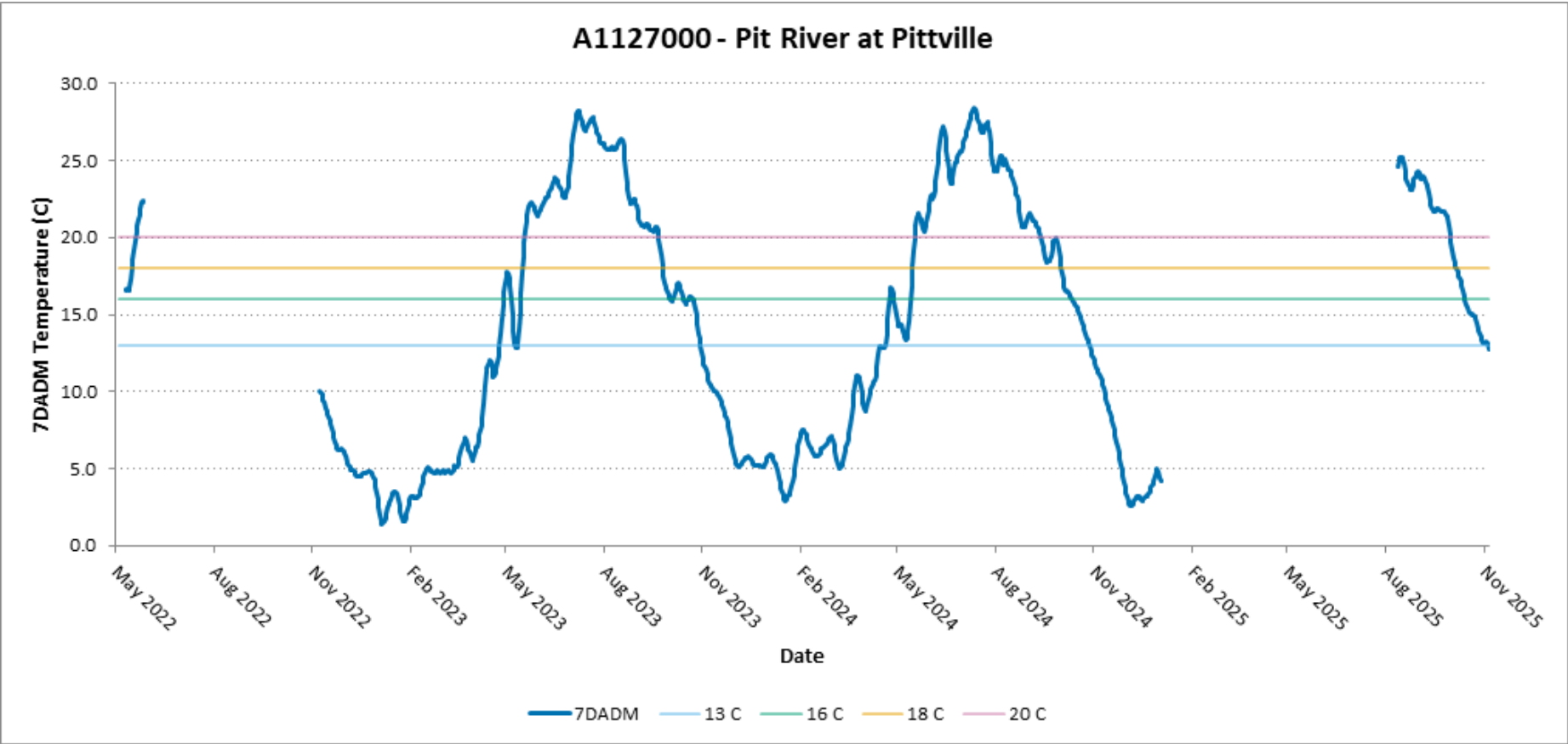


Figure 8-4. Pit River near Canby Thermograph

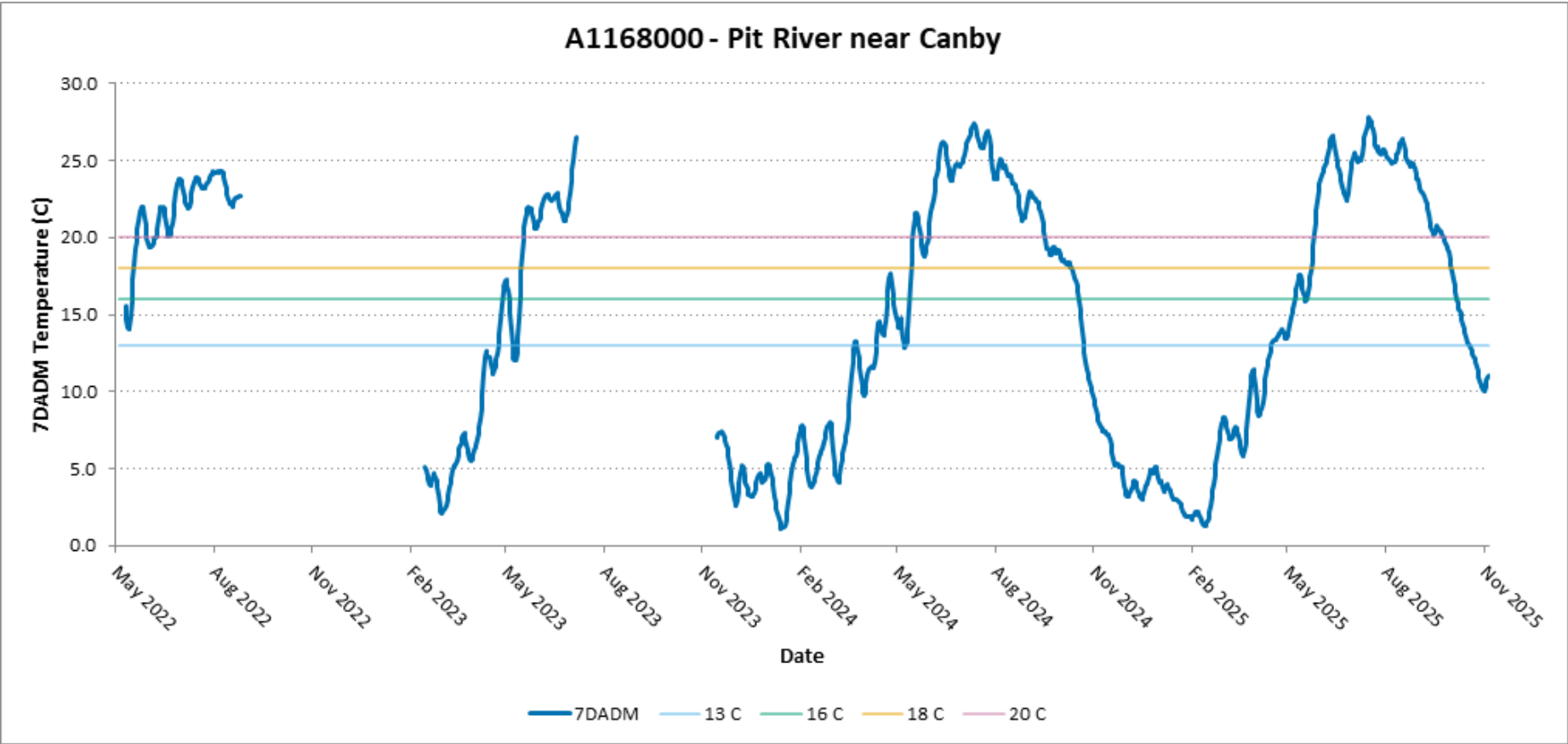


Figure 8-5. Pit River near Montgomery Creek Thermograph

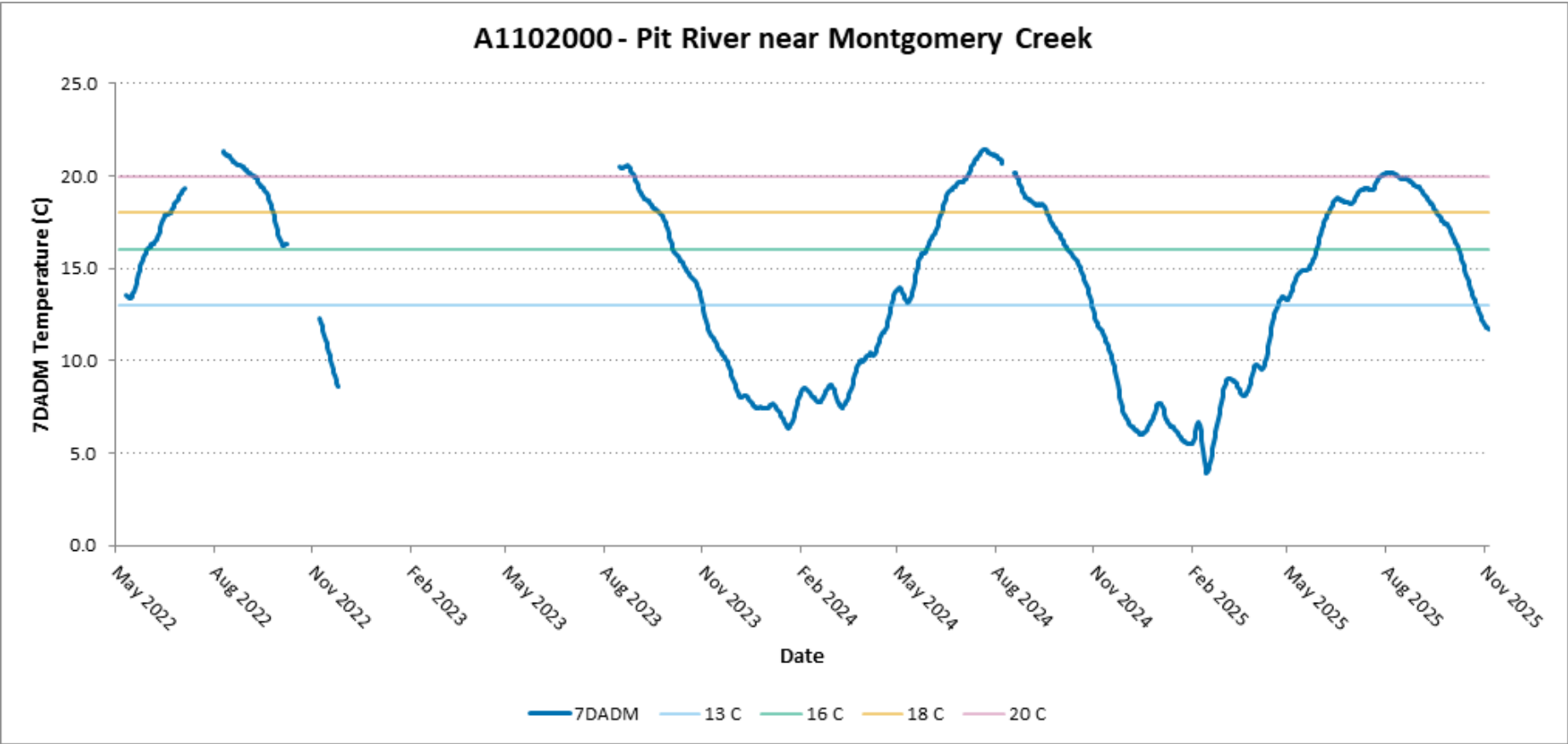


Figure 8-6. Pit River North Fork at Alturas Thermograph

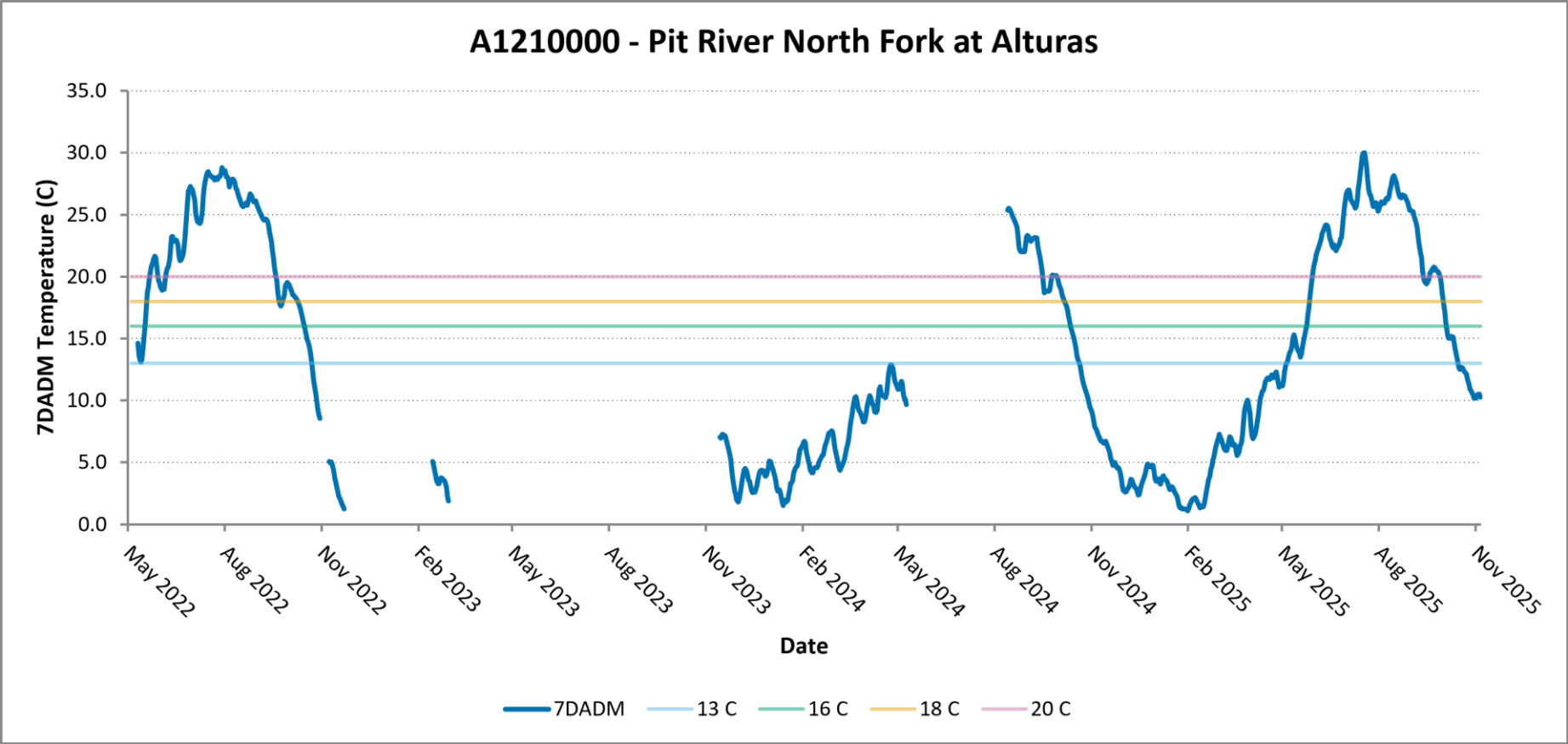


Figure 8-7. Pit River South Fork near Alturas Thermograph

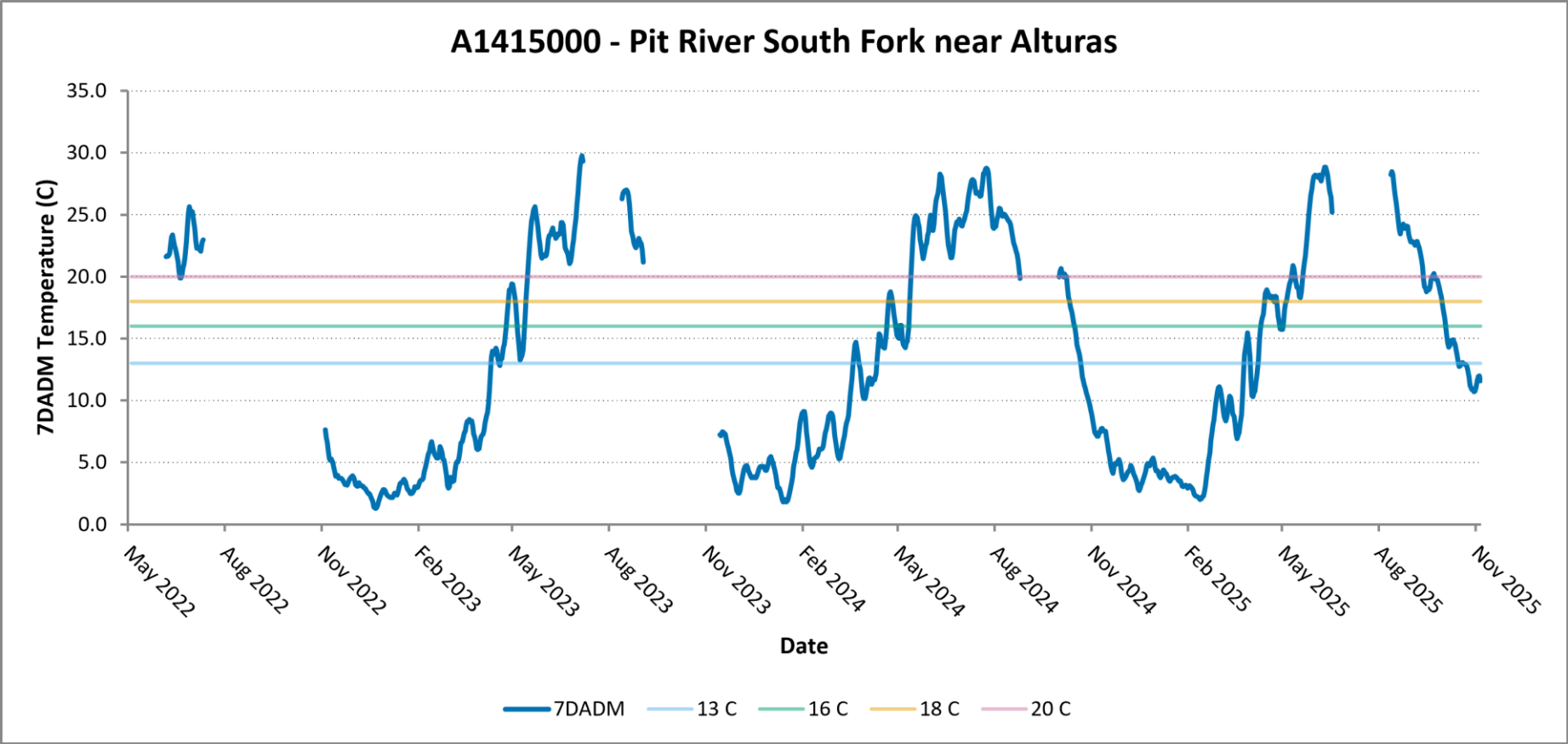


Figure 8-8. Sacramento River at Delta Thermograph

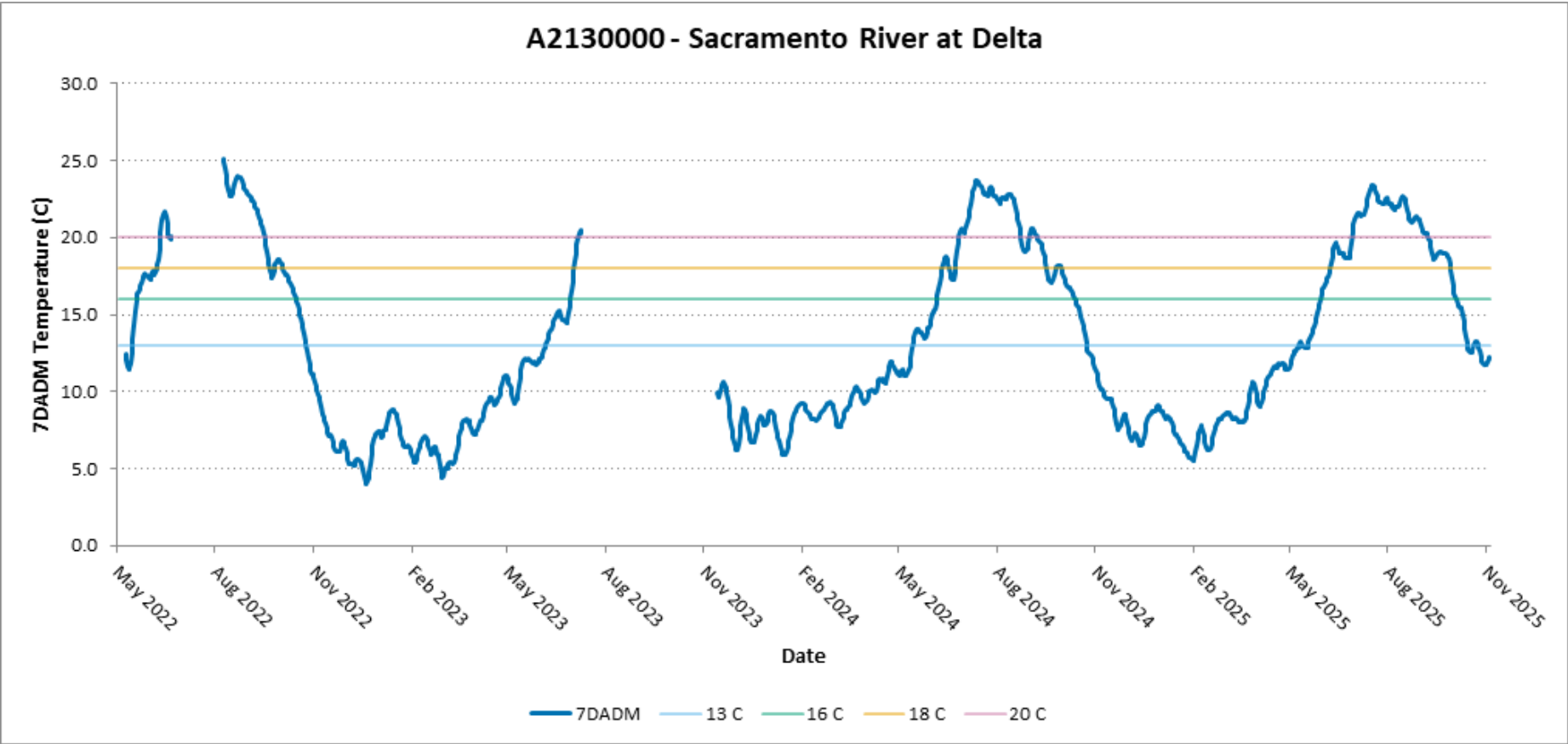
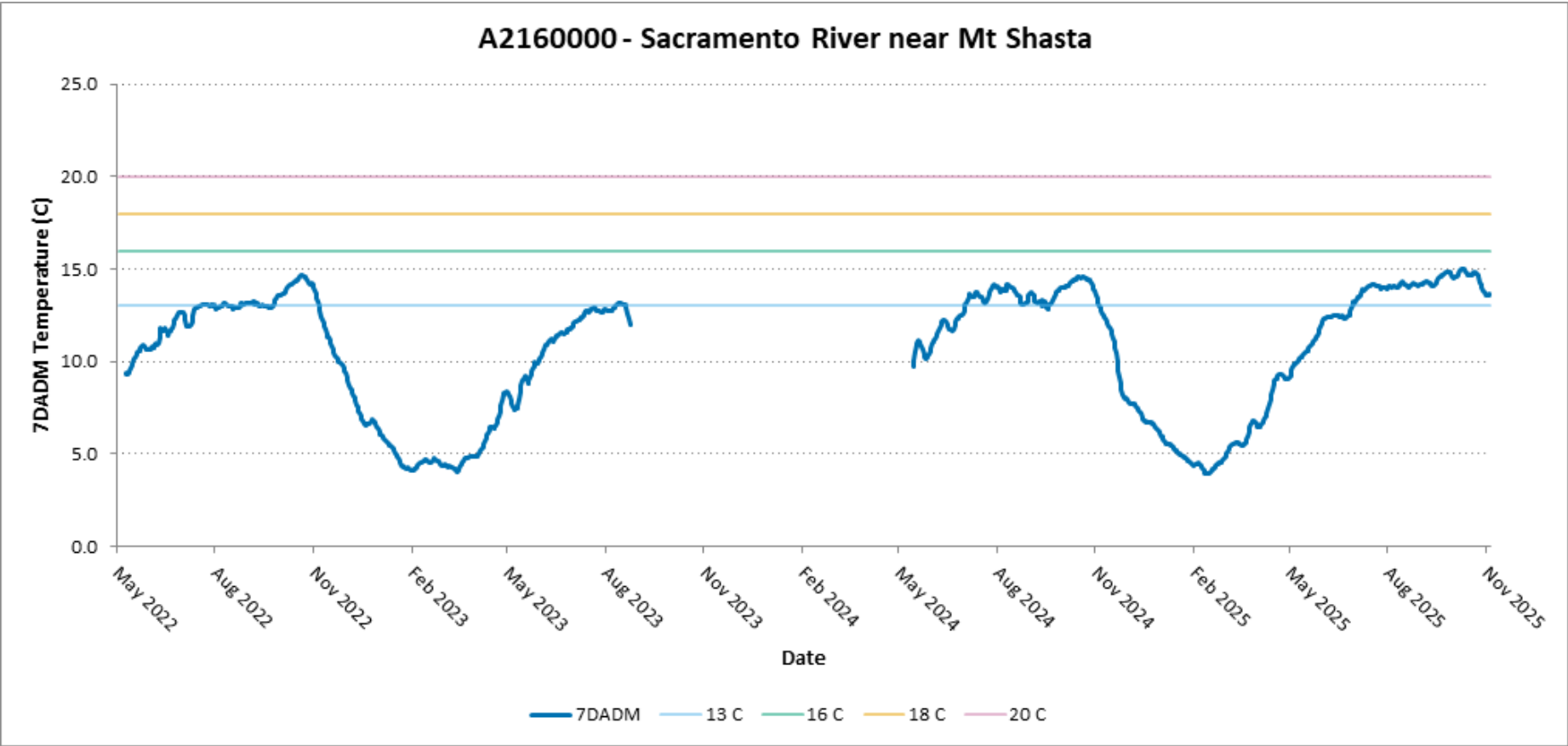


Figure 8-9. Sacramento River near Mt. Shasta Thermograph



8.4 Eastside Subregion Thermographs

Figure 8-10. Antelope Creek near mouth near mouth near Red Bluff Thermograph

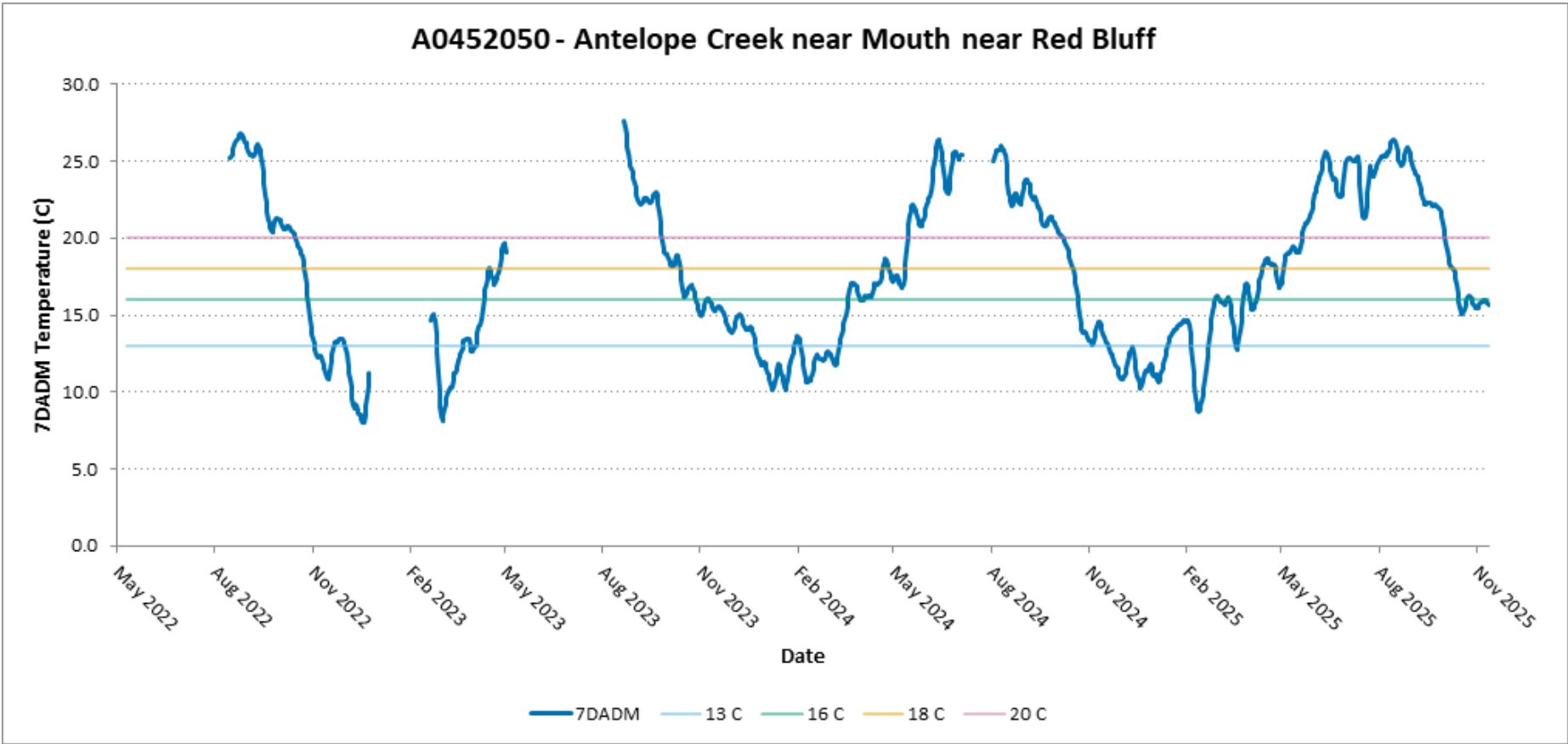


Figure 8-11. Battle Creek at Jellys Ferry Road Bridge Thermograph

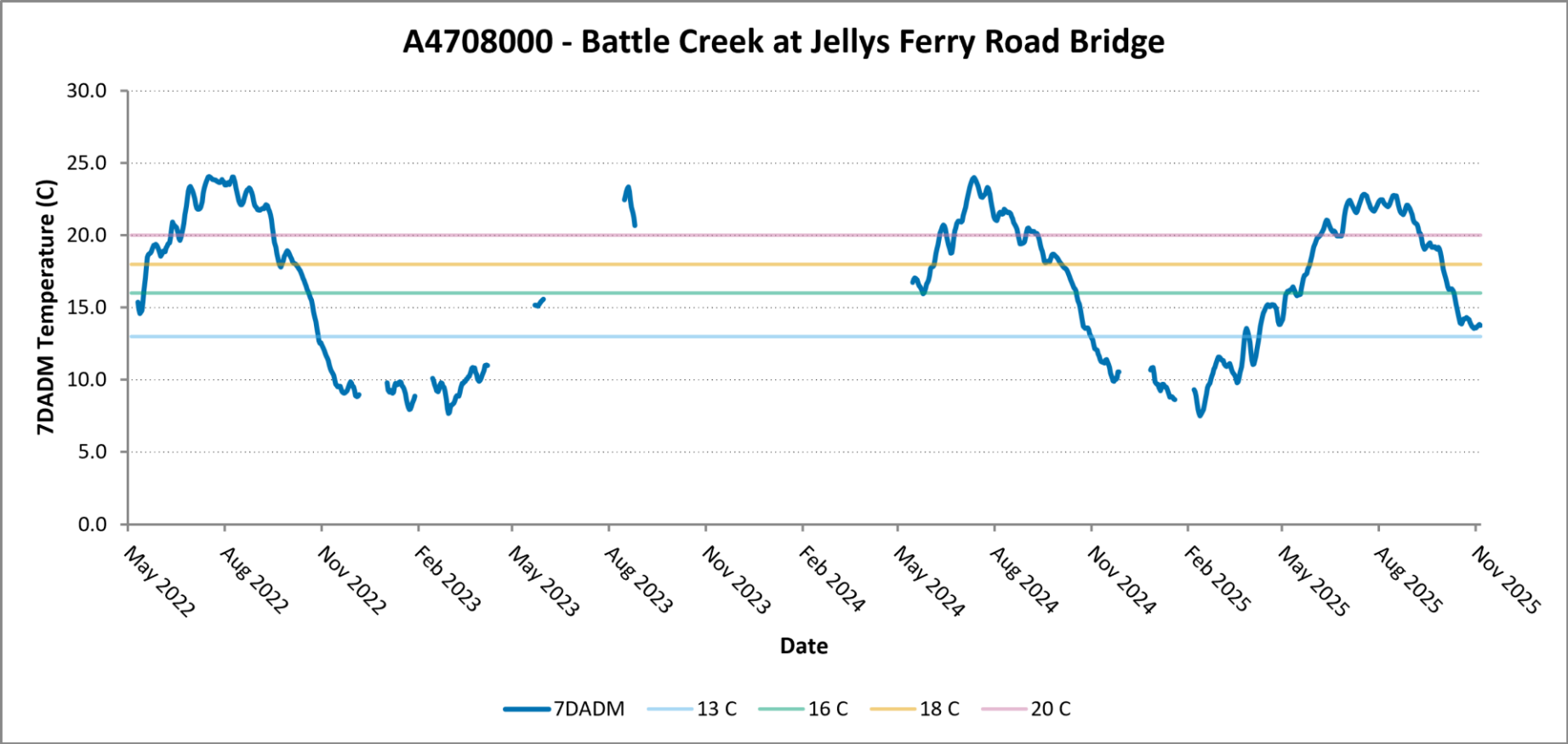


Figure 8-12. Battle Creek North Fork near Manton Thermograph

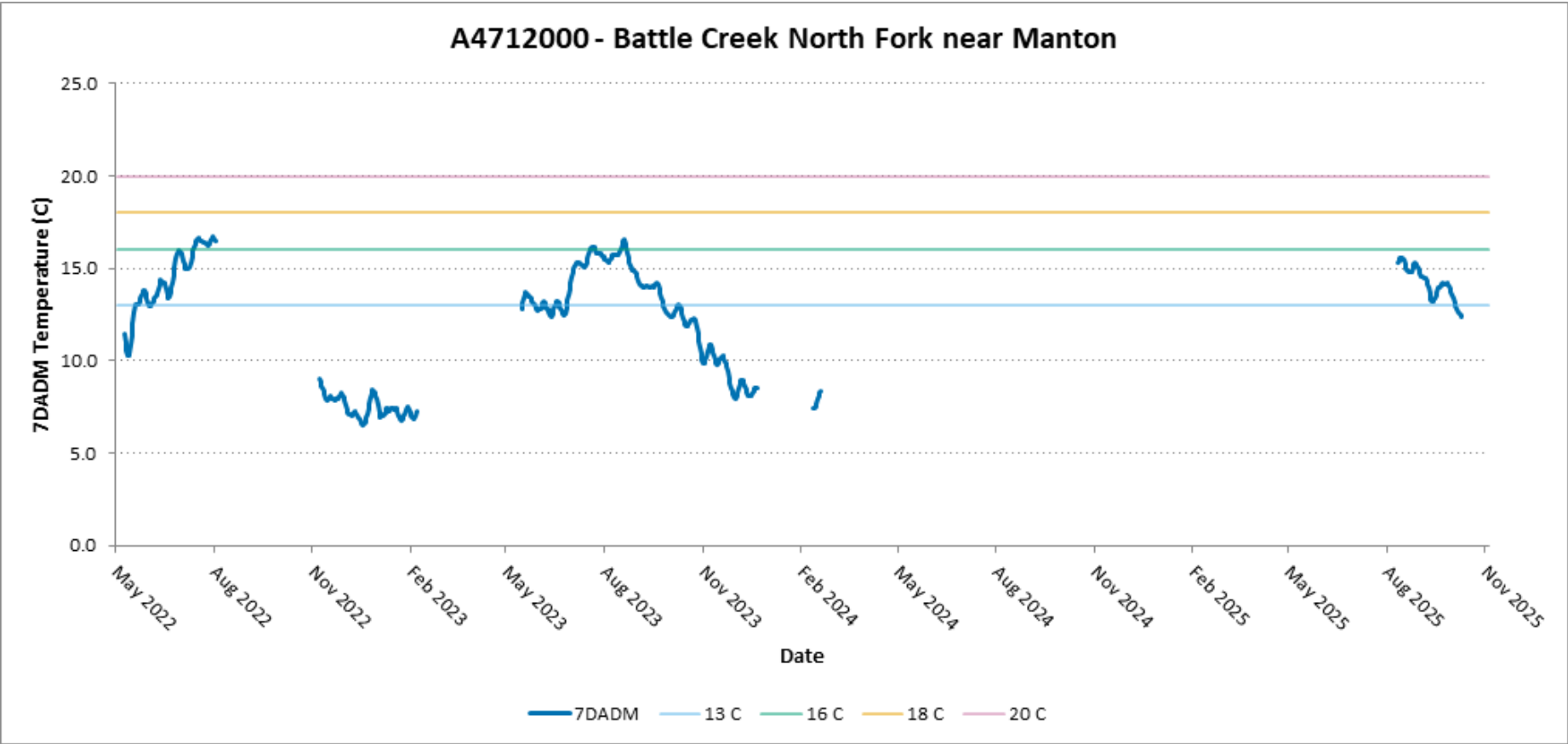


Figure 8-13. Battle Creek South Fork near Mineral Thermograph

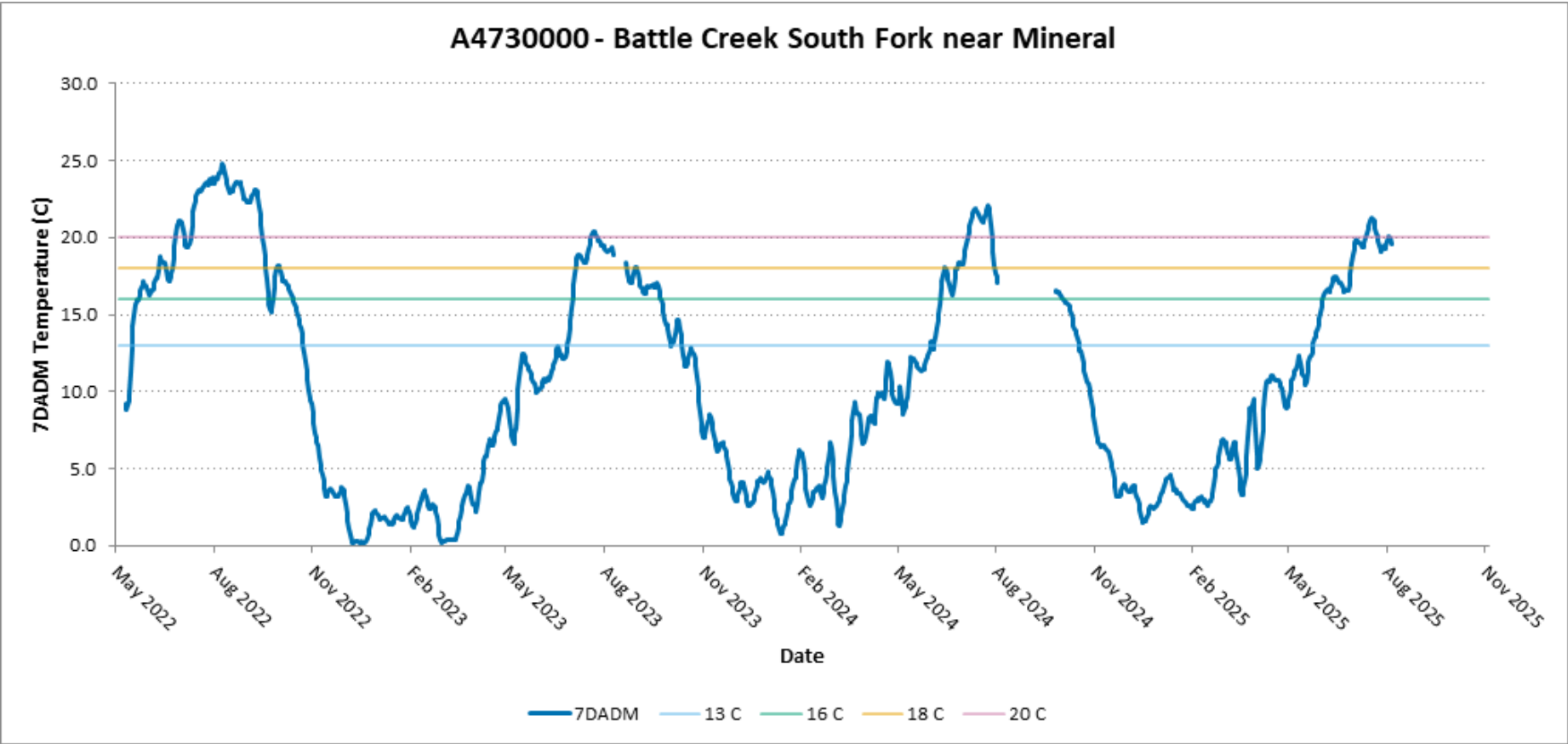
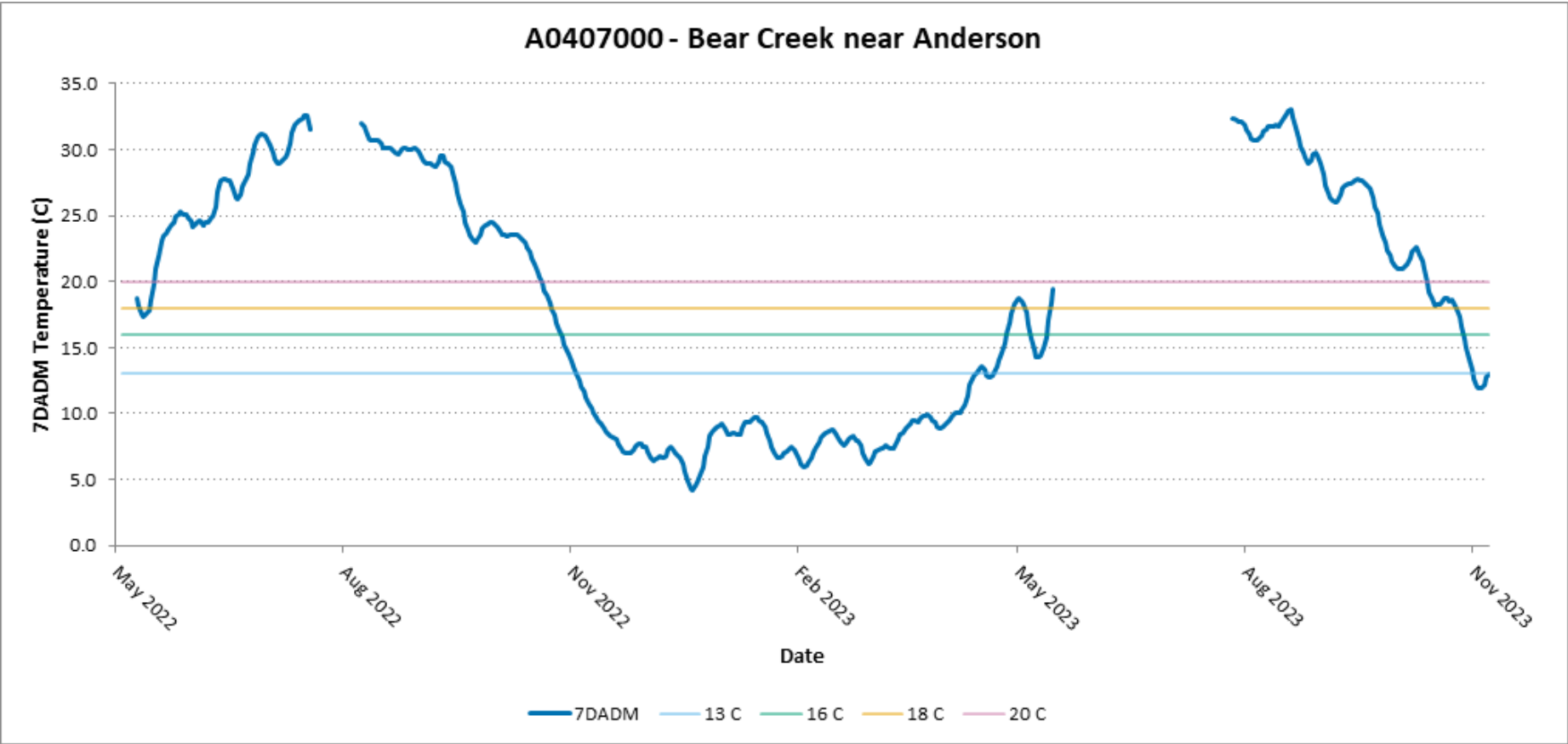
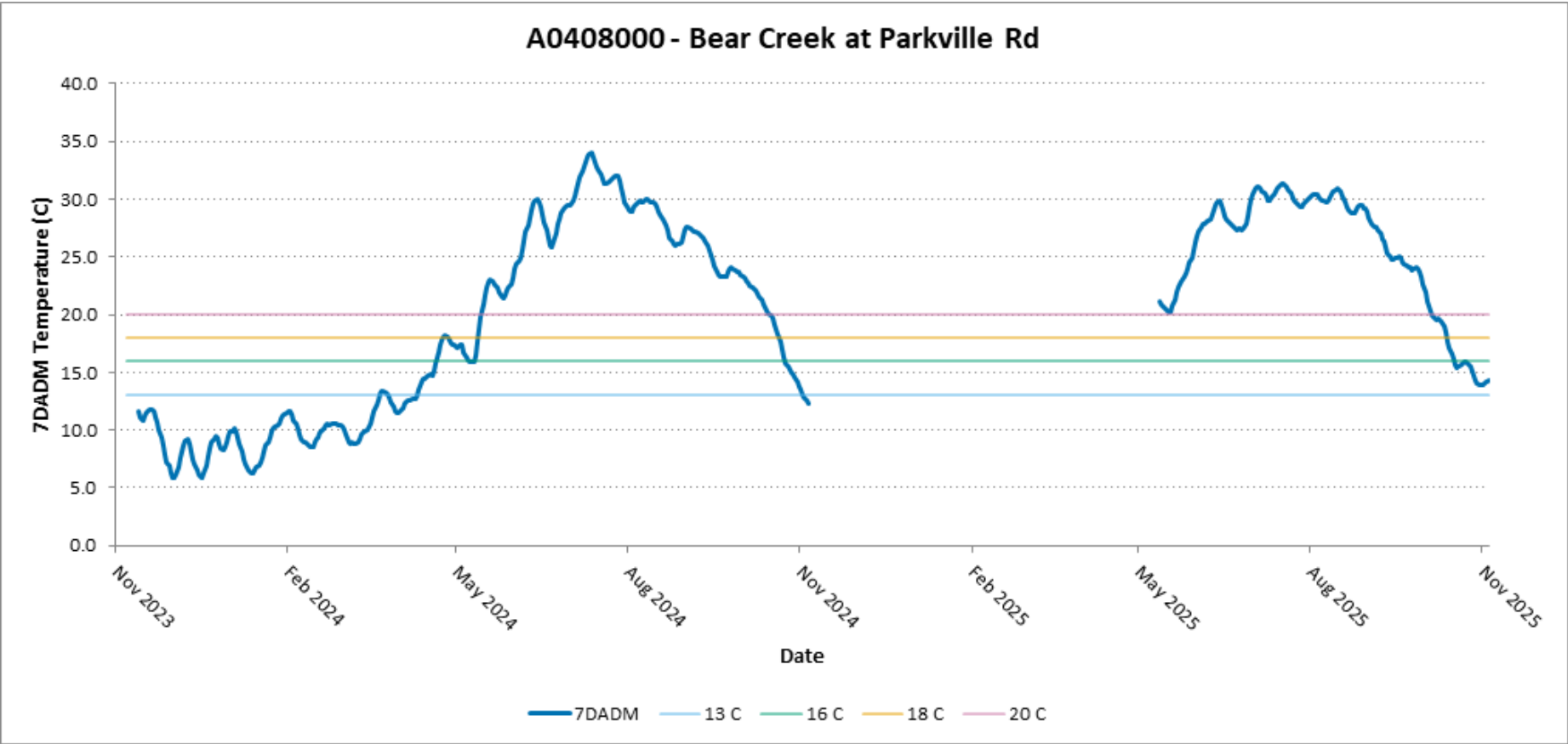


Figure 8-14. Bear Creek near Anderson Thermograph



Note: This station was relocated to A0408000 — Bear Creek at Parkville Rd after August 2023.

Figure 8-15. Bear Creek at Parkville Rd Thermograph



This station was relocated from A0407000 — Bear Creek near Anderson after August 2023.

Figure 8-16. Big Chico Creek at Chico Thermograph

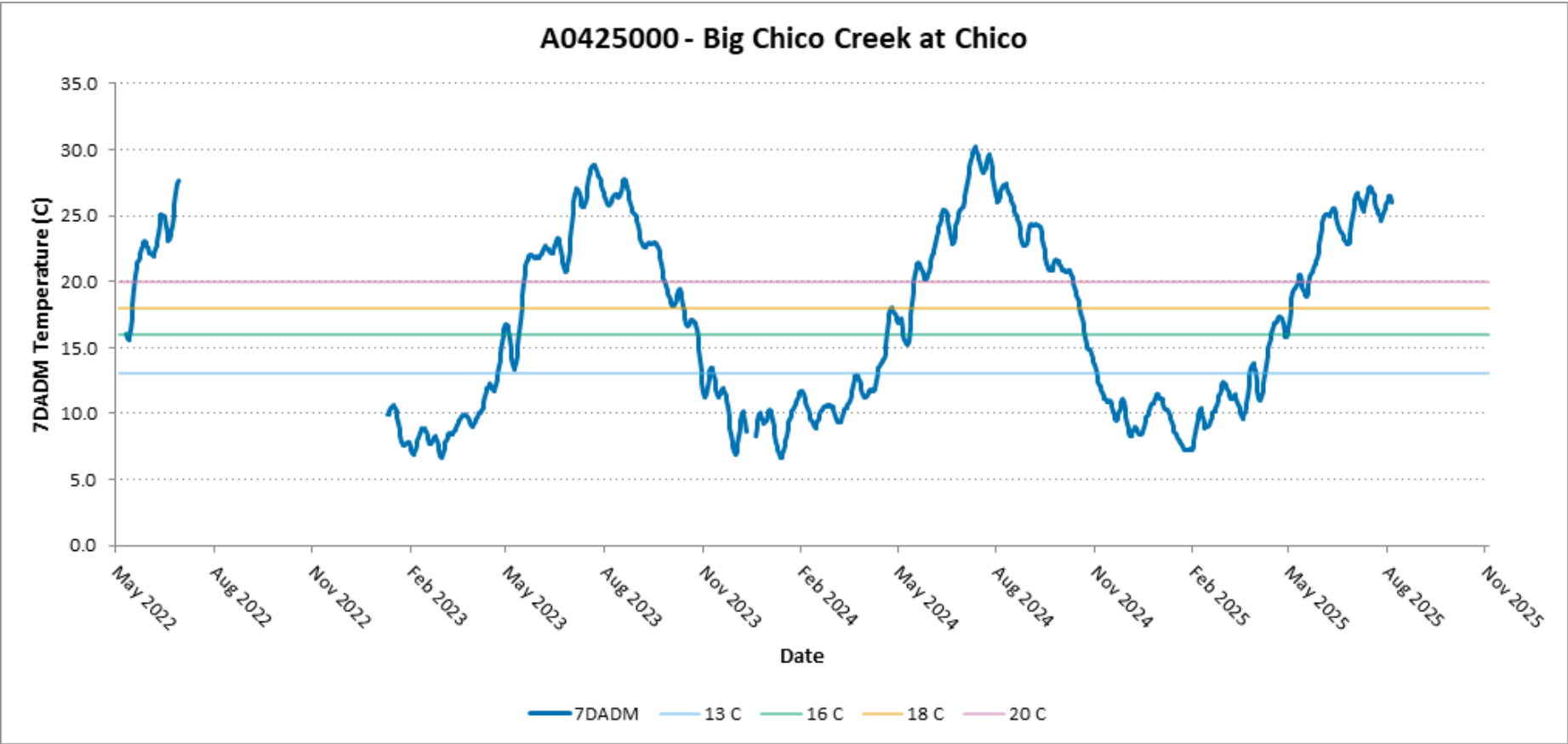


Figure 8-17. Big Chico Creek at Highway 32 Thermograph

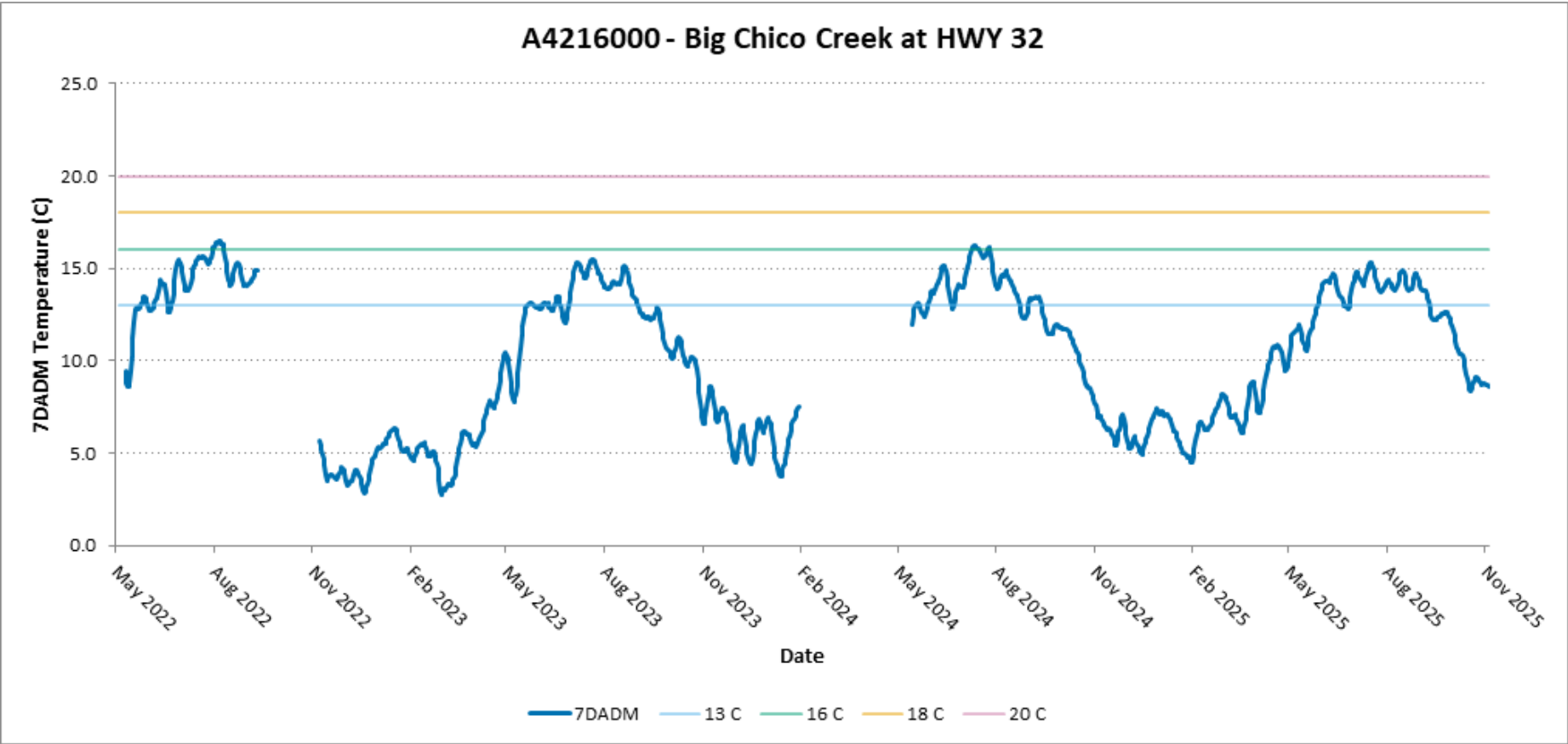


Figure 8-18. Butte Creek at Butte Meadows Thermograph

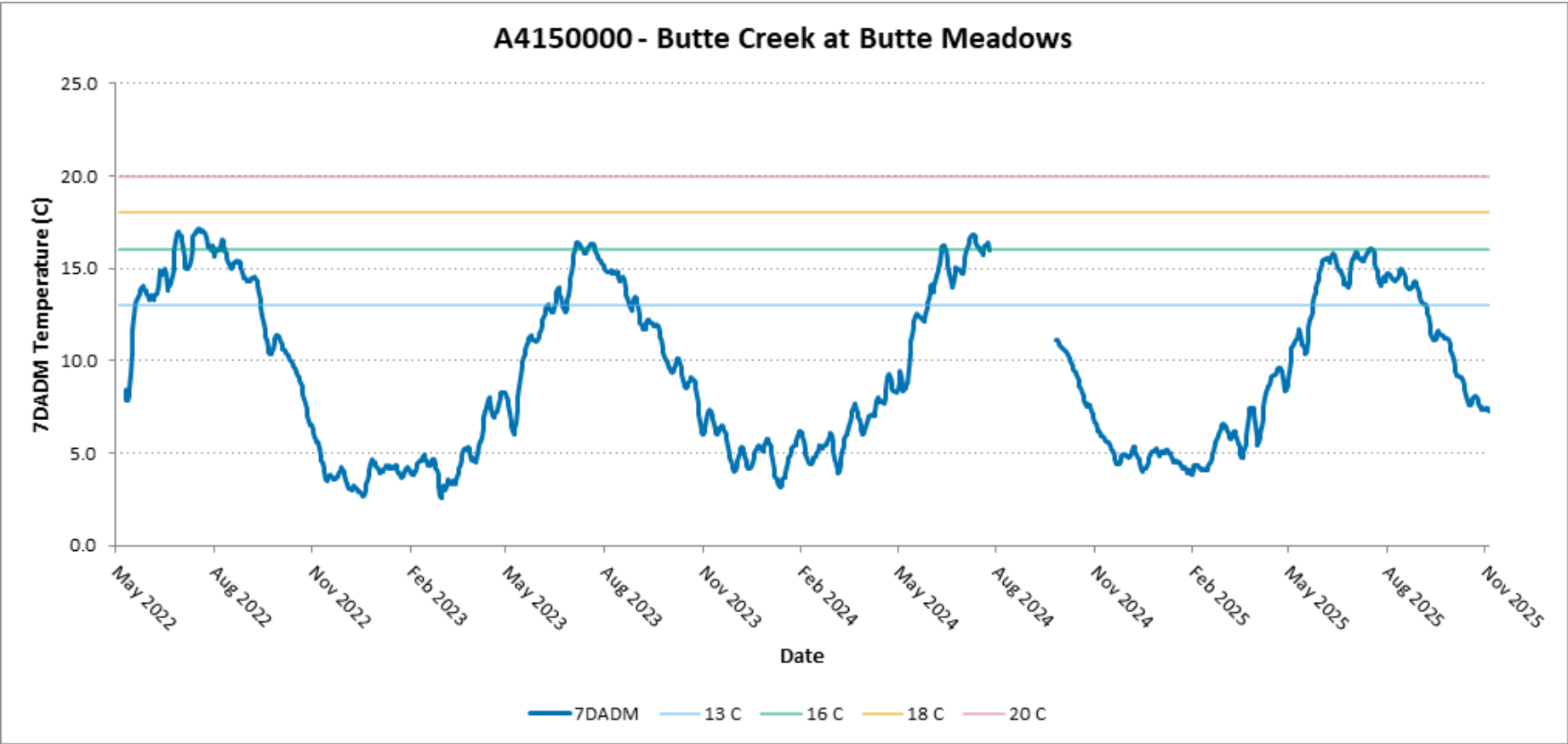


Figure 8-19. Butte Creek downstream Western Canal Siphon Thermograph

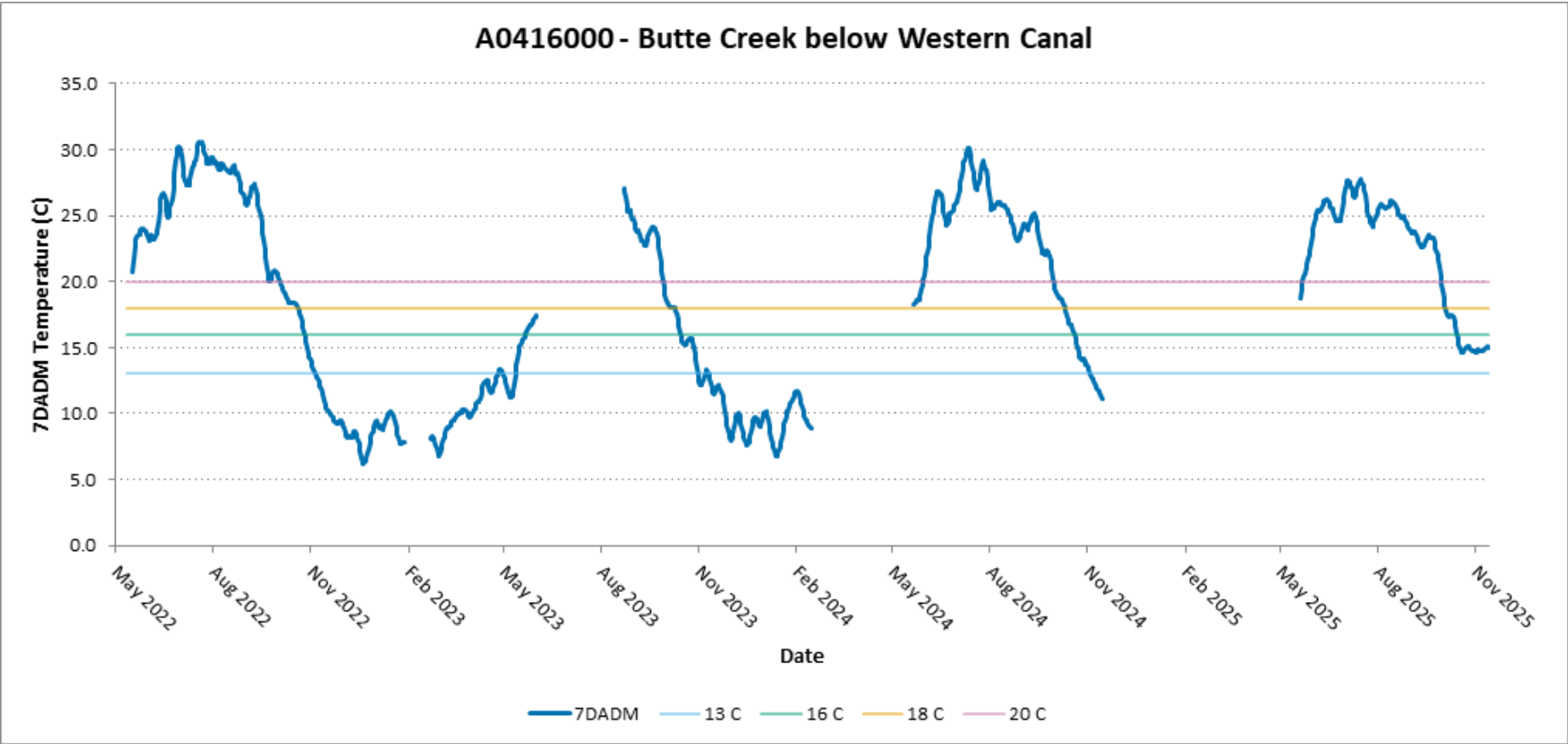


Figure 8-20. Churn Creek near Anderson Thermograph

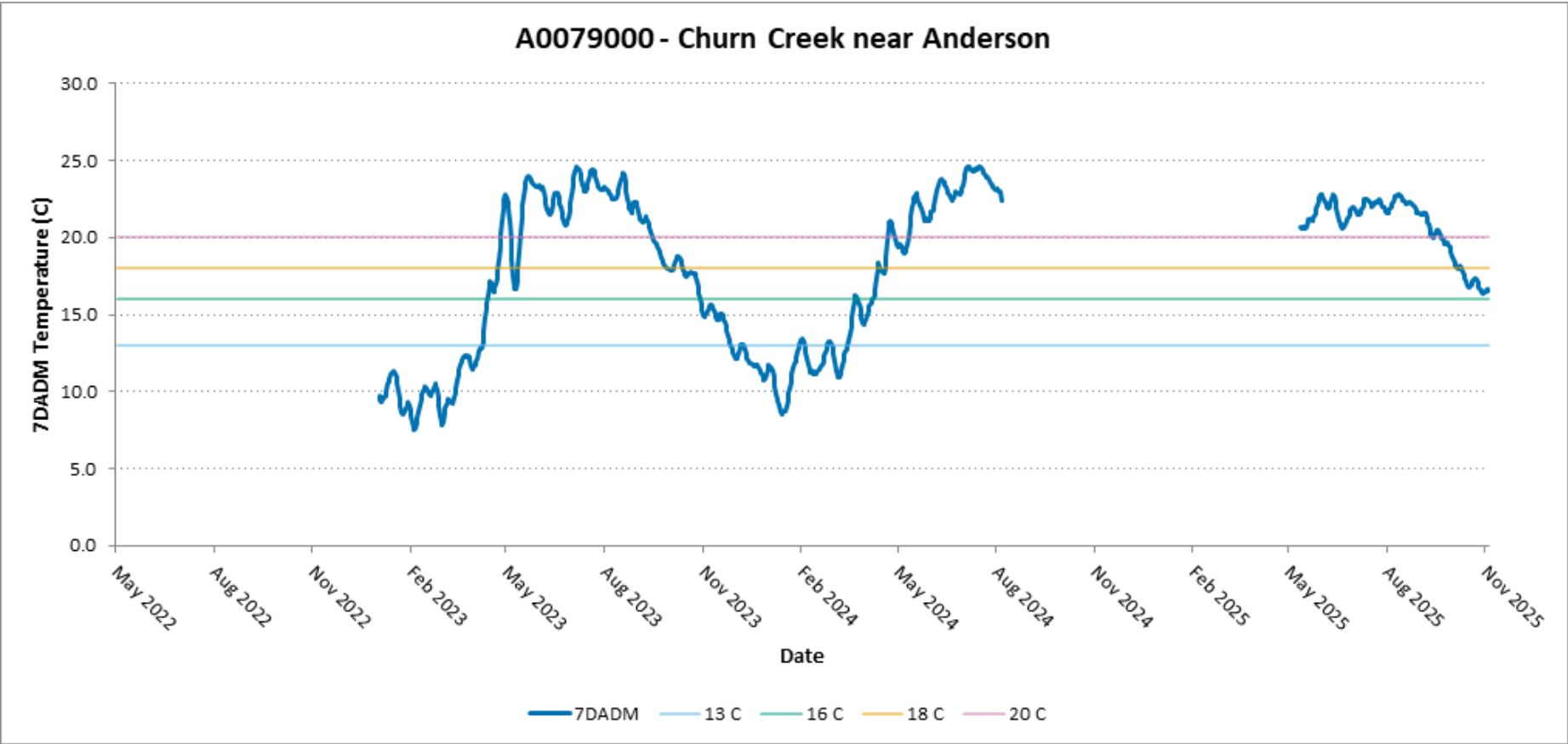


Figure 8-21. Cow Creek near Millville Thermograph

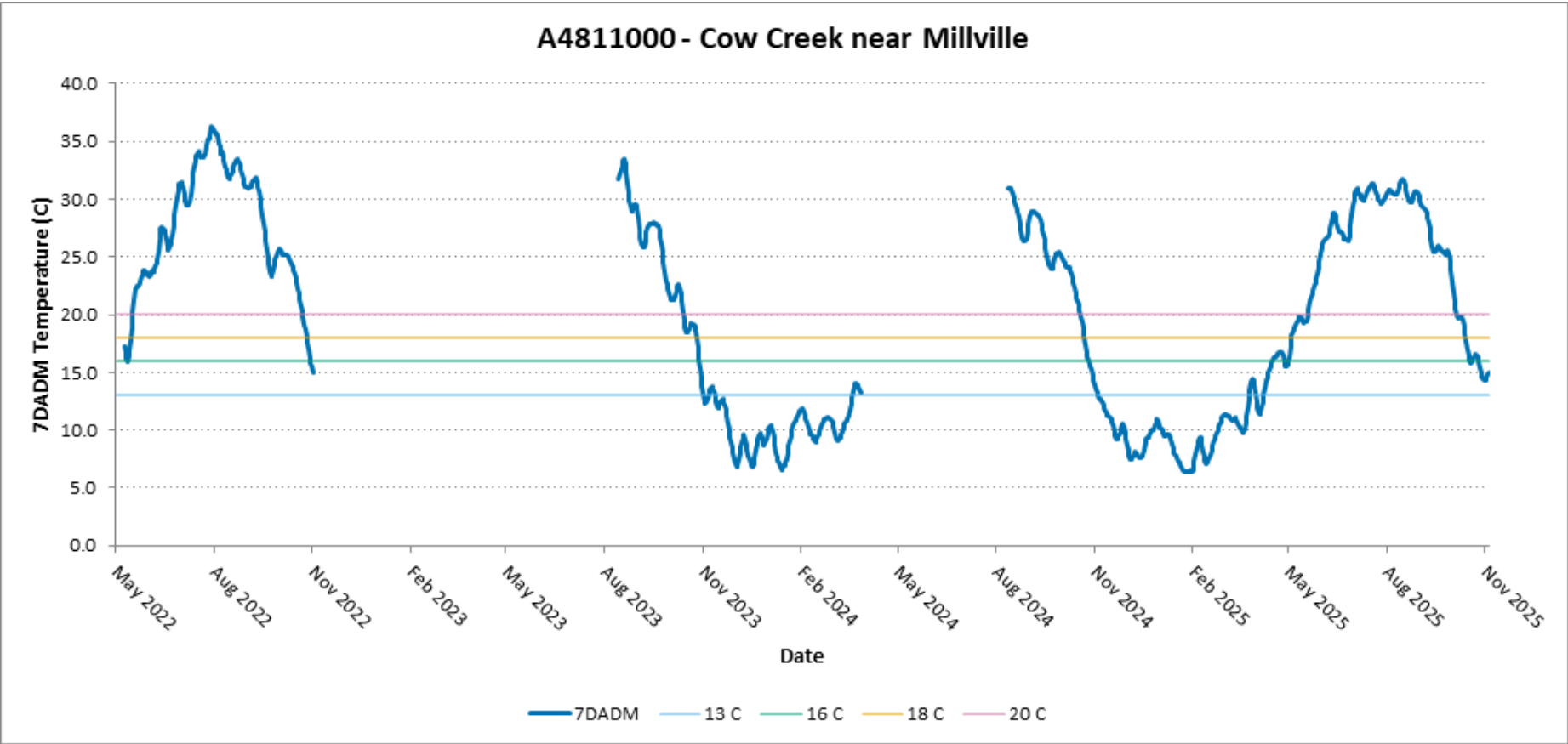


Figure 8-22. Cow Creek Old above Killarc Thermograph

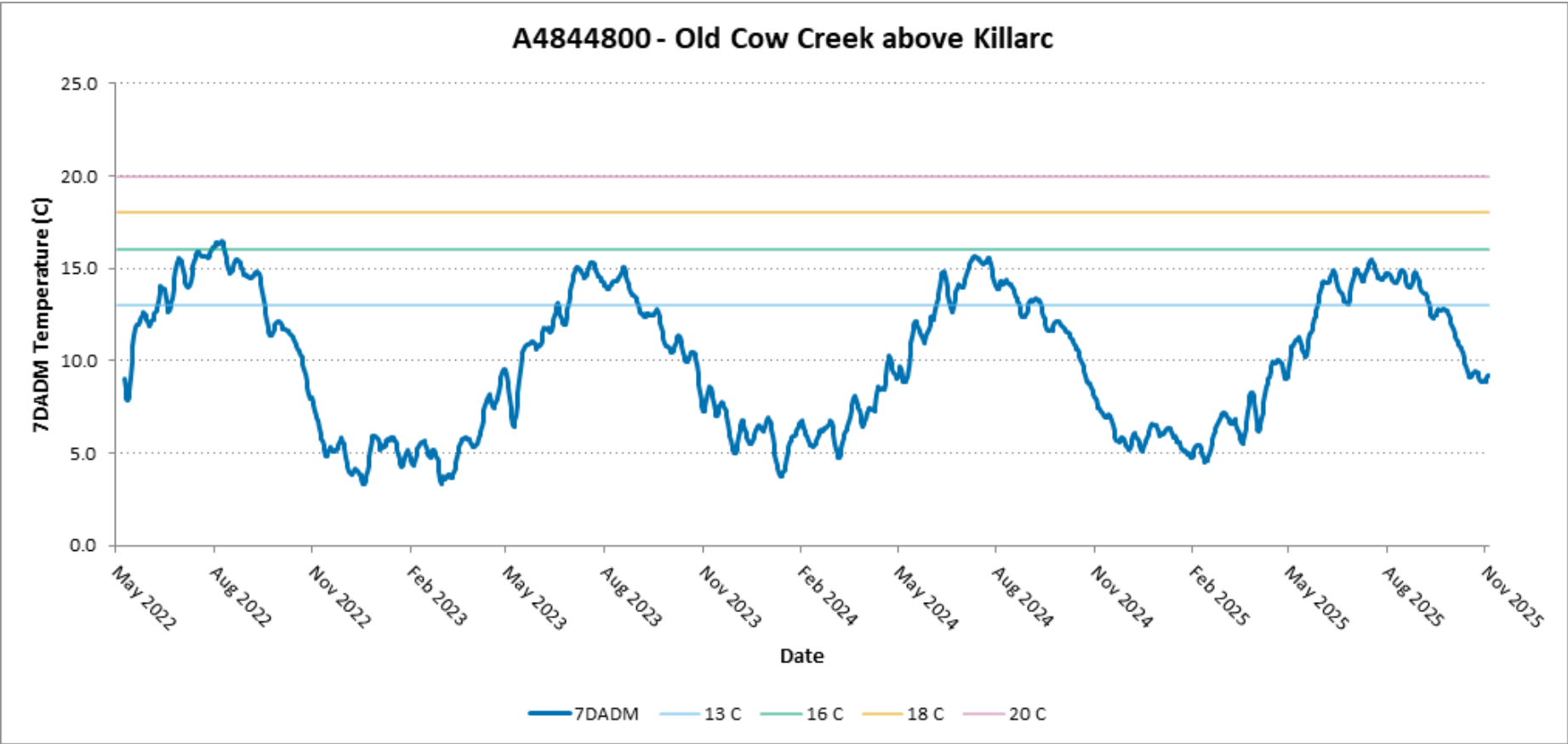


Figure 8-23. Cow Creek South at Campground Thermograph

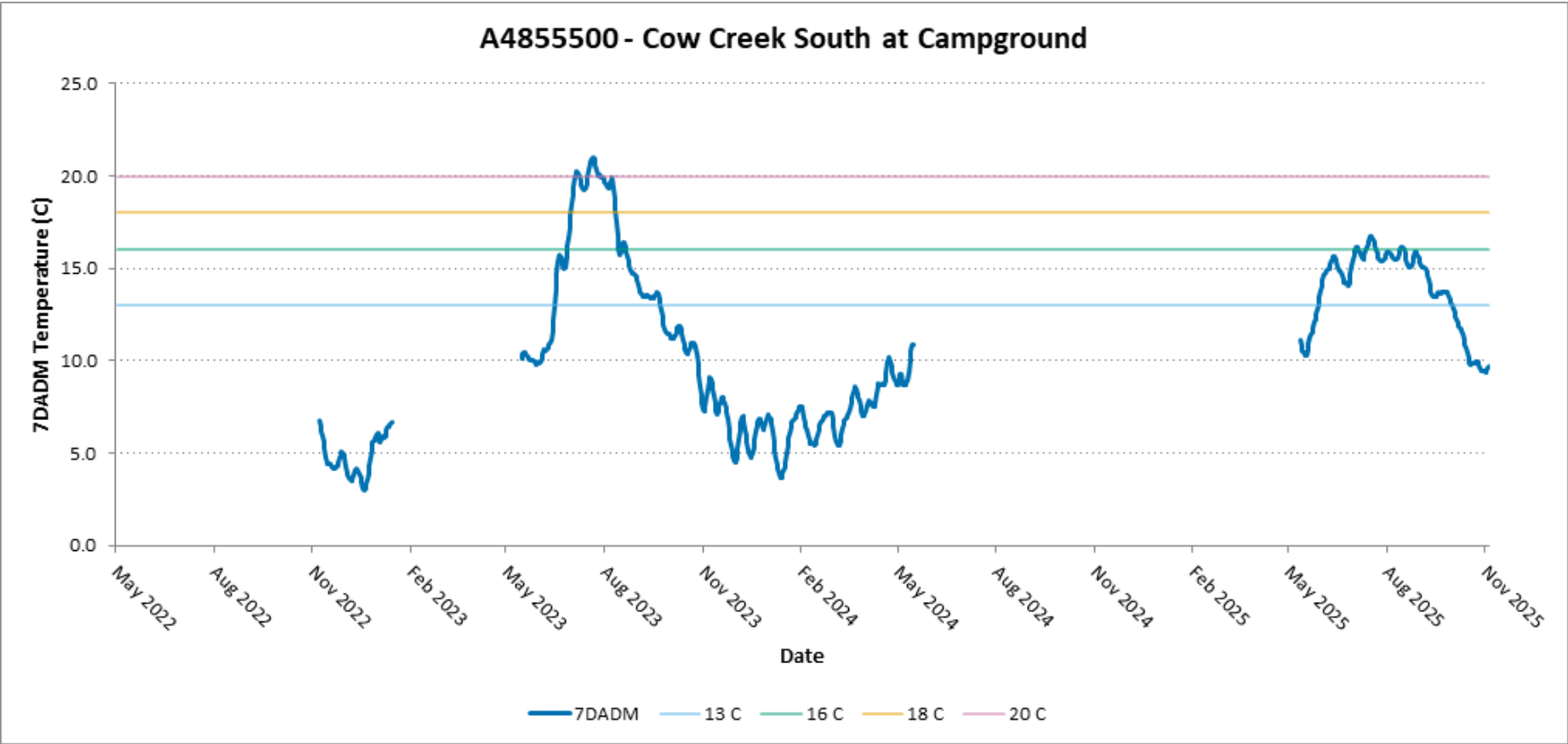


Figure 8-24. Deer Creek at Deer Station Thermograph

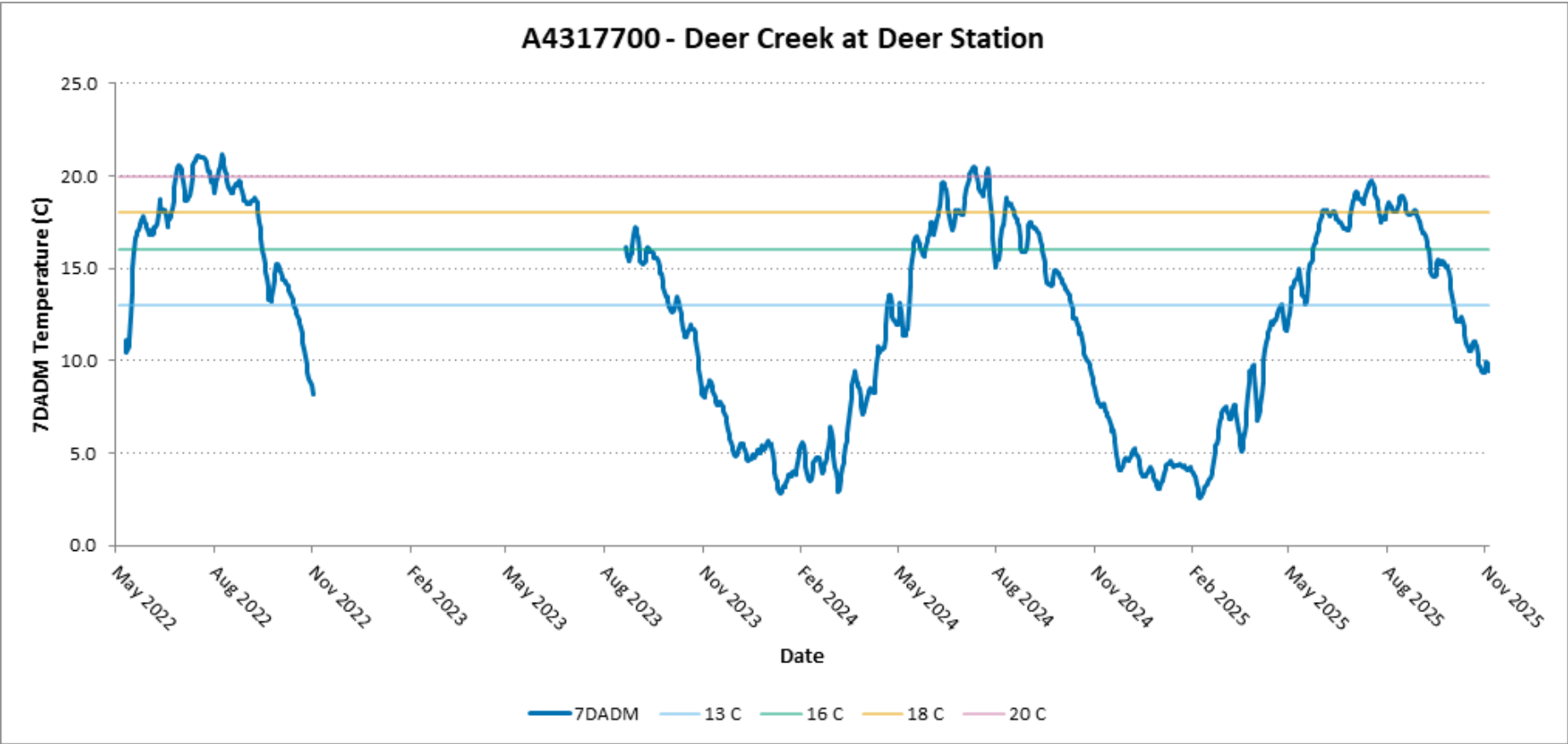


Figure 8-25. Deer Creek at Hwy 99E near Vina Thermograph

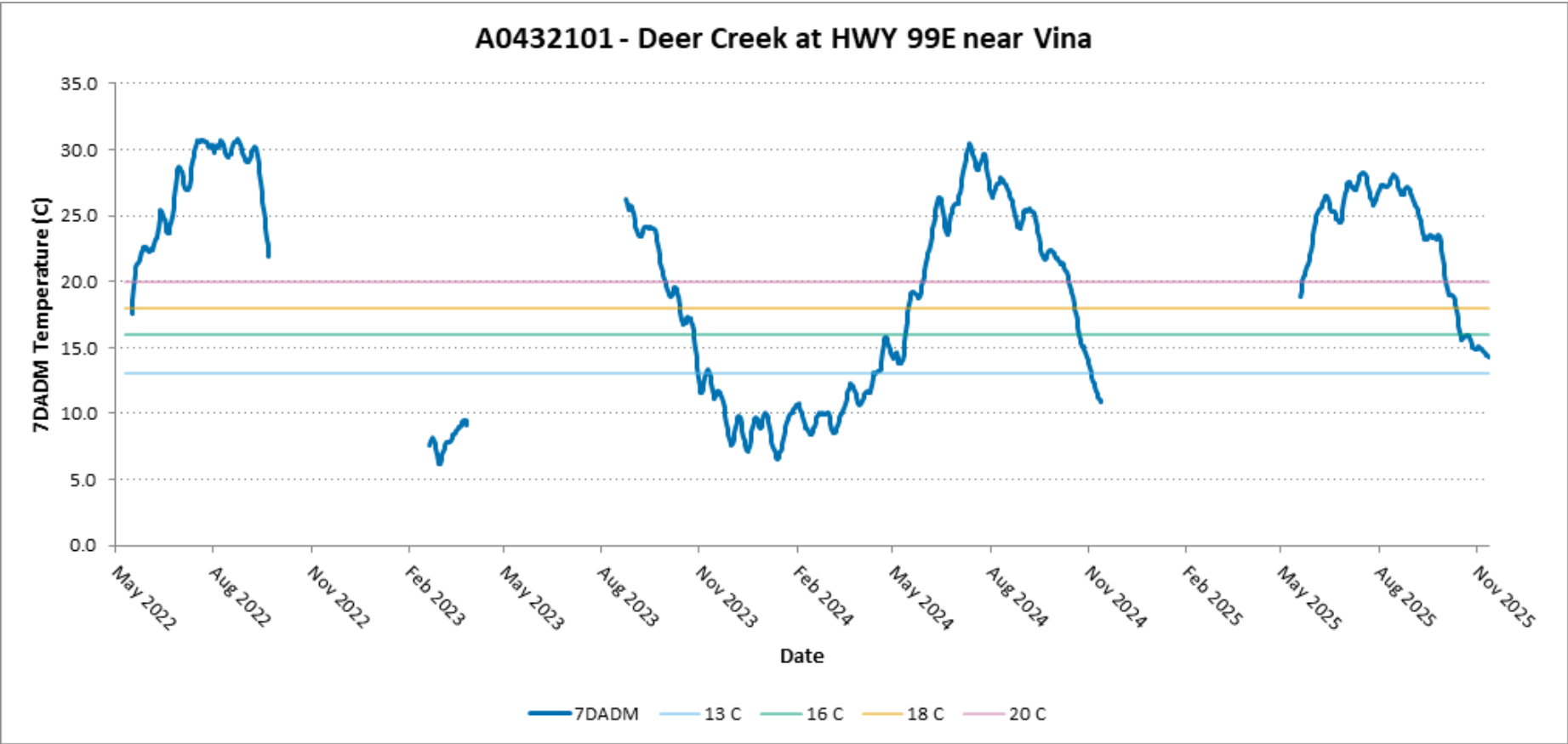


Figure 8-26. Mill Creek near Mineral Thermograph

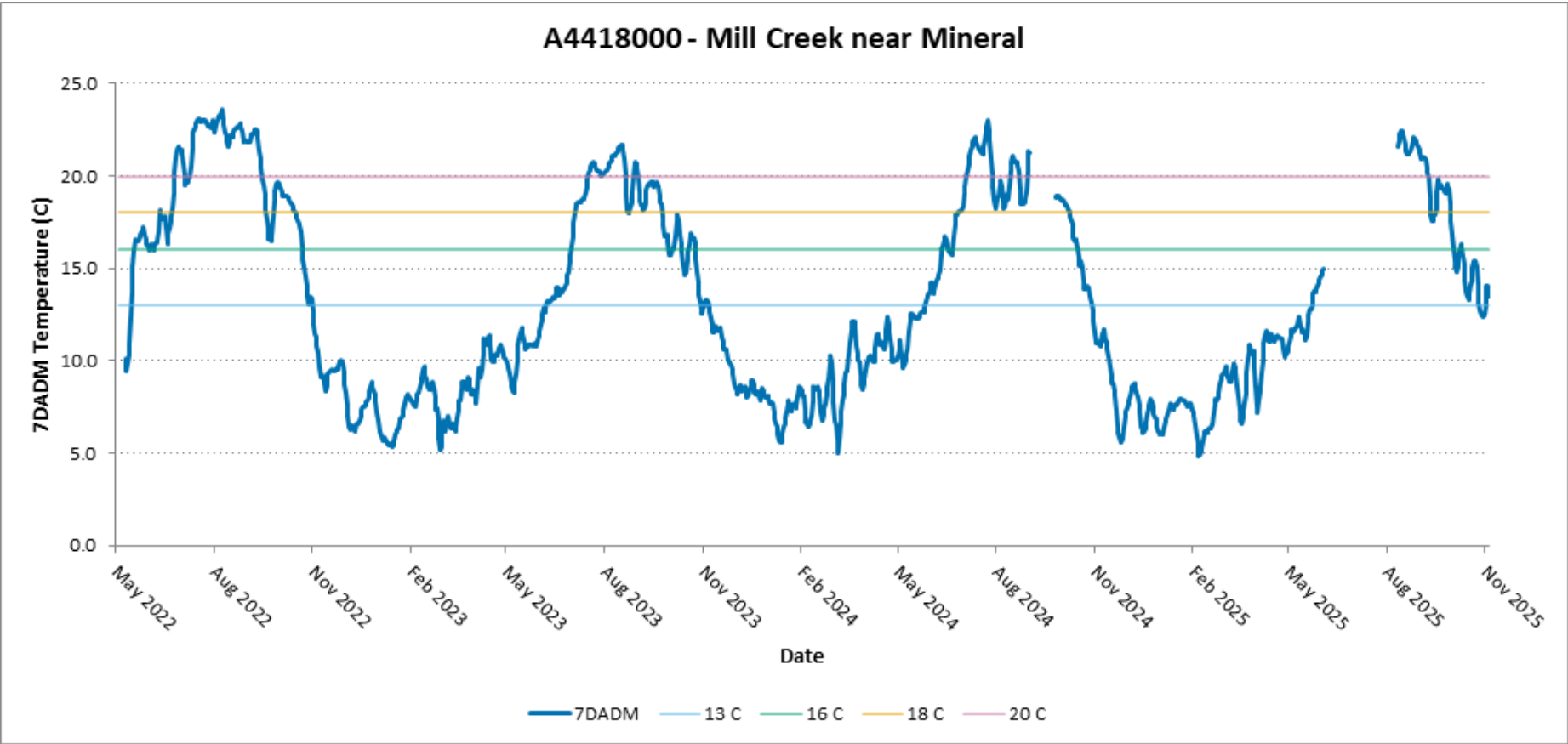


Figure 8-27. Mill Creek near mouth near Los Molinos Thermograph

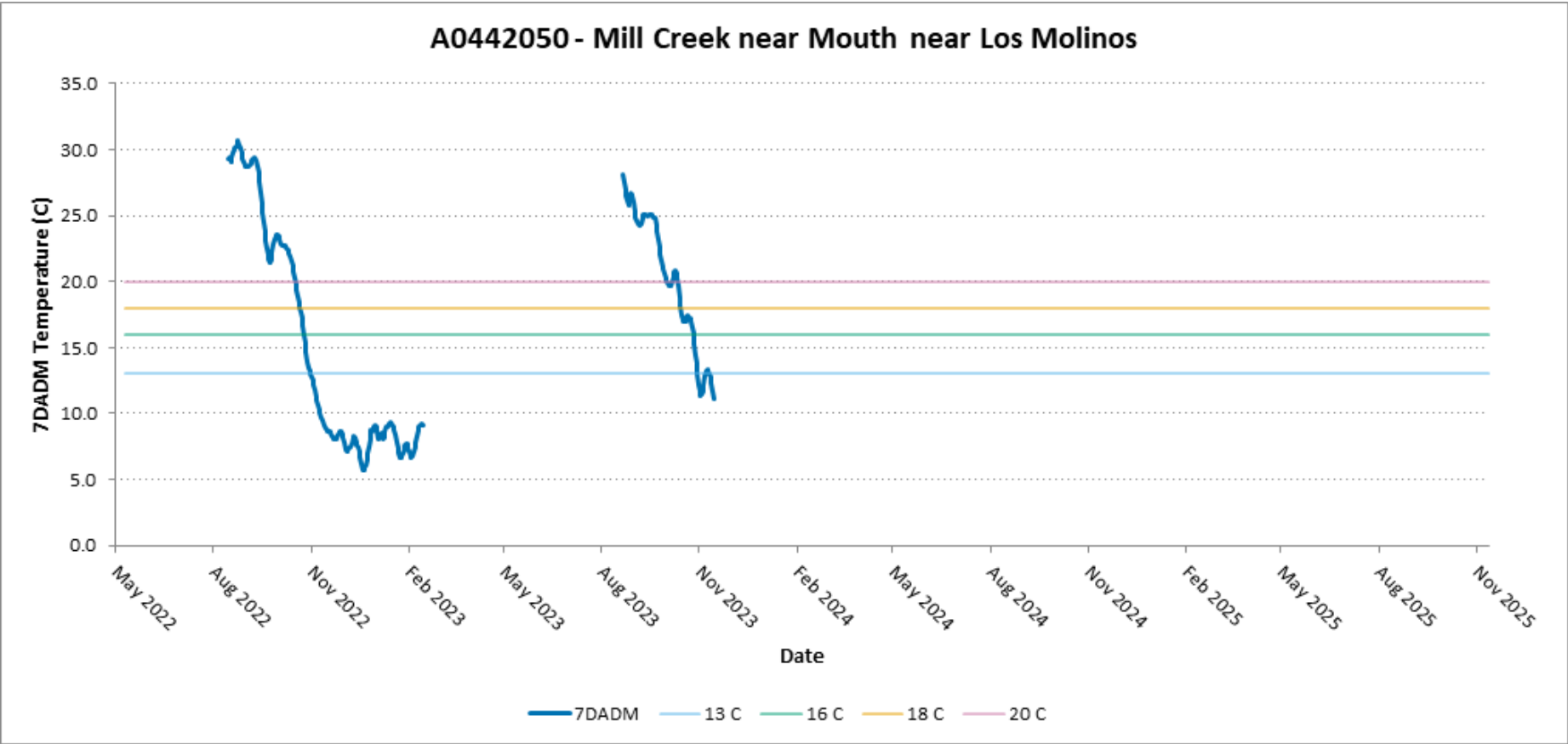


Figure 8-28. Oak Run Creek near Oak Run Thermograph

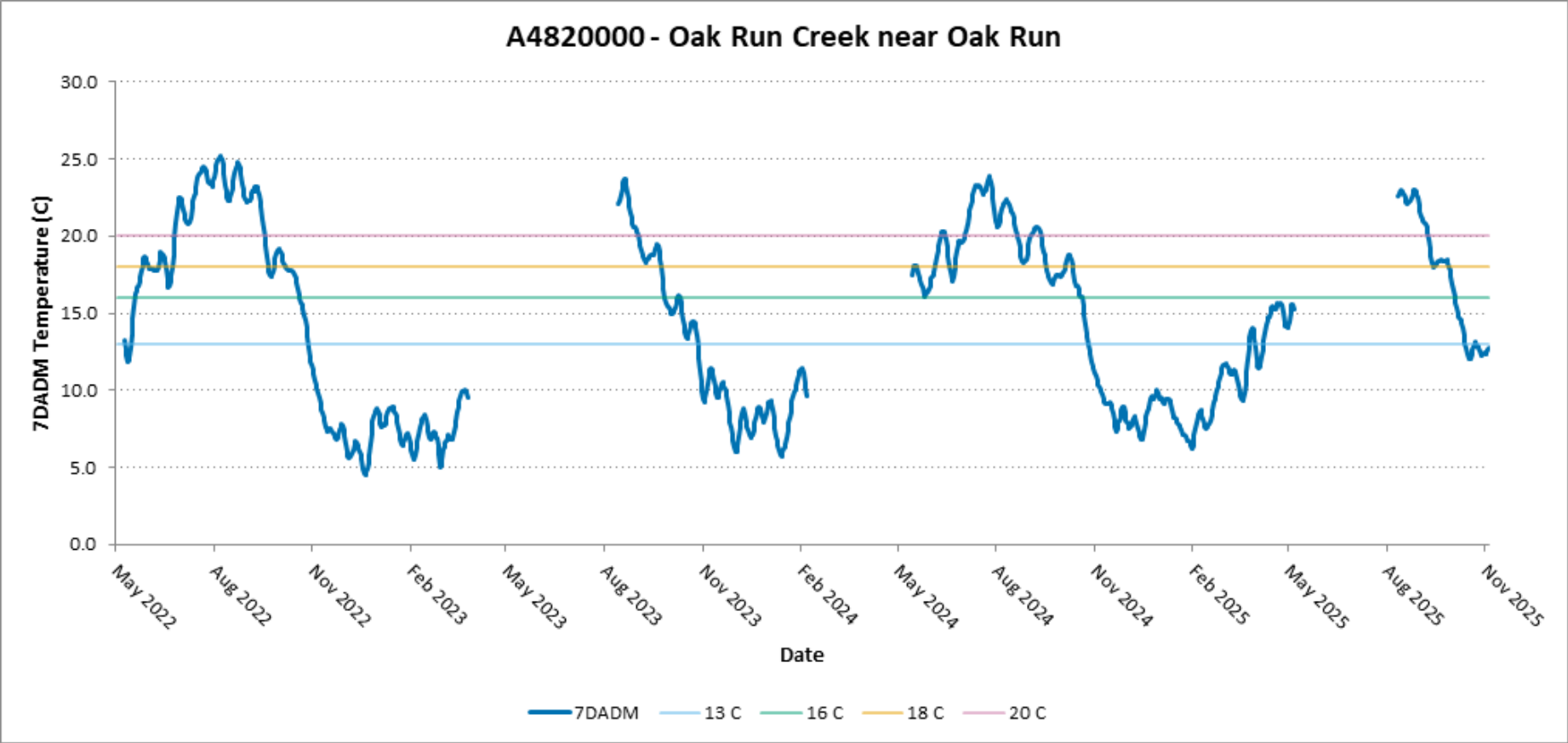


Figure 8-29. Paynes Creek at Paynes Crossing Thermograph

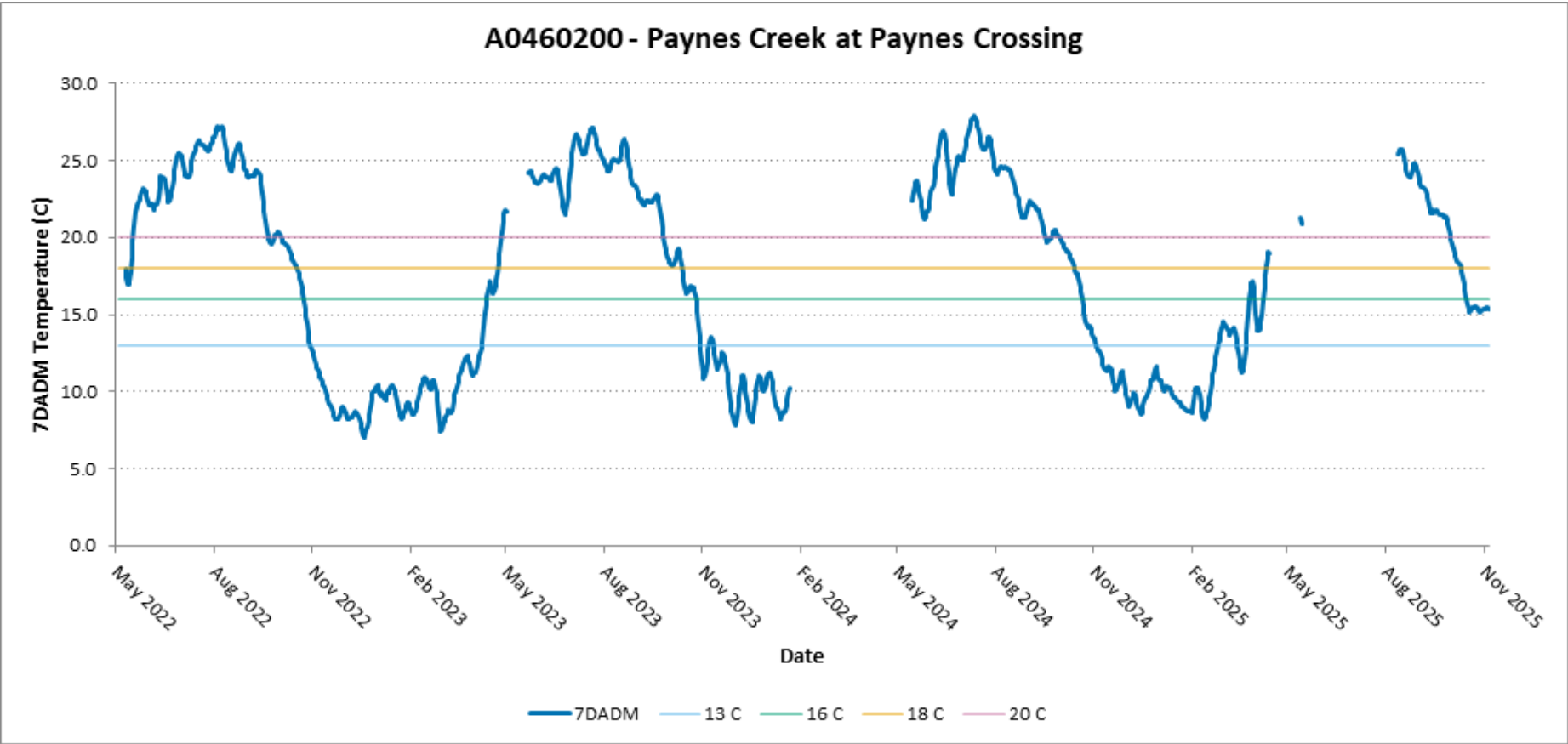
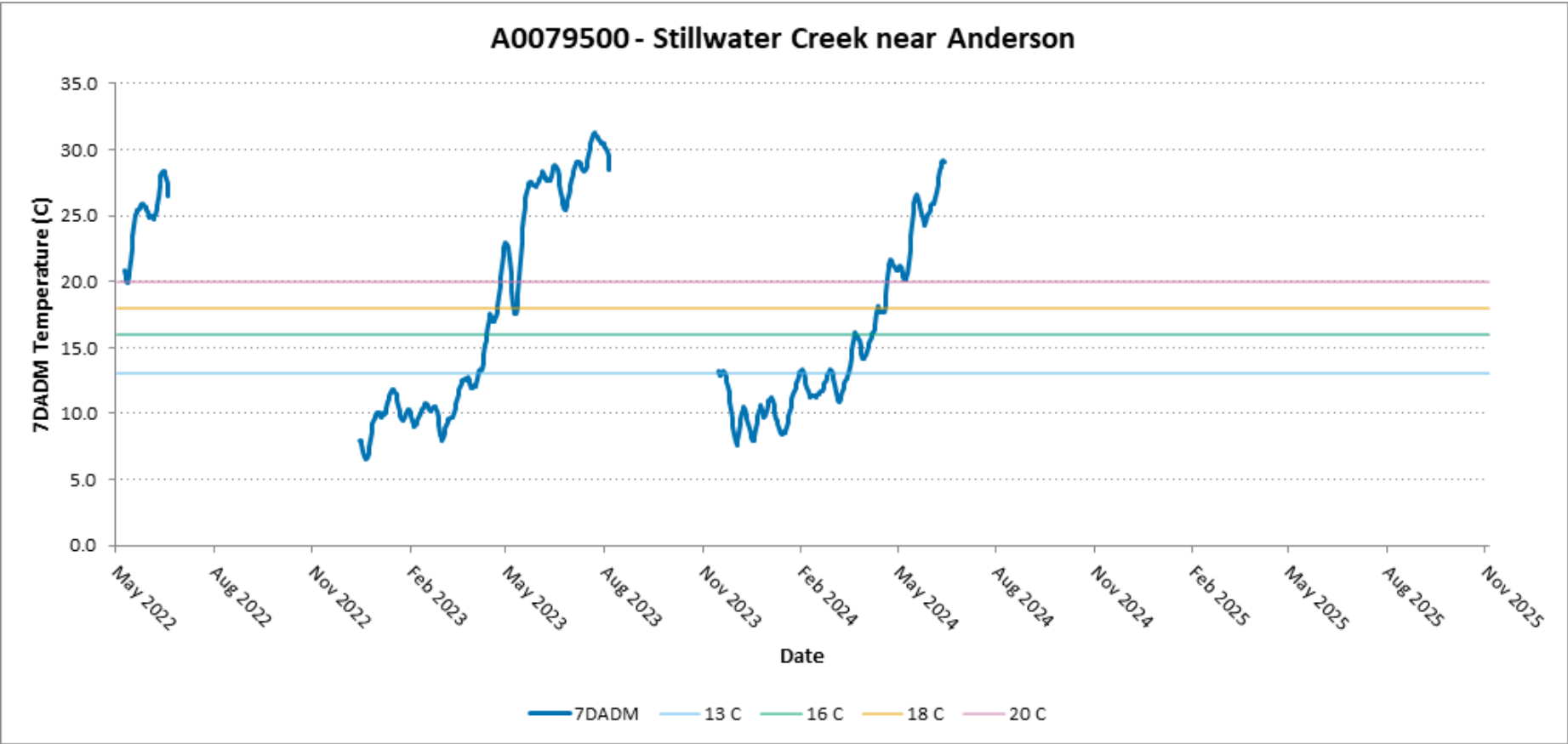


Figure 8-30. Stillwater Creek near Anderson Thermograph



8.5 Sacramento Valley Subregion Thermographs

Figure 8-31. Bear River near mouth Thermograph

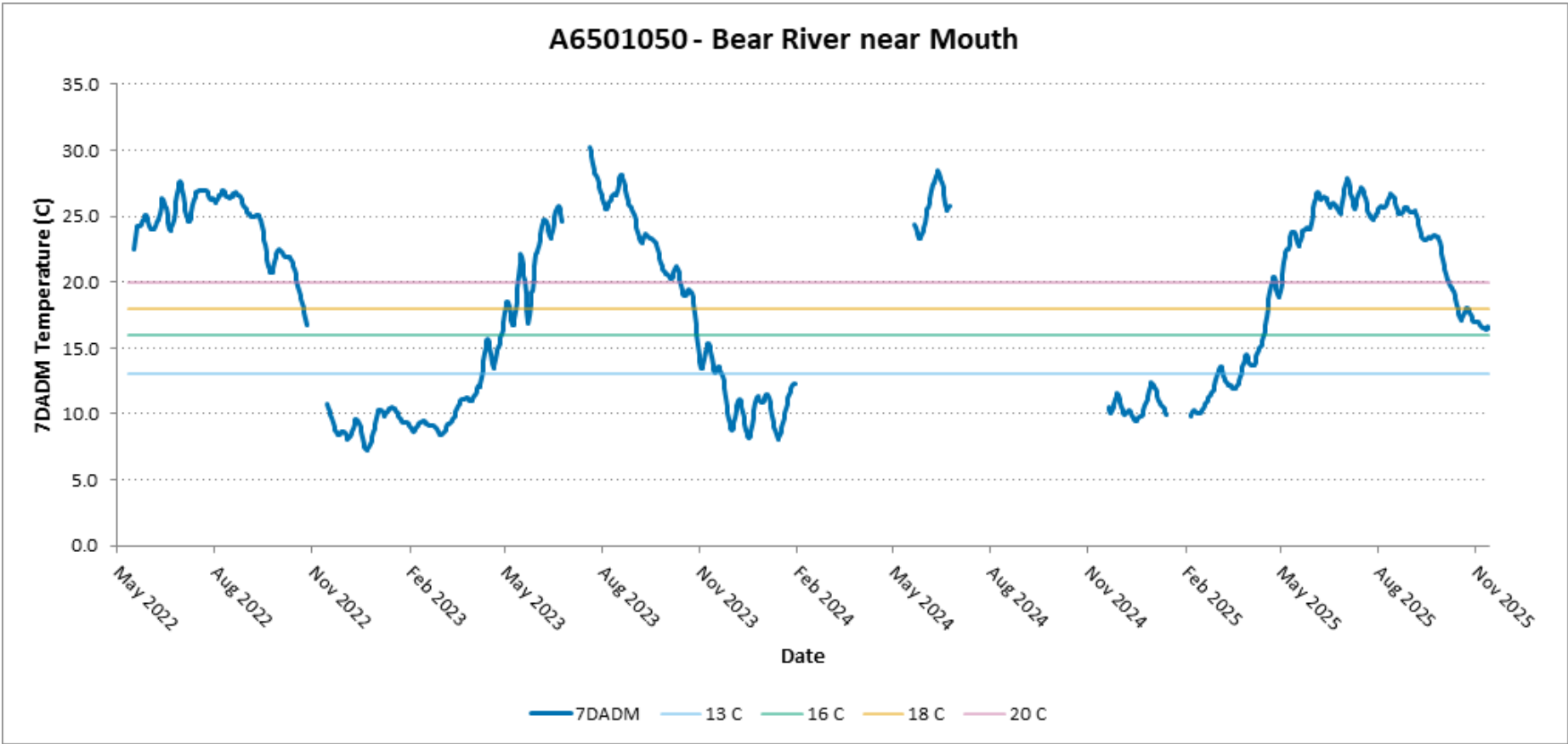


Figure 8-32. Butte Slough near Meridian Thermograph

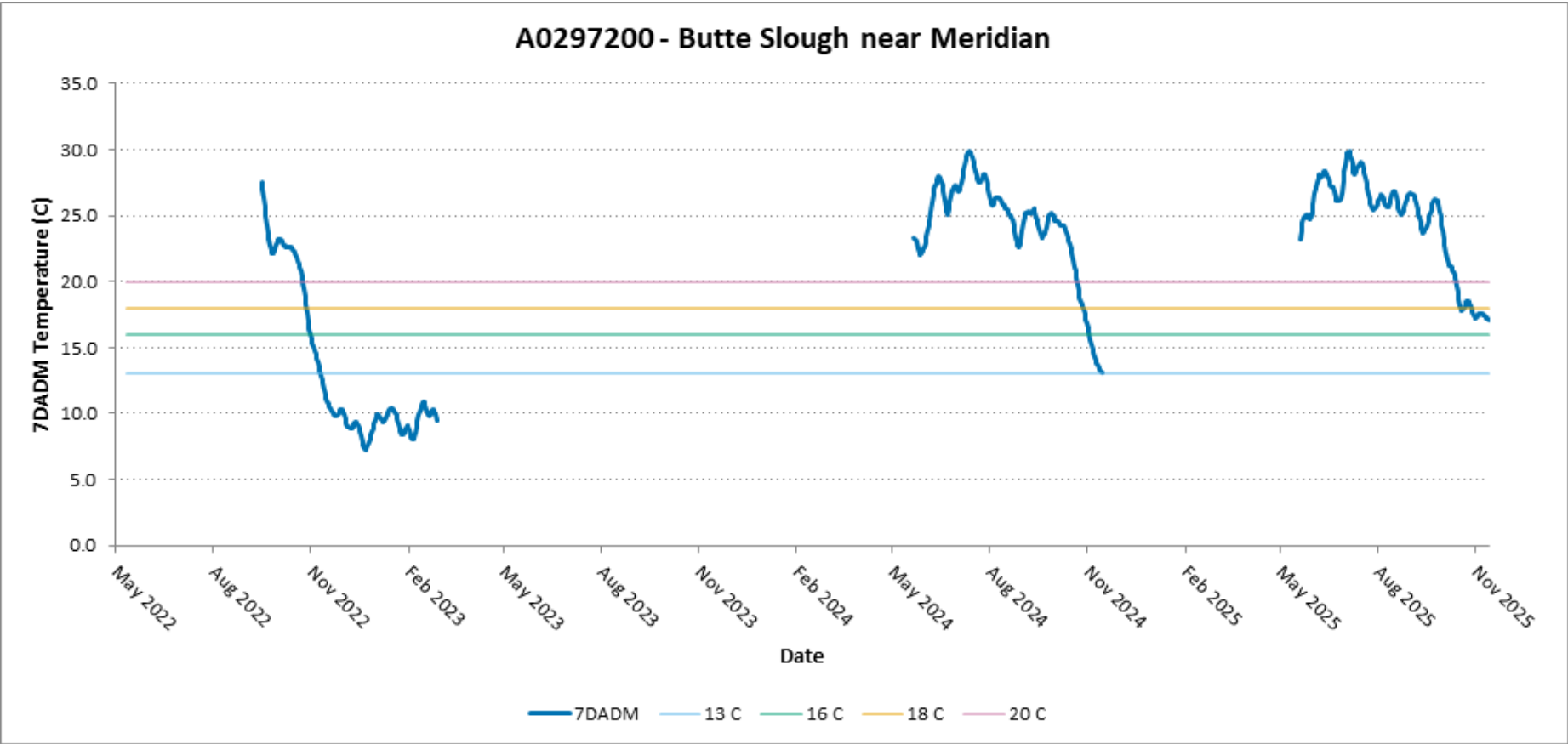


Figure 8-33. Colusa Basin Drain at Knights Landing Thermograph

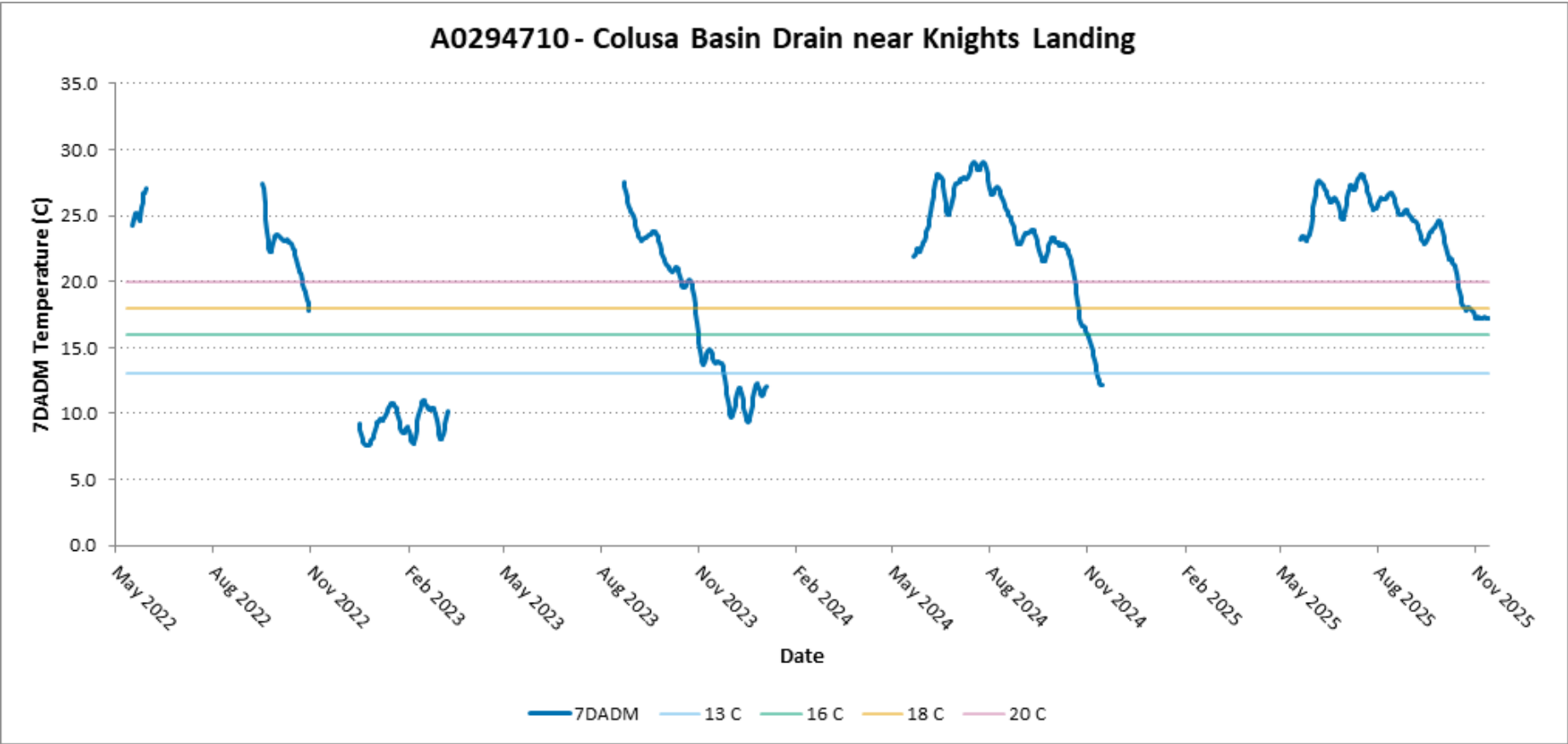


Figure 8-34. Feather River near Verona Thermograph

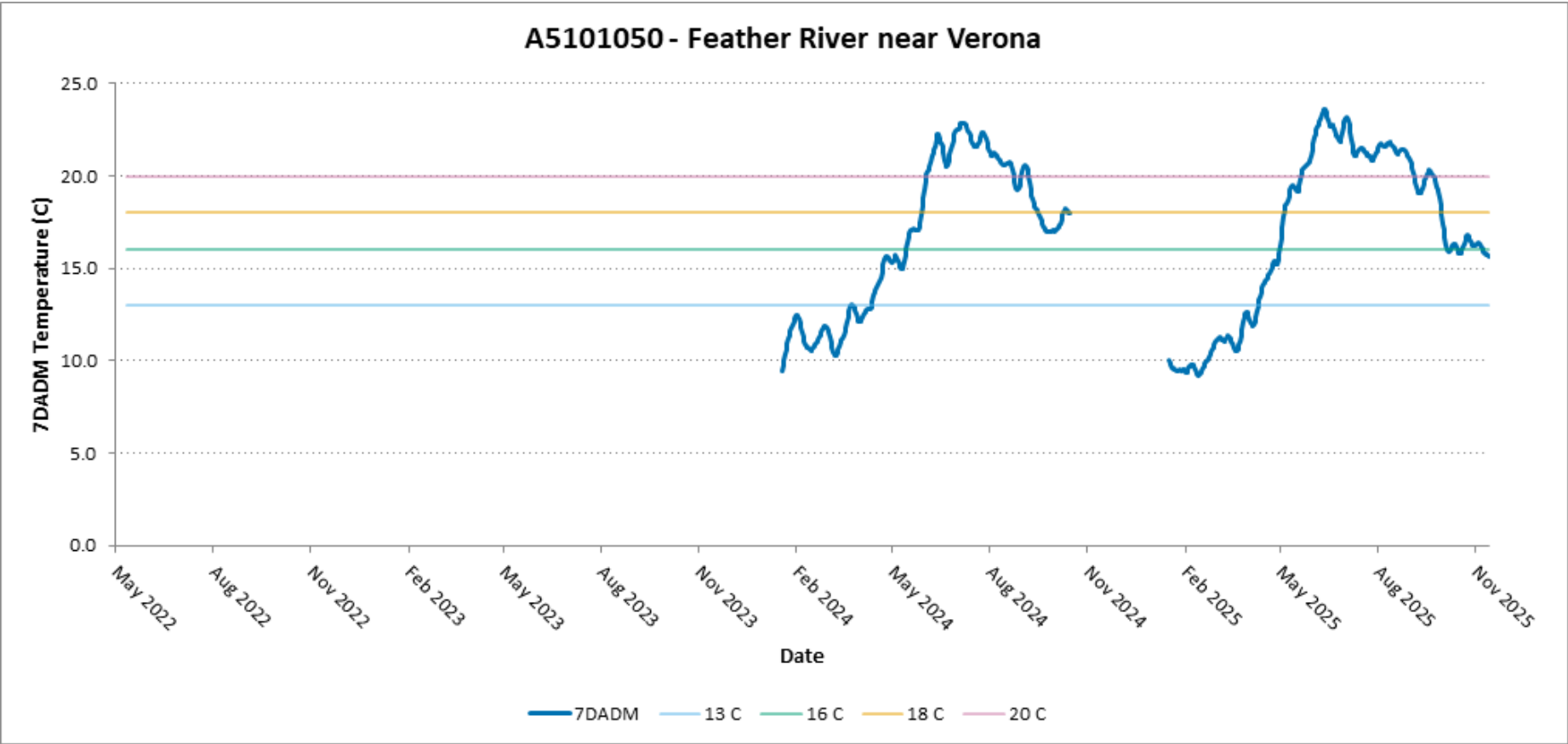


Figure 8-35. Honcut Creek at Highway 70 Thermograph

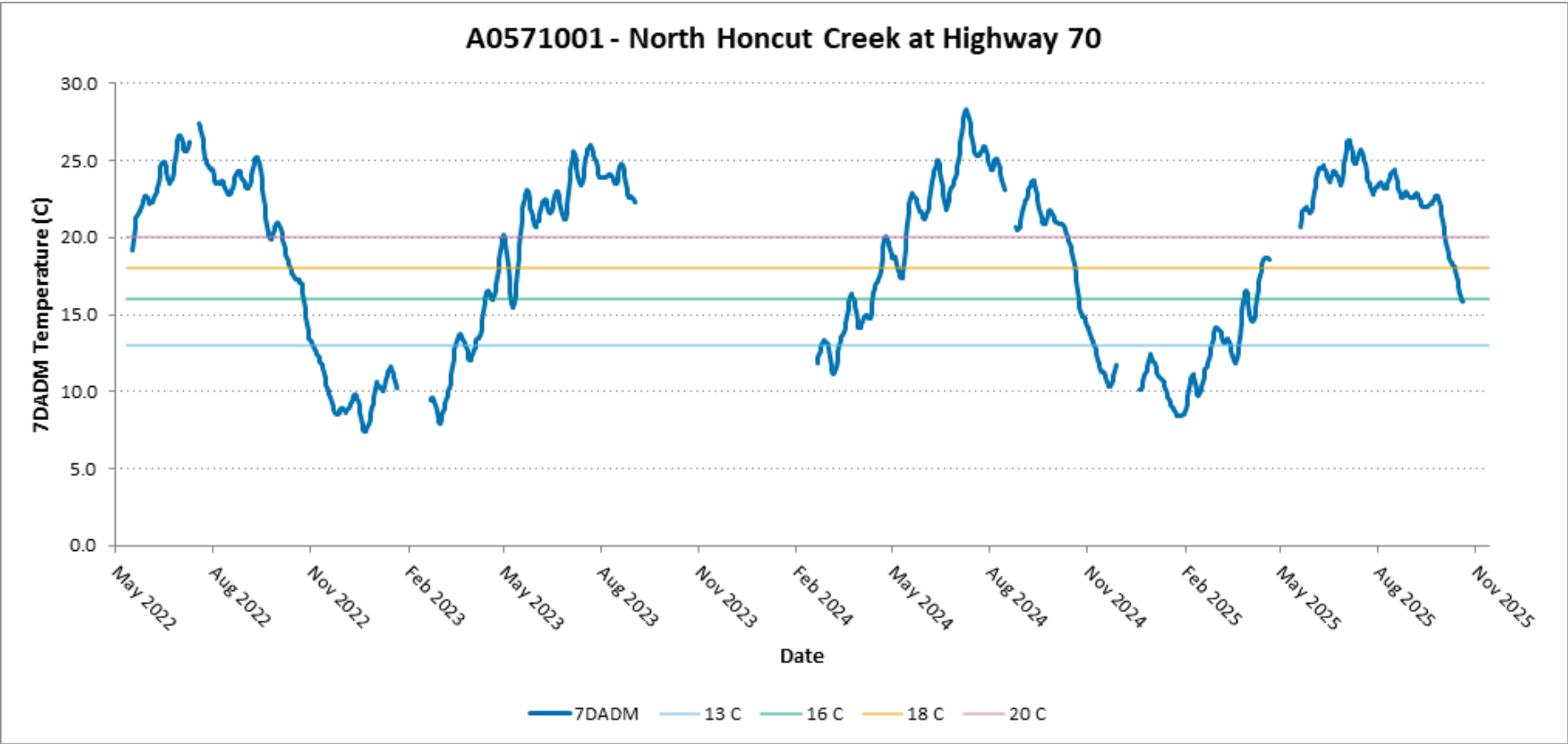


Figure 8-36. Sacramento River above CBD near Knights Landing Thermograph

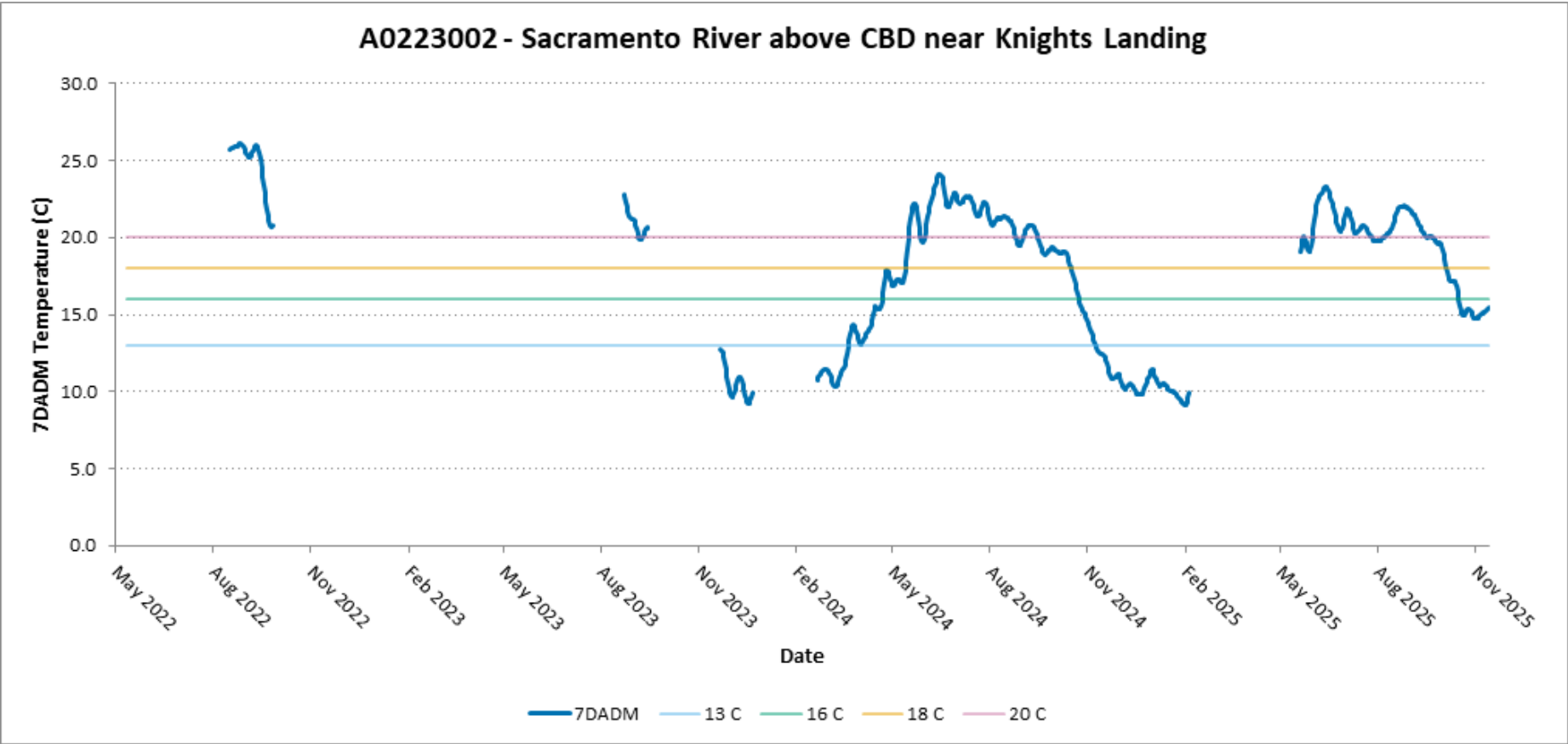


Figure 8-37. Sacramento River at Balls Ferry Thermograph

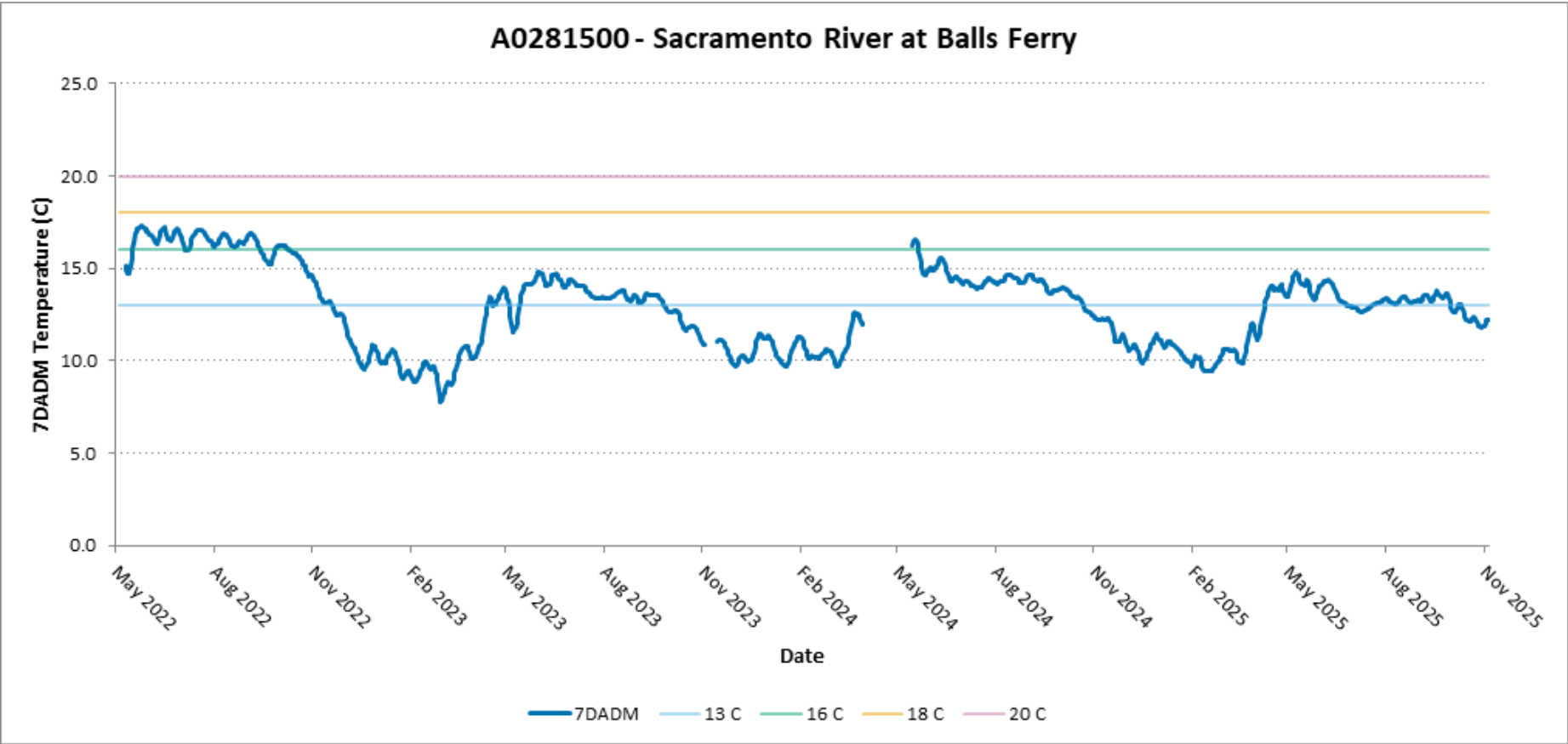


Figure 8-38. Sacramento River at Bend Bridge Thermograph

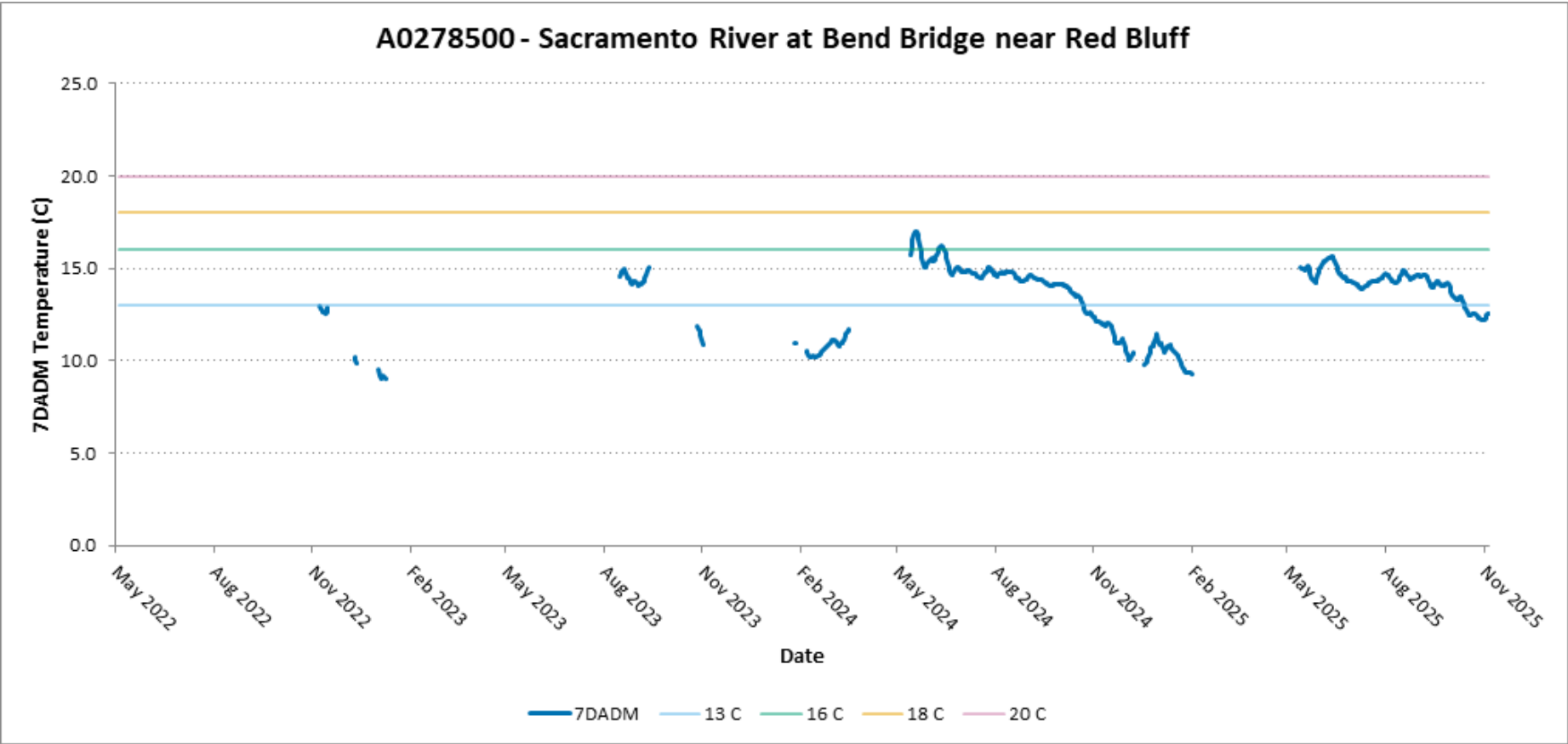


Figure 8-39. Sacramento River at Colusa Thermograph

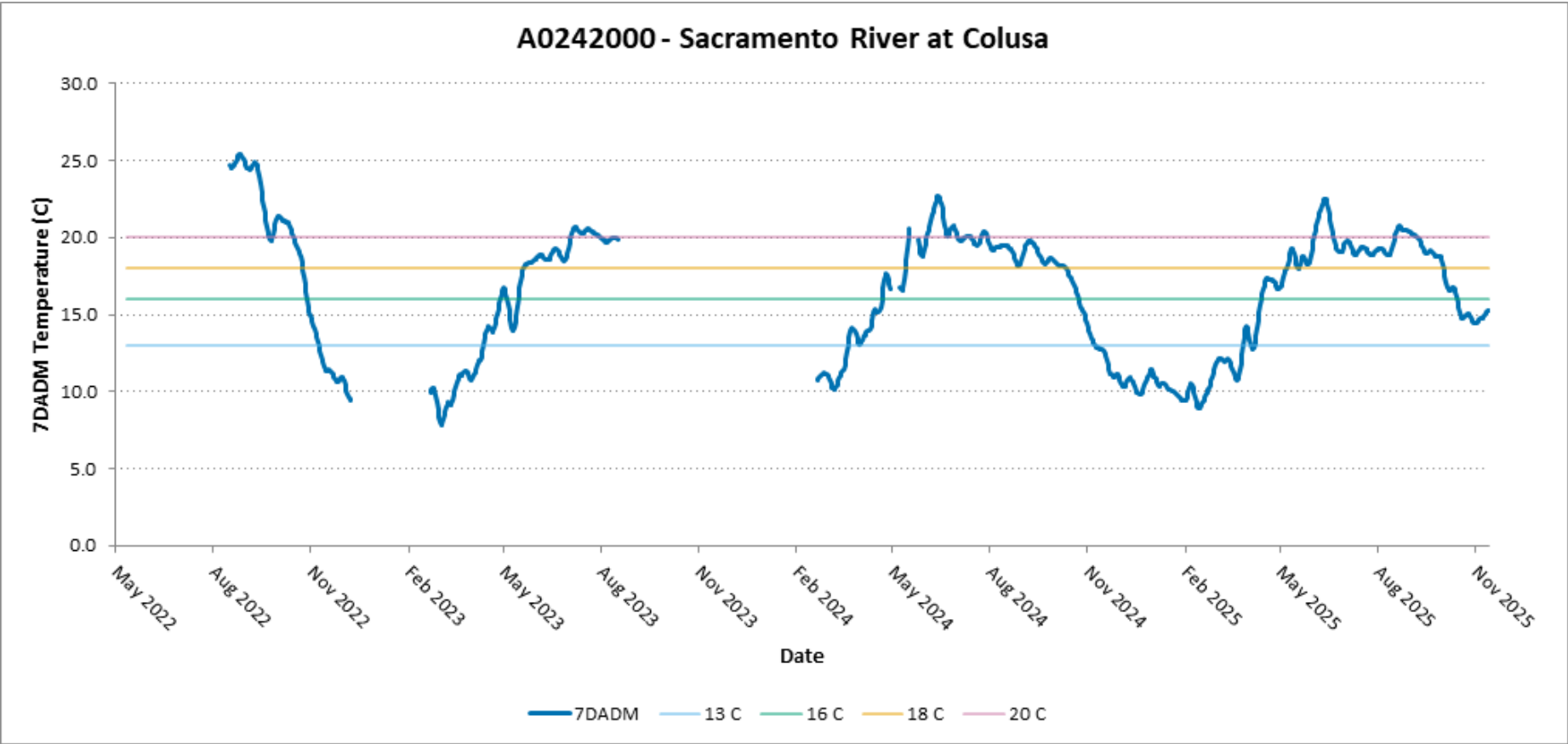


Figure 8-40. Sacramento River at Hamilton City Thermograph

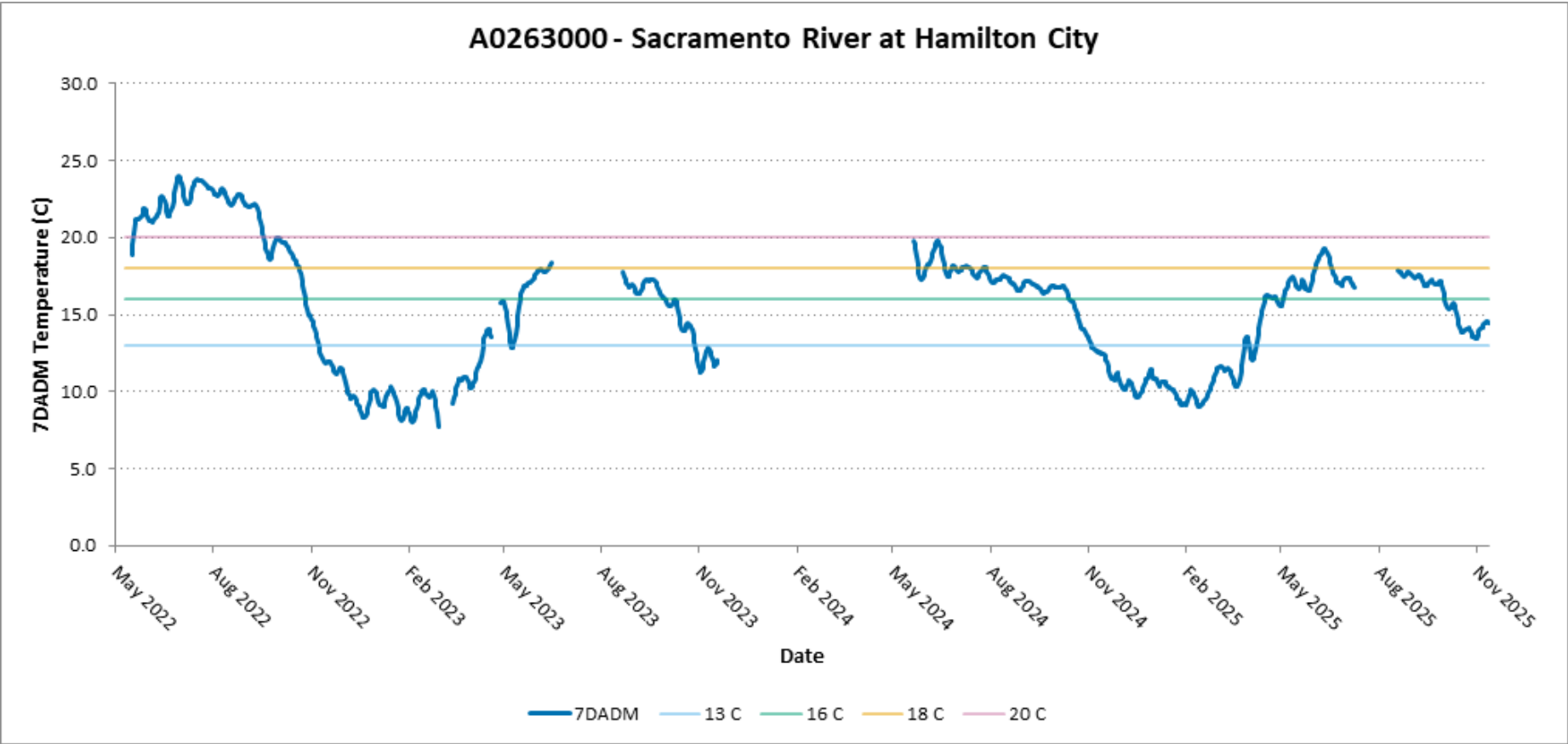


Figure 8-41. Sacramento River at Verona Thermograph

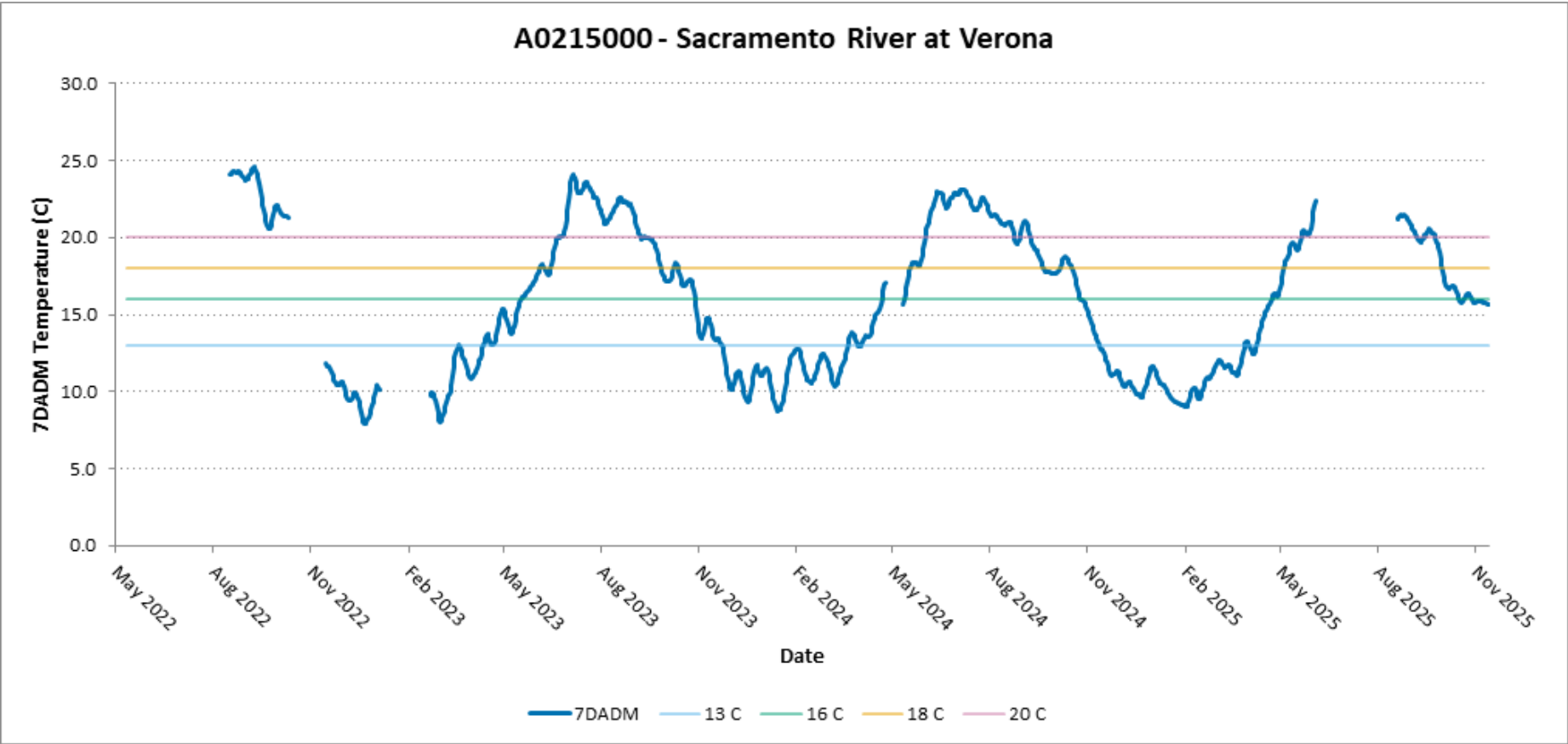


Figure 8-42. Sacramento River at Woodson Bridge Thermograph

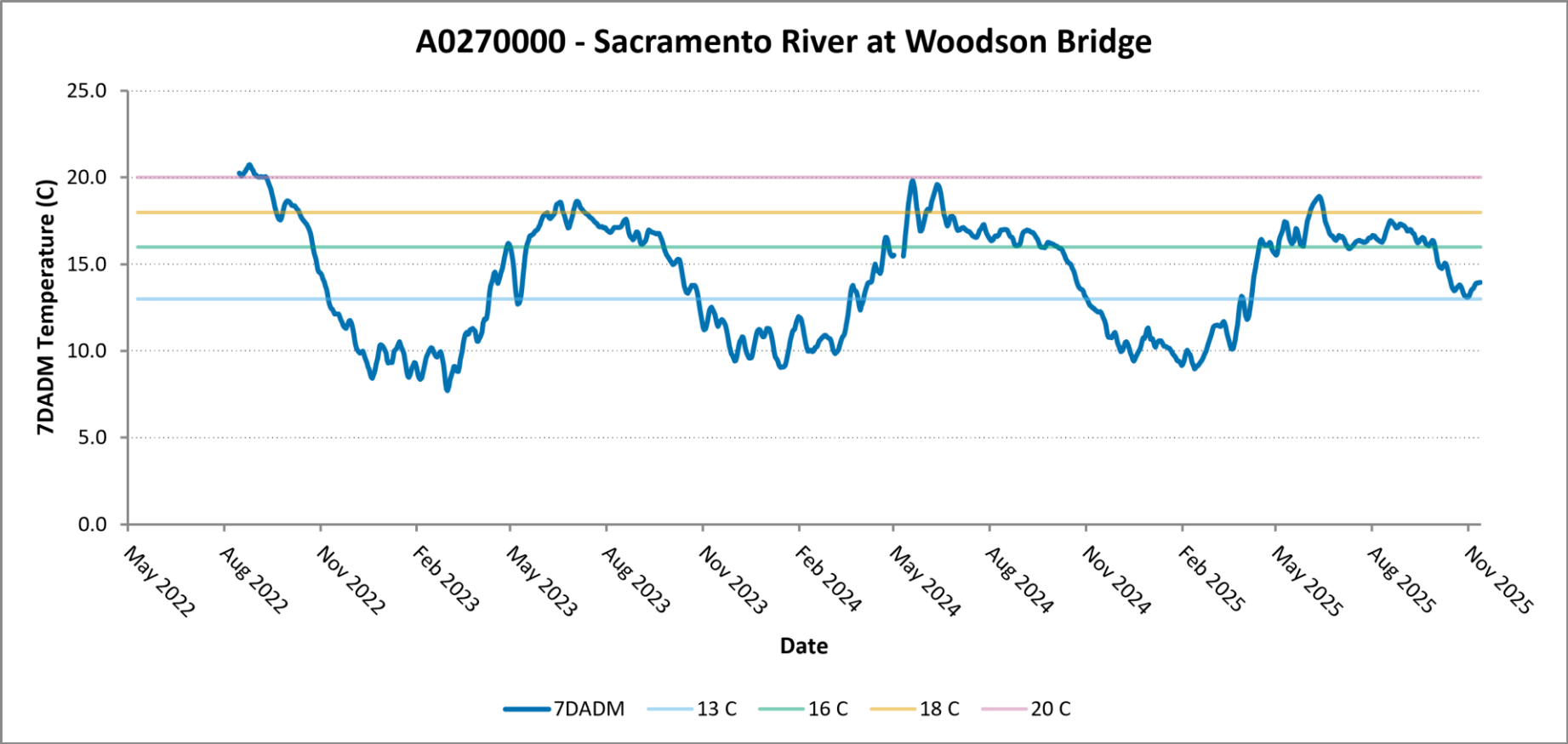


Figure 8-43. Sacramento River below Knights Landing Thermograph

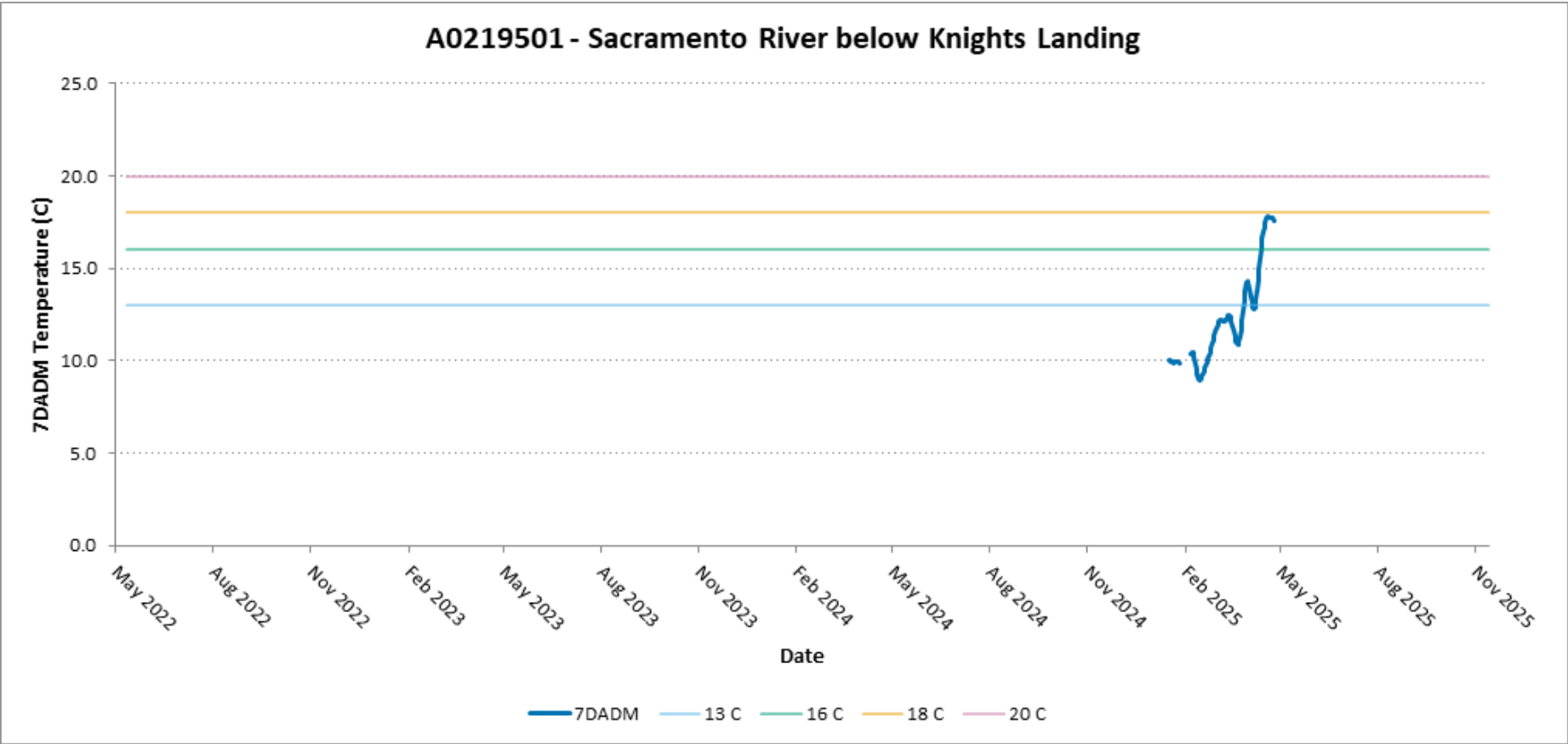


Figure 8-44. Sacramento River below Red Bluff Thermograph

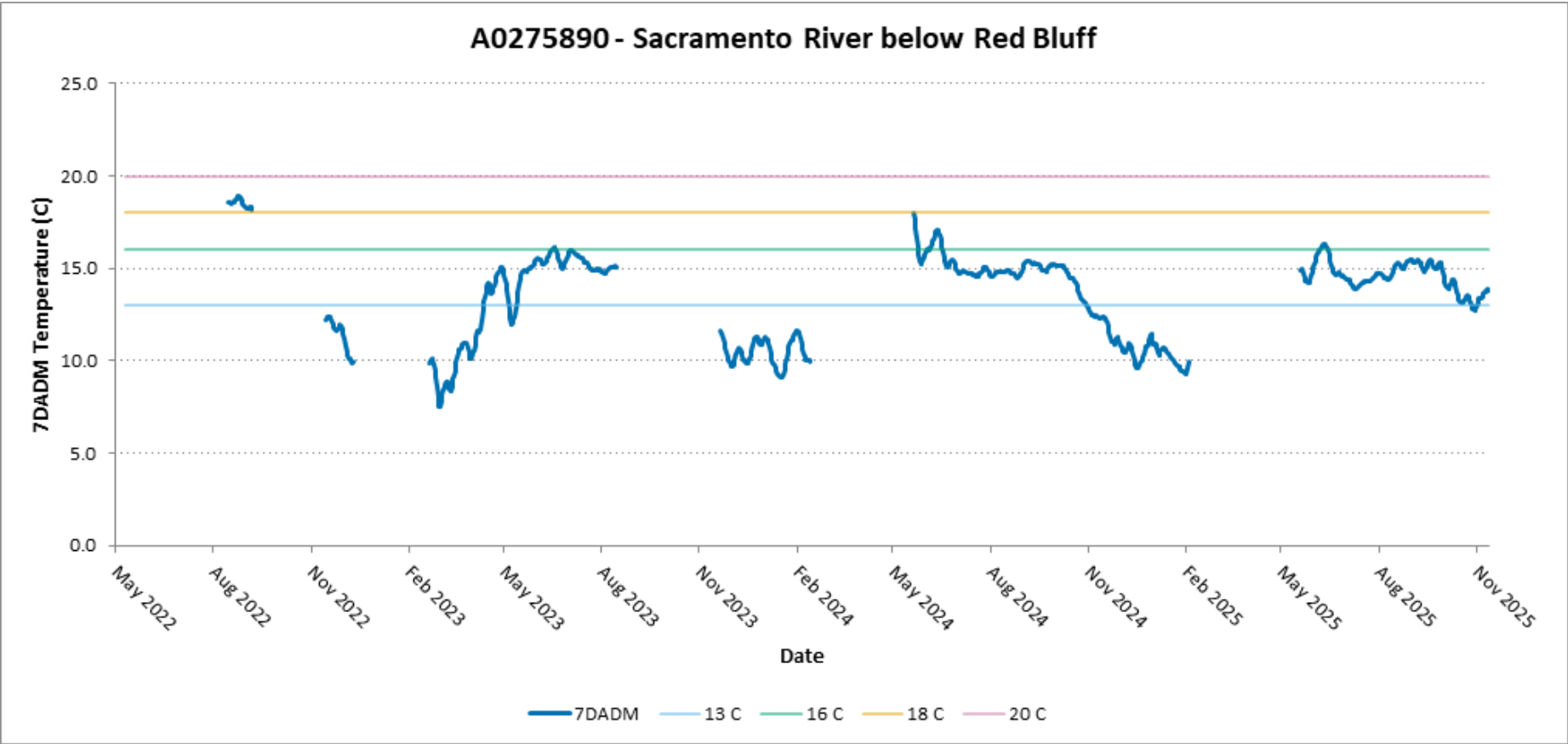


Figure 8-45. Sutter Bypass at RD-1500 Powerplant Thermograph

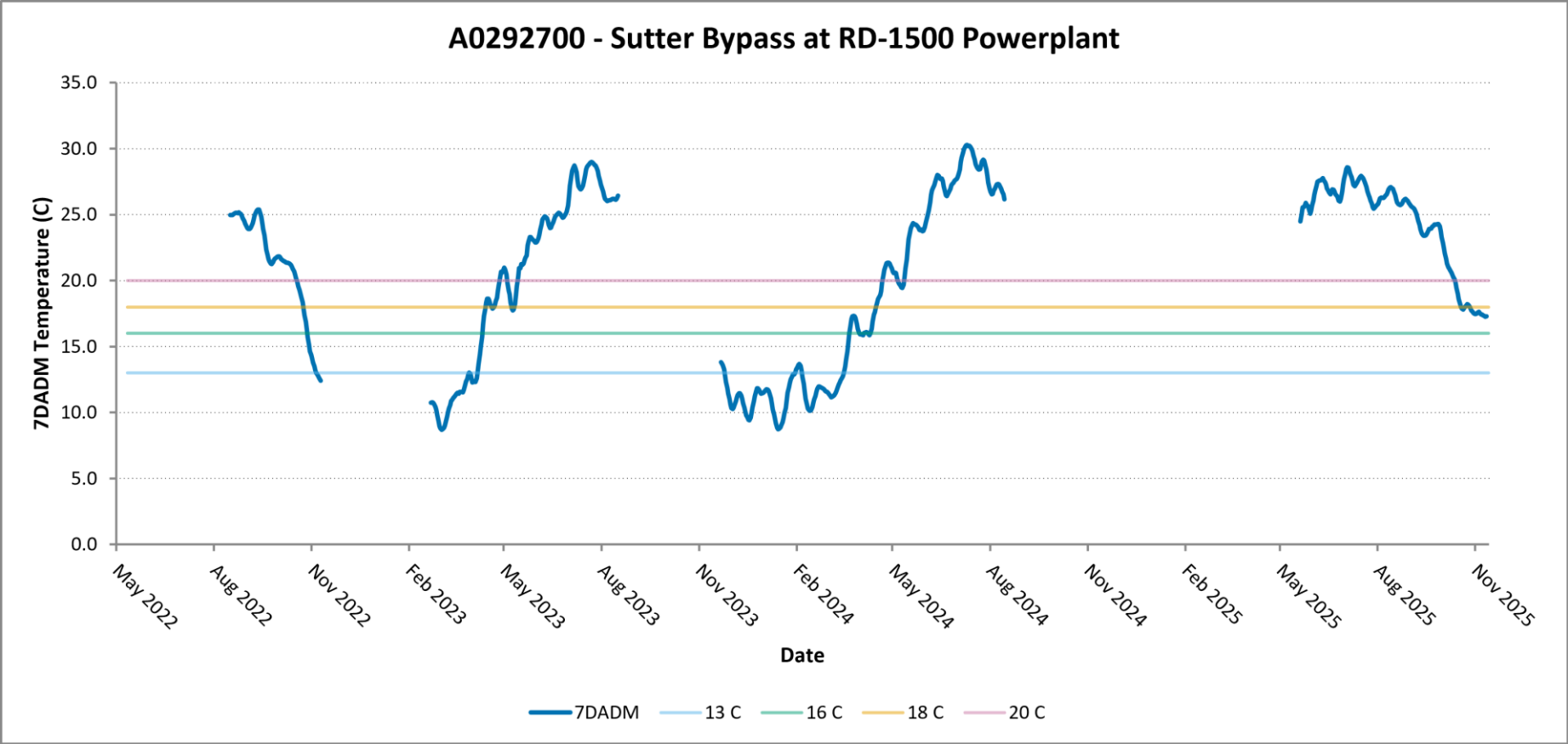
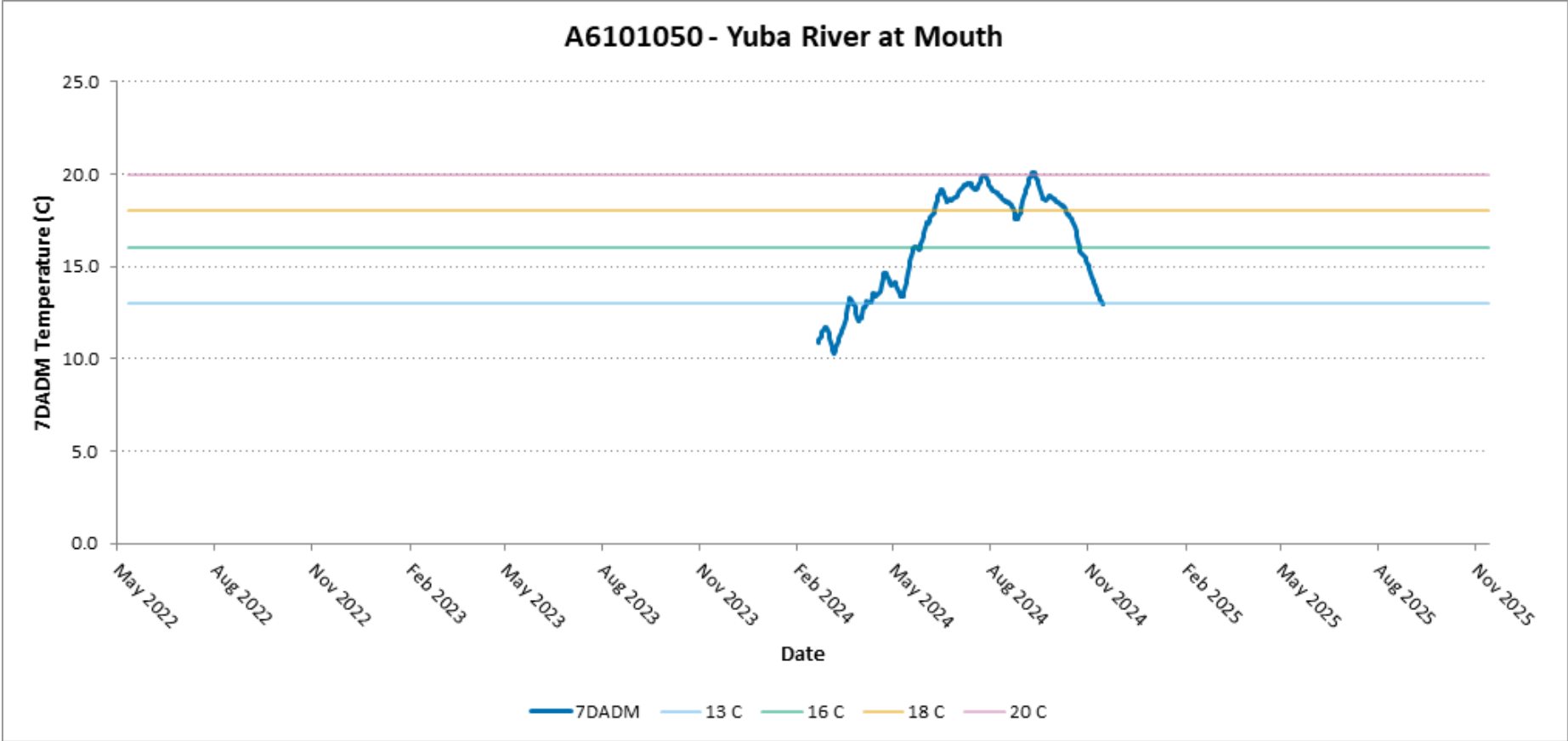


Figure 8-46. Yuba River near mouth Thermograph



8.6 Westside Subregion Thermographs

Figure 8-47. Clear Creek near mouth near Redding Thermograph

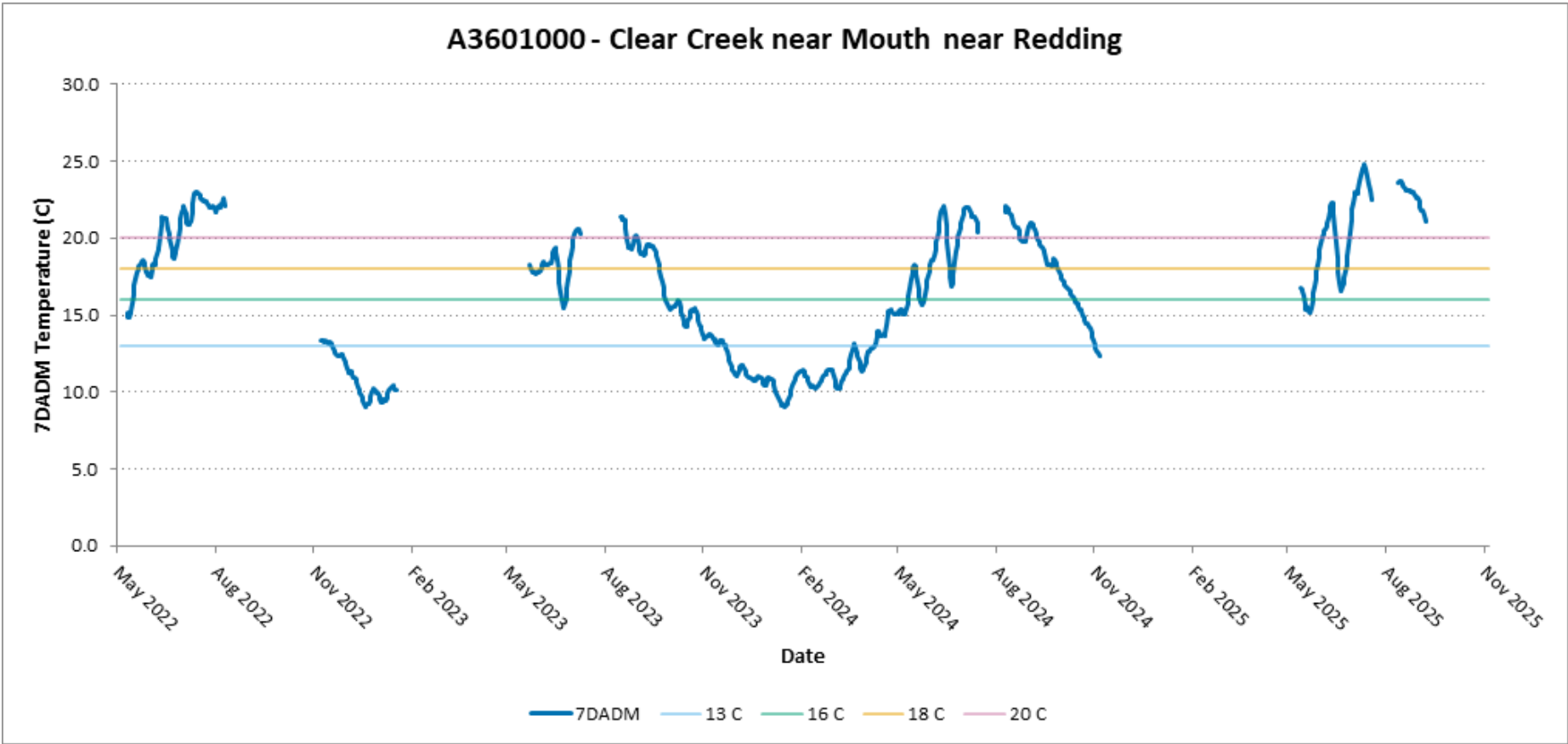
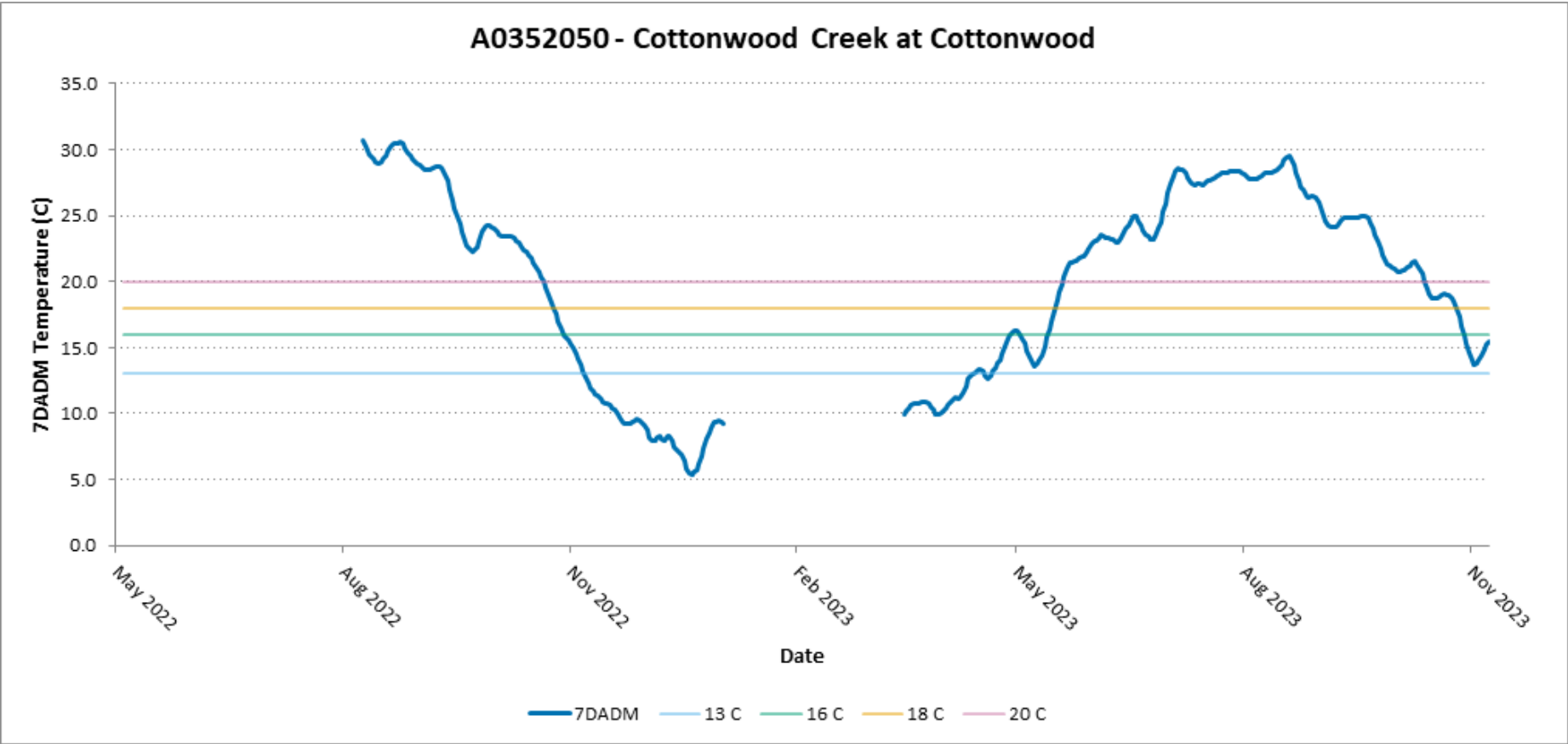
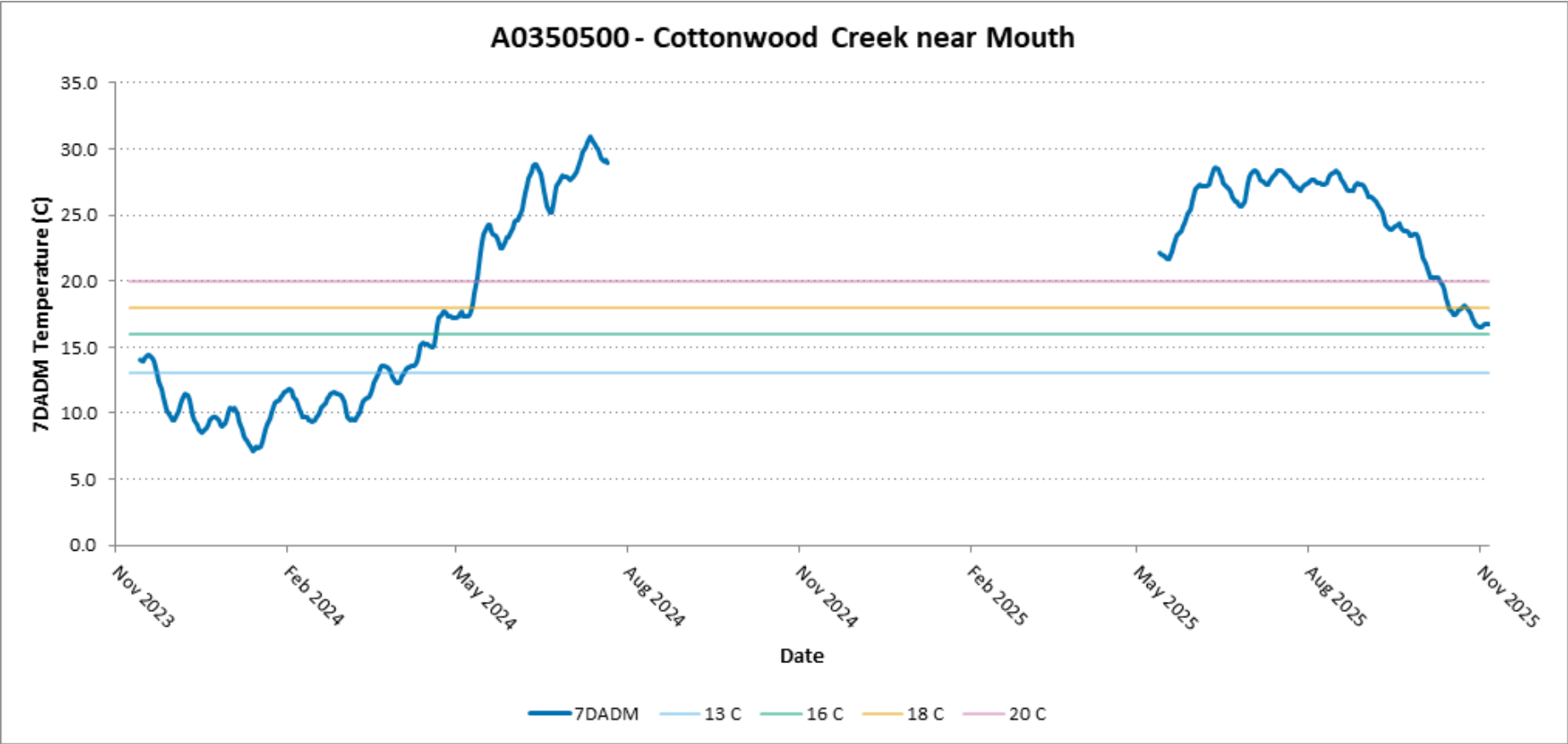


Figure 8-48. Cottonwood Creek at Cottonwood Thermograph mouth



This station was relocated to A0350500 — Cottonwood Creek near mouth after August 2023.

Figure 8-49. Cottonwood Creek near mouth Thermograph



This station was relocated from A0352050 — Cottonwood Creek at Cottonwood after August 2023.

Figure 8-50. Cottonwood Creek North Fork near Igo Thermograph

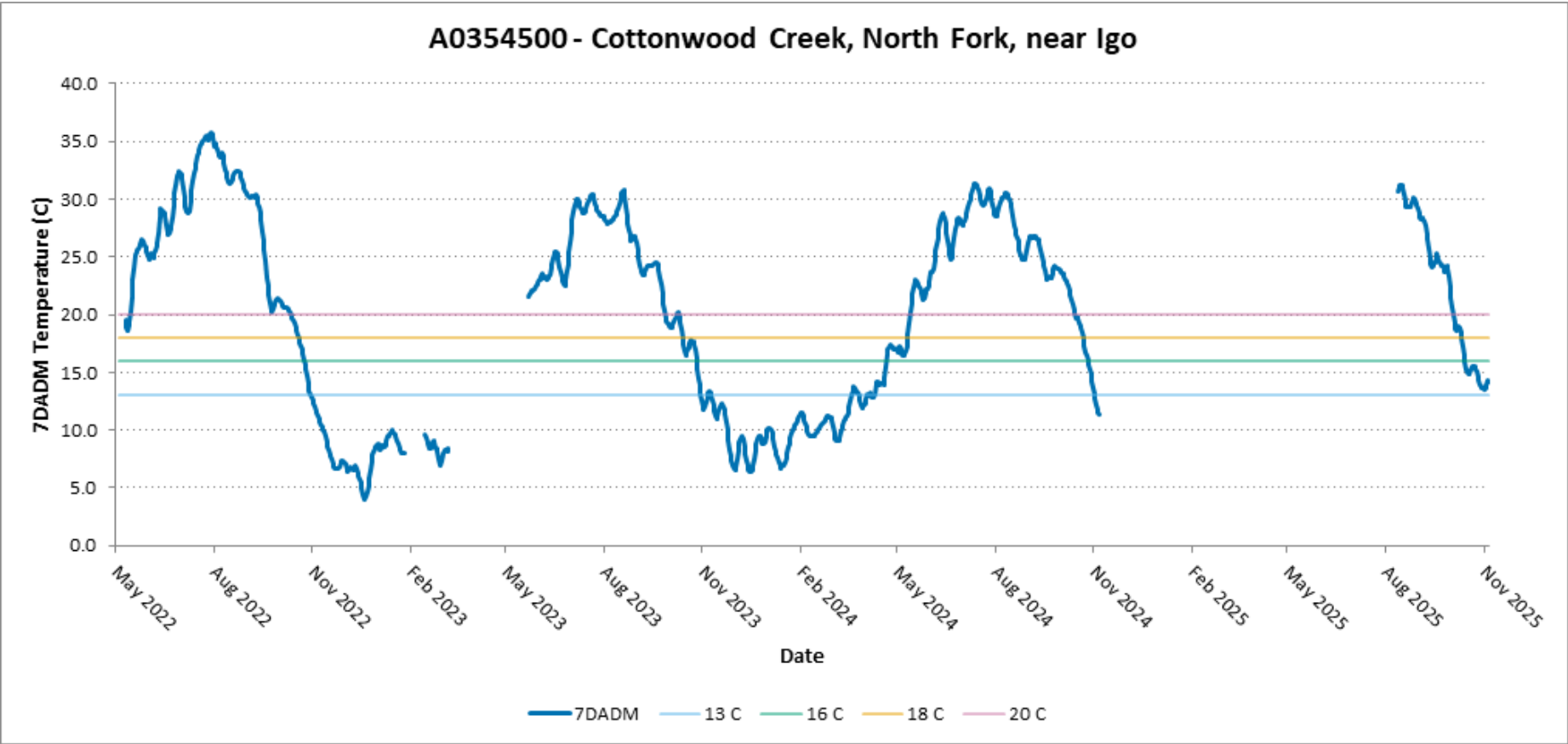


Figure 8-51. Elder Creek near mouth Thermograph

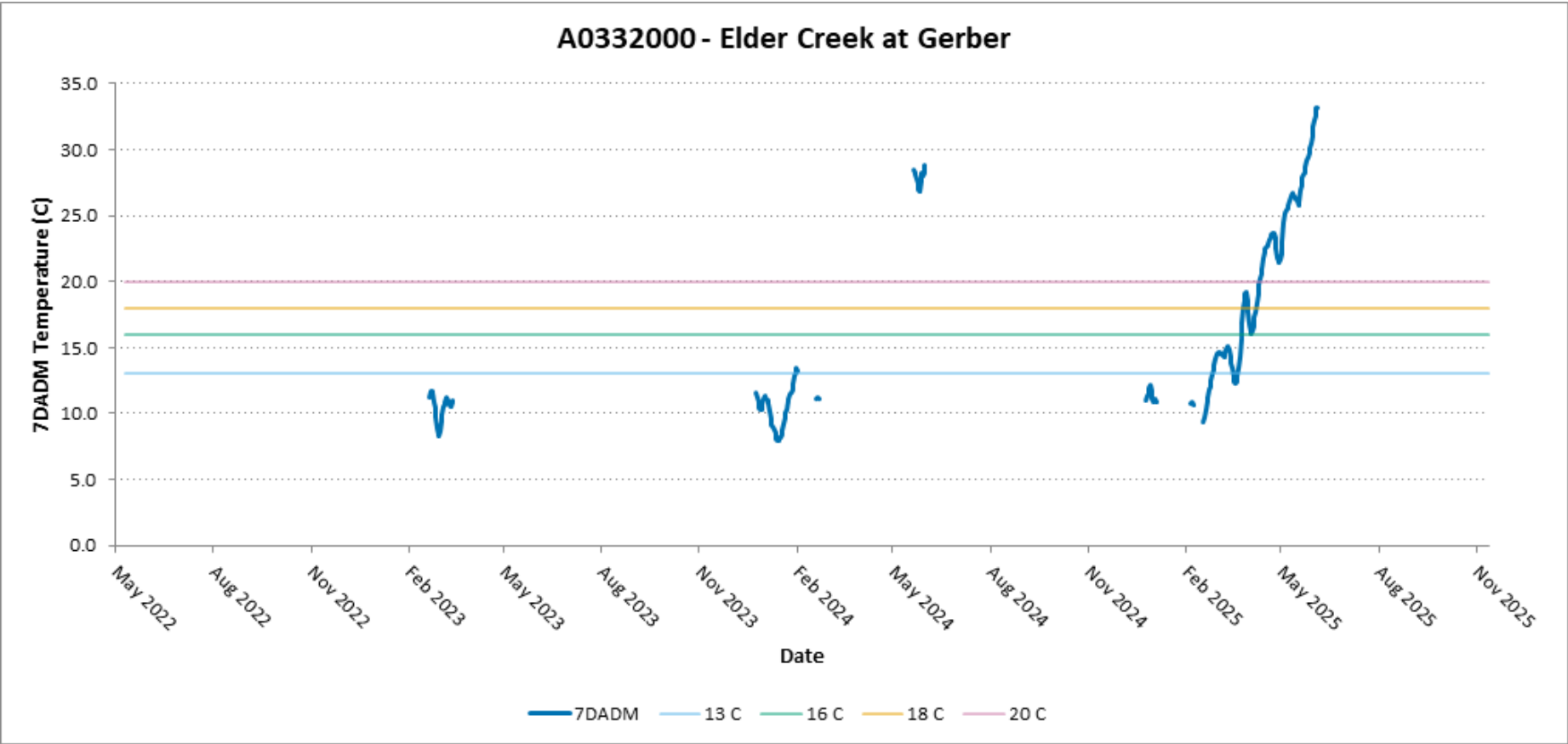
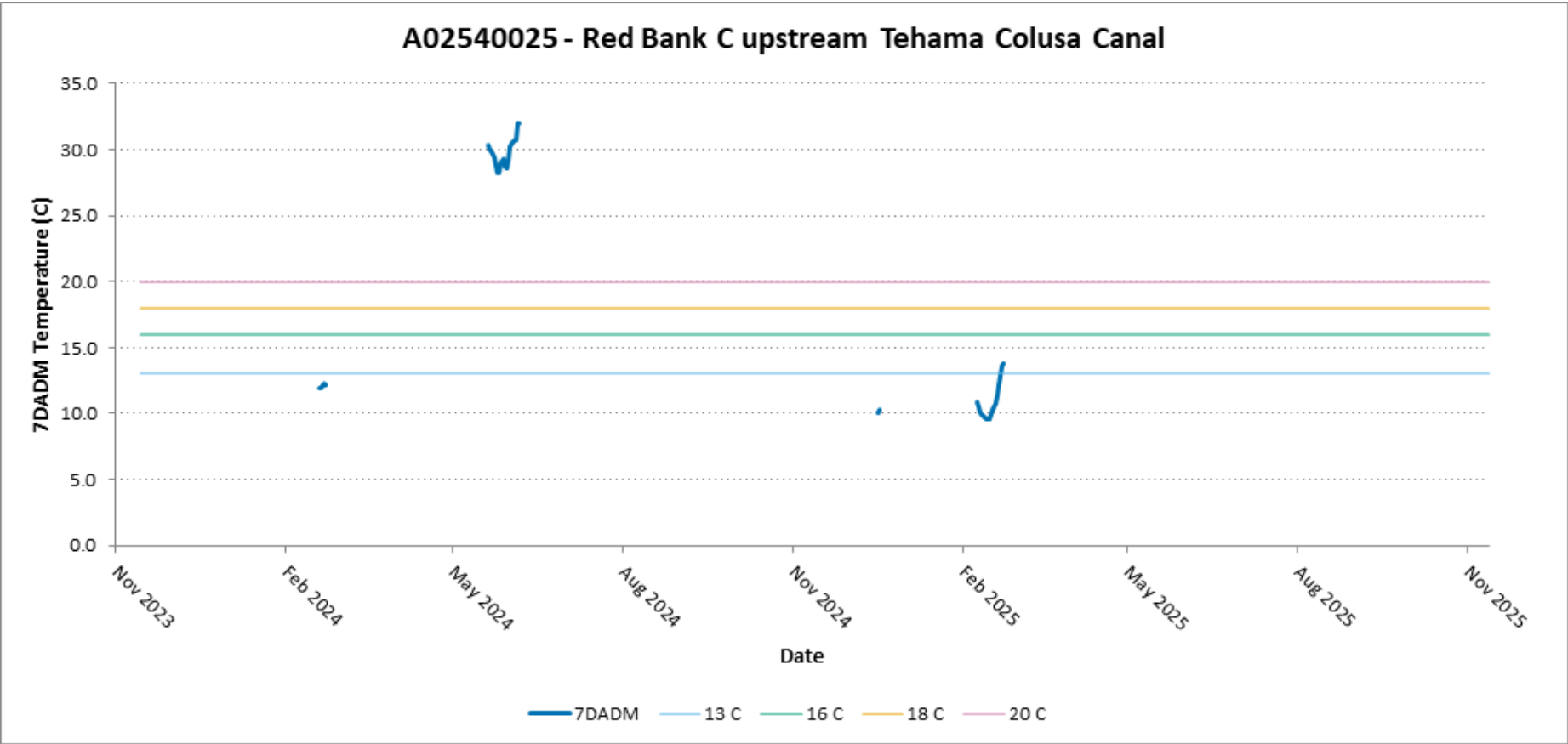


Figure 8-52. Red Bank Creek upstream Tehama Colusa Canal Thermograph



Note: This station was relocated from A0025800 — Red Bank C A HWY 99W after August 2023. The Red Bank CA HWY 99W station did not have any usable water temperature data throughout the monitoring period.

Figure 8-53. Stony Creek near mouth Thermograph

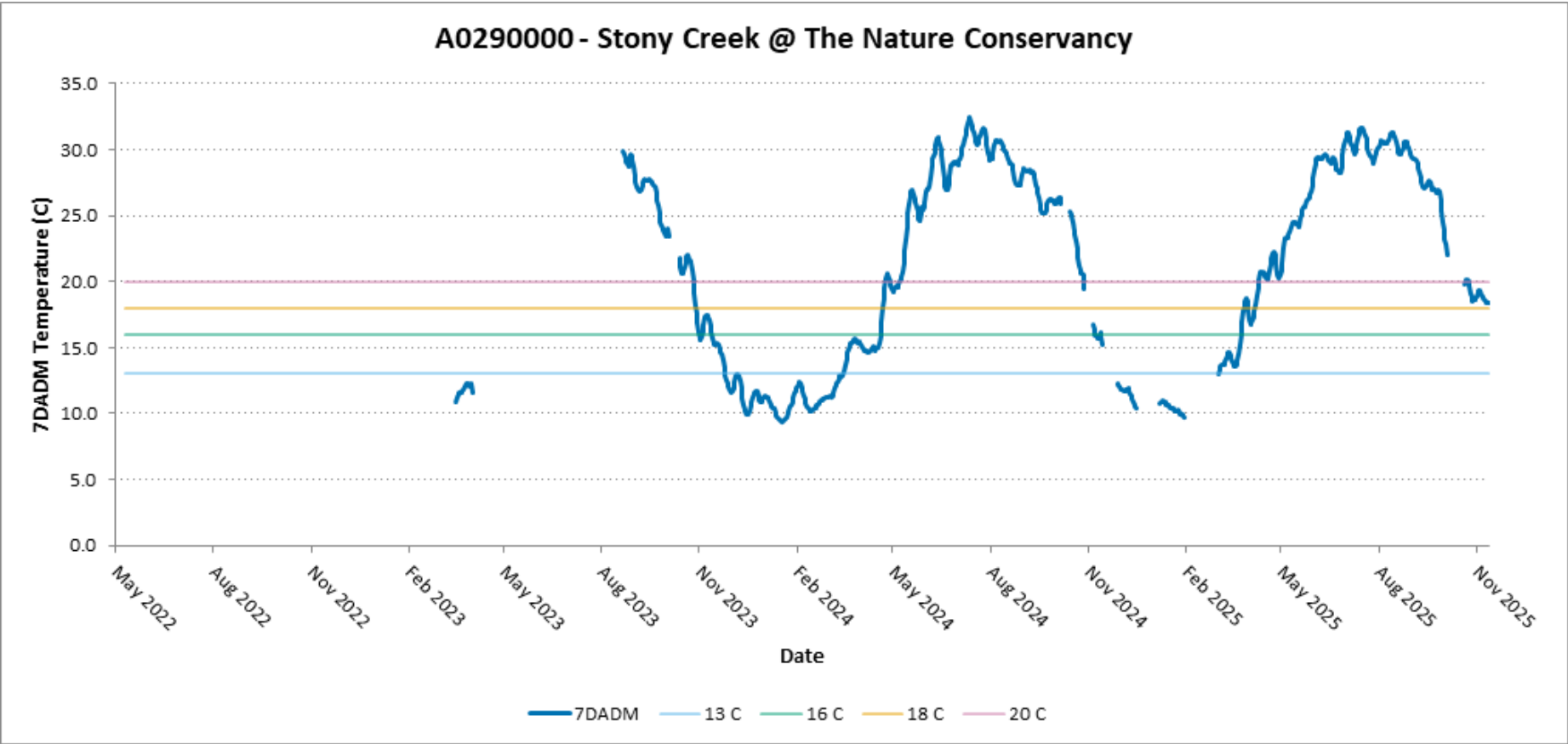


Figure 8-54. Thomes Creek at Hall Road near Richfield Thermograph

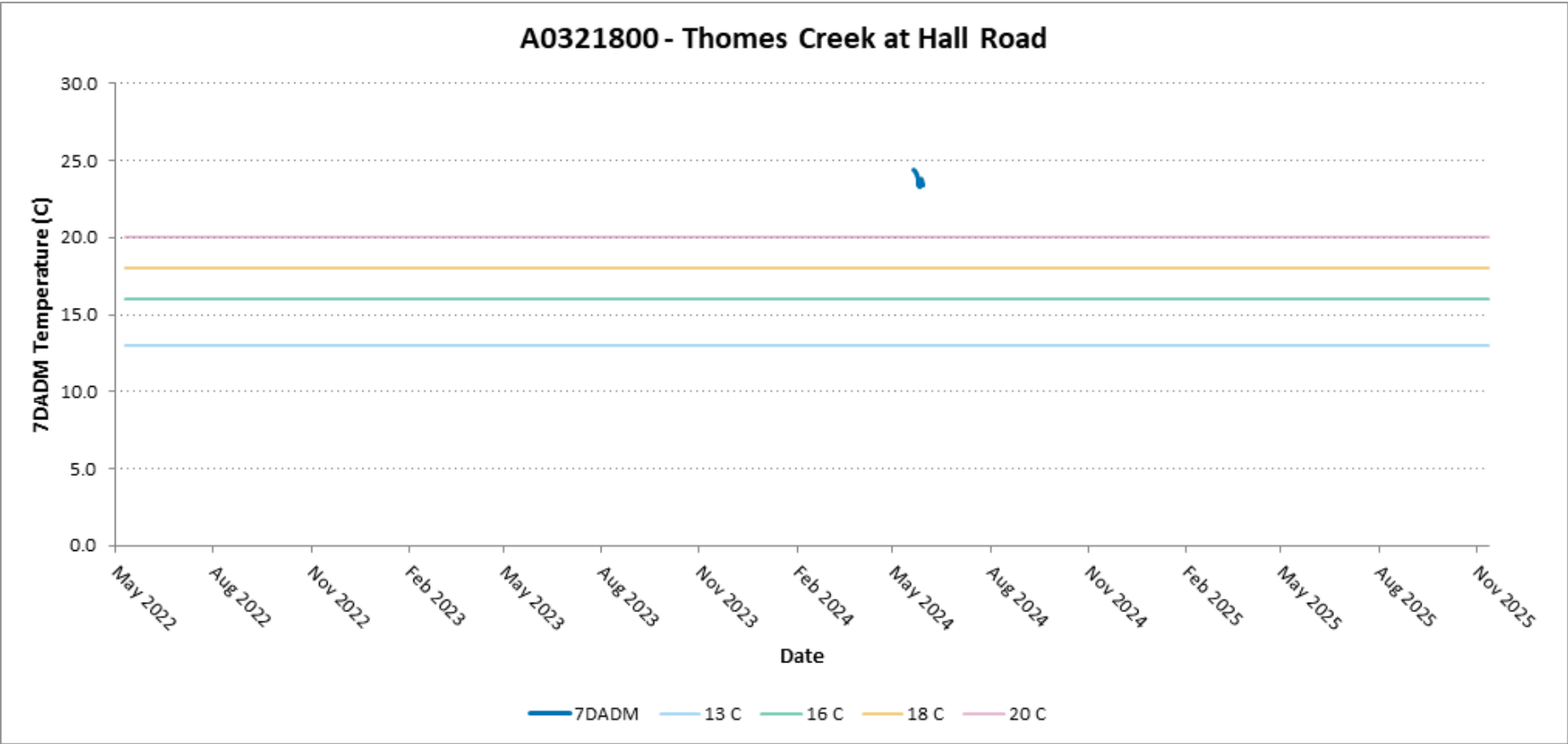
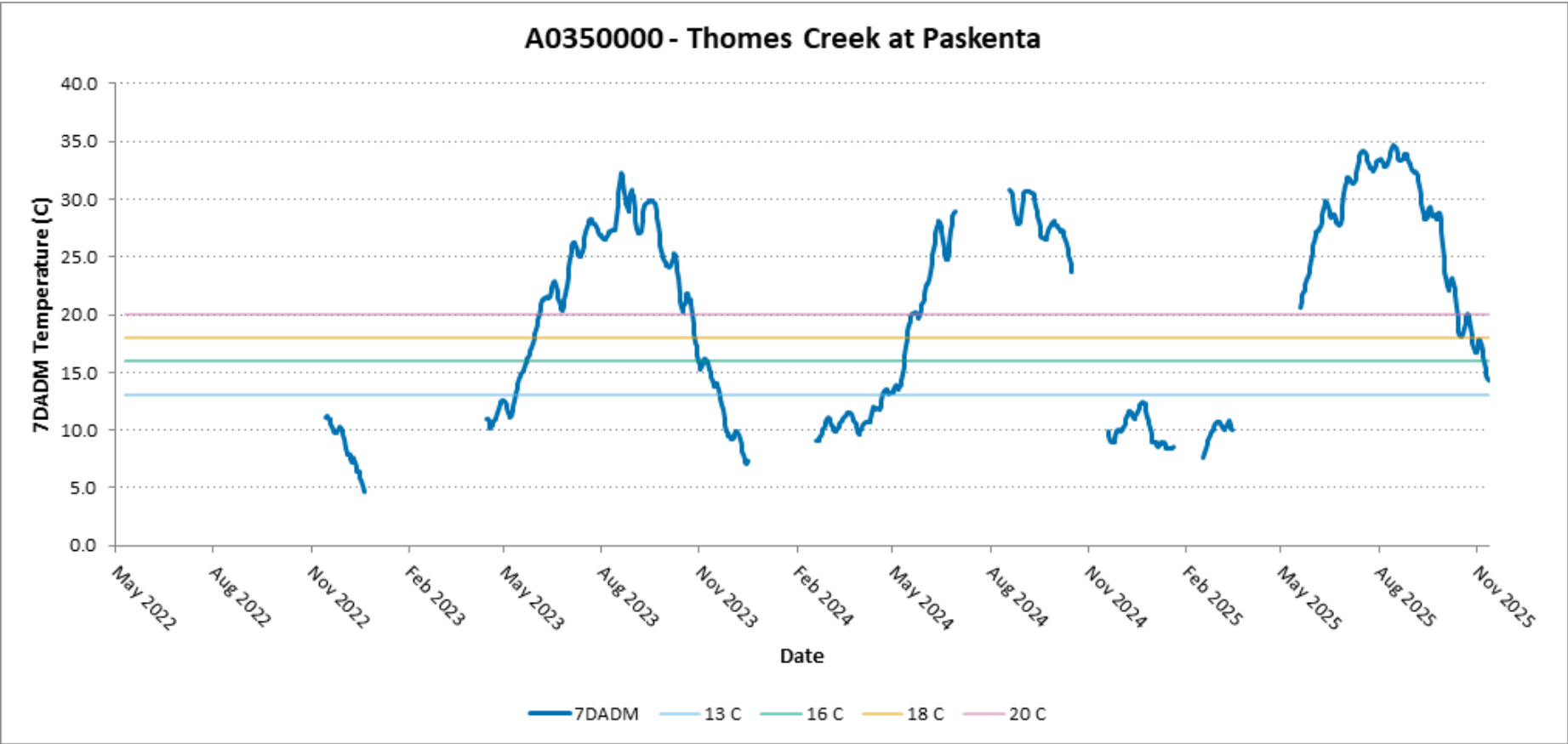


Figure 8-55. Thomes Creek at Paskenta Thermograph



9 Appendix D. Quarterly Continuous Water Temperature Percent Complete Summaries

SWCMP Water Temperature Percent Completion (May 2022 - August 2022)			
Station Name	Station Number	% Complete	Comments
Antelope CNR mouth	A0452050	0	<i>Logger Malfunction</i>
Battle CA Jellys Ferry Bridge	A4708000	100	
Battle CNF NR Manton	A4712000	100	
Battle CSF NR Mineral	A4730000	100	
Bear CA Parkville Rd	A0407000	84	<i>Logger out of Water</i>
Bear River NR Mouth	A6501050	100	
Big Chico CA Chico	A0425000	61	<i>No water in creek</i>
Big Chico CA Hwy 32	A4216000	100	
Butte CA Butte Meadows	A4150000	100	
Butte CDS Western Canal Siphon	A0416000	100	
Butte Slough NR Meridian	A0297200	0	<i>Logger Malfunction</i>
Churn CNR Anderson	A0079000	0	<i>No water in creek</i>
Clear CNR Mouth	A3601000	100	
CBD A Knights Landing	A0294710	20	<i>No flowing water</i>
Cottonwood CNR Mouth	A0352050	0	<i>Logger Malfunction</i>
Cottonwood CNF NR Igo	A0354500	100	
Cow CNR Millville	A4811000	100	
Cow C Old above Killarc	A4844800	100	
Cow C South A Campground	A4855500	0	<i>Logger Missing</i>
Deer CA Deer Station	A4317700	100	
Deer CA Hwy 99E Vina	A0432101	100	
Elder CNR Mouth	A0332000	0	<i>No water in creek</i>
Fall RA Glenburn	A1723000	100	
Feather R NR Verona	A5101050	79	<i>Boat access only; Battery died</i>
Honcut CA Hwy 70	A0571001	98	<i>Logger out of Water</i>
McCloud River above Shasta Lake	A2215000	100	
Mill CNR Mineral	A4418000	100	
Mill CNR Mouth NR Los Molinos	A0442050	0	<i>Logger Malfunction</i>
Oak Run CNR Oak Run	A4820000	100	
Paynes CA Paynes Crossing	A0460200	100	
Pit RA Pittville	A1127000	25	<i>Battery Died</i>
Pit R NR Canby	A1168000	100	
Pit R NR Montgomery Cr	A1102000	67	<i>Battery Died</i>
Pit R NF A Alturas	A1210000	100	
Pit R SF NR Alturas	A1415000	45	<i>Logger out of Water</i>
Red Bank C USTSS	A0025800	0	<i>Logger out of Water</i>
Sacramento R above CBD NR Knights Landing	A0223002	0	<i>Logger Malfunction</i>
Sacramento RA Balls Ferry	A0281500	100	
Sacramento RA Bend Bridge	A0278500	0	<i>Logger Malfunction</i>
Sacramento RA Colusa	A0242000	0	<i>Logger Malfunction</i>
Sacramento RA Delta	A2130000	54	<i>Logger out of Water</i>
Sacramento RA Hamilton City	A0263000	100	
Sacramento RA Verona	A0215000	0	<i>Logger malfunction/data lost</i>
Sacramento RA Woodson Bridge	A0270000	0	<i>Logger malfunction/data lost</i>
Sacramento R below Knights Landing	A0219501	0	<i>Boat access only; Battery died</i>
Sacramento R below Red Bluff	A0275890	0	<i>Logger malfunction/data lost</i>
Sacramento R NR Mt. Shasta	A2160000	100	
Stillwater CNR Anderson	A0079500	52	<i>No water in creek</i>
Stony CNR Mouth	A0290000	100	<i>No water in creek</i>
Sutter Bypass A RD-1500 Powerplant	A0292700	0	<i>Logger Malfunction/data lost</i>
Thomes CA Hall Rd NR Richfield	A0321800	0	<i>Logger out of water</i>
Thomes CA Paskenta	A0350000	0	<i>Logger out of Water</i>
Yuba River NR Mouth	A6101050	0	<i>No Logger at this site</i>
Average Percent Complete =		56	

SWCMP Water Temperature Percent Completion (August 2022 - November 2022)			
Station Name	Station Number	% Complete	Comments
Antelope CNR mouth	A0452050	100	
Battle CA Jellys Ferry Bridge	A4708000	100	
Battle CNF NR Manton	A4712000	0	<i>Logger malfunction/water infiltration</i>
Battle CSF NR Mineral	A4730000	100	
Bear CNR Anderson	A0407000	100	
Bear River NR Mouth	A6501050	85	<i>Battery Died</i>
Big Chico CA Chico	A0425000	0	
Big Chico CA Hwy 32	A4216000	43	<i>Battery Died</i>
Butte CA Butte Meadows	A4150000	100	
Butte CDS Western Canal Siphon	A0416000	100	
Butte Slough NR Meridian	A0297200	70	<i>Logger out of Water</i>
Churn CNR Anderson	A0079000	0	<i>No water in creek</i>
Clear CNR Mouth	A3601000	7	<i>Logger out of Water</i>
CBD A Knights Landing	A0294710	45	<i>Dry channel/Out of Water</i>
Cottonwood CA Cottonwood	A0352050	100	
Cottonwood CNF NR Igo	A0354500	100	
Cow CNR Millville	A4811000	100	
Cow C Old above Killarc	A4844800	100	
Cow C South A Campground	A4855500	0	<i>Logger missing</i>
Deer CA Deer Station	A4317700	100	
Deer CA Hwy 99E Vina	A0432101	48	<i>Battery Died</i>
Elder CNR Mouth	A0332000	0	<i>No water in creek</i>
Fall RA Glenburn	A1723000	100	
Feather R NR Verona	A5101050	0	<i>Boat access only; Battery died</i>
Honcut CA Hwy 70	A0571001	100	
McCloud River above Shasta Lake	A2215000	100	
Mill CNR Mineral	A4418000	100	
Mill CNR Mouth NR Los Molinos	A0442050	100	
Oak Run CNR Oak Run	A4820000	100	
Paynes CA Paynes Crossing	A0460200	100	
Pit R A Pittville	A1127000	5	<i>Logger malfunction/battery died</i>
Pit R NR Canby	A1168000	24	<i>Battery Died</i>
Pit R NR Montgomery Cr	A1102000	73	<i>Battery Died</i>
Pit R NF A Alturas	A1210000	98	<i>Battery Died</i>
Pit R SF NR Alturas	A1415000	3	<i>Logger out of Water</i>
Red Bank CA Hwy99 NR Red Bluff	A0025800	0	<i>Logger out of Water</i>
Sacramento R above CBD NR Knights Landing	A0223002	52	<i>Battery Died</i>
Sacramento RA Balls Ferry	A0281500	100	
Sacramento RA Bend Bridge	A0278500	0	<i>Logger missing</i>
Sacramento RA Colusa	A0242000	100	
Sacramento RA Delta	A2130000	100	
Sacramento RA Hamilton City	A0263000	100	
Sacramento RA Verona	A0215000	67	<i>Logger out of Water</i>
Sacramento RA Woodson Bridge	A0270000	100	
Sacramento R below Knights Landing	A0219501	0	<i>Boat access only; Battery died</i>
Sacramento R below Red Bluff	A0275890	31	<i>Logger out of Water</i>
Sacramento R NR Mt. Shasta	A2160000	100	
Stillwater CNR Anderson	A0079500	0	<i>No water in creek</i>
Stony CNR Mouth	A0290000	0	<i>No water in creek</i>
Sutter Bypass A RD-1500 Powerplant	A0292700	100	
Thomes CA Hall Rd NR Richfield	A0321800	0	<i>No water in creek</i>
Thomes CA Paskenta	A0350000	0	<i>Logger out of Water</i>
Yuba River NR Mouth	A6101050	0	<i>No Logger at this site</i>
Average Percent Complete =		59	

SWCMP Water Temperature Percent Completion (November 2022 - February 2023)			
Station Name	Station Number	% Complete	Comments
Antelope CNR mouth	A0452050	47	<i>Battery died</i>
Battle CA Jellys Ferry Bridge	A4708000	67	<i>Logger out of water</i>
Battle CNF NR Manton	A4712000	100	
Battle CSF NR Mineral	A4730000	100	
Bear CNR Anderson	A0407000	100	
Bear River NR Mouth	A6501050	100	
Big Chico CA Chico	A0425000	32	<i>Logger out of water/stream dry</i>
Big Chico CA Hwy 32	A4216000	100	
Butte CA Butte Meadows	A4150000	100	
Butte CDS Western Canal Siphon	A0416000	81	<i>Logger out of water</i>
Butte Slough NR Meridian	A0297200	100	
Churn CNR Anderson	A0079000	43	<i>Dry creek/Logger buried</i>
Clear CNR Mouth	A3601000	78	<i>Logger out of water</i>
CBD A Knights Landing	A0294710	68	
Cottonwood CA Cottonwood	A0352050	62	<i>Logger buried</i>
Cottonwood CNF NR Igo	A0354500	87	<i>Logger out of water</i>
Cow CNR Millville	A4811000	0	<i>Logger malfunction/battery died</i>
Cow C Old above Killarc	A4844800	100	
Cow C South A Campground	A4855500	76	<i>Battery died</i>
Deer CA Deer Station	A4317700	0	<i>Logger stuck/ unable to retrieve</i>
Deer CA Hwy 99E Vina	A0432101	0	<i>Logger malfunction</i>
Elder CNR Mouth	A0332000	0	<i>Logger stolen - cable cut</i>
Fall RA Glenburn	A1723000	100	
Feather R NR Verona	A5101050	0	<i>Boat access only; Battery died</i>
Honcut CA Hwy 70	A0571001	73	<i>Logger buried in sediment</i>
McCloud River above Shasta Lake	A2215000	0	<i>Logger malfunction</i>
Mill CNR Mineral	A4418000	100	
Mill CNR Mouth NR Los Molinos	A0442050	100	
Oak Run CNR Oak Run	A4820000	100	
Paynes CA Paynes Crossing	A0460200	100	
Pit RA Pittville	A1127000	100	
Pit R NR Canby	A1168000	0	<i>Logger missing</i>
Pit R NR Montgomery Cr	A1102000	23	<i>Battery died</i>
Pit R NF A Alturas	A1210000	20	<i>Battery died</i>
Pit R SF NR Alturas	A1415000	100	
Red Bank CA Hwy99 NR Red Bluff	A0025800	0	<i>Logger missing</i>
Sacramento R above CBD NR Knights Landing	A0223002	0	<i>Logger malfunction</i>
Sacramento RA Balls Ferry	A0281500	100	
Sacramento RA Bend Bridge	A0278500	34	<i>Logger in and out of water then battery died</i>
Sacramento RA Colusa	A0242000	30	<i>Logger removed from water with dock it was attached to</i>
Sacramento RA Delta	A2130000	100	
Sacramento RA Hamilton City	A0263000	100	
Sacramento RA Verona	A0215000	58	<i>Logger out of water/vandalized</i>
Sacramento RA Woodson Bridge	A0270000	100	
Sacramento R below Knights Landing	A0219501	0	<i>Boat access only; Battery died</i>
Sacramento R below Red Bluff	A0275890	34	<i>Logger out of water then battery died</i>
Sacramento R NR Mt. Shasta	A2160000	100	
Stillwater CNR Anderson	A0079500	61	<i>No water in creek</i>
Stony CNR Mouth	A0290000	0	<i>No water in creek/Logger buried</i>
Sutter Bypass A RD-1500 Powerplant	A0292700	0	<i>Logger malfunction/data lost</i>
Thomes CA Hall Rd NR Richfield	A0321800	0	<i>Logger missing</i>
Thomes CA Paskenta	A0350000	42	<i>Logger buried in sediment</i>
Yuba River NR Mouth	A6101050	0	<i>No Logger at this site</i>
Average Percent Complete =		57	

SWCMP Water Temperature Percent Completion (February 2023 - May 2023)			
Station Name	Station Number	% Complete	Comments
Antelope CNR mouth	A0452050	91	<i>Battery died</i>
Battle CA Jellys Ferry Bridge	A4708000	60	<i>Battery died</i>
Battle CNF NR Manton	A4712000	0	<i>Logger malfunction/data lost</i>
Battle CSF NR Mineral	A4730000	100	
Bear CNR Anderson	A0407000	100	
Bear River NR Mouth	A6501050	100	
Big Chico CA Chico	A0425000	100	
Big Chico CA Hwy 32	A4216000	100	
Butte CA Butte Meadows	A4150000	100	
Butte CDS Western Canal Siphon	A0416000	100	
Butte Slough NR Meridian	A0297200	13	<i>Battery died</i>
Churn CNR Anderson	A0079000	100	
Clear CNR Mouth	A3601000	0	<i>Logger missing/stolen</i>
CBD A Knights Landing	A0294710	24	<i>Battery died</i>
Cottonwood CA Cottonwood	A0352050	69	<i>Logger buried</i>
Cottonwood CNF NR Igo	A0354500	28	<i>Logger malfunction/battery died</i>
Cow CNR Millville	A4811000	0	<i>Logger malfunction/battery died</i>
Cow C Old above Killarc	A4844800	100	
Cow C South A Campground	A4855500	0	<i>Logger missing</i>
Deer CA Deer Station	A4317700	0	<i>Logger stuck/ unable to retrieve</i>
Deer CA Hwy 99E Vina	A0432101	48	<i>Battery died</i>
Elder CNR Mouth	A0332000	33	<i>Logger out of water</i>
Fall R A Glenburn	A1723000	100	
Feather R NR Verona	A5101050	0	<i>Boat access only; Battery died</i>
Honcut CA Hwy 70	A0571001	100	
McCloud River above Shasta Lake	A2215000	100	
Mill CNR Mineral	A4418000	100	
Mill CNR Mouth NR Los Molinos	A0442050	0	<i>Logger missing</i>
Oak Run CNR Oak Run	A4820000	52	<i>Battery died</i>
Paynes CA Paynes Crossing	A0460200	85	<i>Logger out of water</i>
Pit R A Pittville	A1127000	100	
Pit R NR Canby	A1168000	100	
Pit R NR Montgomery Cr	A1102000	0	<i>Logger malfunction/battery died</i>
Pit R NF A Alturas	A1210000	23	<i>Battery died</i>
Pit R SF NR Alturas	A1415000	100	
Red Bank CA Hwy99 NR Red Bluff	A0025800	0	<i>Logger missing</i>
Sacramento R above CBD NR Knights Landing	A0223002	3	<i>Logger malfunction/battery died</i>
Sacramento RA Balls Ferry	A0281500	100	
Sacramento RA Bend Bridge	A0278500	0	<i>Logger malfunction/data lost</i>
Sacramento RA Colusa	A0242000	100	
Sacramento RA Delta	A2130000	100	
Sacramento RA Hamilton City	A0263000	87	<i>Logger out of water</i>
Sacramento RA Verona	A0215000	100	
Sacramento RA Woodson Bridge	A0270000	100	
Sacramento R below Knights Landing	A0219501	0	<i>Boat access only; Battery died</i>
Sacramento R below Red Bluff	A0275890	100	
Sacramento R NR Mt. Shasta	A2160000	100	
Stillwater CNR Anderson	A0079500	100	
Stony CNR Mouth	A0290000	25	<i>Logger out of water</i>
Sutter Bypass A RD-1500 Powerplant	A0292700	100	
Thomes CA Hall Rd NR Richfield	A0321800	0	<i>Logger missing</i>
Thomes CA Paskenta	A0350000	36	<i>Logger buried/out of water</i>
Yuba River NR Mouth	A6101050	0	<i>No Logger at this site</i>
Average Percent Complete =		60	

SWCMP Water Temperature Percent Completion (May 2023 - August 2023)			
Station Name	Station Number	% Complete	Comments
Antelope CNR mouth	A0452050	0	Logger missing
Battle CA Jellys Ferry Bridge	A4708000	16	Battery died
Battle CNF NR Manton	A4712000	100	
Battle CSF NR Mineral	A4730000	93	Logger out of water
Bear CNR Anderson	A0407000	27	Logger out of water
Bear River NR Mouth	A6501050	78	Logger out of water
Big Chico CA Chico	A0425000	100	
Big Chico CA Hwy 32	A4216000	100	
Butte CA Butte Meadows	A4150000	100	
Butte CDS Western Canal Siphon	A0416000	16	Logger out of water
Butte Slough NR Meridian	A0297200	1	Logger malfunction/battery died
Churn CNR Anderson	A0079000	100	
Clear CNR Mouth	A3601000	62	Logger out of water
CBD A Knights Landing	A0294710	0	Logger malfunction/battery died
Cottonwood CA Cottonwood	A0352050	100	
Cottonwood CNF NR Igo	A0354500	100	
Cow CNR Millville	A4811000	0	Logger malfunction/battery died
Cow C Old above Killarc	A4844800	100	
Cow C South A Campground	A4855500	100	
Deer CA Deer Station	A4317700	0	Logger malfunction/data not recovered
Deer CA Hwy 99E Vina	A0432101	0	Logger malfunction
Elder CNR Mouth	A0332000	0	Logger out of water/dry stream
Fall R A Glenburn	A1723000	0	Logger malfunction/battery died
Feather R NR Verona	A5101050	0	Boat access only; Battery died
Honcut CA Hwy 70	A0571001	100	
McCloud River above Shasta Lake	A2215000	68	Battery died
Mill CNR Mineral	A4418000	100	
Mill CNR Mouth NR Los Molinos	A0442050	0	Logger missing
Oak Run CNR Oak Run	A4820000	3	Logger malfunction/battery died
Paynes CA Paynes Crossing	A0460200	100	
Pit R A Pittville	A1127000	100	
Pit R NR Canby	A1168000	62	Logger out of water
Pit R NR Montgomery Cr	A1102000	0	Logger malfunction/battery died
Pit R NF A Alturas	A1210000	0	Logger malfunction/battery died
Pit R SF NR Alturas	A1415000	64	Logger out of water
Red Bank CA Hwy99 NR Red Bluff	A0025800	0	Logger missing/dry stream
Sacramento R above CBD NR Knights Landing	A0223002	0	Logger malfunction/battery died
Sacramento RA Balls Ferry	A0281500	100	
Sacramento RA Bend Bridge	A0278500	0	Logger malfunction/data lost
Sacramento RA Colusa	A0242000	100	
Sacramento RA Delta	A2130000	67	Logger out of water
Sacramento RA Hamilton City	A0263000	36	Logger out of water
Sacramento RA Verona	A0215000	100	
Sacramento RA Woodson Bridge	A0270000	100	
Sacramento R below Knights Landing	A0219501	0	Boat access only; Battery died
Sacramento R below Red Bluff	A0275890	100	
Sacramento R NR Mt. Shasta	A2160000	100	
Stillwater CNR Anderson	A0079500	97	No water in creek
Stony CNR Mouth	A0290000	0	Logger missing
Sutter Bypass A RD-1500 Powerplant	A0292700	100	
Thomes CA Hall Rd NR Richfield	A0321800	0	Logger missing/dry stream
Thomes CA Paskenta	A0350000	100	
Yuba River NR Mouth	A6101050	0	No Logger at this site
Average Percent Complete =		53	

SWCMP Water Temperature Percent Completion (August 2023 - November 2023)			
Station Name	Station Number	% Complete	Comments
Antelope C	A0452050	100	
Battle CA Jellys Ferry	A4708000	18	<i>Logger malfunction/stopped logging</i>
Battle CNF NR Mant	A4712000	100	
Battle CSF NR Mineral	A4730000	100	
Bear CA Parkville Rd	A0407000	100	
Bear R NR Mouth	A6501050	100	
Big Chico C	A0425000	100	
Big Chico CA HWY32	A4216000	100	
Butte CA Butte Meadows	A4150000	100	
Butte CDS Western	A0416000	100	
Butte Slu (2507 key)	A0297200	0	<i>Logger damaged - total loss</i>
CBD (Scott's Key)	A0294710	100	
Churn CNR Anderson	A0079000	100	
Clear C	A3601000	100	
Cottonwood CNF NR Igo	A0354500	100	
Cottonwood CNR Mouth	A0350500	100	
Cow CNR Millville	A4811000	100	
Cow C Old AB Killarc	A4844800	100	
Cow C SA CG	A4855500	100	
Deer C	A0432101	97	
Deer CA Deer Station	A4317700	100	
Elder Cat Gerber	A0332000	0	<i>No water in creek</i>
Fall RA Glenburn	A1723000	100	
Feather R NR Verona	A5101050	0	<i>Boat access only; Battery died</i>
Honcut CA HWY 70	A0571001	16	<i>Battery died</i>
McCloud R AB Shasta Lake	A2215000	100	
Mill C	A0442050	100	
Mill CNR Mineral	A4418000	100	
NF Pit R	A1210000	0	<i>Logger malfunction</i>
Oak Run CNR Oak Run	A4820000	100	
Paynes CNR Red Bluff	A0460200	100	
Pit RA Canby	A1168000	0	<i>Logger missing</i>
Pit RA Pittville	A1127000	100	
Pit R NR Montgomery C	A1102000	100	
Red Bank CUSTOC	A02540025	0	<i>No water in creek</i>
Sac RA Balls Ferry	A0281500	95	<i>Logger buried</i>
Sac RA Colusa	A0242000	0	<i>Logger malfunction/stopped logging</i>
Sac RA Delta	A2130000	0	<i>Logger malfunction/data lost</i>
Sac RA Hamilton City	A0263000	100	
Sac RA Verona	A0215000	100	
Sac RA Vina	A0270000	100	
Sac R AB CBD	A0223002	32	<i>Logger malfunction/stopped logging</i>
Sac R BL Knights Landing	A0219501	0	<i>Boat access only; Battery died</i>
Sac R BL RB div Dam	A0275890	0	<i>Logger damaged/data lost</i>
Sac R NR Mt. Shasta	A2160000	18	<i>Logger malfunction/stopped logging</i>
Sacramento R At Bend	A0278500	49	<i>Logger out of water</i>
SF Pit R	A1415000	11	<i>Logger out of water</i>
Stillwater C	A0079500	0	<i>No water in creek</i>
Stony CA TNC	A0290000	96	<i>Logger out of water</i>
Sutter BP A RD-1500	A0292700	0	<i>Logger malfunction/stopped logging after 3 hrs</i>
Thomes CA Hall Rd	A0321800	0	<i>No water in creek</i>
Thomes CA Paskenta	A0350000	100	
Yuba River NR Mouth	A6101050	0	<i>No Logger at this site</i>
Average Percent Complete =		65	

SWCMP Water Temperature Percent Completion (November 2023 - February 2024)			
Station Name	Station Number	% Complete	Comments
Antelope CNR mouth	A0452050	100	
Battle CA Jellys Ferry Bridge	A4708000	3	<i>Battery died/logger malfunction</i>
Battle CNF NR Manton	A4712000	48	<i>Logger malfunction</i>
Battle CSF NR Mineral	A4730000	100	
Bear Creek at Parkville Rd	A0408000	100	
Bear River NR Mouth	A6501050	81	<i>Battery died</i>
Big Chico CA Chico	A0425000	100	
Big Chico CA Hwy 32	A4216000	89	<i>Battery died</i>
Butte CA Butte Meadows	A4150000	100	
Butte CDS Western Canal Siphon	A0416000	100	
Butte Slough NR Meridian	A0297200	90	<i>Battery died</i>
Churn CNR Anderson	A0079000	100	
Clear CNR Mouth	A3601000	100	
CBD A Knights Landing	A0294710	54	<i>Battery died</i>
Cottonwood CNR Mouth	A0350500	100	
Cottonwood CNF NR Igo	A0354500	100	
Cow CNR Millville	A4811000	100	
Cow C Old above Killarc	A4844800	100	
Cow C South A Campground	A4855500	100	
Deer CA Deer Station	A4317700	100	
Deer CA Hwy 99E Vina	A0432101	100	
Elder CNR Mouth	A0332000	51	<i>Logger out of water</i>
Fall R A Glenburn	A1723000	100	
Feather R NR Verona	A5101050	43	<i>Boat access only; station serviced 1/12/24</i>
Honcut CA Hwy 70	A0571001	0	<i>Logger malfunction/battery died</i>
McCloud River above Shasta Lake	A2215000	100	
Mill CNR Mineral	A4418000	100	
Mill CNR Mouth NR Los Molinos	A0442050	0	<i>Unable to retrieve logger due to high flows</i>
Oak Run CNR Oak Run	A4820000	100	
Paynes CA Paynes Crossing	A0460200	81	<i>Battery died</i>
Pit R A Pittville	A1127000	100	
Pit R NR Canby	A1168000	100	
Pit R NR Montgomery Cr	A1102000	100	
Pit R NF A Alturas	A1210000	100	
Pit R SF NR Alturas	A1415000	100	
Red Bank CUS TOC	A02540025	0	<i>Logger out of water</i>
Sacramento R above CBD NR Knights Landing	A0223002	40	<i>Battery died</i>
Sacramento R A Balls Ferry	A0281500	0	<i>Unable to retrieve logger due to high flows/logger missing</i>
Sacramento R A Bend Bridge	A0278500	100	
Sacramento R A Colusa	A0242000	5	<i>Logger out of water/battery dead</i>
Sacramento R A Delta	A2130000	100	
Sacramento R A Hamilton City	A0263000	5	<i>Battery died</i>
Sacramento R A Verona	A0215000	100	
Sacramento R A Woodson Bridge	A0270000	100	
Sacramento R below Knights Landing	A0219501	0	<i>Boat access only; Battery died/logger missing</i>
Sacramento R below Red Bluff	A0275890	100	
Sacramento R NR Mt. Shasta	A2160000	0	<i>Unable to retrieve logger due to high flows/logger missing</i>
Stillwater CNR Anderson	A0079500	98	<i>Logger out of water</i>
Stony CNR Mouth	A0290000	100	
Sutter Bypass A RD-1500 Powerplant	A0292700	100	
Thomes CA Hall Rd NR Richfield	A0321800	0	<i>Logger missing/stolen</i>
Thomes CA Paskenta	A0350000	36	<i>Logger buried/out of water</i>
Yuba River NR Mouth	A6101050	0	<i>No Logger at station</i>
Average Percent Complete =		72	

SWCMP Water Temperature Percent Completion (February 2024 - May 2024)			
Station Name	Station Number	% Complete	Comments
Antelope CNR mouth	A0452050	100	
Battle CA Jellys Ferry Bridge	A4708000	100	
Battle CNF NR Manton	A4712000	14	<i>Battery died</i>
Battle CSF NR Mineral	A4730000	100	
Bear Creek at Parkville Rd	A0408000	100	
Bear River NR Mouth	A6501050	0	<i>Unable to locate logger</i>
Big Chico CA Chico	A0425000	100	
Big Chico CA Hwy 32	A4216000	0	<i>Battery died</i>
Butte CA Butte Meadows	A4150000	100	
Butte CDS Western Canal Siphon	A0416000	0	<i>Logger malfunction</i>
Butte Slough NR Meridian	A0297200	0	<i>Battery died</i>
Churn CNR Anderson	A0079000	100	
Clear CNR Mouth	A3601000	100	
CBD A Knights Landing	A0294710	0	<i>Battery died/Unable to access</i>
Cottonwood CNR Mouth	A0350500	100	
Cottonwood CNF NR Igo	A0354500	100	
Cow CNR Millville	A4811000	54	<i>Battery died/Unable to access</i>
Cow C Old above Killarc	A4844800	100	
Cow C South A Campground	A4855500	100	
Deer CA Deer Station	A4317700	100	
Deer CA Hwy 99E Vina	A0432101	100	
Elder CNR Mouth	A0332000	9	<i>Logger out of water</i>
Fall RA Glenburn	A1723000	100	
Feather R NR Verona	A5101050	100	
Honcut CA Hwy 70	A0571001	100	
McCloud River above Shasta Lake	A2215000	100	
Mill CNR Mineral	A4418000	100	
Mill CNR Mouth NR Los Molinos	A0442050	0	<i>Water too high to access logger</i>
Oak Run CNR Oak Run	A4820000	0	<i>Logger missing</i>
Paynes CA Paynes Crossing	A0460200	0	<i>Logger stuck, couldn't recover</i>
Pit R A Pittville	A1127000	100	
Pit R NR Canby	A1168000	100	
Pit R NR Montgomery Cr	A1102000	100	
Pit R NF A Alturas	A1210000	100	
Pit R SF NR Alturas	A1415000	100	
Red Bank C US TCC	A02540025	10	<i>Logger out of water</i>
Sacramento R above CBD NR Knights Landing	A0223002	100	
Sacramento RA Balls Ferry	A0281500	0	<i>Logger missing</i>
Sacramento RA Bend Bridge	A0278500	48	<i>Logger out of water</i>
Sacramento RA Colusa	A0242000	96	<i>Logger out of water</i>
Sacramento RA Delta	A2130000	100	
Sacramento RA Hamilton City	A0263000	0	<i>Logger malfunction</i>
Sacramento RA Verona	A0215000	88	<i>Logger out of water</i>
Sacramento RA Woodson Bridge	A0270000	97	<i>Logger out of water</i>
Sacramento R below Knights Landing	A0219501	0	<i>Boat access only; Logger missing</i>
Sacramento R below Red Bluff	A0275890	0	<i>Battery died/Logger malfunction</i>
Sacramento R NR Mt. Shasta	A2160000	0	<i>Logger missing</i>
Stillwater CNR Anderson	A0079500	100	
Stony CNR Mouth	A0290000	100	
Sutter Bypass A RD-1500 Powerplant	A0292700	100	<i>Logger missing</i>
Thomes CA Hall Rd NR Richfield	A0321800	0	<i>Logger missing</i>
Thomes CA Paskenta	A0350000	100	
Yuba River NR Mouth	A6101050	100	
Average Percent Complete =		66	

SWCMP Water Temperature Percent Completion (May 2024 - August 2024)			
Station Name	Station Number	% Complete	Comments
Antelope CNR mouth	A0452050	74	<i>Logger out of water</i>
Battle CA Jellys Ferry Bridge	A4708000	100	
Battle CNF NR Manton	A4712000	0	<i>Logger malfunction</i>
Battle CSF NR Mineral	A4730000	88	<i>Park Fire/Logger out of water</i>
Bear Creek at Parkville Rd	A0408000	100	
Bear River NR Mouth	A6501050	43	<i>Battery died</i>
Big Chico CA Chico	A0425000	100	
Big Chico CA Hwy 32	A4216000	99	<i>Unreliable data</i>
Butte CA Butte Meadows	A4150000	80	<i>Battery died</i>
Butte CDS Western Canal Siphon	A0416000	100	
Butte Slough NR Meridian	A0297200	100	
Churn CNR Anderson	A0079000	100	
Clear CNR Mouth	A3601000	79	<i>Logger out of water</i>
CBD A Knights Landing	A0294710	100	
Cottonwood CNR Mouth	A0350500	81	<i>Logger out of water</i>
Cottonwood CNF NR Igo	A0354500	100	
Cow CNR Millville	A4811000	0	<i>Battery died/Unable to access</i>
Cow C Old above Killarc	A4844800	100	
Cow C South A Campground	A4855500	8	<i>Battery died</i>
Deer CA Deer Station	A4317700	100	
Deer CA Hwy 99E Vina	A0432101	100	
Elder CNR Mouth	A0332000	19	<i>Logger out of water/Stream dried up</i>
Fall RA Glenburn	A1723000	100	
Feather R NR Verona	A5101050	100	
Honcut CA Hwy 70	A0571001	100	
McCloud River above Shasta Lake	A2215000	100	
Mill CNR Mineral	A4418000	100	
Mill CNR Mouth NR Los Molinos	A0442050	0	<i>Water too high to access logger</i>
Oak Run CNR Oak Run	A4820000	100	
Paynes CA Paynes Crossing	A0460200	0	<i>Unable to access due to Park Fire</i>
Pit RA Pittville	A1127000	100	
Pit R NR Canby	A1168000	100	
Pit R NR Montgomery Cr	A1102000	100	
Pit R NF A Alturas	A1210000	0	<i>Battery dead/Logger malfunction</i>
Pit R SF NR Alturas	A1415000	100	
Red Bank CUS TCC	A02540025	25	<i>Logger out of water/Stream dried up</i>
Sacramento R above CBD NR Knights Landing	A0223002	100	
Sacramento RA Balls Ferry	A0281500	100	
Sacramento RA Bend Bridge	A0278500	100	
Sacramento RA Colusa	A0242000	98	
Sacramento RA Delta	A2130000	100	
Sacramento RA Hamilton City	A0263000	100	
Sacramento RA Verona	A0215000	100	
Sacramento RA Woodson Bridge	A0270000	100	
Sacramento R below Knights Landing	A0219501	0	<i>Boat access only; Logger missing</i>
Sacramento R below Red Bluff	A0275890	100	
Sacramento R NR Mt. Shasta	A2160000	100	
Stillwater CNR Anderson	A0079500	40	<i>Battery died</i>
Stony CNR Mouth	A0290000	100	
Sutter Bypass A RD-1500 Powerplant	A0292700	100	
Thomes CA Hall Rd NR Richfield	A0321800	16	<i>Logger out of water/Stream dried up</i>
Thomes CA Paskenta	A0350000	49	<i>Battery died</i>
Yuba River NR Mouth	A6101050	99	
Average Percent Complete =		77	

SWCMP Water Temperature Percent Completion (August 2024 - November 2024)			
Station Name	Station Number	% Complete	Comments
Antelope CNR mouth	A0452050	100	
Battle CA Jellys Ferry Bridge	A4708000	100	
Battle CNF NR Manton	A4712000	0	<i>Park Fire/Logger malfunction</i>
Battle CSF NR Mineral	A4730000	57	<i>Park Fire/Logger out of water</i>
Bear Creek at Parkville Rd	A0408000	100	
Bear River NR Mouth	A6501050	0	<i>Logger malfunction</i>
Big Chico CA Chico	A0425000	100	
Big Chico CA Hwy 32	A4216000	100	
Butte CA Butte Meadows	A4150000	57	<i>Park Fire/Battery died</i>
Butte CDS Western Canal Siphon	A0416000	100	
Butte Slough NR Meridian	A0297200	100	
Churn CNR Anderson	A0079000	0	<i>Logger missing</i>
Clear CNR Mouth	A3601000	100	
CBD A Knights Landing	A0294710	100	
Cottonwood CNR Mouth	A0350500	0	<i>Logger missing</i>
Cottonwood CNF NR Igo	A0354500	100	
Cow CNR Millville	A4811000	100	
Cow C Old above Killarc	A4844800	100	
Cow C South A Campground	A4855500	0	<i>Battery died</i>
Deer CA Deer Station	A4317700	100	
Deer CA Hwy 99E Vina	A0432101	100	
Elder CNR Mouth	A0332000	0	<i>No water, stream dry</i>
Fall RA Glenburn	A1723000	100	
Feather R NR Verona	A5101050	67	<i>Boat access only; Battery died</i>
Honcut CA Hwy 70	A0571001	100	
McCloud River above Shasta Lake	A2215000	100	
Mill CNR Mineral	A4418000	78	<i>Park Fire/Logger out of water</i>
Mill CNR Mouth NR Los Molinos	A0442050	0	<i>Water too high to access logger</i>
Oak Run CNR Oak Run	A4820000	100	
Paynes CA Paynes Crossing	A0460200	100	<i>Recovered old logger</i>
Pit RA Pittville	A1127000	100	
Pit R NR Canby	A1168000	100	
Pit R NR Montgomery Cr	A1102000	100	
Pit R NF A Alturas	A1210000	100	
Pit R SF NR Alturas	A1415000	66	<i>Logger out of water</i>
Red Bank CUS TCC	A02540025	0	<i>stream dry/logger out of water</i>
Sacramento R above CBD NR Knights Landing	A0223002	100	
Sacramento RA Balls Ferry	A0281500	100	
Sacramento RA Bend Bridge	A0278500	100	
Sacramento RA Colusa	A0242000	100	
Sacramento RA Delta	A2130000	100	
Sacramento RA Hamilton City	A0263000	100	
Sacramento RA Verona	A0215000	100	
Sacramento RA Woodson Bridge	A0270000	100	
Sacramento R below Knights Landing	A0219501	0	<i>Boat access only; Logger missing</i>
Sacramento R below Red Bluff	A0275890	100	
Sacramento R NR Mt. Shasta	A2160000	100	
Stillwater CNR Anderson	A0079500	0	<i>Battery died/No water in stream</i>
Stony CNR Mouth	A0290000	96	<i>Logger out of water</i>
Sutter Bypass A RD-1500 Powerplant	A0292700	0	<i>Logger missing</i>
Thomes CA Hall Rd NR Richfield	A0321800	0	<i>no water in stream</i>
Thomes CA Paskenta	A0350000	70	<i>Battery died</i>
Yuba River NR Mouth	A6101050	99	
Average Percent Complete =		73	

SWCMP Water Temperature Percent Completion (November 2024 - February 2025)			
Station Name	Station Number	% Complete	Comments
Antelope CNR mouth	A0452050	100	
Battle CA Jellys Ferry Bridge	A4708000	67	<i>Logger out of water/battery died</i>
Battle CNF NR Manton	A4712000	0	<i>Logger missing</i>
Battle CSF NR Mineral	A4730000	100	
Bear Creek at Parkville Rd	A0408000	0	<i>Logger missing</i>
Bear River NR Mouth	A6501050	81	<i>Logger out of water</i>
Big Chico CA Chico	A0425000	100	
Big Chico CA Hwy 32	A4216000	100	
Butte CA Butte Meadows	A4150000	100	
Butte CDS Western Canal Siphon	A0416000	0	<i>Logger stuck, unable to retrieve</i>
Butte Slough NR Meridian	A0297200	0	<i>Logger stuck, unable to retrieve</i>
Churn CNR Anderson	A0079000	0	<i>Logger missing</i>
Clear CNR Mouth	A3601000	0	<i>Logger missing</i>
CBD A Knights Landing	A0294710	0	<i>Logger missing</i>
Cottonwood CNR Mouth	A0350500	0	<i>Logger missing</i>
Cottonwood CNF NR Igo	A0354500	0	<i>Logger malfunction/logger damaged</i>
Cow CNR Millville	A4811000	100	
Cow C Old above Killarc	A4844800	100	
Cow C South A Campground	A4855500	0	<i>Logger missing</i>
Deer CA Deer Station	A4317700	100	
Deer CA Hwy 99E Vina	A0432101	0	<i>Logger missing</i>
Elder CNR Mouth	A0332000	39	<i>Logger out of water</i>
Fall R A Glenburn	A1723000	100	
Feather R NR Verona	A5101050	37	<i>Boat access only; Logger battery died, station serviced 1/10/25</i>
Honcut CA Hwy 70	A0571001	82	<i>Logger out of water</i>
McCloud River above Shasta Lake	A2215000	100	
Mill CNR Mineral	A4418000	100	
Mill CNR Mouth NR Los Molinos	A0442050	0	<i>Unable to access/Logger lost</i>
Oak Run CNR Oak Run	A4820000	100	
Paynes CA Paynes Crossing	A0460200	100	
Pit R A Pittville	A1127000	63	<i>Logger malfunction/stopped logging</i>
Pit R NR Canby	A1168000	100	
Pit R NR Montgomery Cr	A1102000	100	
Pit R NF A Alturas	A1210000	100	
Pit R SF NR Alturas	A1415000	100	
Red Bank CUSTCC	A02540025	60	<i>Logger out of water</i>
Sacramento R above CBD NR Knights Landing	A0223002	100	
Sacramento RA Balls Ferry	A0281500	100	
Sacramento RA Bend Bridge	A0278500	90	<i>Logger out of water/Logger downloaded early because of incoming storm</i>
Sacramento RA Colusa	A0242000	100	
Sacramento RA Delta	A2130000	100	
Sacramento RA Hamilton City	A0263000	100	
Sacramento RA Verona	A0215000	99	
Sacramento RA Woodson Bridge	A0270000	100	
Sacramento R below Knights Landing	A0219501	31	<i>Boat access only; Logger missing/out of water</i>
Sacramento R below Red Bluff	A0275890	91	<i>Logger malfunction/stopped logging during high flows</i>
Sacramento R NR Mt. Shasta	A2160000	100	
Stillwater CNR Anderson	A0079500	0	<i>Logger missing</i>
Stony CNR Mouth	A0290000	61	<i>Logger out of water and/or buried</i>
Sutter Bypass A RD-1500 Powerplant	A0292700	0	<i>Logger missing</i>
Thomes CA Hall Rd NR Richfield	A0321800	0	<i>Logger missing</i>
Thomes CA Paskenta	A0350000	76	<i>Logger out of water/buried</i>
Yuba River NR Mouth	A6101050	0	<i>Logger missing</i>
Average Percent Complete =		62	

SWCMP Water Temperature Percent Completion (February 2025 - May 2025)			
Station Name	Station Number	% Complete	Comments
Antelope CNR mouth	A0452050	100	
Battle CA Jellys Ferry Bridge	A4708000	100	
Battle CNF NR Manton	A4712000	0	Logger missing
Battle CSF NR Mineral	A4730000	100	
Bear Creek at Parkville Rd	A0408000	0	Logger missing
Bear River NR Mouth	A6501050	100	
Big Chico CA Chico	A0425000	100	
Big Chico CA Hwy 32	A4216000	100	
Butte CA Butte Meadows	A4150000	100	
Butte CDS Western Canal Siphon	A0416000	0	Logger stuck, unable to retrieve
Butte Slough NR Meridian	A0297200	0	Logger stuck, unable to retrieve
Churn CNR Anderson	A0079000	0	Logger missing
Clear CNR Mouth	A3601000	0	Logger missing
CBD A Knights Landing	A0294710	0	Logger missing
Cottonwood CNR Mouth	A0350500	0	Logger missing
Cottonwood CNF NR Igo	A0354500	0	Logger malfunction/logger damaged
Cow CNR Millville	A4811000	100	
Cow C Old above Killarc	A4844800	100	
Cow C South A Campground	A4855500	0	Logger missing
Deer CA Deer Station	A4317700	100	
Deer CA Hwy 99E Vina	A0432101	0	Logger missing
Elder CNR Mouth	A0332000	100	
Fall R A Glenburn	A1723000	100	
Feather R NR Verona	A5101050	100	
Honcut CA Hwy 70	A0571001	75	Logger out of water
McCloud River above Shasta Lake	A2215000	100	
Mill CNR Mineral	A4418000	100	
Mill CNR Mouth NR Los Molinos	A0442050	0	Unable to access/Logger lost
Oak Run CNR Oak Run	A4820000	100	
Paynes CA Paynes Crossing	A0460200	75	Logger out of water
Pit R A Pittville	A1127000	0	Logger malfunction/stopped logging
Pit R NR Canby	A1168000	100	
Pit R NR Montgomery Cr	A1102000	100	
Pit R NF A Alturas	A1210000	100	
Pit R SF NR Alturas	A1415000	100	
Red Bank CUS TOC	A02540025	13	Logger out of water, no flow in creek
Sacramento R above CBD NR Knights Landing	A0223002	0	Logger malfunction/battery died
Sacramento R A Balls Ferry	A0281500	100	
Sacramento R A Bend Bridge	A0278500	0	Missing data file
Sacramento R A Colusa	A0242000	100	
Sacramento R A Delta	A2130000	100	
Sacramento R A Hamilton City	A0263000	100	
Sacramento R A Verona	A0215000	100	
Sacramento R A Woodson Bridge	A0270000	100	
Sacramento R below Knights Landing	A0219501	79	Logger out of water
Sacramento R below Red Bluff	A0275890	0	Logger malfunction/stopped logging during high flows
Sacramento R NR Mt. Shasta	A2160000	100	
Stillwater CNR Anderson	A0079500	0	Logger missing
Stony CNR Mouth	A0290000	85	Logger buried
Sutter Bypass A RD-1500 Powerplant	A0292700	0	Logger missing
Thomes CA Hall Rd NR Richfield	A0321800	0	Logger missing
Thomes CA Paskenta	A0350000	36	Logger buried
Yuba River NR Mouth	A6101050	0	Logger missing
Average Percent Complete =		58	

SWCMP Water Temperature Percent Completion (May 2025 - August 2025)			
Station Name	Station Number	% Complete	Comments
Antelope CNR mouth	A0452050	100	
Battle CA Jellys Ferry Bridge	A4708000	100	
Battle CNF NR Manton	A4712000	0	Logger missing
Battle CSF NR Mineral	A4730000	100	
Bear Creek at Parkville Rd	A0408000	100	
Bear River NR Mouth	A6501050	100	
Big Chico CA Chico	A0425000	100	
Big Chico CA Hwy 32	A4216000	100	
Butte CA Butte Meadows	A4150000	100	
Butte CDS Western Canal Siphon	A0416000	100	
Butte Slough NR Meridian	A0297200	100	
Churn CNR Anderson	A0079000	100	
Clear CNR Mouth	A3601000	79	Logger out of water
CBD A Knights Landing	A0294710	100	
Cottonwood CNR Mouth	A0350500	100	
Cottonwood CNF NR Igo	A0354500	0	Logger malfunction/logger damaged
Cow CNR Millville	A4811000	100	
Cow C Old above Killarc	A4844800	100	
Cow C South A Campground	A4855500	100	
Deer CA Deer Station	A4317700	100	
Deer CA Hwy 99E Vina	A0432101	100	
Elder CNR Mouth	A0332000	24	Logger out of water; stream dried up
Fall R A Glenburn	A1723000	100	
Feather R NR Verona	A5101050	100	
Honcut CA Hwy 70	A0571001	100	
McCloud River above Shasta Lake	A2215000	100	
Mill CNR Mineral	A4418000	31	Logger malfunction/battery died
Mill CNR Mouth NR Los Molinos	A0442050	0	Unable to access/Logger lost
Oak Run CNR Oak Run	A4820000	0	Logger malfunction/logger damaged
Paynes CA Paynes Crossing	A0460200	8	Logger malfunction/battery died
Pit R A Pittville	A1127000	0	Logger malfunction/stopped logging
Pit R NR Canby	A1168000	100	
Pit R NR Montgomery Cr	A1102000	99	Logger out of water
Pit R NF A Alturas	A1210000	100	
Pit R SF NR Alturas	A1415000	45	Logger out of water
Red Bank CUSTCC	A02540025	0	No water in creek
Sacramento R above CBD NR Knights Landing	A0223002	81	Logger malfunction/stopped logging
Sacramento R A Balls Ferry	A0281500	100	
Sacramento R A Bend Bridge	A0278500	100	
Sacramento R A Colusa	A0242000	100	
Sacramento R A Delta	A2130000	100	
Sacramento R A Hamilton City	A0263000	63	Logger malfunction/battery died
Sacramento R A Verona	A0215000	23	Logger malfunction/stopped logging
Sacramento R A Woodson Bridge	A0270000	100	
Sacramento R below Knights Landing	A0219501	0	Logger out of water
Sacramento R below Red Bluff	A0275890	100	
Sacramento R NR Mt. Shasta	A2160000	100	
Stillwater CNR Anderson	A0079500	0	Logger missing
Stony CNR Mouth	A0290000	100	
Sutter Bypass A RD-1500 Powerplant	A0292700	100	
Thomes CA Hall Rd NR Richfield	A0321800	0	Stream dry, no logger deployed
Thomes CA Paskenta	A0350000	100	
Yuba River NR Mouth	A6101050	0	No logger at site due to homeless encampments
Average Percent Complete =		73	

SWCMP Water Temperature Percent Completion (August 2025 - November 2025)			
Station Name	Station Number	% Complete	Comments
Antelope CNR mouth	A0452050	100	
Battle CA Jellys Ferry Bridge	A4708000	100	
Battle CNF NR Manton	A4712000	73	Logger out of water
Battle CSF NR Mineral	A4730000	0	Logger missing
Bear Creek at Parkville Rd	A0408000	100	
Bear River NR Mouth	A6501050	100	
Big Chico CA Chico	A0425000	0	Logger missing
Big Chico CA Hwy 32	A4216000	100	
Butte CA Butte Meadows	A4150000	100	
Butte CDS Western Canal Siphon	A0416000	100	
Butte Slough NR Meridian	A0297200	100	
Churn CNR Anderson	A0079000	100	
Clear CNR Mouth	A3601000	35	Logger out of water
CBD A Knights Landing	A0294710	100	
Cottonwood CNR Mouth	A0350500	100	
Cottonwood CNF NR Igo	A0354500	100	
Cow CNR Millville	A4811000	100	
Cow C Old above Killarc	A4844800	100	
Cow C South A Campground	A4855500	100	
Deer CA Deer Station	A4317700	100	
Deer CA Hwy 99E Vina	A0432101	100	
Elder CNR Mouth	A0332000	0	No water in creek
Fall R A Glenburn	A1723000	100	
Feather R NR Verona	A5101050	100	
Honcut CA Hwy 70	A0571001	74	Logger malfunction/bad data
McCloud River above Shasta Lake	A2215000	100	
Mill CNR Mineral	A4418000	100	
Mill CNR Mouth NR Los Molinos	A0442050	0	Unable to access/Logger lost
Oak Run CNR Oak Run	A4820000	100	
Paynes CA Paynes Crossing	A0460200	100	
Pit R A Pittville	A1127000	100	
Pit R NR Canby	A1168000	100	
Pit R NR Montgomery Cr	A1102000	100	
Pit R NF A Alturas	A1210000	100	
Pit R SF NR Alturas	A1415000	100	
Red Bank C US TCC	A02540025	0	No water in creek
Sacramento R above CBD NR Knights Landing	A0223002	100	
Sacramento R A Balls Ferry	A0281500	100	
Sacramento R A Bend Bridge	A0278500	100	
Sacramento R A Colusa	A0242000	100	
Sacramento R A Delta	A2130000	100	
Sacramento R A Hamilton City	A0263000	100	
Sacramento R A Verona	A0215000	100	
Sacramento R A Woodson Bridge	A0270000	100	
Sacramento R below Knights Landing	A0219501	0	Logger out of water
Sacramento R below Red Bluff	A0275890	100	
Sacramento R NR Mt. Shasta	A2160000	100	
Stillwater CNR Anderson	A0079500	0	Stream dry, no logger deployed
Stony CNR Mouth	A0290000	92	Logger out of water
Sutter Bypass A RD-1500 Powerplant	A0292700	99	
Thomes CA Hall Rd NR Richfield	A0321800	0	Stream dry, no logger deployed
Thomes CA Paskenta	A0350000	100	
Yuba River NR Mouth	A6101050	0	No logger at site due to homeless encampments
Average Percent Complete =		81	

10 Appendix E. Park Fire Case Study

POST-FIRE WATER QUALITY ASSESSMENT OF ANADROMOUS STREAMS



Cover Photo 1 (upper): Big Chico Creek Canyon following the Park Fire (CSU Chico)

Cover Photo 2 (lower): Mill Creek Canyon following the Park Fire (CalSport)

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10.1 INTRODUCTION

The Park Fire began on July 24, 2024, in Chico, California and burned more than 429,000 acres across portions of Butte and Tehama Counties within the northern Sacramento Valley (CAL FIRE 2024). Portions of the burn area occurred within watersheds that are ecologically important Sacramento River tributaries.

These tributaries provide important spawning, migration, rearing, and thermal refuge habitat for Central Valley spring-run Chinook salmon, steelhead, and fall-run Chinook salmon. These species are highly sensitive to habitat degradation and declining water quality conditions (NOAA Fisheries 2023).

This case study evaluates post-wildfire effects on water quality within selected Sacramento River tributaries (i.e., study streams) affected by the Park Fire, with a focus on sediment transport, nutrient loading, and constituent mobilization during the first post-fire wet season.

10.2 STUDY STREAMS

This case study evaluated upper and lower watershed monitoring stations on Mill Creek, Deer Creek, and Big Chico Creek, along with lower watershed reference stations at Antelope Creek near mouth (SWCMP Station A0452050) and Paynes Creek at Paynes Crossing (SWCMP Station A0460200) (Figure 10-1).

Mill Creek was evaluated at Mill Creek near Mineral (SWCMP Station A4418000) in the upper watershed and Mill Creek near mouth near Los Molinos (SWCMP Station A0442050) in the lower watershed. Mill Creek supports important cold-water habitat and one of the largest remaining naturally reproducing spring-run Chinook salmon populations in California (NOAA Fisheries 2023).

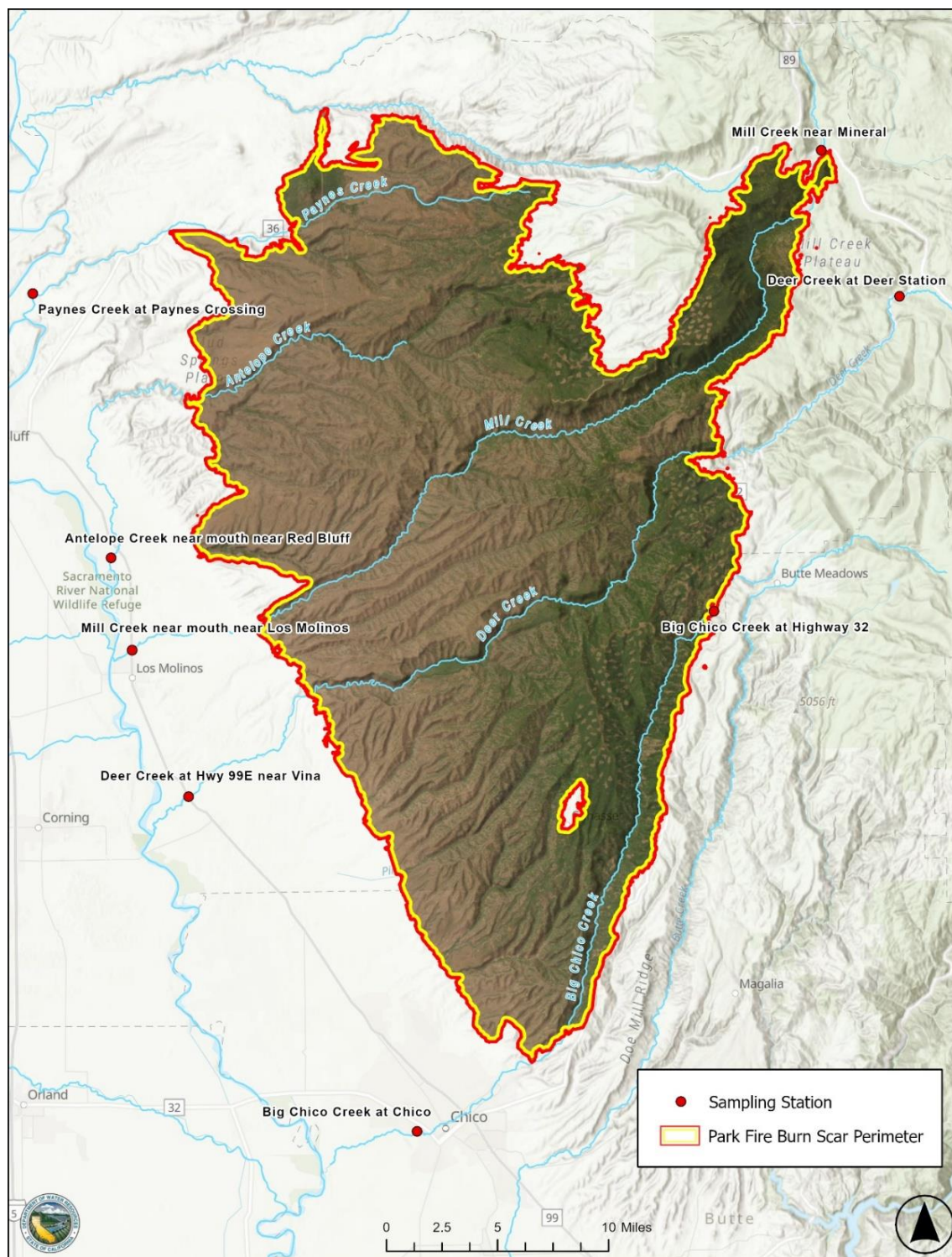
Deer Creek was evaluated at Deer Creek at Deer Station (SWCMP Station A4317700) in the upper watershed and Deer Creek at Highway 99 E near Vina (SWCMP Station A0432101) in the lower watershed. Deer Creek provides important migration, spawning, and rearing habitat for spring-run Chinook salmon and steelhead (CDFW 2023).

Big Chico Creek was evaluated at Big Chico Creek at Highway 32 (SWCMP Station A4216000) in the upper watershed and Big Chico Creek at Chico (SWCMP Station A0425000) near Rose Avenue in the lower watershed. The watershed consists of mixed forest and foothill terrain and experienced substantial wildfire-related disturbance associated with the Park Fire.

Antelope Creek near mouth and Paynes Creek were included as lower watershed reference streams for comparison with the paired watershed systems. Antelope Creek near mouth supports naturally spawning spring-run Chinook salmon, while Paynes Creek provides seasonal migratory and rearing habitat for salmonids. These streams provide additional context for evaluating watershed responses to the Park Fire, including storm-driven sediment and nutrient transport.

Figure 10-1. Park Fire Perimeter

This figure illustrates the Park Fire perimeter and associated burn scar showing the study streams and monitoring station locations evaluated in this case study. The figure illustrates upper and lower watershed stations on Big Chico Creek, Deer Creek, and Mill Creek, along with the lower watershed reference streams Antelope Creek near mouth and Paynes Creek.



10.3 POST-FIRE WATER QUALITY PARAMETERS

Post-wildfire water quality impacts are often greatest during the first major storm events when runoff transports ash, sediment, nutrients, and metals from burned hillslopes into stream systems (USGS 2022).

Although SWCMP evaluated a broad suite of analytes, Total Suspended Solids (TSS), Total Aluminum, Total Iron, and Total Phosphorus were used as primary indicators of post-fire watershed disturbance and sediment transport.

Elevated TSS indicates erosion and channel instability and can increase turbidity, embed spawning gravels, and reduce habitat quality for salmonids (NOAA Fisheries 2023). Total Aluminum and Total Iron are commonly associated with fine sediment transport and soil disturbance from burned uplands (U.S. EPA 2024). Total Phosphorus indicates nutrient loading from ash, burned vegetation, and disturbed soils and may contribute to algal growth and dissolved oxygen fluctuations (UC ANR 2021).

Although dissolved metals were evaluated for potential toxicity, results from this study indicate that physical habitat degradation, rather than dissolved metals toxicity, was the primary post-fire impact across the monitored watersheds.

10.4 FEBRUARY STORM EVENT

Constituent concentrations observed during February 2025 coincided with a major storm system that impacted Northern California between January 31 and February 5, 2025. The storm produced heavy rainfall, elevated streamflow, and localized flooding across the Sacramento Valley and surrounding foothill watersheds.

Upper watershed stations on Deer Creek, Mill Creek, and Big Chico Creek, along with the lower watershed Big Chico Creek at Chico station, were sampled on February 4, 2025, during peak or near-peak runoff conditions. Lower watershed stations, including Deer Creek, Mill Creek, Paynes Creek, and Antelope Creek near mouth, were sampled on February 11, 2025, under post-storm conditions.

The dataset captures both peak runoff conditions in the upper watershed and downstream transport effects in the lower watershed. The strongest response occurred in Big Chico Creek, where total suspended solids, total aluminum, total iron, and total phosphorus increased substantially during the February storm event.

10.5 WATER QUALITY FINDINGS

Water quality responses varied among watersheds, with the strongest impacts occurring during the February 2025 storm event. Evaluated parameters included Total Suspended Solids (TSS), Total Aluminum (Al), Total Iron (Fe), and Total Phosphorus (TP), which were used as indicators of sediment transport, erosion, and post-fire watershed disturbance (USGS 2022).

Antelope Creek near mouth and Paynes Creek were evaluated as lower watershed reference streams. Antelope Creek near mouth exhibited the most stable overall conditions, with only minor increases in TSS, aluminum, iron, and phosphorus during the February storm event before returning to near-pre-fire conditions. Paynes Creek showed a stronger storm response, particularly for TSS and phosphorus, although post-fire concentrations generally returned to lower baseline conditions following the February event. These results suggest short-duration storm-driven sediment and nutrient transport rather than sustained watershed disturbance.

The paired watershed systems on Mill Creek, Deer Creek, and Big Chico Creek showed increasing post-fire response from upstream to downstream stations. Deer Creek exhibited the least overall response among the paired watersheds, with moderate increases in TSS, aluminum, and iron during storm conditions. Because the upper watershed Deer Creek station was outside the Park Fire perimeter, observed changes likely reflect regional storm runoff rather than direct wildfire influence.

Mill Creek exhibited moderate and relatively stable post-fire conditions. February 2025 sampling showed elevated sediment-associated constituents relative to pre-fire conditions, although increases were substantially lower than those observed in Big Chico Creek. Both upper and lower watershed stations showed evidence of storm-driven sediment transport with moderate post-fire stabilization.

Big Chico Creek exhibited the strongest overall response during the February 2025 storm event. The upper watershed station at Highway 32 was the only upper watershed station located within the Park Fire perimeter and was directly influenced by runoff from burned uplands. Total suspended solids, total aluminum, total iron, and total phosphorus increased substantially during peak runoff conditions, particularly at the lower watershed Big Chico Creek at Chico station. Elevated post-fire median concentrations persisted after the February event, indicating continued sediment transport and prolonged watershed disturbance.

Overall, Deer Creek represented the most stable paired watershed system, Mill Creek showed moderate sediment-associated response, and Big Chico Creek exhibited the clearest evidence of wildfire-related watershed impacts. These findings indicate that physical habitat degradation associated with sediment transport was the dominant post-fire impact across the monitored watersheds (NOAA Fisheries 2023).

Figures 10-2 through 10-5 show pre-fire median concentrations, February 2025 first-flush concentrations, and post-fire median concentrations for Total Aluminum, Total Iron, Total Suspended Solids, and Total Phosphorus at the Antelope Creek near mouth and Paynes Creek reference stations.

Figures 10-6 through 10-9 show pre-fire median concentrations, February 2025 first-flush concentrations, and post-fire median concentrations for Total Aluminum, Total Iron, Total Suspended Solids, and Total Phosphorus at paired upper and lower watershed stations on Deer Creek, Mill Creek, and Big Chico Creek.

Note: Pre-fire median represents samples collected from May 2022 through the first-flush event (February 2025). The first-flush bar represents the initial storm event sampled in February 2025. Post-fire median represents samples collected after the first-flush event through November 2025.

Figure 10-2. Total Aluminum concentrations for Antelope and Paynes Creek

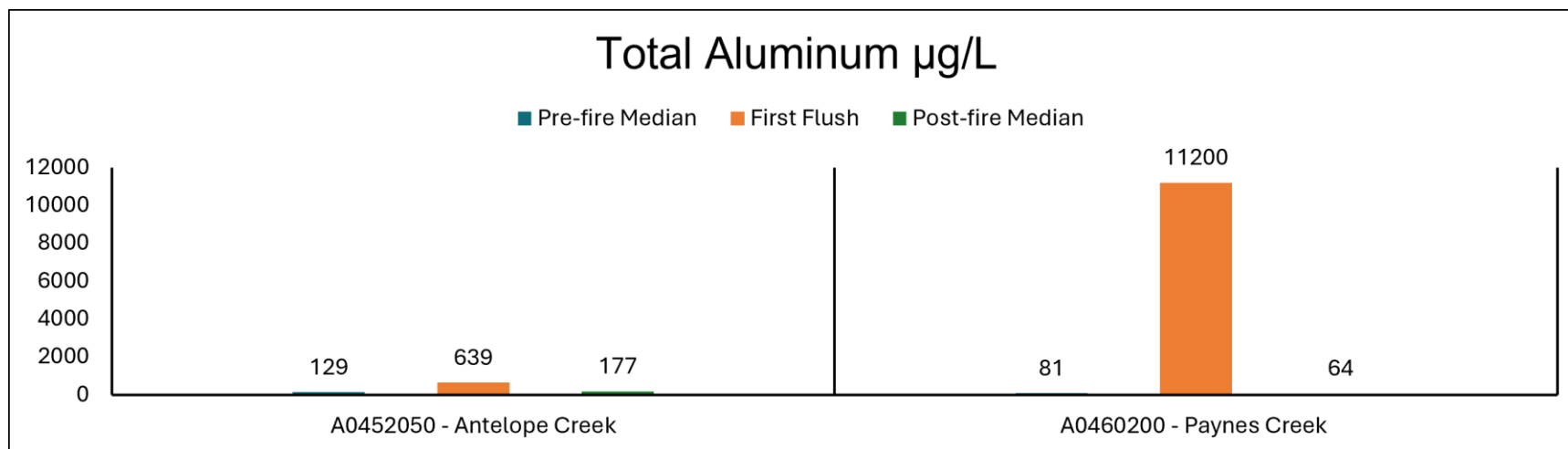


Figure 10-3. Total Iron concentrations for Antelope and Paynes Creek

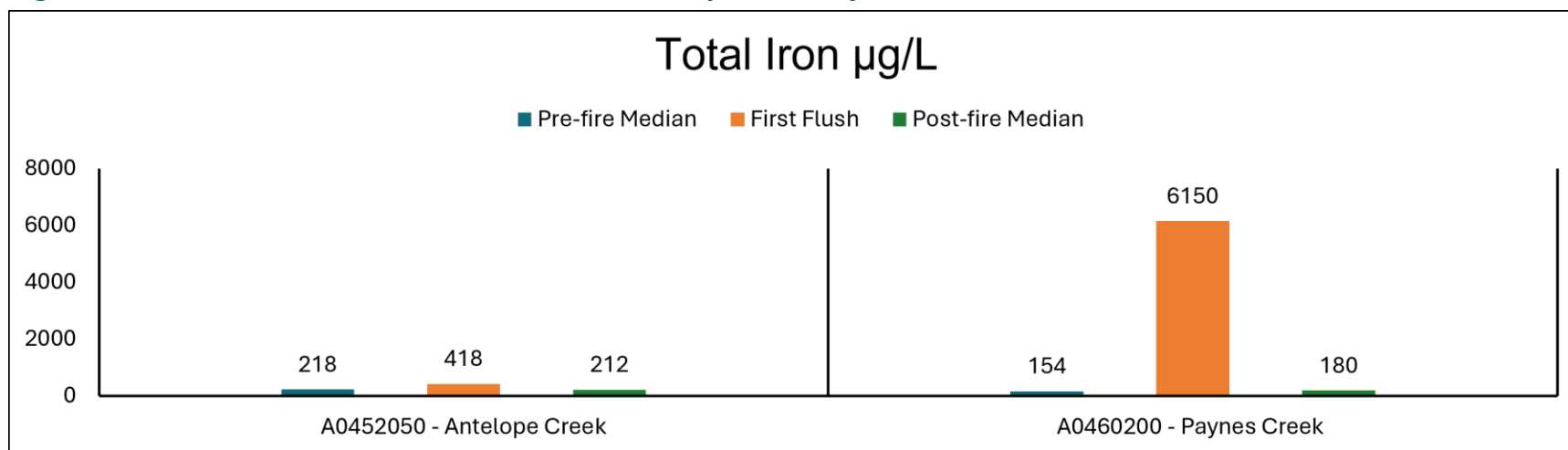


Figure 10-4. Total Suspended Solids concentrations for Antelope and Paynes Creek

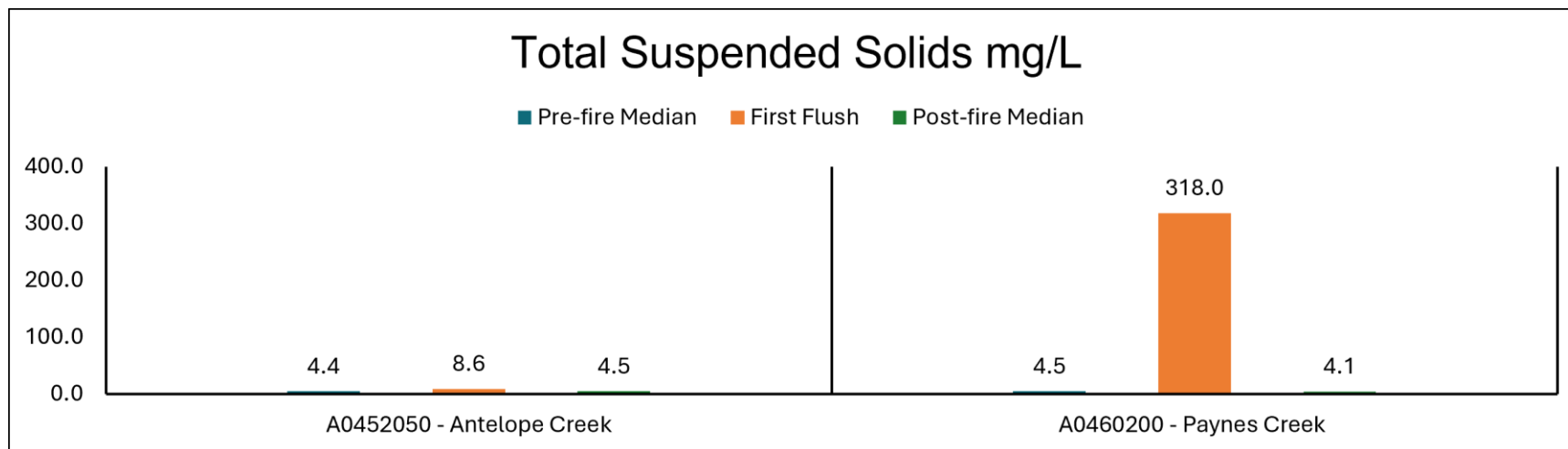


Figure 10-5. Total Phosphorous concentrations for Antelope and Paynes Creek

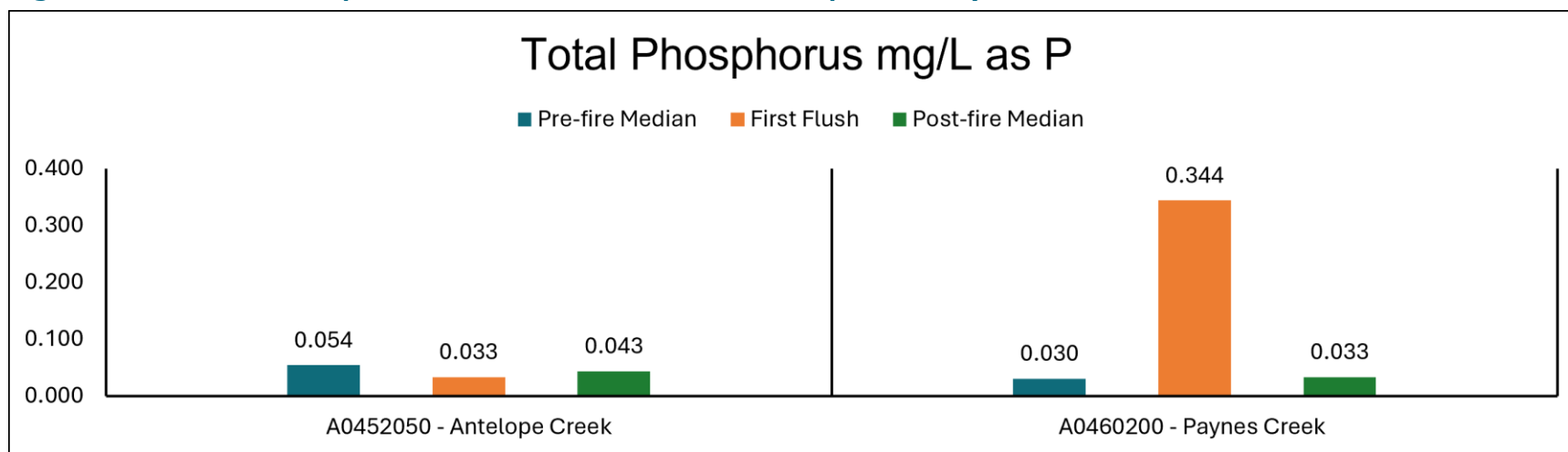


Figure 10-6. Combined look at Total Aluminum concentrations for upper and lower Deer, Mill, and Big Chico Creeks

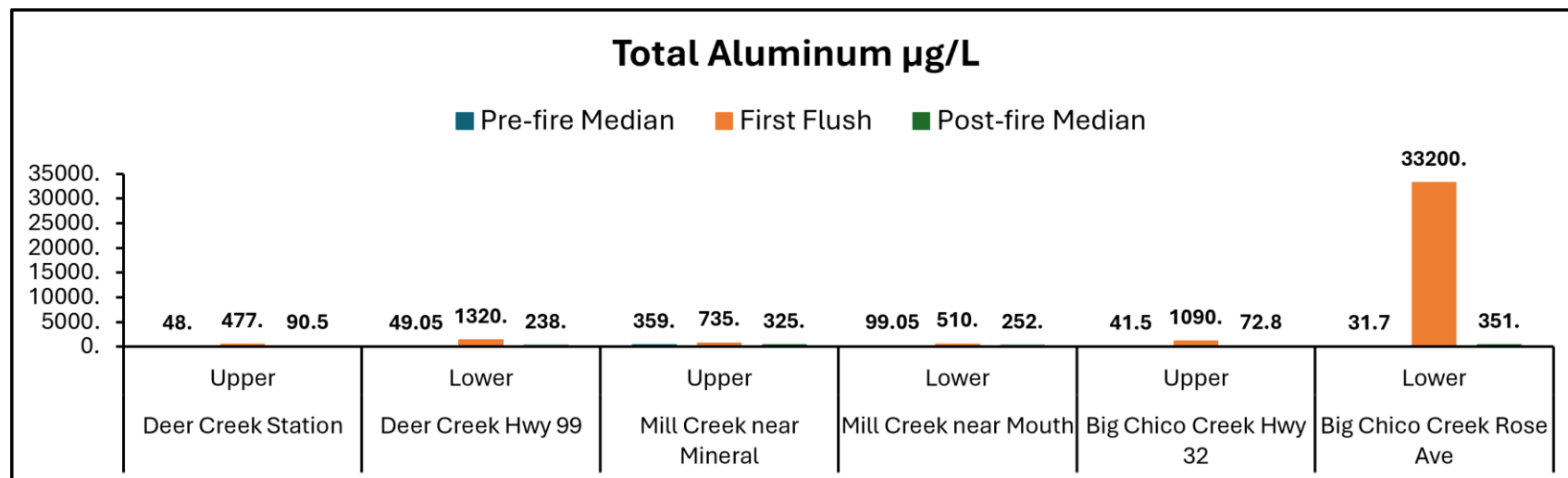


Figure 10-7. Combined look at Total Iron concentrations for upper and lower Deer, Mill, and Big Chico Creeks

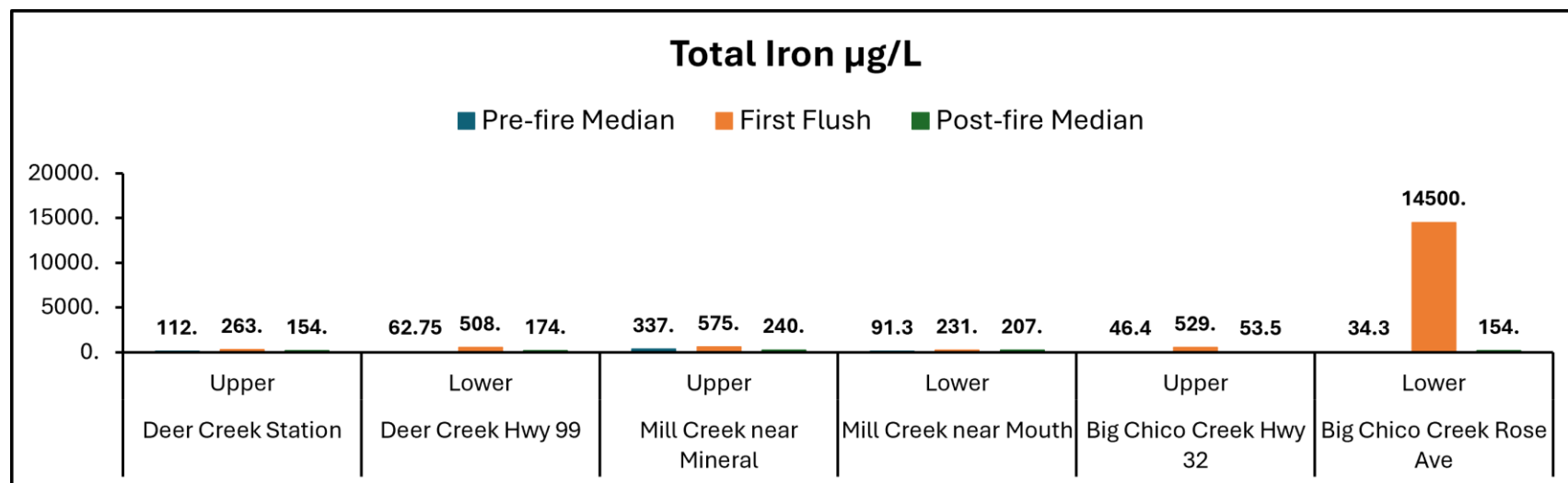


Figure 10-8. Combined look at Total Suspended Solids concentrations for upper and lower Deer, Mill, and Big Chico Creeks

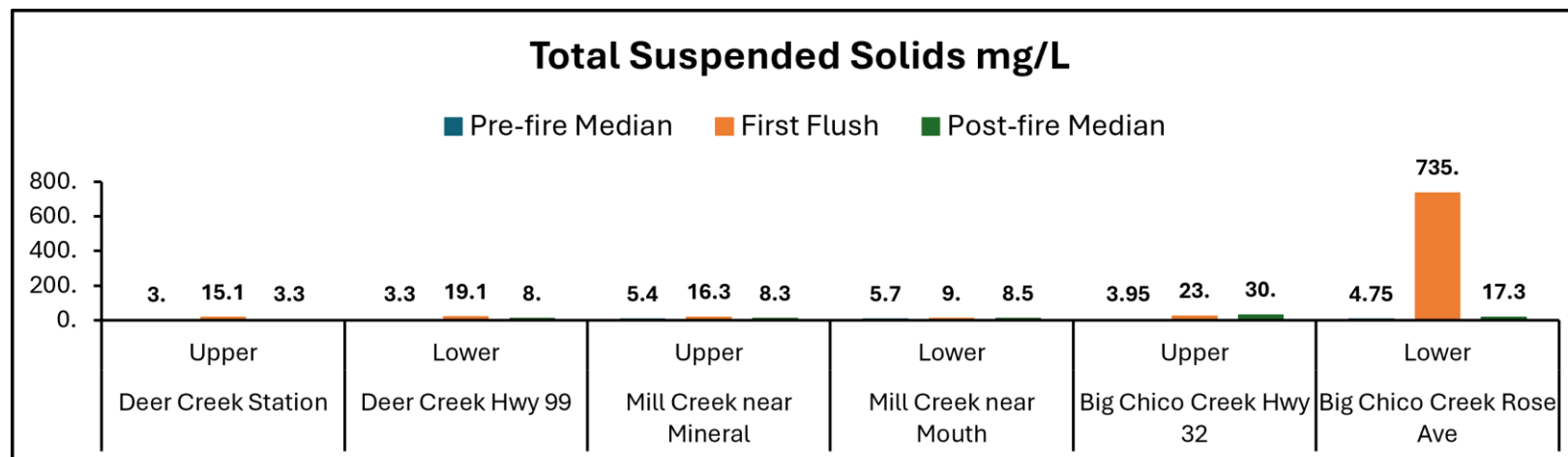
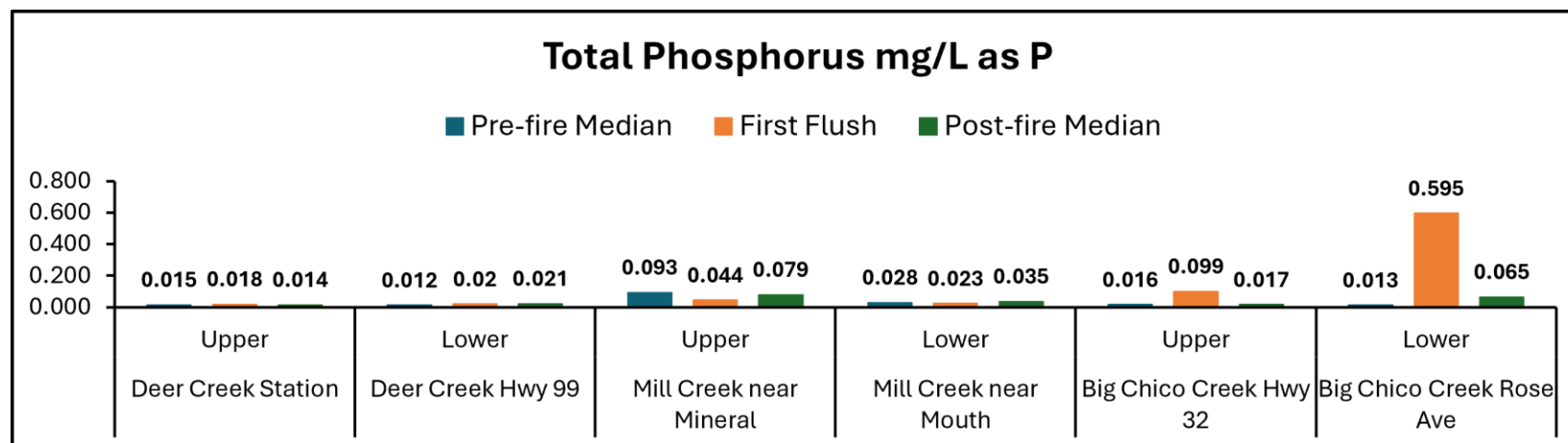


Figure 10-9. Combined look at Total Phosphorus concentrations for upper and lower Deer, Mill, and Big Chico Creeks



10.6 UPPER VS. LOWER WATERSHED DISCUSSION

Comparison of paired upper and lower watershed stations on Deer Creek, Mill Creek, and Big Chico Creek showed increasing downstream response during the February 2025 first-flush event.

Big Chico Creek at Highway 32 was the only upper watershed station located within the Park Fire perimeter and was directly influenced by runoff from burned uplands. In contrast, the upper watershed Deer Creek and Mill Creek stations were located upstream of the fire perimeter and likely reflected broader storm-driven watershed response rather than direct wildfire effects. Both Big Chico Creek stations were sampled on February 4, 2025, during peak or near-peak storm runoff conditions, while the lower Deer Creek and Mill Creek stations were sampled later on February 11, 2025, under post-storm conditions.

Deer Creek exhibited moderate increases in sediment-associated constituents at both stations, although the lower watershed station showed greater increases in total aluminum, total iron, and TSS, indicating downstream transport and accumulation of fine sediment.

Mill Creek showed similar but more moderate patterns between upper and lower watershed stations, with relatively limited first-flush amplification and more stable post-fire conditions compared to the other watersheds.

Big Chico Creek exhibited the strongest upper-to-lower watershed contrast. Although the upper watershed station showed elevated sediment-associated constituents during storm conditions, the lower watershed Big Chico Creek at Chico station exhibited substantial first-flush amplification and persistently elevated post-fire concentrations, indicating continued downstream sediment transport and watershed disturbance.

Overall, downstream amplification of sediment-associated constituents was most pronounced in Big Chico Creek, indicating the strongest watershed-scale response to the Park Fire.

10.7 BIG CHICO CREEK AT CHICO ASSESSMENT

10.7.1 Dissolved Metals

Dissolved copper and zinc remained below hardness-adjusted aquatic life criteria, while dissolved lead exhibited only two slight exceedances during the monitoring period. Big Chico Creek at Chico, which exhibited the highest sediment-associated constituent response following the Park Fire, was used as the primary example for evaluating dissolved metals toxicity (Table 10-1).

These results indicate that dissolved metals toxicity was unlikely to represent a primary stressor to aquatic life during the monitoring period. Instead, physical habitat degradation associated with sediment transport and turbidity represented the dominant post-fire impact mechanism.

Table 10-1. Freshwater Chronic Aquatic Life Criteria Evaluation (California Toxics Rule (CTR))

This table summarizes the laboratory results for Big Chico Creek at Chico and the calculated freshwater chronic criteria (CCC) for dissolved copper, zinc, and lead. Criteria were calculated using the hardness-dependent equations in 40 CFR Section 131.38 (EPA 2026). Note that two samples were greater than the chronic aquatic life criteria for dissolved lead. The comparison is provided as a screening-level evaluation because the CTR chronic criterion is defined as a 4-day average concentration, whereas the monitoring data represent individual grab samples.

Laboratory Results

Analyte	Units	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Dissolved Hardness	mg/L as CaCO ₃	81	49	56	76	78	32	47	82	84	27	60	78	64
Dissolved Copper	µg/L	1	1	1	1	1	1	1	1	1	1.14	1	1	1.1
Dissolved Zinc	µg/L	5	5	5	5	5	5	5	5	5	5	5	5	5
Dissolved Lead	µg/L	1	1	1	1	1	1	1	1	1	1	1	1	1

Hardness-Dependent Freshwater Aquatic Life Criteria (CTR)

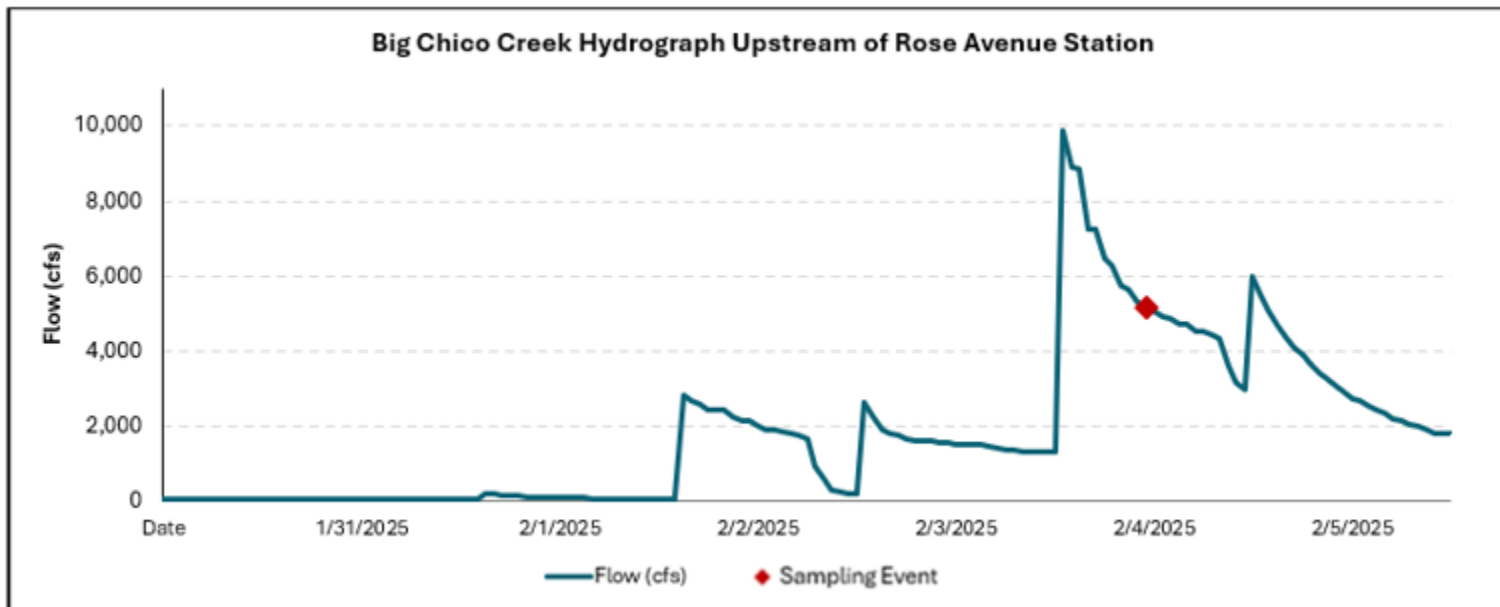
Criteria	Units	Nov 2022	Feb 2023	May 2023	Aug 2023	Nov 2023	Feb 2024	May 2024	Aug 2024	Nov 2024	Feb 2025	May 2025	Aug 2025	Nov 2025
Copper Chronic	µg/L	7.50	4.90	5.50	7.10	7.20	3.40	4.70	7.60	7.70	2.90	5.80	7.20	6.10
Zinc Chronic	µg/L	99.00	65.00	72.00	94.00	96.00	45.00	62.00	100.00	100.00	39.00	77.00	96.00	81.00
Lead Chronic	µg/L	2.00	1.10	1.30	1.90	1.90	0.71	1.10	2.00	2.10	0.59	1.40	1.90	1.50

10.7.2 Big Chico Creek Stream Flow

Streamflow data during the February storm event for Big Chico Creek were obtained from the California Data Exchange Center (CDEC) BIC (Big Chico Creek) gaging station, which is located approximately five miles upstream of the Big Chico Creek at Chico SWCMP station (Figure 10-11). The dataset represents hourly discharge measurements collected during the February 2025 storm event and was used to characterize hydrologic conditions during the first-flush response. Provisional data (raw uncensored data) are publicly available through the CDEC website at: https://cdec.water.ca.gov/dynamicapp/staMeta?station_id=BIC.

Figure 10-10. Big Chico Creek Stream Flow

This hydrograph shows flow conditions upstream of the Big Chico Creek at Chico (Rose Avenue) monitoring station during the February 2025 storm event. Streamflow increased rapidly from baseflow conditions to a peak discharge of approximately 9,873 cubic feet per second (cfs) on February 4, 2025, reflecting a major storm response. Water quality sampling at the Big Chico Creek at Chico station occurred at approximately 7:15 a.m. PST on February 4, 2025, at approximately 5,178 cfs flows, coinciding with falling peak flow conditions and representing maximum transport potential for sediment, nutrients, and associated metals.

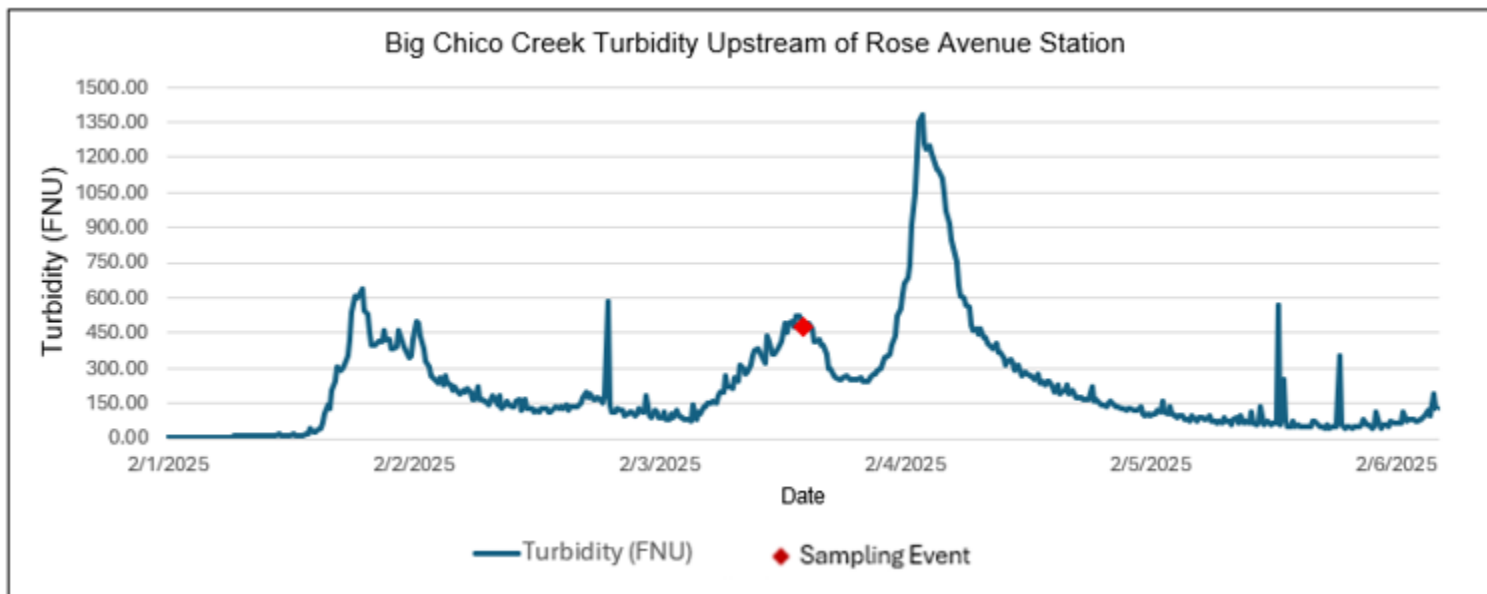


10.7.3 Big Chico Creek Turbidity

Turbidity data during the February 2025 storm event for Big Chico Creek were obtained from the California Data Exchange Center BIC (Big Chico Creek) gaging station, which is located approximately five miles upstream of the Big Chico Creek at Chico (Rose Avenue) SWCMP station (Figure 10-12). The dataset represents continuous turbidity measurements (FNU) collected during the February 2025 storm event and was used to characterize suspended sediment transport and first-flush conditions within the watershed. Data are publicly available through the WDL at: <https://wdl.water.ca.gov/WaterDataLibrary/StationDetails.aspx?Station=A4210500&source=map>.

Figure 10-11. Big Chico Creek turbidity (FNU)

This figure illustrates that turbidity increased rapidly during the first-flush response, reaching a peak concentration of approximately 1,379 FNU on February 4, 2025, indicating substantial suspended sediment transport associated with storm runoff from the watershed. Water quality sampling at the Big Chico Creek at Chico station occurred at approximately 7:15 a.m. PST on February 4, 2025, when turbidity measured approximately 480 FNU, reflecting highly elevated sediment conditions during peak runoff and transport processes.



10.7.4 Big Chico Creek Photographs

The following photographs of Big Chico Creek at Chico were collected during the February 2025 sampling event and document elevated streamflow conditions, highly turbid water, and substantial suspended sediment transport associated with post-fire storm runoff following the Park Fire.

Figure 10-12. Bank to bank photograph of Big Chico Creek at sample location



Figure 10-13. Upstream photograph of Big Chico Creek at sample location

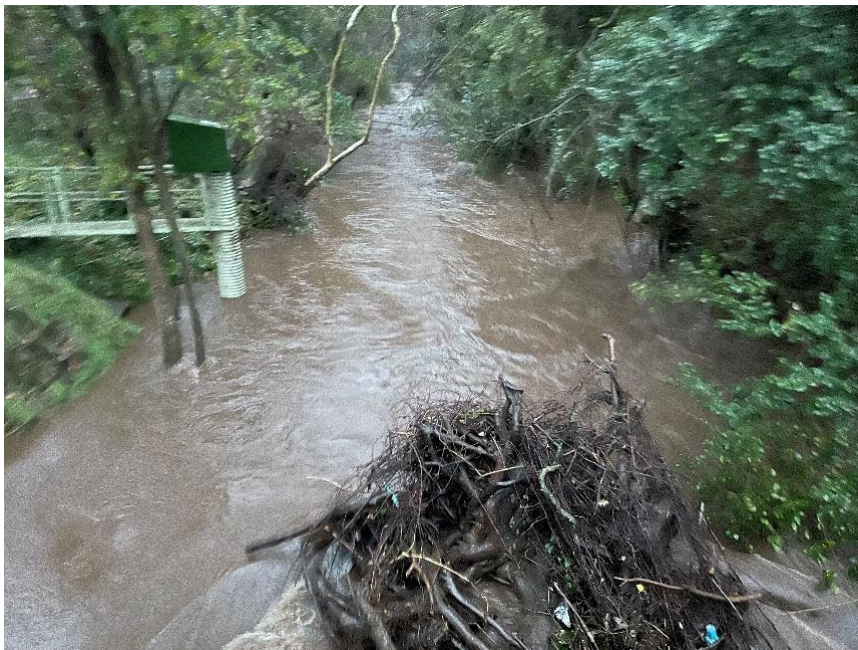
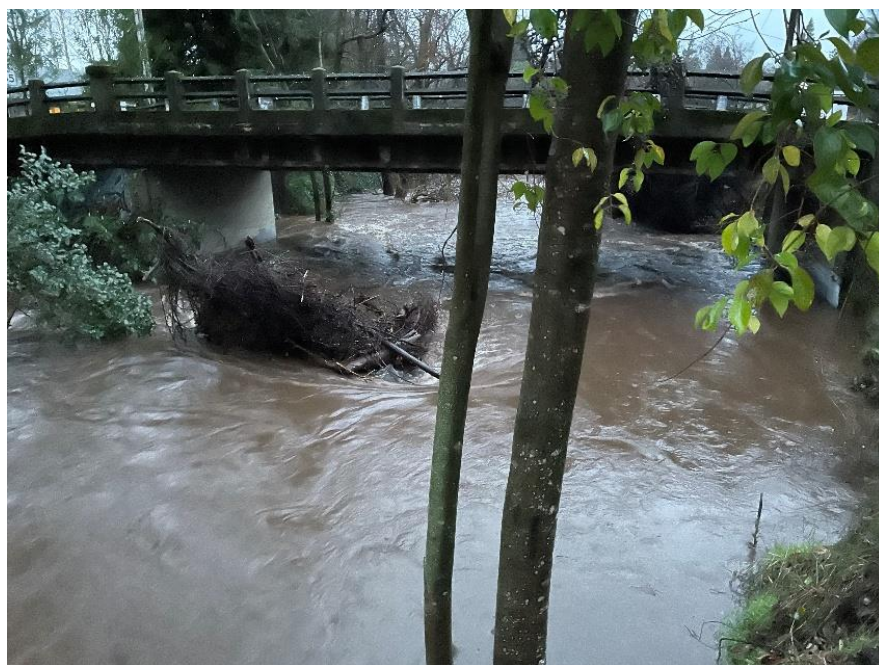


Figure 10-14. Downstream photo of Big Chico Creek at sample location



10.8 PARK FIRE CASE-STUDY CONCLUSION

The Park Fire produced measurable water quality impacts across the monitored stream systems, although impacts varied among watersheds. The strongest responses were associated with sediment transport, nutrient loading, and physical habitat degradation during the February 2025 first-flush storm event.

Big Chico Creek exhibited the strongest and most persistent post-fire response, particularly at the lower watershed Big Chico Creek at Chico station where sediment-associated constituents increased substantially during the February 2025 storm event and remained elevated afterward. Deer Creek and Mill Creek exhibited more moderate storm-driven responses with evidence of post-storm stabilization. Antelope Creek near mouth and Paynes Creek provided regional reference context, although Paynes Creek experienced a short-duration sediment and nutrient pulse during February 2025.

Dissolved metals concentrations generally remained below applicable aquatic life criteria throughout the monitoring period, indicating that physical habitat degradation rather than dissolved metals toxicity was the primary post-fire stressor.

Monitoring under SWCMP concluded in November 2025 and captured only the first post-fire wet season following the Park Fire. Additional long-term monitoring would improve understanding of watershed recovery, sediment persistence, and long-term

aquatic habitat impacts, which may continue for several years depending on burn severity, storm intensity, and recovery rates (USGS 2022).

10.9 REFERENCES

- California Department of Fish and Wildlife (CDFW). 2023. California Salmonid Stream Habitat Restoration Manual and Anadromous Fisheries Information. Sacramento, CA.
- California Department of Forestry and Fire Protection (CAL FIRE). 2024. Park Fire Incident Information and Situation Reports. Sacramento, CA.
- California Sportfishing Protection Alliance (CalSport). 2026. The Aftermath of the Park Fire. Photograph by Patrick Jarrett. Accessed May 2026. <https://calsport.org/the-aftermath-of-the-park-fire>.
- California State University, Chico. 2026. BCCER Launches Campaign. Accessed May 2026. <https://www.csuchico.edu/bccer/>.
- National Oceanic and Atmospheric Administration Fisheries (NOAA Fisheries). 2023. Central Valley Salmonid Habitat and Recovery Information. Sacramento, CA.
- University of California Agriculture and Natural Resources (UC ANR). 2021. Post-Wildfire Impacts on Watershed Nutrient Dynamics and Water Quality. Davis, CA.
- U.S. Environmental Protection Agency (EPA). 2026. 40 CFR § 131.38—Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California. Electronic Code of Federal Regulations. Accessed July 16, 2026. <https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-131/subpart-D/section-131.38>.
- U.S. Geological Survey (USGS). 2022. Post-Wildfire Runoff and Water Quality Effects in Western Watersheds. Reston, VA.

11 Appendix F. Subregion Photographs

Northeast Subregion Station Photographs



McCloud River above Shasta Lake



Sacramento River at Delta



Sacramento River near Mt. Shasta



Pit River South Fork near Alturas



Pit River North Fork at Alturas



Pit River at Canby



Pit River at Pittville



Fall River at Glenburn



Pit River near Montgomery Creek

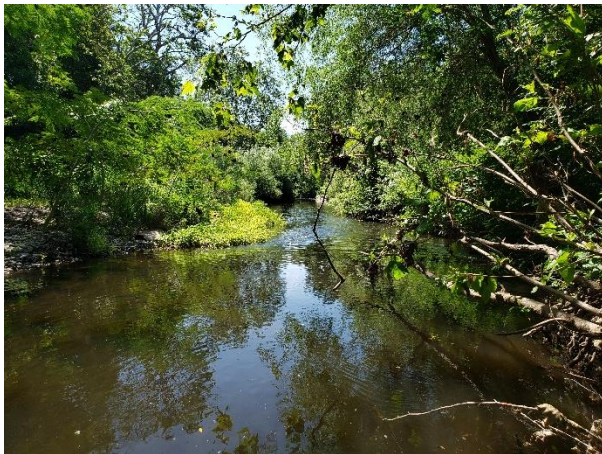
Eastside Subregion Station Photographs



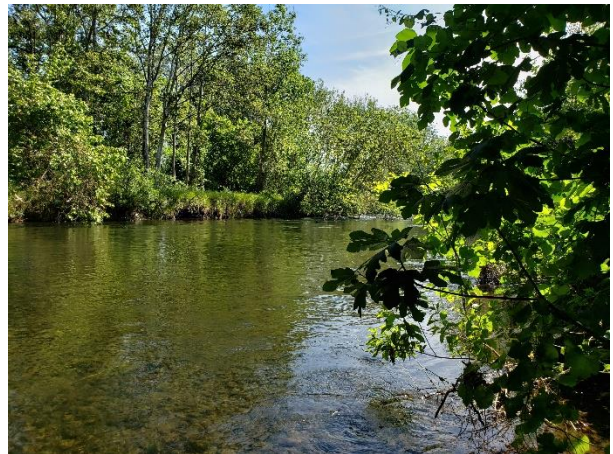
Battle Creek at Jellys Ferry Road



Paynes Creek at Paynes Crossing



Antelope Creek near mouth



Deer Creek at Highway 99 E near Vina



Mill Creek near mouth near Los Molinos



Oak Run Creek near Oak Run



Cow Creek South at Campground



Cow Creek Old above Killarc



Stillwater Creek near Anderson



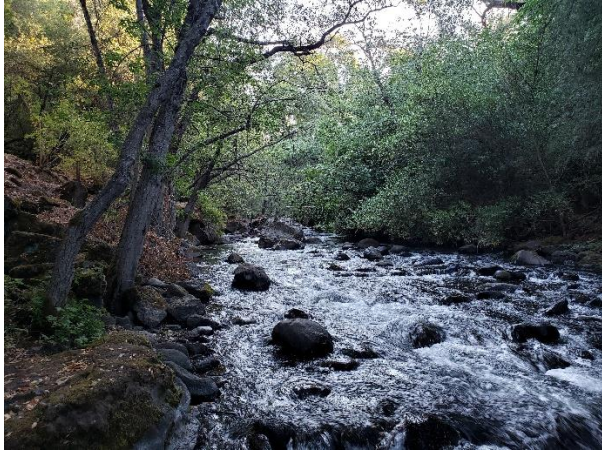
Cow Creek near Millville



Bear Creek at Parkville Road



Butte Creek downstream Western Canal Siphon



Battle Creek North Fork near Manton



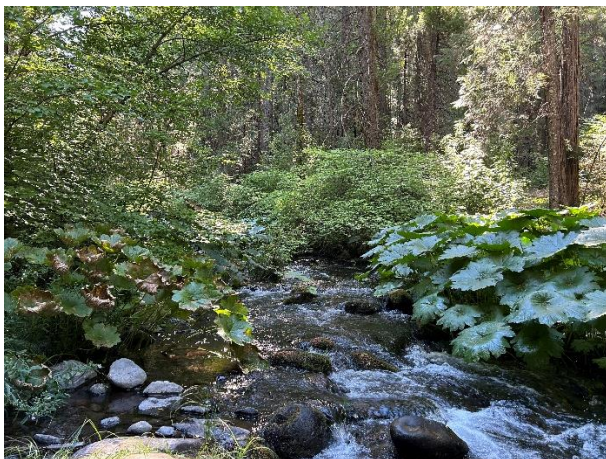
Mill Creek near Mineral



Deer Creek at Deer Station



Big Chico Creek at Chico



Big Chico Creek at Highway 32



Butte Creek at Butte Meadows



Battle Creek South Fork near Mineral



Churn Creek near Anderson



Bear Creek near Anderson

Sacramento Valley Subregion Station Photographs



Yuba River near mouth



Sacramento River at Verona



Honcut Creek at Highway 70



Bear River near mouth



Feather River near Verona



Sacramento River below Red Bluff



Sacramento River at Woodson Bridge



Sacramento River at Balls Ferry



Sacramento River at Bend Bridge



Sacramento River at Hamilton City



Sacramento River at Colusa



Butte Slough near Meridian



Sutter Bypass at RD-1500



Sacramento River near Knights Landing



Colusa Basin Drain near Knights Landing



Sacramento River below Knights Landing

Westside Subregion Station Photographs



Stony Creek near mouth



Clear Creek near mouth



Thomes Creek at Hall Road near Richfield



Thomes Creek at Paskenta



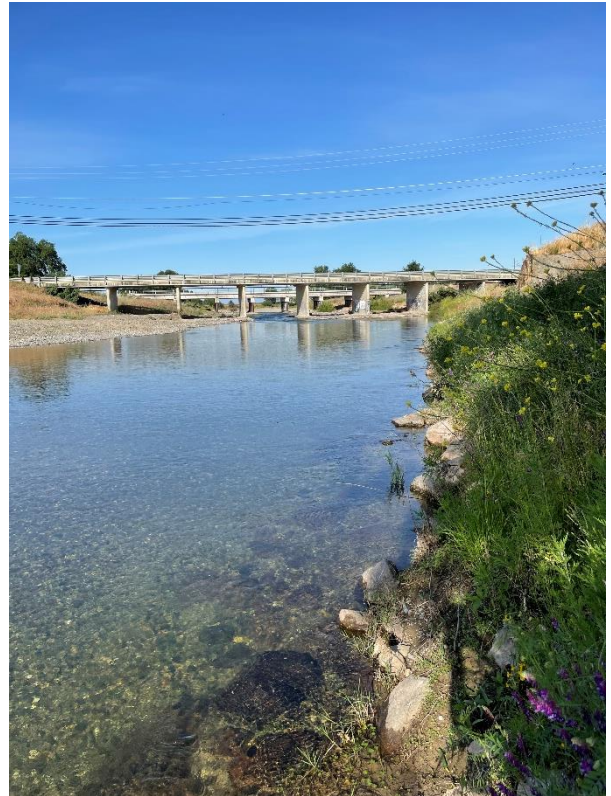
Cottonwood Creek near mouth



Cottonwood Creek near Igo



Red Bank Creek upstream Tehama County Colusa Canal



Elder Creek near mouth



Red Bank Creek at HWY 99W



Cottonwood Creek at Cottonwood

Appendix G. SWCMP Agreement 22-028-150

SCO ID: 3940-22028150

STATE OF CALIFORNIA - DEPARTMENT OF GENERAL SERVICES

STANDARD AGREEMENT

STD 213 (Rev. 04/2020)

AGREEMENT NUMBER

22-028-150

PURCHASING AUTHORITY NUMBER (If Applicable)

1. This Agreement is entered into between the Contracting Agency and the Contractor named below:

CONTRACTING AGENCY NAME

State Water Resources Control Board

CONTRACTOR NAME

California Department of Water Resources

2. The term of this Agreement is:

START DATE

October 1, 2022

THROUGH END DATE

September 30, 2027

3. The maximum amount of this Agreement is:

\$875,000.00

Eight Hundred Seventy Five Thousand Dollars and Zero Cents

4. The parties agree to comply with the terms and conditions of the following exhibits, which are by this reference made a part of the Agreement.

Exhibits	Title	Pages
Exhibit A	Scope of Work	6
Exhibit B	Budget Detail and Payment Provisions	4
Exhibit B1	Budget, Attachment I	2
+ - Exhibit C *	General Terms and Conditions	1
+ - Exhibit D	Special Terms and Conditions	6

Items shown with an asterisk (*), are hereby incorporated by reference and made part of this agreement as if attached hereto.

These documents can be viewed at <https://www.dgs.ca.gov/OLS/Resources>

IN WITNESS WHEREOF, THIS AGREEMENT HAS BEEN EXECUTED BY THE PARTIES HERETO.

CONTRACTOR

CONTRACTOR NAME (if other than an individual, state whether a corporation, partnership, etc.)

California Department of Water Resources

CONTRACTOR BUSINESS ADDRESS

2440 Main Street

CITY

Red Bluff

STATE

CA

ZIP

96080

PRINTED NAME OF PERSON SIGNING

Teresa Connor

TITLE

Office Manager

CONTRACTOR AUTHORIZED SIGNATURE



DATE SIGNED

Apr 11, 2022

SCO ID: 3940-22028150

STATE OF CALIFORNIA - DEPARTMENT OF GENERAL SERVICES
STANDARD AGREEMENT
 STD 213 (Rev. 04/2020)

AGREEMENT NUMBER 22-028-150	PURCHASING AUTHORITY NUMBER (If Applicable)
---------------------------------------	---

STATE OF CALIFORNIA

CONTRACTING AGENCY NAME

State Water Resources Control Board

CONTRACTING AGENCY ADDRESS

1001 I Street, 18th Floor

CITY

Sacramento

STATE

CA

ZIP

95814

PRINTED NAME OF PERSON SIGNING

James Bradley

TITLE

Branch Chief, Business Operations Branch

FOR THE CONTRACTING AGENCY AUTHORIZED SIGNATURE



DATE SIGNED

Apr 11, 2022

CALIFORNIA DEPARTMENT OF GENERAL SERVICES

EXEMPTION (If Applicable)



Adobe Acrobat Sign Transaction Number: CSUCHBCA

EXHIBIT A SCOPE OF WORK

1. SERVICES OVERVIEW

- A. The California Department of Water Resources (hereinafter referred to as the Contractor) agrees to provide to the State Water Resources Control Board and the Central Valley Regional Water Quality Control Board (Regional Water Board), collectively referred to herein as the Water Boards, with services as described herein:

The Contractor shall continue to conduct the Sacramento Watershed Coordinated Monitoring Program (SWCMP) that was established in November 2008 to monitor and assess ambient surface water quality in the northern Sacramento River Basin of California. The Contractor shall be responsible for SWCMP's Monitoring Plan, a Quality Assurance Project Plan (QAPP), sample collection, sample preparation, sample analyses, and data reporting.

- B. The services shall be performed primarily at the Department of Water Resources Division of Integrated Regional Water Management – Northern Region Office, located at 2440 Main Street, Red Bluff, CA, 96080. The Contractor shall also perform field work at locations throughout the Sacramento River Basin.
- C. The services shall be provided during the Contractor's normal working hours, Monday through Friday, except holidays. The Contractor shall ensure that any staff assigned to this project does not work outside normal business hours or incur overtime to complete the tasks outlined in this Agreement.
- D. The Project Representatives during the term of this Agreement will be:

Central Valley Regional Water Quality Control Board	California Department of Water Resources
Name: Alisha Wenzel, Contract Manager	Name: Scott McReynolds, Project Director
Phone: (916) 464-4717	Phone: (530) 529-7304
Fax: (916) 464-4800	Fax: (530) 529-7322
e-mail: Alisha.Wenzel@waterboards.ca.gov	e-mail: scottmc@water.ca.gov

Direct all inquiries to:

Central Valley Regional Water Quality Control Board	California Department of Water Resources
Section/Unit: Surface Water Ambient Monitoring Program	Section/Unit: Northern Region Administration
Attention: Alisha Wenzel	Attention: Kim Burns
Address: 11020 Sun Center Drive # 200 Rancho Cordova, CA 95670-6114	Address: 2440 Main Street Red Bluff, CA 96080
Phone: (916) 464-4717	Phone: (530) 528-7320
Fax: (916) 464-4800	Fax: (530) 529-7322
e-mail: Alisha.Wenzel@waterboards.ca.gov	e-mail: Kim.burns@water.ca.gov

**EXHIBIT A
SCOPE OF WORK**

The parties may change their Project Representative upon providing ten (10) business days written notice to the other party. Said changes shall not require an Amendment to this Agreement.

2. WORK TO BE PERFORMED:

A. Background and Goals

The Sacramento Watershed Coordinated Monitoring Program (SWCMP) is a collaborative project designed by the Department of Water Resources Northern Region and the Water Boards Surface Water Ambient Monitoring Program (SWAMP) to monitor ambient water quality trends in the Sacramento River Basin and to support informed management of the State's water resources. The SWCMP started monitoring in November 2008 and has collected water quality information at key sites along the major rivers, at the base of tributaries, and at mid-elevation monitoring sites on key tributaries. Samples are collected quarterly during the winter runoff, spring snowmelt, irrigation, and dry seasons. Data is used to identify potential impairments to beneficial uses, to document water quality conditions and trends, and to provide information on background conditions for water quality regulatory programs. This agreement will provide additional monitoring at the SWCMP trend sites and will support continued collaboration to document water quality trends and potential impacts from drought, catastrophic wildfires, and other changes in the watershed.

B. Tasks and Deliverables

The Contractor shall be responsible for the performance of tasks, and for the preparation of deliverables as specified in this Exhibit.

Task 1 – Project Management and Administration

- 1.1 The Contractor shall provide all technical and administrative services as needed for the Agreement completion, including monitoring, supervising, and reviewing all work performed. In addition, the Contractor shall coordinate budgeting and scheduling to ensure that the Agreement is completed within budget, on schedule, and in accordance with approved procedures, applicable laws, and regulations throughout Agreement term.
- 1.2 The Contractor shall ensure that the Agreement requirements are met through completion of quarterly progress reports submitted to the Water Board Contract Manager, and through regular communication with the Water Board Contract Manager. The progress reports shall describe activities undertaken and accomplishments of each task, milestones achieved, and any problems encountered in the performance of the work under this Agreement.

Task 1 – Deliverables

- ❖ Electronic quarterly progress reports

EXHIBIT A SCOPE OF WORK

Task 2 – Review, Maintain, and Update Project Documentation

- 2.1 The Contractor shall review the SWCMP Monitoring Plan and update as necessary. The monitoring plan shall identify the goals of the monitoring effort, sample site locations, sample frequency, and constituents to be monitored. The Contractor shall submit any revisions to the Water Boards Contract Manager for review and approval.
- 2.2 The Contractor shall review the SWCMP Quality Assurance Project Plan (QAPP) and update as necessary. The QAPP shall describe the data and assessment needs of the project, responsible individuals, sampling and analytical methods, quality control measures, and data management practices. Resources for developing a QAPP are available at: https://www.waterboards.ca.gov/water_issues/programs/quality_assurance/qapp.html. The Contractor shall submit any revisions to the Water Boards Contract Manager and Quality Assurance Officer for review and approval.

Task 2 – Deliverables

- ❖ Revised SWCMP Monitoring Plan
- ❖ Revised SWCMP QAPP

Task 3 – Sample Collection and Analysis

- 3.1 The Contractor shall conduct field sampling activities in accordance with the approved SWCMP Monitoring Plan and QAPP. Field crews shall complete SWAMP field sheets for each site visit. The Contractor shall collect water samples at a maximum of fifty-six (56) monitoring stations.
- 3.2 The Contractor shall collect water samples four (4) times per calendar year according to the schedule identified in the SWCMP Monitoring Plan. Samples shall be collected for the constituents identified in Table 1 below. The Contractor is responsible for all costs associated with the chemical analysis of these constituents and for providing all necessary equipment and materials. The Contractor shall provide the Water Boards electronic access to all analytical results.

Table 1 - Minimum constituents to be monitored

Constituent	Constituent (continued)
Physical Parameters:	Minerals:
Temperature	Alkalinity
pH	Total Hardness
Electrical Conductivity	Total Suspended Solids

**EXHIBIT A
 SCOPE OF WORK**

Constituent	Constituent (continued)
Dissolved Oxygen	Nutrients:
Turbidity	Total Ammonia as Nitrogen
Total and Dissolved Metals:	Total Kjeldahl Nitrogen
Aluminum	Total Organic Nitrogen
Arsenic	Dissolved Ammonia
Copper	Dissolved Nitrate + Nitrite
Iron	Dissolved Ortho-phosphate
Lead	Total Phosphorus
Manganese	Total Organic Carbon
Nickel	Dissolved Organic Carbon
Zinc	

- 3.3 The Contractor shall collect additional water samples as requested by the Water Boards Contract Manager. The Water Boards shall be responsible for all costs associated with the transport and laboratory analysis of these samples. Specific constituents, monitoring stations, and frequency will be identified in the SWCMP Monitoring Plan.
- 3.4 In the event of a catastrophic wildfire or other large incident with the potential to affect water quality in the Sacramento River Basin, the monitoring stations, frequency, and constituents may be adjusted to allow for emergency monitoring of the impacts. Any such changes will require agreement of both the Contractor and the Water Boards Contract Manager and shall be documented in an addendum to the SWCMP Monitoring Plan.

Task 3 – Deliverables

- ❖ Electronic copies of completed field sheets
- ❖ Electronic access to analytical results

Task 4 – Draft and Final Report

- 4.1 The Contractor shall prepare Draft and Final Reports in accordance with the schedule in Section 2.C and the requirements for progress reports in Exhibit A, Section 3.
- 4.2 The Contractor shall prepare a Draft Report that summarizes all project quality assurance and analytical data. The Draft Report shall be submitted to the Water Boards Contract Manager for review and comment.
- 4.3 The Contractor shall prepare a Final Report that addresses the comments provided by the Water Boards Contract Manager.

**EXHIBIT A
SCOPE OF WORK**

Task 4 – Deliverables

- ❖ Draft Report
- ❖ Final Report

C. Task and Deliverables Schedule

Task #	Deliverable	Deliverable Due Date
1.2	Quarterly progress reports	Three (3) months after the Agreement start date and quarterly thereafter
2.1	Revised SWCMP Monitoring Plan	October 31, 2023
2.2	Revised SWCMP QAPP	October 31, 2025
3.1	Electronic copies of completed field sheets	One (1) month after sample collection
3.2	Electronic access to analytical results	Three (3) months after sample collection
4.2	Draft Report	July 1, 2027
4.3	Final Report	August 31, 2027

If due date falls on a Saturday, Sunday or State holiday, deliverables shall be due the following business day.

3. PROGRESS REPORTS:

- A. Not later than three (3) months from the Agreement start date and quarterly thereafter, during the life of this Agreement, the Contractor shall provide an electronic written progress report to the Water Boards Contract Manager describing activities undertaken, accomplishment of milestones, and any problems encountered in the performance of the work under this Agreement, and delivery of intermediate products, if any.
- B. The Contractor shall submit to the Water Boards Contract Manager for approval the reports containing the results of the work performed in accordance with the schedule provided in this Exhibit A.
- C. Not later than July 1, 2027, the Contractor shall submit to the Water Boards Contract Manager an electronic copy of a draft report describing the work performed pursuant to this Exhibit for review and comment.
- D. Within four (4) weeks of receipt of the draft report, the Water Boards Contract Manager will submit final comments to the Contractor.
- E. Not later than August 31, 2027, the Contractor shall submit to the Water Boards Contract Manager for approval an electronic copy of the final report containing the results of the work performed and addressing the comments submitted to the Contractor by the Water Boards Contract Manager.

EXHIBIT A
SCOPE OF WORK

- F. The report shall not be considered final until accepted and approved by the Water Boards Contract Manager.

EXHIBIT B
BUDGET DETAIL AND PAYMENT PROVISIONS

1. INVOICING AND PAYMENT

- A. For services satisfactorily rendered, and upon receipt and approval of the invoices, the Water Boards agrees to compensate the Contractor for actual expenditures incurred in accordance with the rates specified herein, which is attached hereto and made a part of this Agreement.
- B. Invoices shall include the Agreement Number and shall be submitted not more frequently than monthly in arrears bearing the contract number to:

Alisha Wenzel, Contract Manager
State Water Resources Control Board
Central Valley Region Water Quality Control Board
11020 Sun Center Drive# 200
Rancho Cordova, CA 95670-6114

- A. The Contractor shall also send a copy of the invoice or payment request to the Water Boards' Accounting Operations Section:

State Water Resources Control Board – Accounting
1001 I Street, 18th Floor
Sacramento, California 95814

- B. Payment of any invoice will be made only after receipt of a complete, adequately supported, properly documented and accurately addressed invoice or payment request. Failure to use the address exactly as provided above may result in return of the invoice or payment request to the Contractor. Payment shall be deemed complete upon deposit of the payment, properly addressed, postage prepaid, in the United States mail. All invoices must be approved by the Contract Manager.
- C. Payment: Costs for this Agreement shall be computed in accordance with State Administrative Manual Section 8752 and 8752.1.
- D. The invoice shall contain the following information:
 - 1. The word "INVOICE" should appear in a prominent location at the top of page(s);
 - 2. Printed name of Contractor;
 - 3. Business address of Contractor, including P.O. Box, City, State, and Zip Code;
 - 4. The date of the invoice;
 - 5. The number of the Agreement upon which the claim is based; and
 - 6. An itemized account of the services for which the Water Boards is being billed;
 - (a) The time period covered by the invoice, i.e., the term "from" and "to";
 - (b) A brief description of the services performed;
 - (c) The method of computing the amount due. On cost reimbursable Agreements, invoices must be itemized based on the categories specified in the Budget. The amount claimed for salaries/wages/consultant fees must also be explained; i.e., hours or days worked times the hourly or daily rate = the total amount claimed;
 - (d) The total amount due; this should be in a prominent location in the lower right-hand portion of the last page and clearly distinguished from other figures or computations

EXHIBIT B
BUDGET DETAIL AND PAYMENT PROVISIONS

- appearing on the invoice; the total amount due shall include all costs incurred by Contractor under the terms of this Agreement; and
- (e) Original signature of Contractor (not required of established firms or entities using preprinted letterhead invoices).

2. BUDGET CONTINGENCY CLAUSE

- A. It is mutually agreed that if the Budget Act of the current year and/or any subsequent years covered under this Agreement does not appropriate sufficient funds for the program, this Agreement shall be of no further force and effect. In this event, the State shall have no liability to pay any funds whatsoever to Contractor or to furnish any other considerations under this Agreement and Contractor shall not be obligated to perform any provisions of this Agreement.
- B. If funding for any fiscal year is reduced or deleted by the Budget Act for purposes of this program, the State shall have the option to either cancel this Agreement with no liability occurring to the State, or offer an agreement amendment to Contractor to reflect the reduced amount.
- C. The State's obligation to make any payment under this contract shall be suspended during such time as the Budget Act covering that fiscal year has not been approved by the Legislature and signed into law by the Governor.

3. BUDGET FLEXIBILITY CLAUSE

- A. Subject to the prior review and approval of the Contract Manager, line item shifts of up to a cumulative maximum of \$25,000 or 10% of the annual Agreement total, whichever is less, may be made over the life of the Agreement. There must be a substantial business justification for any shifts made.
- B. Fund shifts which increase Indirect, Overhead or General Expense line items are prohibited.
- C. Line item shifts may be proposed / requested by either the Water Boards or the Contractor in writing, and must not increase or decrease the total Agreement amount allocated. Any line item shifts must be approved by the Executive Officer of Region 5, or his/her designee, and must be sent to the Contracts Office within 10 days of approval for inclusion in the Agreement folder.
- D. If the Agreement is formally amended, any line item shifts agreed to by the parties must be included in the amendment.

4. TIMELY SUBMISSION OF FINAL INVOICE

- A. A final undisputed invoice shall be submitted for payment no more than ninety (90) calendar days following the expiration or termination date of this Agreement. Said invoice should be clearly marked "Final Invoice," thus indicating that all payment obligations of the Water Boards under this Agreement have ceased and that no further payments are due or outstanding.
- B. The Water Boards may, at its discretion, choose not to honor any delinquent final invoice.

**EXHIBIT B
BUDGET DETAIL AND PAYMENT PROVISIONS**

- C. This Agreement includes multiple years of funding with varying availability due to fund reversion limitations. Contract funds are only available in the Fiscal Year for which they are allocated, as set forth in the table below. If the Contractor does not submit approvable invoices requesting all of the funds encumbered for that Fiscal Year by the Annual Invoice Request Deadline, any remaining amount will revert to the Water Board, and will not be available to reimburse costs incurred past the Annual Funding Availability End Date.

Fiscal Year	Allocated Contract Funds*	Annual Funding Availability Start Date	Annual Funding Availability End Date	Annual Invoice Request Deadline	Agreement Final Invoice
2022-23	\$175,000.00	7/1/2022	6/30/2025	3/31/2025	
2023-24	\$175,000.00	7/1/2023	6/30/2026	3/31/2026	
2024-25	\$175,000.00	7/1/2024	6/30/2027	3/31/2027	
2025-26	\$175,000.00	7/1/2025	9/30/2027	12/30/2027	
2026-27	\$175,000.00	7/1/2026	9/30/2027	12/30/2027	12/30/2027

*Shifts to Allocated Contract Funds between fiscal years may be proposed / requested by either the Water Board or Contractor in writing and must not increase or decrease the total Agreement amount allocated. Any shifts in Allocated Contract Funds must be approved by the Deputy Director of the Division of Administrative Services, or his/her designee, and must be sent to the Water Board's Contracts Unit for processing in order for funding shift to be implemented.

- D. If this Agreement's funding for any fiscal year expires due to reversion or is reduced, substantially delayed, or deleted by the Budget Act, by Executive Order, or by order or action of the Department of Finance, the State Water Board has the option to either cancel this Agreement with no liability occurring to the State Water Board, or offer an amendment to the Contractor to reflect the reduced amount.
- E. In order to be approved, invoice costs must be eligible and undisputed.
- F. The Contractor must submit its final invoice for each fiscal year not later than the relevant Annual Invoice Request Deadline set forth in the table above for the given fiscal year. This final invoice for each fiscal year must be clearly marked "Final Invoice for Fiscal Year ####-##" with the relevant fiscal year. Disputed Invoice costs on the Final Invoice for each fiscal year that are not resolved prior to the Annual Invoice Request Deadline may not be paid due to reversion.
- G. The Water Boards will have no payment obligation under this Agreement of any costs not approved. The Contractor shall not submit invoices not in compliance or consistent with the stipulations of the table above. The Contractor shall not incur any costs after the submittal of the Annual Invoice period for that Fiscal Year period. The Contractor shall not incur any costs after the submission of the Agreement Final Invoice.

5. EXPENSE ALLOWABILITY/FISCAL DOCUMENTATION

EXHIBIT B
BUDGET DETAIL AND PAYMENT PROVISIONS

- A. Invoices received from a Contractor and accepted and/or submitted for payment by the Water Boards, shall not be deemed evidence of allowable Agreement costs.
- B. The Contractor shall maintain for review and audit and supply to the Water Boards upon request, adequate documentation of all expenses claimed pursuant to this Agreement to permit a determination of expense allowability.
- C. If the allowability or appropriateness of an expense cannot be determined by the Water Boards because invoice detail, fiscal records, or backup documentation is nonexistent or inadequate according to generally accepted accounting principles or practices, all questionable costs may be disallowed and payment may be withheld by the Water Boards. Upon receipt of adequate documentation supporting a disallowed or questionable expense, reimbursement may resume for the amount substantiated and deemed allowable.
- D. If travel is a reimbursable expense, receipts must be maintained to support the claimed expenditures.
- E. Costs and/or expenses deemed unallowable are subject to recovery by the Water Boards. See provision entitled, "Recovery of Overpayments" for more information.

6. RECOVERY OF OVERPAYMENTS

- A. Contractor agrees that claims based upon a contractual agreement or an audit finding and/or an audit finding that is appealed and upheld, will be recovered by the Water Boards by one of the following options:
 - 1) Contractor's remittance to the Water Boards of the full amount of the audit exception within 30 days following the Water Boards' request for repayment;
 - 2) A repayment schedule, which is agreeable to both the Water Boards and the Contractor.
- B. The Water Boards reserves the right to select which option will be employed and the Contractor will be notified by the Water Boards in writing of the claim procedure to be utilized.
- C. Interest on the unpaid balance of the audit finding or debt will accrue at a rate equal to the monthly average of the rate received on investments in the Pooled Money Investment Fund commencing on the date that an audit or examination finding is mailed to the Contractor, beginning 30 days after Contractor's receipt of the Water Boards' demand for repayment, or commencing on the date that an audit or examination finding is mailed to the Contractor, if applicable.
- D. If the Contractor has filed a valid appeal regarding the report of audit findings, recovery of the overpayments will be deferred until a final administrative decision on the appeal has been reached. If the Contractor loses the final administrative appeal, Contractor shall repay, to the Water Boards, the over-claimed or disallowed expenses, plus accrued interest. Interest accrues from the Contractor's first receipt of Water Boards' notice requesting reimbursement of questioned audit costs or disallowed expenses.

**EXHIBIT B, ATTACHMENT I
BUDGET**

A. PERSONNEL				
Position/Title	Labor Rate (Hourly)*	Billable Rate (Hourly)**	Estimated # of Hours	Line Item Total
Senior Environmental Scientist	\$73.69	\$249.58	864	\$215,637.12
Environmental Scientist (Range C)	\$49.19	\$156.20	1161	\$181,348.20
Environmental Scientist (Range C)	\$49.19	\$156.20	1075	\$167,915.00
Environmental Scientist (Range C)	\$49.19	\$156.20	640	\$99,968.00
Research Data Analyst II	\$44.16	\$143.95	776	\$111,705.20
Scientific Aid	\$19.53	\$23.80	774	\$18,421.20
PERSONNEL TOTAL				\$794,994.72

B. FRINGE BENEFITS AND INDIRECT COSTS
Fringe benefits and an indirect cost rate of 32.5% are included in personnel billable rates.

C. OPERATING EXPENSES			
Materials and Supplies	Unit Cost	Estimated # of Units	Line Item Total
Water Filters	\$4.75	1280	\$6,080.00
pH Probe	\$144.00	5	\$720.00
DO Probe	\$500.00	5	\$2,500.00
Calibration Standards	\$108.05	5	\$540.25
Water Purification	\$300.00	5	\$1,500.00
Batteries	\$20.00	5	\$100.00
Temperature Loggers	\$59.00	60	\$3,540.00
Overnight Shipping	\$75.25	20	\$1,505.00
OPERATING EXPENSES TOTAL			\$16,485.25

D. EQUIPMENT
Not applicable

E. TRAVEL (IN STATE)			
Expense	Cost per Trip***	Estimated # of Trips	Amount
Per Diem and Overnight Travel	\$296.00	20	\$5,920.00
TRAVEL TOTAL			\$5,920.00

**EXHIBIT B, ATTACHMENT I
BUDGET**

F. SUBCONTRACT DETAILS	
Subcontract #1: Laboratory Services****	
Task	Amount
Analytical Chemistry Testing Services	\$57,600.03
SUBCONTRACT TOTAL	\$57,600.03

BUDGET TOTAL (A+B+C+D+E+F):	\$875,000.00
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* Pay rate may increase by 5% per fiscal year in accordance with the State Administrative Manual. Increases must not increase the total contract amount.

**The Contractor applies a monthly assessment to the base hourly rate in accordance with the Cost Allocation Plan (CAP) approved by Department of Finance and the federal government. Monthly assessments account for all direct and indirect costs, and actual rates vary by employee. In order to recover full costs as required by the State Administrative Manual, the Contractor has approval to adjust the monthly assessment or indirect cost rate in accordance with the CAP. Increases must not increase the total contract amount.

***Travel shall be reimbursed at CalHR rates, as outlined in Exhibit D.

****Contractor shall select subcontractors through a competitive bid process in compliance with the State Contracting Manual.

GIA- 610
General Interagency Agreement Terms and Conditions

1. **APPROVAL:** This Agreement is not valid until signed by both parties and approved by the Department of General Services, if required.
2. **AUDIT:** The agency performing work under this Agreement agrees that the awarding department, the Department of General Services, the Bureau of State Audits, or their designated representative shall have the right to review and to copy any records and supporting documentation pertaining to the performance of this Agreement if it exceeds \$10,000. The agency performing work agrees to maintain such records for possible audit for a minimum of three (3) years after final payment, unless a longer period of record retention is stipulated.
3. **PAYMENT:** Costs for this Agreement shall be computed in accordance with State Administrative Manual Section 8752 and 8752.1.
4. **AMENDMENT:** No amendment or variation of the terms of this Agreement shall be valid unless made in writing, signed by the parties, and approved as required. No oral understanding or agreement not incorporated in the Agreement is binding on any of the parties.
5. **SUBCONTRACTING:** All subcontracting must comply with the requirements of the State Contracting Manual, Section 3.06.
6. **ADVANCE PAYMENT:** The parties to this interagency agreement may agree to the advancing of funds as provided in Government Code Sections 11257 through 11263.
7. **DISPUTES:** The agency performing work under this Agreement shall continue with the responsibilities under this Agreement during any dispute.
8. **TIMELINESS:** Time is of the essence in this Agreement.
9. **NON-PAYMENT OF INVOICES – FUND TRANSACTION REQUEST:** In accordance with Government Code Section 11255, the parties agree that when an invoice is not paid by the requested due date to the Contractor (agency providing the service) and the invoice is not disputed by the contracting Department (agency receiving the service), Contractor may send the contracting Department a 30-day notice that it intends to initiate a transfer of funds through a Transaction Request sent to the State Controller's Office. To facilitate a Transaction Request should one be needed, the contracting Department shall no later than 10 business days following execution of this agreement provide data to the Contractor for the appropriation to be charged including: fund number, organization code, fiscal year, reference, category or program, and, if applicable, element, component, and task.

EXHIBIT D
SPECIAL TERMS AND CONDITIONS

1. **DISPUTE RESOLUTION PROCESS:** Any dispute arising under or relating to the terms of this Agreement, or related to the performance hereunder, which is not disposed of by Agreement shall be decided by the Contract Manager, who shall reduce such decision to writing and mail or otherwise furnish a copy thereof to the Contractor. The decision of the Contract Manager shall be final and conclusive unless, within fifteen (15) calendar days from the date of receipt of such copy, the Contractor mails or otherwise delivers a written appeal to the State Water Resources Control Board Executive Director. The decision of the Executive Director, or authorized representative, on such appeal shall be final and conclusive unless determined by a court of competent jurisdiction to have been fraudulent, or capricious, or arbitrary, or so grossly erroneous as necessarily to imply bad faith, or not supported by any substantial evidence. In connection with any appeal under this Section, the Contractor shall be afforded an opportunity to be heard and to offer evidence and argument in support of the appeal. Pending final decision on any dispute hereunder, the Contractor shall proceed diligently with the performance of the Agreement work as directed by the Contract Manager unless the Contractor has received notice of termination. Decisions on any disputes hereunder may include decisions of both fact and law; provided, however, that nothing herein shall be construed as making final any decision on a question of fact or law in the event of any subsequent legal proceeding before a court of competent jurisdiction.

Authority to terminate performance under the terms of this Agreement is not subject to appeal under this Section. All other issues including, but not limited to, the amount of any equitable adjustment and the amount of any compensation or reimbursement which should be paid to the Contractor shall be subject to the disputes process under this Section. (PCC 10240.5, 10381, 22200 et seq, 40 CFR 31.70)

2. **ACCESSIBLE CONTENT REQUIREMENTS:**

The Contractor shall ensure that all data, plans, drawings, specifications, reports, computer programs, operating manuals, notes, and other written or graphic work submitted to the State Water Board or uploaded directly to any State internet website or database in the performance of this Agreement comply with the accessible content requirements set forth in Government Code sections 7405 and 11135; section 508 of the federal Rehabilitation Act (29 USC 794d) and the regulations promulgated thereunder (36 CFR part 1194); and the most current Web Content Accessibility Guidelines published by the Web Accessibility Initiative of the World Wide Web Consortium at a minimum Level AA success criteria.

If the Contractor provides any electronic or information technology, or related services, under this Agreement, the Contractor shall respond to and resolve any complaint brought to the attention of the Contractor regarding the accessibility of its products or services.

3. **PERMITS, WAIVER, REMEDIES AND DEBARMENT:** The Contractor shall procure all permits and licenses necessary to accomplish the work contemplated in this Agreement, pay all charges and fees, and give all notices necessary and incidental to the due and lawful prosecution of the work.

EXHIBIT D
SPECIAL TERMS AND CONDITIONS

Any waiver of rights with respect to a default or other matter arising under the Agreement at any time by either party shall not be considered a waiver of rights with respect to any other default or matter.

Any rights and remedies of the Water Boards provided for in this Agreement are in addition to any other rights and remedies provided by law.

Contractor shall not subcontract with any party who is debarred or suspended or otherwise excluded from or ineligible for participation in federal assistance programs under Executive Order 12549, "Debarment and Suspension". Contractor shall not subcontract with any individual or organization on USEPA's List of Violating Facilities. (40 CFR, Part 31.35, Gov. Code 4477)

In addition, the Contractor shall not subcontract with any party who is debarred, suspended, or otherwise excluded from or ineligible for participation in any work overseen, directed, funded, or administered by the State Water Board program for which this contract is authorized. The Contractor shall not subcontract with any individual or organization on the State Water Board's List of Disqualified Businesses and Persons that is identified as debarred or suspended or otherwise excluded from or ineligible for participation in any work overseen, directed, funded, or administered by the State Water Board program for which this contract is authorized.

The State Water Board's List of Disqualified Businesses and Persons is located at: http://www.waterboards.ca.gov/water_issues/programs/ustcf/dbp.shtml

4. **HEALTH AND SAFETY:** Contractors are required to, at their own expense, comply with all applicable health and safety laws and regulations. Upon notice, Contractors are also required to comply with the state agency's specific health and safety requirements and policies. Contractors agree to include in any subcontract related to performance of this Agreement, a requirement that the subcontractor comply with all applicable health and safety laws and regulations, and upon notice, the state agency's specific health and safety requirements and policies.
5. **RUSSIAN SANCTIONS:** The Contractor represents that the Contractor is not a target of economic sanctions imposed in response to Russia's actions in Ukraine imposed by the United States government or the State of California. The Contractor is required to comply with the economic sanctions imposed in response to Russia's actions in Ukraine, including with respect to, but not limited to, the federal executive orders identified in California Executive Order N-6-22, located at <https://www.gov.ca.gov/wp-content/uploads/2022/03/3.4.22-Russia-Ukraine-Executive-Order.pdf> and the sanctions identified on the United States Department of the Treasury website (<https://home.treasury.gov/policy-issues/financial-sanctions/sanctions-programs-and-country-information/ukraine-russia-related-sanctions>). The Contractor is required to comply with all applicable reporting requirements regarding compliance with the economic sanctions, including, but not limited to, those reporting requirements set forth in California Executive Order N-6-22 for all Contractors with one or more agreements with the State of California with an aggregated value of Five Million Dollars (\$5,000,000) or more. Notwithstanding any other provision in this Agreement, failure to comply with the economic

**EXHIBIT D
SPECIAL TERMS AND CONDITIONS**

sanctions and all applicable reporting requirements may result in termination of this Agreement.

For Contractors with an aggregated agreement value of Five Million Dollars (\$5,000,000) or more with the State of California, reporting requirements include, but are not limited to, information related to steps taken in response to Russia's actions in Ukraine, including but not limited to:

A. Desisting from making any new investments or engaging in financial transactions with Russian institutions or companies that are headquartered or have their principal place of business in Russia;

B. Not transferring technology to Russia or companies that are headquartered or have their principal place of business in Russia; and

C. Direct support to the government and people of Ukraine.

6. **TRAVEL AND PER DIEM:** Any reimbursement for necessary travel and per diem shall, unless otherwise specified in this Agreement, be at the rates and rules currently in effect, as established by the California Department of Human Resources (Cal HR). If the Cal HR rates change during the term of the Agreement, the new rates shall apply upon their effective date and no amendment to this Agreement shall be necessary. Local government agency, education and special districts will pay travel time and per diem according to their respective statutory requirements. No travel outside the state of California shall be reimbursed without prior authorization from the Water Boards. Verbal authorization should be confirmed in writing. Written authorization may be in a form including fax or email confirmation.

4) **Professional Liability** – Contractor shall maintain professional liability covering any damages caused by a negligent error; act or omission with limits not less than \$1,000,000 per occurrence and \$1,000,000 policy aggregate. The policy's retroactive date must be displayed on the certificate of insurance and must be before the date this Agreement was executed or before the beginning of Agreement work.

5) **Environmental/Pollution Liability** – The Contractor shall maintain pollution liability for limits not less than \$1,000,000 per claim covering the Contractor's liability for bodily injury, property damage and environmental damage resulting from pollution and related cleanup costs incurred arising out of the work or services to be performed under this Agreement. Coverage shall be provided for both work performed on site as well as transportation and proper disposal of hazardous materials. The policy shall be endorsed to include, "The State of California, its officers, agents, employees, and servants as additional insured, but only insofar as the operations under this Agreement are concerned." This endorsement must be supplied under form acceptable to the Office of Risk and Insurance Management.

**EXHIBIT D
SPECIAL TERMS AND CONDITIONS**

7. **CANCELLATION / TERMINATION WITHOUT CAUSE:** In addition to the "Termination for Cause" provisions in Section 7 of Exhibit C of this Agreement, the Water Boards may terminate this Agreement without cause if doing so is in the best interest of the State, by giving thirty (30) days written notice to the Contractor. Such notification shall state the effective date of termination or cancellation and include any final performance and/or payment/invoicing instructions/requirements. Upon receipt of a notice of termination or cancellation from the Water Boards, Contractor shall take immediate steps to stop performance and to cancel or reduce subsequent Contract costs.

Termination Process (for both Terminations for Cause and Terminations without Cause):

Any termination shall be effected by written notice to the Contractor, either hand-delivered to the Contractor or sent certified mail, return receipt requested. The notice of termination shall specify the effective date of termination.

Upon receipt of notice of termination, and except as otherwise directed in the notice, the Contractor shall:

- a. Stop work on the date specified in the notice;
- b. Place no further orders or enter into any further Subcontracts for materials, services or facilities except as necessary to complete work under the Agreement up to effective date of termination;
- c. Terminate all orders and Subcontracts;
- d. Promptly take all other reasonable and feasible steps to minimize any additional cost, loss, or expenditure associated with work terminated, including, but not limited to reasonable settlement of all outstanding liability and claims arising out of termination of orders and Subcontracts;
- e. Deliver or make available to the Water Boards all data, drawings, specifications, reports, estimates, summaries, and such other information and material as may have been accumulated by the Contractor under this Agreement, whether completed, partially completed, or in progress.

In the event of termination, final payment may include reasonable compensation for satisfactory services rendered, materials supplied, and expenses incurred, if any, pursuant to this Agreement prior to the effective date of termination.

8. **COMPUTER SOFTWARE:** Contractor certifies that it has appropriate systems and controls in place to ensure that Water Boards funds will not be used in the performance of this Contract for the acquisition, operation or maintenance of computer software in violation of copyright laws.
9. **POTENTIAL SUBCONTRACTORS:** Nothing contained in this Agreement or otherwise, shall create any contractual relationship between the Water Boards and any Subcontractors, and no Subcontract shall relieve the Contractor of his responsibility and obligations hereunder. The Contractor agrees to be as fully responsible to the Water Boards for the acts and omissions of its Subcontractors and of persons either directly or indirectly employed by any of them as it is for the acts and omissions of persons directly employed by the Contractor. The Contractor's obligation to pay its Subcontractors is an independent obligation from the Water Boards' obligation to make payments to the Contractor. As a result, the Water Boards

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shall have no obligation to pay or to enforce the payment of any moneys to any Subcontractor. Should Water Boards determine that the work performed by a Subcontractor is substantially unsatisfactory and is not in substantial accordance with the Contract terms and conditions, or that the Subcontractor is substantially delaying or disrupting the process of work, Water Boards may request substitution of the Subcontractor.

10. SUBCONTRACTING:

A. As a requirement of this Agreement (and any amendments thereto) subcontracting is limited to \$50,000 or 25% of the total contract, whichever is less. If the total of all subcontracts exceeds the limitation, all subcontracts must be in accordance with the following conditions:

B. Subcontract service(s) must be selected by the primary contractor pursuant to a bidding process requiring at least three bids from responsible bidders. A bidding process is not required when a subcontractor(s) is one of the following entities:

Entities excluded from bidding:

1. Another state entity, including:

- a) A governmental agency from any state (Public Contract Code § 10340)
- b) A state college or state university from any state

2. A local governmental entity or agency, including those created as a Joint Powers Authority (JPA)

3. An auxiliary organization of the California State University (CSU), or a California community college

4. The Federal Government

5. A foundation organized to support the Board of Governors of the California Community Colleges, or

6. An auxiliary organization of the Student Aid Commission established under Education code § 69522.

C. By signing this Agreement, the Contractor is certifying selection of a non-excluded subcontractor(s) was pursuant to a bidding process requiring at least three bids from responsible bidders.

D. The Water Boards will only pay overhead charges on the first \$25,000 for each subcontract.

11. **FORCE MAJEURE:** Except for defaults of Subcontractors, neither party shall be responsible for delays or failures in performance resulting from acts beyond the control of the offending party. Such acts shall include but shall not be limited to acts of God, fire, flood, earthquake, other natural disaster, nuclear accident, strike, lockout, riot, freight embargo, public regulated utility, or governmental statutes or regulations superimposed after the fact. If a delay or failure in performance by the Contractor arises out of a default of its Subcontractor, and if such default of its Subcontractor, arises out of causes beyond the control of both the

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Contractor and Subcontractor, and without the fault or negligence of either of them, the Contractor shall not be liable for damages of such delay or failure, unless the supplies or services to be furnished by the Subcontractor were obtainable from other sources in sufficient time to permit the Contractor to meet the required performance schedule.

