UPPER LOS ANGELES RIVER WATERSHED MANAGEMENT AREA FIRE EFFECTS STUDY INTERIM REPORT

DECEMBER 2023

SUBMITTED TO:
SAN GABRIEL VALLEY COUNCIL OF GOVERNMENTS AND
UPPER LOS ANGELES RIVER WATERSHED MANAGEMENT GROUP

TABLE OF CONTENTS

APPENDICES

LIST OF TABLES

LIST OF FIGURES

LIST OF FIGURES (continued)

ACRONYMS AND ABBREVIATIONS

°C	degree(s) Celsius
µg/L	microgram(s) per liter
µS/cm	microSiemens(s) per centimeter
BAER	Burned Area Emergency Response
BMI	benthic macroinvertebrate
BMP	best management practice
BS	blank spike
CaCO3	calcium carbonate
CAL FIRE	California Department of Forestry and Fire Protection
CIMP	Coordinated Integrated Management Program
COAST	California State University – Council on Ocean Affairs, Science, and Technology
CRAM	California Rapid Assessment Method
CSCI	California Stream Condition Index
CWH	Council for Watershed Health
CWP	Los Angeles County Water Plan
DEM	Digital Elevation Model
DO	dissolved oxygen
DQO	data quality objective
EMC	effect mean concentration
EPA	United States Environmental Protection Agency
EPT	ephemeroptera, plecoptera, and trichoptera taxa
GHG	greenhouse gas
GIS	geographic information system
HRU	Hydrologic Response Unit
HSPF	Hydrologic Simulation Program FORTRAN
IBI	Southern California Index of Biotic Integrity
ID	identifier
IPCC	Intergovernmental Panel on Climate Change
J	estimated concentration
LARWMP	Los Angeles River Watershed Monitoring Program
LCS	laboratory control sample
LCSD	laboratory control sample duplicate
LD	laboratory duplicate
LSPC	Loading Simulation Program in C++

ACRONYMS AND ABBREVIATIONS (continued)

MDL	method detection limit
mg/L	milligram(s) per liter
mg/m^2	milligram(s) per square meter
mg/m^3	milligram(s) per cubic meter
MS	matrix spike
MS4	municipal separate storm sewer system
mS/cm	milliSiemen(s) per centimeter
MSD	matrix spike duplicate
MTBS	Monitoring Trends in Burn Severity
N	nitrogen
NASA	National Aeronautics and Space Administration
ND	not detected
ng/L	nanogram(s) per liter
NHD	National Hydrology Dataset
NLCD	National Land Cover Database
NLDAS	North American Land Data Assimilation System
NTU	nephelometric turbidity unit(s)
O/E	ratio of observed taxa at a site to the expected taxa at a site
O&M	operations and maintenance
P	phosphorus
PAH	polycyclic aromatic hydrocarbon
PFAS	per- and polyfluoroalkyl substances
PFOA	perfluorooctanoic acid
pMMI	predictive multi-metric index
QA	quality assurance
QAPP	Quality Assurance Project Plan
QC	quality control
RCP	Representative Concentrations Pathway
Regional Board	California Regional Water Quality Control Board, Los Angeles Region
RL	reporting limit
RPD	relative percent difference
SAFIT	Southwest Association of Freshwater Invertebrate Taxonomists
SCAG	Southern California Association of Governments
SCCWRP	Southern California Coastal Water Research Project

ACRONYMS AND ABBREVIATIONS (continued)

SCIMP	Coordinated Integrated Monitoring Program
SCRMP	Southern California Regional Monitoring Program
SCWP	Safe, Clean Water Program
SGVCOG	San Gabriel Valley Council of Governments
SMC	Stormwater Monitoring Coalition
SOW	State of the Los Angeles River Watershed Symposium
sq ft	square foot (feet)
SRM	standard reference material
SSURGO	Soil Survey Geographic Database
Study	Fire Effects Study
SWAMP	Surface Water Ambient Monitoring Program
TAC	Technical Advisory Committee
TBD	to be determined
TMDL	total maximum daily load
TSG	Technical Stakeholder Group
ULAR	Upper Los Angeles River
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
WASC	Watershed Area Steering Committee
WMA	Watershed Management Area
WMG	Watershed Management Group

1.0 INTRODUCTION

1.1 Project Background

Scientific studies have shown that wildfires produce various sources of post-fire pollutants such as gases, aerially deposited particulates, fire retardant/suppression chemicals, sediment, and ash. Increased concentrations of nutrients and metals in surface water have also been documented, which is of key importance for stakeholders in the Los Angeles region because of existing water quality impairments. Watersheds that were affected by wildfires may drain to rivers, lakes, and streams that are currently designated as impaired under Section 303(d) of the Clean Water Act for the same pollutants that are found at elevated concentrations in post-fire runoff (Southern California Coastal Water Research Project [SCCWRP], 2009).

The Upper Los Angeles River (ULAR) Watershed Management Group (WMG) consists of 19 agencies: Los Angeles County, Los Angeles County Flood Control, and the Cities of Los Angeles, Alhambra, Burbank, Calabasas, Glendale, Hidden Hills, La Cañada Flintridge, Montebello, Monterey Park, Pasadena, Rosemead, San Fernando, San Gabriel, San Marino, South El Monte, South Pasadena, and Temple City. Collectively, the ULAR WMG is responsible for upholding water quality standards by complying with multiple nutrient total maximum daily loads (TMDLs) and the Los Angeles River Metals TMDL. Considering the increase in frequency and intensity of wildfires throughout southern California and the existing evidence correlating elevated nutrients and metals concentrations in surface water with wildfires, the ULAR WMG is investigating the impacts of wildfires on water quality within its own watershed through the Fire Effects Study (Study). The goal of the Study is to implement a resilient watershed management program that addresses water quality impacts from wildfires, achieves TMDL compliance, and protects public health and beneficial uses.

This interim report details the progress made during Year 1 of the Study and highlights next steps for Year 2 of the Study. Year 1 monitoring was completed from October 2022 to September 2023., Year 2 monitoring is planned for October 2023 to September 2024. Data collected under this Study helps to address existing data gaps in water quality for burn areas, to identify the effects of post-fire runoff on contamination flux, and to determine impacts on downstream receiving waters. Additionally, these data provide information on the immediate impacts following a wildfire and the persistence of wildfire effects over time. Furthermore, data are used to develop watershed models that help predict how land use and other environmental changes resulting from wildfires could impact baseline pollutant loading to receiving waters and how climate change scenarios may further exacerbate these impacts. Post-fire data are input into best management practice (BMP) models to help inform BMP selection, siting, and even maintenance, considering various environmental conditions. The data collected and models developed from the Study characterize wildfire impacts and help stormwater managers to strategize a more resilient watershed management program that meets water quality objectives and interim and final TMDLs and support beneficial uses.

The California Regional Water Quality Control Board, Los Angeles Region (Regional Board) provides feedback on the Study methods, findings, and potential implications of data collected. Feedback from Regional Board staff will be integrated as applicable. These communications also support coordination across other studies that the Regional Board is tracking or involved in related to fire effects on water quality conditions.

1.2 Problem Statement

Wildfires can alter stormwater quality runoff, which can have adverse effects on downstream water quality. Specifically, stormwater and sediment runoff from burned catchments after wildfires have been associated with increased concentrations of nutrients, metals, and organic pollutants.[1] Potential sources of post-fire pollutants include fire-retardant chemicals, fire suppression chemicals, and ash deposits. These impacts pose challenges to environmental managers in the Los Angeles region, who are responsible for compliance with nutrients and metals TMDLs (Figure 1). In response, the Study was developed by the San Gabriel Valley Council of Governments (SGVCOG) on behalf of the ULAR WMG and was approved for funding under the Safe, Clean Water Program by the ULAR and Rio Hondo Watershed Area Steering Committees (WASCs). This Study will characterize wildfire impacts on stormwater quality and urban runoff and support implementation of a resilient watershed management program that achieves TMDL compliance under changing conditions.

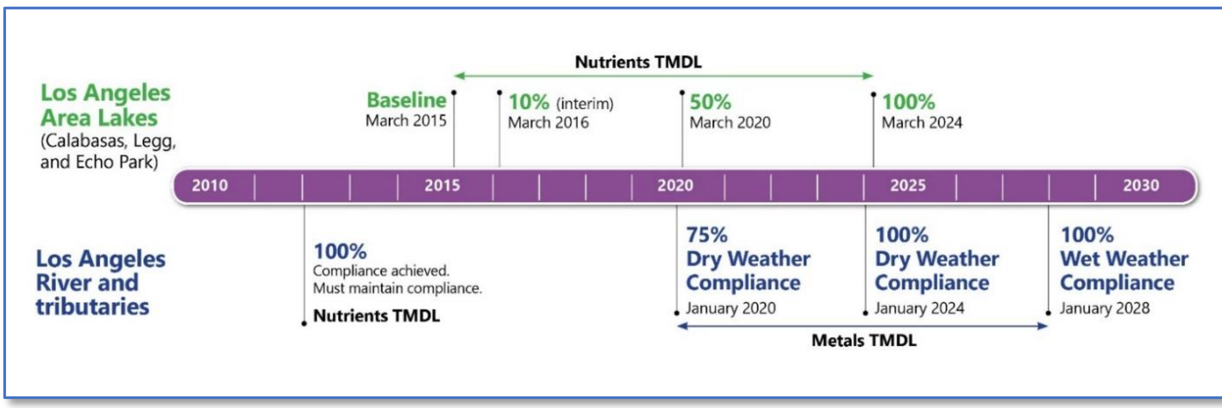


Figure 1. TMDL Compliance Timelines for Metals and Nutrients

1.2.1 Safe Clean Water Program Goals

In November 2018, voters in Los Angeles County approved Measure W, also known as the Los Angeles County Safe, Clean Water Program (SCWP), to improve water quality, increase local supply, and enhance communities. With this funding source available, stakeholders have an opportunity to initiate collaboratively on scientific studies and implement projects that will help address the ongoing water quality and quantity challenges within the Los Angeles region. Studies that are awarded funding under the SCWP, such as this Study, are approved by the WASCs and designed to fulfill the SCWP goals: improving water quality, leveraging other funding sources, encouraging innovation and new technology, and investing in scientific research.

[1] Southern California Coastal Water Research Project. (2009). Effects of post-fire runoff on surface water quality. Retrieved on 12/7/2020 from http://ftp.sccwrp.org/pub/download/DOCUMENTS/TechnicalReports/598_SoCalRegionalFireMonitoringPlan.pdf.

Improvement of Water Quality and Contributing to Compliance With Water Quality Requirements

This Study helps to identify the impacts of post-fire runoff on downstream receiving waters and factors that influence the persistence of these impacts. Data collected are used to develop models to predict how land use and other environmental changes from fires impact baseline pollutant loading. Models also incorporate climate change scenarios because they can potentially exacerbate these water quality impacts. Additionally, data are input into BMP models to forecast appropriate structural BMP selection, siting, and maintenance. This information helps support a more resilient management program that meets TMDL objectives and supports beneficial use goals under these conditions. Data may also show that water quality requirements need to be re-evaluated to allow for these changing landscapes.

Leveraging Other Funding Sources to Maximize SCWP Goals

Because this Study is a region-wide study that includes two WASCs, involves regulatory engagement, and invites regional stakeholders to participate, it has the advantage of attracting additional interest and potential funding sources to further expand this Study.

Encouraging Innovation and Adoption of New Technology and Practices

Modelling data generated by the Study informs stakeholders about wildfire impacts on BMP performance, which can help watershed managers with BMP selection and effectiveness assessments that consider wildfire conditions and climate change scenarios.

Investing in Independent Scientific Research

This Study includes scientific research focused on the impact of fires on water quality to support regional understanding and development of better management strategies under changing future conditions.

1.2.2 Fire Effect Study Goals

The goal of the Study is to improve water quality using an approach that involves engaging regulators and leverage water quality data to generate models that will further the understanding of the impacts of wildfires on pollutant loading, BMP performance, and overall TMDL compliance. The intent of the Study is to characterize the pollutants from wildfires in the ULAR watershed and determine the fate, transport, and duration of pollutants effects. This Study assesses the long-term effects of the pollutants on water quality, using historical data from previous studies along with new data, and reassesses the effects given the changes in hydrology and weather patterns over the past decade. Next, the Study develops predictive models that can be used to anticipate future impacts of land use and other environmental changes on water quality and further exacerbation of these impacts by climate change scenarios.

This Interim Report summarizes progress to date. A Final Report, due December 2024, will quantify the effects of post-fire runoff on contaminant flux and downstream receiving waters and the factors that influence how long post-fire runoff effects persist and can impact compliance. Results of the Study will also evaluate which strategies most effectively protect water quality and beneficial uses in receiving waters impacted by post-fire runoff.

This Study leverages guidance from the *Effects of Post-fire Runoff Surface Water Quality: Development of a Southern California Regional Monitoring Program with Management Questions and Implementation Recommendations (*SCCWRP, 2009) for the monitoring design. However, because of site constraints (see Section 2.3) in the Study area, the program has been modified to focus on water quality monitoring and bioassessment to evaluate the impacts of wildfires. Monitoring results are used to calibrate watershed models and address the Study questions listed in Table 1.

Table 1. Fire Effects Study Questions

Fire Effects Study Management Questions	Addressed Through
How does post-fire runoff impact contaminant loading?	• Water quality monitoring • Watershed modeling
How do pollutant loads for metals and nutrients in burned catchments compare to loads in unburned areas?	• Water quality monitoring of comparison sites • Watershed modeling
What is the likely effect of post-fire runoff on downstream receiving waters?	• Watershed modeling
What are the factors that influence the duration of post-fire runoff effects?	• Bioassessment monitoring • Watershed modeling
How do wildfires impact BMP performance?	• BMP modeling
How can the Study findings be applied to achieve regulatory compliance or regulatory relief?	• All monitoring • Watershed and BMP modeling

BMP = best management practice

1.3 Geographical Background

This Study is specific the ULAR watershed management area (WMA), which covers an area of 479 square miles in the coastal plain of the Los Angeles Basin. The WMA includes the San Fernando Valley and portions of the San Gabriel Valley. This watershed is highly urbanized and is surrounded by the second largest metropolitan area in the United States. The ULAR WMA includes both the ULAR watershed and some areas of the Rio Hondo watershed (~66 square miles) as shown in Figure 2. In recent years, multiple wildfires have occurred in the area surrounding and within the ULAR WMA (Li & Banerjee, 2021). This watershed is at particular risk to wildfires because of high temperatures, the vapor pressure deficit, grass cover, and the distance to roads (Li & Banerjee, 2021).

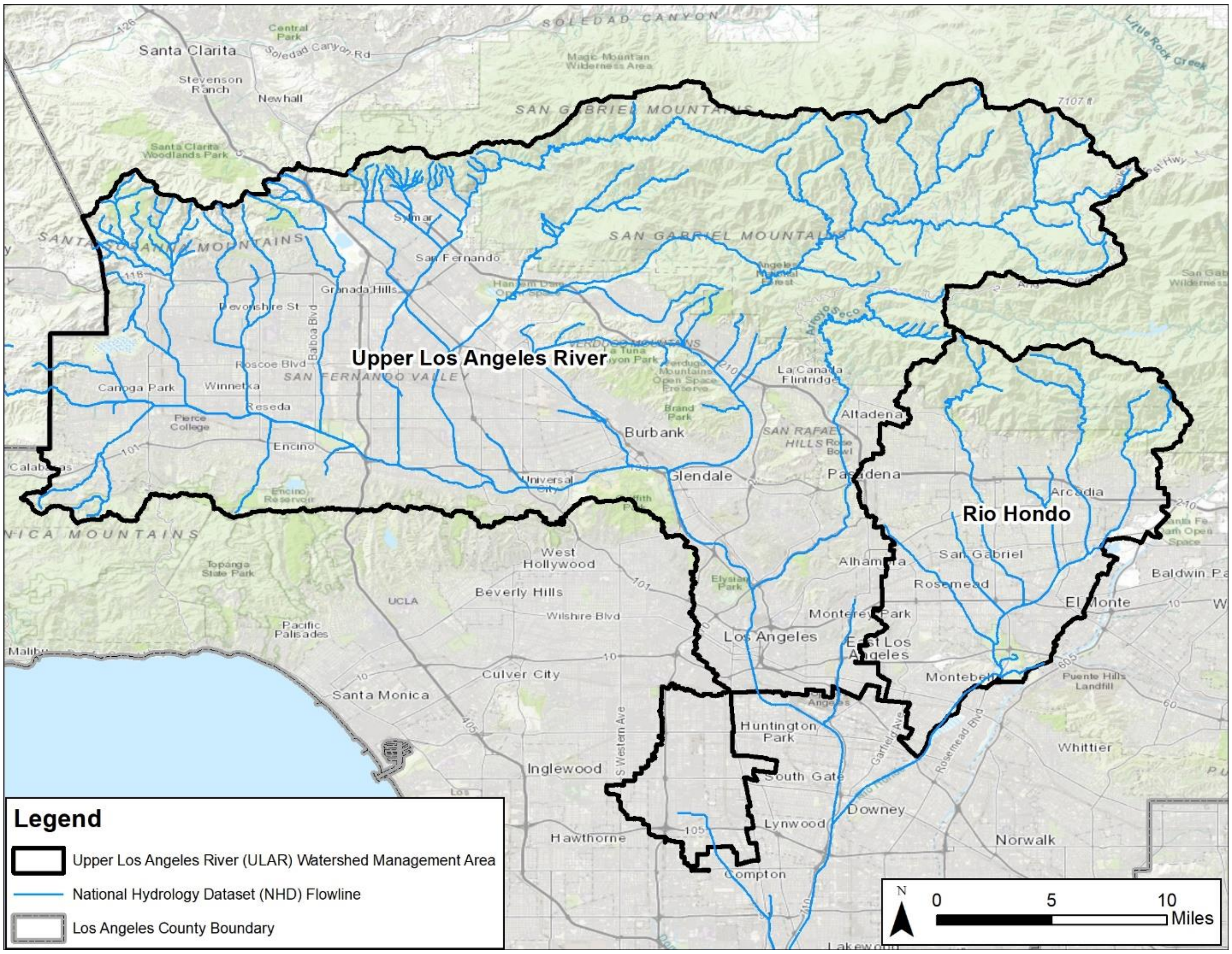


Figure 2. Upper Los Angeles River and Rio Hondo Watershed Management Areas

2.0 METHODS

The two main components of this Study are: 1) water quality monitoring in areas hydrologically connected to areas affected by wildfires and 2) the development of models to simulate potential impacts of fires in the Upper Los Angeles River watershed. Monitoring conducted under this Study is intended to fill data gaps related to post-fire runoff that may not be addressed by existing monitoring programs. The model platform being developed includes a range of post-fire impact and climate change scenarios to ultimately guide the selection of structural control measures best suited to address post-fire conditions. Monitoring methods are described in Section 2.1. Modeling methods are discussed in Section 2.2.

2.1 Monitoring

Water Quality Monitoring Methods

This section presents the dry and wet weather sample collection methods used for water quality samples collected specifically for this Study. Samples were collected in accordance with the Study Work Plan and Quality Assurance Project Plan (QAPP) (WSP USA Environment & Infrastructure, et al. 2023). Field logs and Chain of Custody (CoC) forms were generated for each sample by field teams. Samples were submitted to an analytical laboratory for analysis at the completion of each event.

<u>Dry Weather</u>

At each monitoring site (described in Section 3.1.1), grab water quality samples were collected during non-storm conditions. Grab samples were collected by a syringe, with a grab pole, or with a decontaminated bucket, depending on site conditions. Sampling activities were consistent with Surface Water Ambient Monitoring Program (SWAMP) protocols (SWAMP, 2016).

<u>Wet Weather</u>

During wet weather conditions, composite samples representative of the whole storm event were collected at each site. Standard flow-weighted compositing requires real-time data collection using flow monitoring devices that are installed onsite and operate in tandem with an auto-sampler so that total flow calculations can be sent to the sampler to trigger collection of sample aliquots. Because of the lack of channel access, flow-monitoring devices and automated samplers could not be installed for wet weather monitoring. Therefore, samples were collected and flow was estimated at consistent time intervals over the duration of the storm (e.g., one 1-liter aliquot per hour over the duration of the storm) to be post-processed proportionally to total flow volume. Level measurements were taken concurrently with and between collection each samples, as time permitted, or when significant changes in flow rates were observed.

To establish baseline conditions prior to the start of the storm, the monitoring team took an initial measurement at each monitoring site to identify the distance from the water surface or top of the channel to the bottom of the channel. During the storm, at each sample aliquot collection site, the depth of the water was measured again by subtracting the distance from the water surface to the channel bottom at each time interval. At the end of the storm, all the water depth measurements were entered into a program used to generate a hydrograph using the Manning's equation for the appropriate type of channel and to calculate the total flow from the time of collection of each sample to the end of the storm. The total flow estimated at the time of collection of each sample volume was then divided by the total flow over the duration of the storm to identify the percentage of total flow for each sample aliquot (i.e., composite sample). The percentages were then multiplied by the total composite sample volume to identify the volume required from each sample aliquot for the composite (United States Environmental Protection Agency [USEPA], 2017).

The monitoring team used clean sampling techniques to collect water samples to ensure that collection did not contaminate, lose, or change the chemical form of the sample in a way that might affect sample analyses and results. During all sampling operations, the monitoring team was careful to minimize exposure of the sample and sample collection equipment to sources of contamination (USEPA, 1996).

Bioassessment Methods

Bioassessment sampling was performed during the appropriate index period for bioassessment sampling in southern California (March through July). Biological condition and physical habitat quality were assessed in the field following the SWAMP bioassessment field protocol (Ode et al., 2016). The California Rapid Assessment Method (CRAM) was used to assess the overall wetland condition using the Version 6.1 module for riverine wetlands (Collins et al., 2013).

Benthic biological community sample analysis followed standardized assessment tools adopted by SWAMP. Laboratory processing of the BMI samples followed the procedures in the *Standard Operating Procedures for Laboratory Processing and Identification of Benthic Macroinvertebrates in California* (Woodward et al., 2012). BMIs were identified according to the Southwest Association of Freshwater Invertebrate Taxonomists (SAFIT) Level 2a requirements (Richards and Rogers, 2011). These data were then analyzed to produce various biological metrics and two different indices of overall BMI health: (1) Southern California Index of Biotic Integrity (IBI) (Ode et al., 2005), and (2) statewide California Stream Condition Index (CSCI) (Mazor et al., 2016).

2.2 Modeling

A model platform that can simulate potential impacts of fires in the Upper Los Angeles River watershed is under development as part of the Fire Effects Study. Given the spatial and temporal limit of monitoring efforts to characterize post-fire impacts, the model platform includes a continuous simulation, watershed model and BMP performance evaluation model. The combination of these two models allows for prediction of the watersheds response to different possible fire scenarios and how that influences the performance of structural BMPs constructed or planned in the watershed.

The baseline model is based on the preSIP Adaptive Management Model, which includes an updated Loading Simulation Program in C++ (LSPC) watershed model for the Upper Los Angeles River and a python constructed network of BMP models for planned, designed, and completed BMPs in the Upper Los Angeles River. For additional details on this model development, visit the PreSIP Story Map. The Fire Effects Model will build from this baseline model to explore different fire scenarios, also layered with potential climate change scenarios. Section 4 provides additional details on the modeling approach.

To guide parameterization of fire scenarios, historical data have been analyzed to characterize potential impacts on hydrology and pollutant generation and transport dynamics in the watershed. The team coordinated with multiple agencies and programs to compile monitoring data where fires have had historical impacts in southern California. This historical database was organized to run multiple statistical analyses to observe potential watershed responses in terms of the magnitude and timing of pollutant concentrations and loads generated off land surfaces following fires and potential methods of transport via stormwater into protected waterbodies. Section 5 provides details on the data analysis.

2.3 Constraints

Wet weather sampling was conducted during the wet season (October 1 through April 30), depending on rainfall; dry weather post-fire sampling occurred after a wildfire event in or upstream of the ULAR WMA. For both types of sampling, monitoring could occur only at stations with existing historical data that can be compared with findings from the Study. Wet weather monitoring sites were limited by safety and access to sites during wet weather conditions. The final monitoring sites were determined after field reconnaissance and identification of access and equipment installation constraints.

The Study Work Plan and QAPP proposed standard flow-weighted composite sampling using flow-monitoring devices and automated samplers installed onsite during wet weather. Because of the lack of channel access, manual compositing, as described in the Study Work Plan and QAPP Amendment and Section 2.1 above, was conducted.

Another Study constraint was selection of historical data for modeling updates; for many previous studies, it could not be determined whether fires were ongoing or extinguished at the time of monitoring. Model parameterization for various post-fire and climate change scenarios depended on the available data to justify parameter selection.

2.4 Deviations from the Work Plan

There were no deviations from the Fire Study Work Plan and QAPP as amended by Amendment 1 (March 2023).

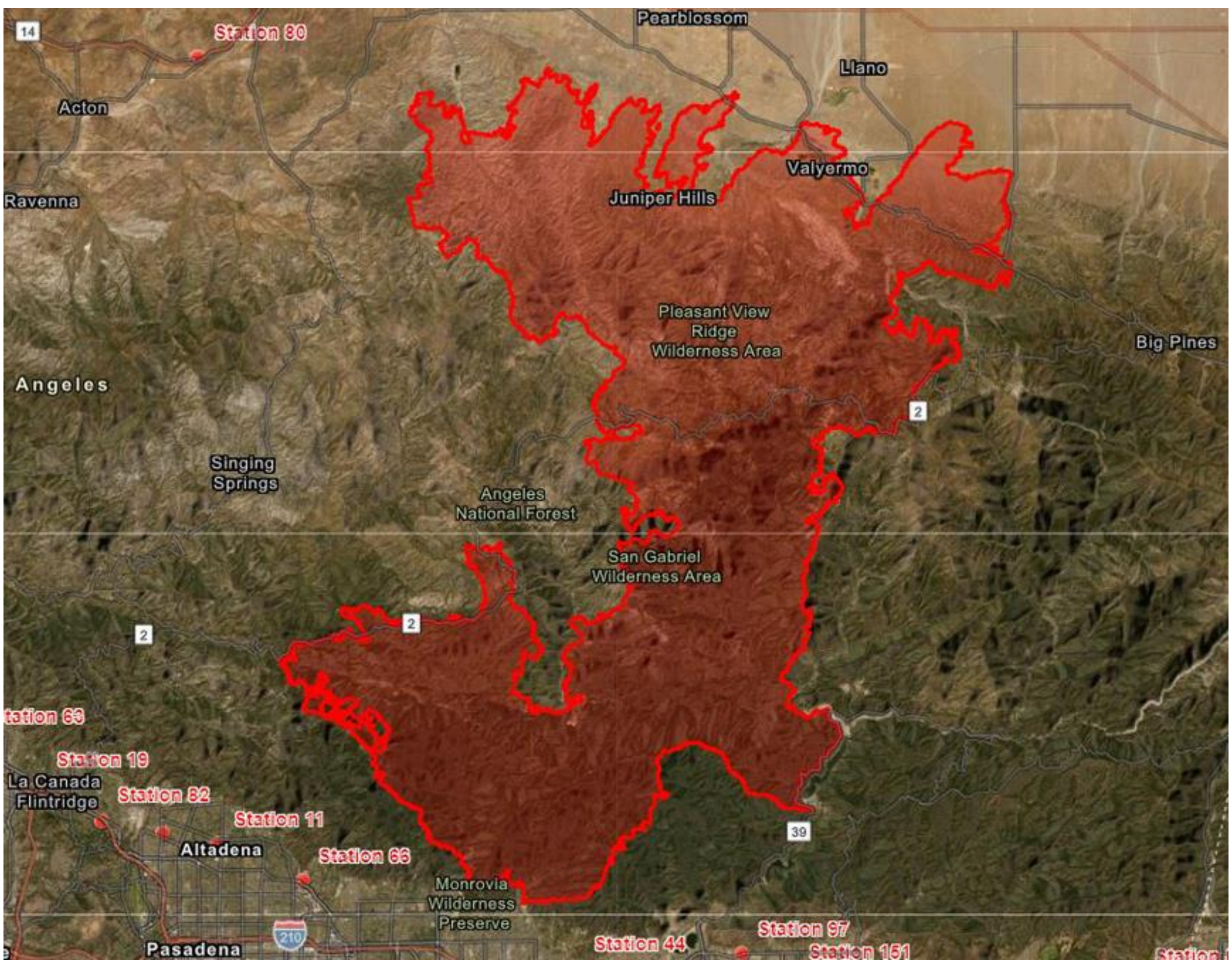
3.0 MONITORING

This section describes the results of monitoring conducted under this Study.

Fire Watch

The Study team referenced the California Department of Forestry and Fire Protection (CAL FIRE) website to track new wildfires within the ULAR WMA. If a wildfire occurs, the Study team evaluates the suitability of the wildfire for post-fire rapid response monitoring based on Section 10.1.1 of the QAPP. The QAPP states that the drainage area contributing to a water body with a potential monitoring site should be 80 percent burned. The Study team determines the extent of burn area by overlaying CAL FIRE Burned Area Emergency Response (BAER) maps onto ULAR WMA maps to identify streams with drainage areas that meet this requirement.

On September 6, 2020, the Bobcat Fire started in the Angeles National Forest, north of Azusa, in the San Gabriel Mountains (Figure 3). The Bobcat Fire burned more than 180 square miles, making it one of the largest fires on record in Los Angeles County (NASA Earth Observatory, 2020).



Source: County of Los Angeles Fire Department

Figure 3. Bobcat Fire Map

Figure 4 is a map of recent fires that wildfires that also burned more than 100 acres in Los Angeles County from 2017 to 2021, demonstrating the scale of the Bobcat Fire.

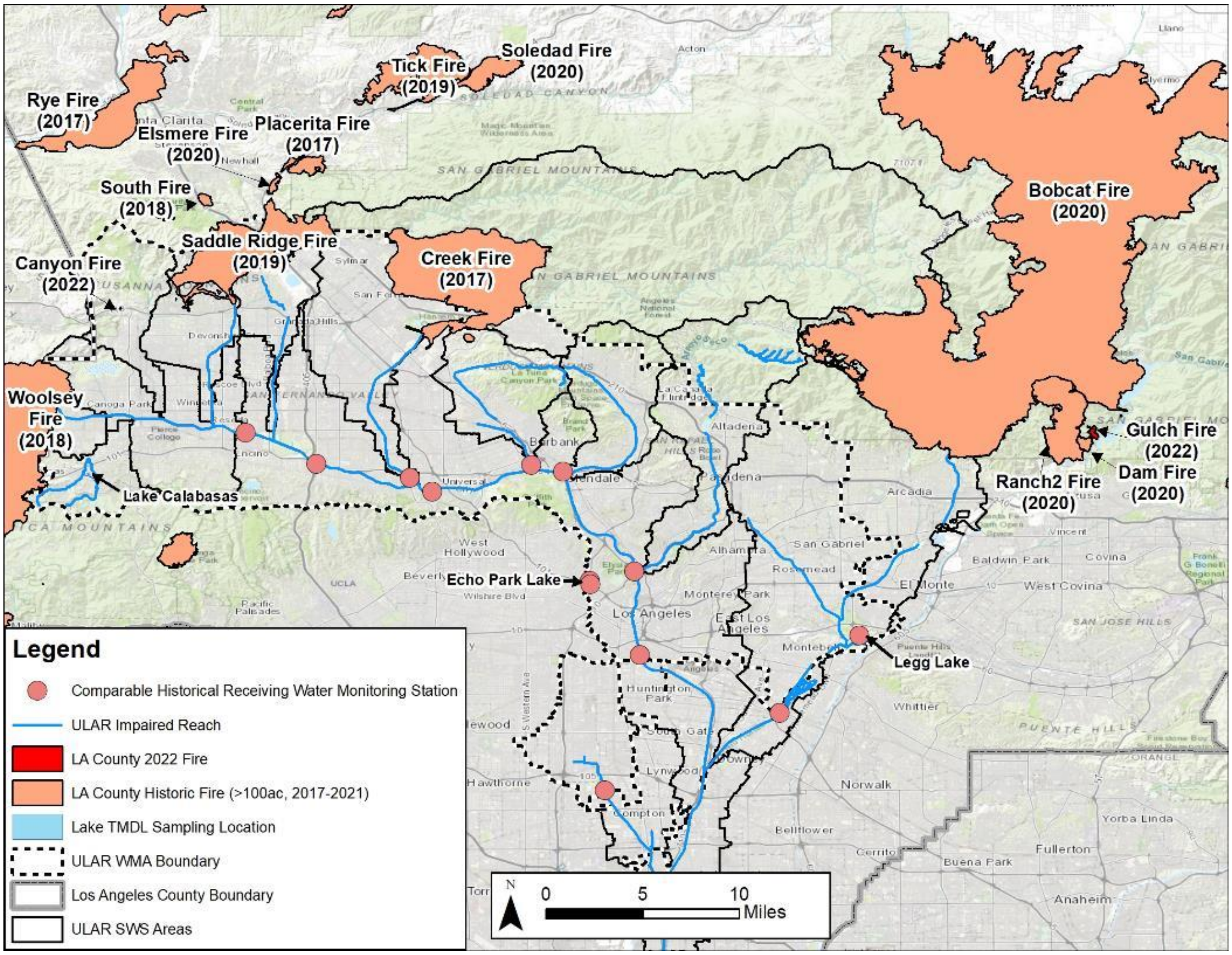


Figure 4. Recent Wildfire Burn Areas in Los Angeles County from 2017 to 2021

Figure 5 shows smoke from the 2020 Bobcat Fire in a photograph taken by National Aeronautics and Space Administration (NASA) E-2 high-altitude aircraft.

Source: Bobcat Fire Scorches Southern California (nasa.gov)

Figure 5. Photograph of Smoke from the Bobcat Fire Captured by NASA's ER-2 Aircraft

Because the Bobcat Fire met the criteria in the QAPP and qualified as one of the largest fires on record, monitoring sites for Year 1 of the Study were selected to target areas downstream of the Bobcat Fire burn area to characterize water quality impacts from this fire.

On July 2, 2023, the Chantry Fire started in Arcadia and was contained by the next day. This fire burned an area of 6 acres and was not large enough to register on the CAL FIRE website. In the summer of 2023, several fires caused by fireworks were also reported in urbanized residential and commercial areas and were not expected to impact the municipal separate storm sewer system (MS4). These fires did not meet the 80 percent burned drainage area specified in the QAPP therefore, water quality monitoring was not conducted for these instances.

3.1 Water Quality Monitoring

The "monitoring" sections of this report refer only to the data that were specifically collected for this Study. Other historical monitoring datasets were reviewed and used for modeling purposes.

3.1.1 Description of Water Quality Monitoring Sites

To address the Study management questions, wet weather and dry weather water quality was completed at three sites downstream of the Bobcat Fire burn areas that had previously been monitored under the ULAR Coordinated Integrated Management Program (CIMP):

- **F193B-R** is a concrete box channel in Santa Anita Wash that runs north to south under Longden Avenue. F193B-R is approximately 70 feet upstream of Longden Avenue and is on the west side of the channel.
- **F194B-R** is a concrete box channel in Sawpit Wash that runs north to south below Live Oak Avenue. F194B-R is approximately 200 feet downstream of Live Oak Avenue and is on the east side of the channel.
- **ARCAD_WA_CON** site is a concrete trapezoidal channel that is downstream of the Arcadia Wash confluence with the Rio Hondo receiving water channel. ARCAD_WA_CON is approximately 1050 feet downstream of lower Azusa Road on the west side of the Channel.

The water quality monitoring sites and coordinates for wet weather and dry weather monitoring events during Year 1 (October 1, 2022, through September 30, 2023) of the Study are presented in Table 2. During Year 2 (October 1, 2023, through September 30, 2024) the same sites will be monitored unless a new wildfire affects the ULAR WMA.

Table 2. Water Quality Monitoring Sites and Coordinates

Monitoring Site ID	Monitoring Site Name	Latitude	Longitude
F193B-R	Santa Anita Wash at Longden Avenue	34.11444	-118.01500
F194B-R	Sawpit Wash Below Live Oak Avenue	34.10722	-118.00500
ARCAD_WA_CON	Arcadia Wash Confluence	34.08968	-118.03388

ID = identifier

Figure 6 shows the locations of the three water quality sites monitored during dry weather and wet weather conditions. Monitoring sites are located at the Santa Anita Wash, Sawpit Wash, and the confluence of the Arcadia Wash with the Rio Hondo.

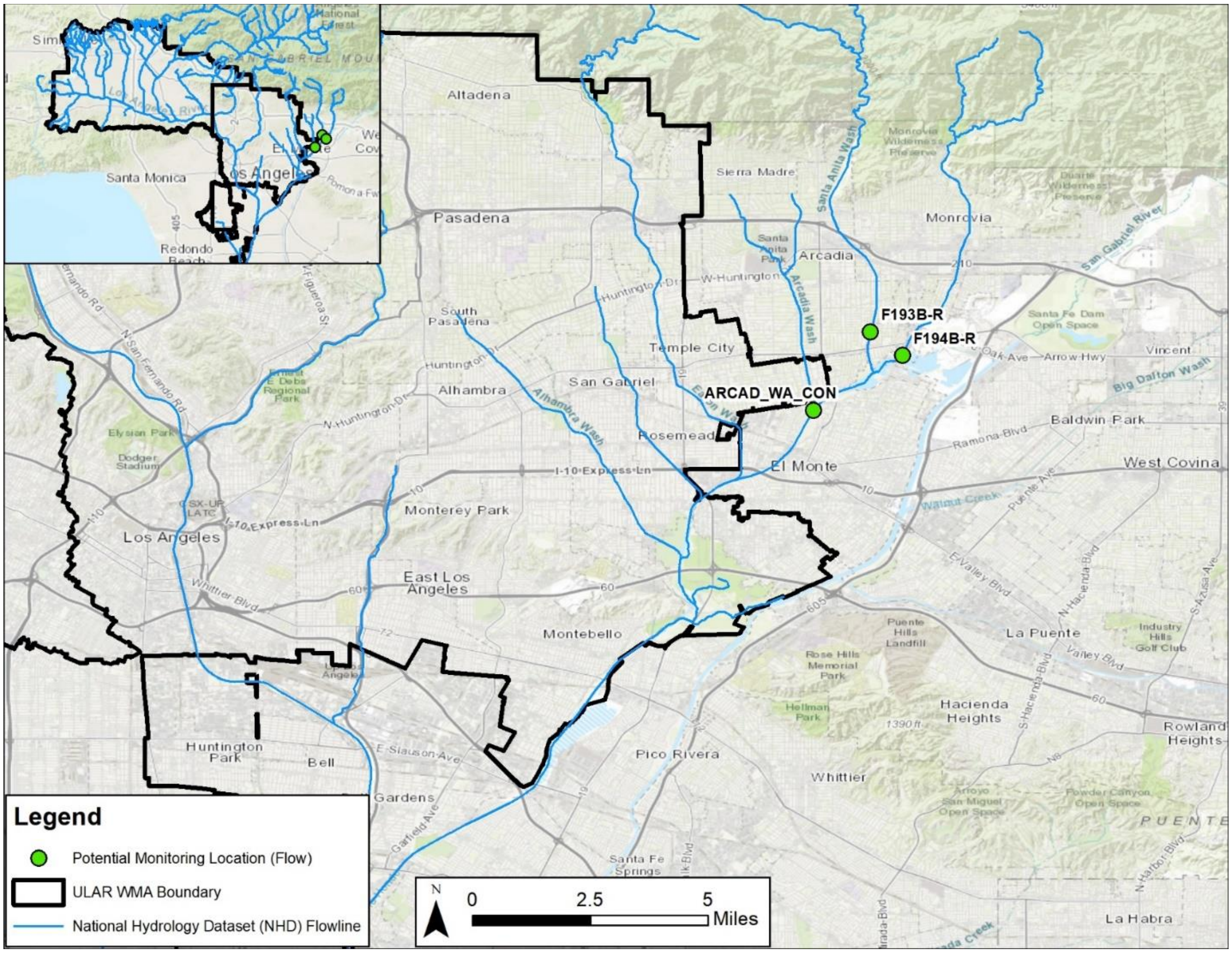


Figure 6. Fire Effects Study Water Quality Monitoring Sites

Figure 7 shows the conditions at the three water quality monitoring sites during dry weather events.

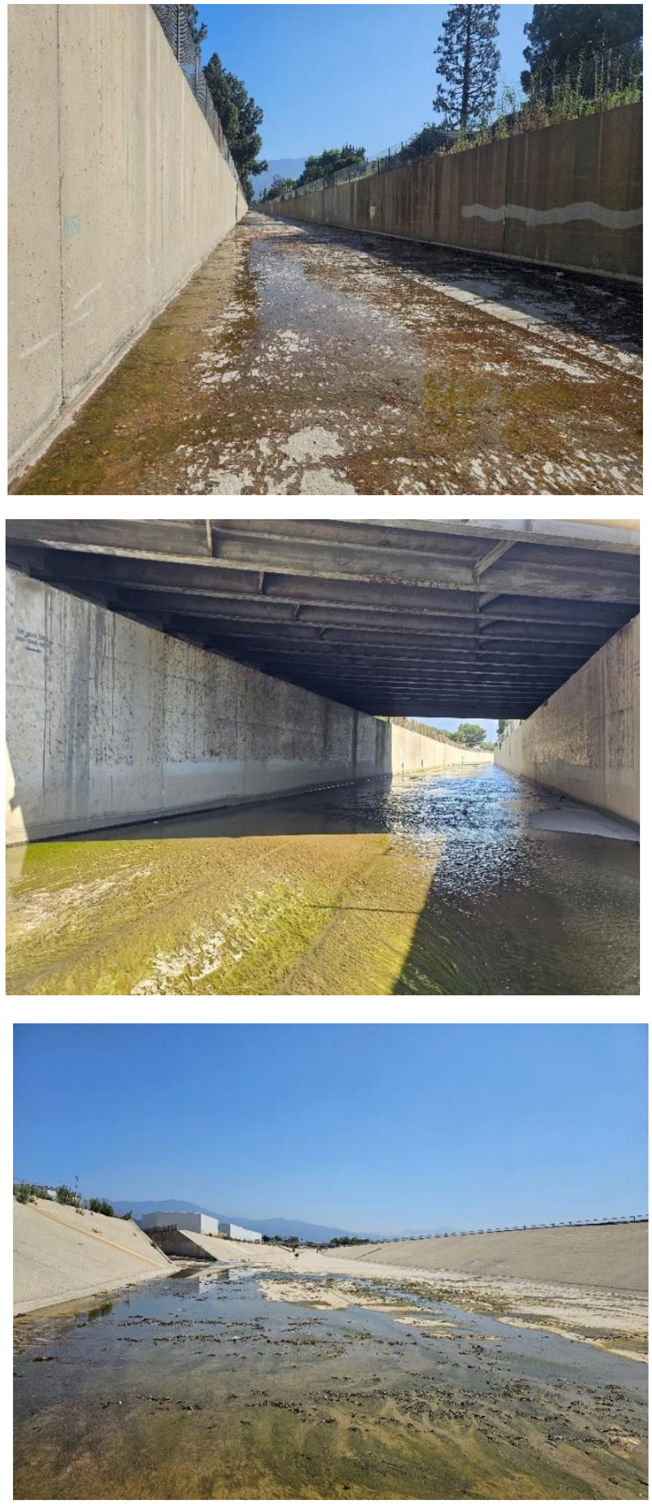


Figure 7. Water Quality Monitoring Sites During Dry Weather Events: F193B-R (upper), F194B-R (middle), and ARCAD_WA_CON (lower)

3.1.2 Monitored Event Summary

The Study team tracked weather conditions from October 1, 2022, through September 30, 2023, for the monitoring season on the National Weather Service website to determine whether and when to mobilize monitoring teams. Monitoring teams were mobilized for wet weather events based on the following criteria:

- Storm forecasts must meet qualifying criteria at least 24 hours prior to the onset of rainfall.
- A storm must be forecast to produce at least 0.25 inch of rainfall.
- The probability of precipitation must be greater than 70 percent.
- A storm event must be preceded by at least 72 hours of dry conditions (less than 0.10 inch of precipitation in a 24-hour period).

Dry weather monitoring was conducted when at least 72 hours of dry conditions or less than 0.10 inch of precipitation occurred in a 24-hour period.

Rapid response monitoring was not conducted during Year 1 of the Study. This type of monitoring consists of grab sample collection at each monitoring site during non-storm conditions. Mobilization for rapid response monitoring is scheduled immediately after a wildfire during the first runoff event with potential to mobilize pollutants from burned areas. Because no suitable wildfires occurred from October 1, 2022, through September 30, 2023, rapid response monitoring was not conducted. The Study team continues to watch for wildfires in the ULAR WMA.

Water quality grab samples were collected successfully during two dry weather events, and composite samples were collected during three wet weather events at each site as shown in Table 3.

Table 3. Water Quality Events Monitored During Year 1

Date	Event Type	Parameters Analyzed	Sample Collection Method	Samples Collected?	Study Year
12/8/2022	Dry weather	Field parameters, total and dissolved metals, nutrients, PAHs	Grab sampling	Yes	Year 1
6/27/2023	Dry weather	Field parameters, total and dissolved metals, nutrients, PAHs	Grab sampling	Yes	Year 1
1/14/2023–1/15/2023	Wet weather	Field parameters, total and dissolved metals, nutrients, PAHs	Manual flow weighted composite	Yes	Year 1
2/24/2023–2/25/2023	Wet weather	Field parameters, total and dissolved metals, nutrients, PAHs	Manual flow weighted composite	Yes	Year 1
3/10/2023-3/11/2023	Wet weather	Field parameters, total and dissolved metals, nutrients, PAHs	Manual flow weighted composite	Yes	Year 1

PAH = polycyclic aromatic hydrocarbon

3.1.3 Tabulated Water Quality Results

This section presents water quality results for key contaminants such as metals, nutrients, and polycyclic aromatic hydrocarbons (PAHs) in samples that were collected during both wet weather and dry weather monitoring events. To provide context, dry weather and wet weather water metals results were compared with the results from a 2012 Stormwater Contaminant Loading Following Southern California Wildfires study conducted by SCCWRP (Stein et al., 2012).

Although the dry weather monitoring events in December 2022 and June 2023 were intended to provide data on water quality conditions after a wildfire, the concentrations of copper detected during dry weather were low and typical of an unburned watershed, likely due to the length of time that elapsed from the 2020 Bobcat Fire to the dry weather monitoring events. Total copper results for the Study ranged from 7.9 to 13 micrograms per liter (µg/L), as shown in Table 4. Post-fire total copper results in the Arroyo Seco from the 2012 SCCWRP Study were detected at concentrations from 40 to 200 µg/L.

Table 4. Dry Weather Water Quality Results Highlights

Analyte	F193B-R		F194B-R		ARCAD_WA_CON	
	12/8/2022	6/27/2023	12/8/2022	6/27/2023	12/8/2022	6/27/2023
Copper, Total (µg/L)	7.9	25	13	2.6	8.6	12
Zinc, Total (µg/L)	6.2 J	5.7 J	30	3.3 J	6.9 J	16
Phosphorus as P (mg/L)	0.13	0.068	0.33	0.046 J	0.042 J	0.11
Chlorophyll-a (mg/m^3)	1	5.1	1.2	7.1	4.4	14.6
Total PAH (ng/L)	132	0.8	180	0.8	131	0.8

* Range of individual PAH compounds reported for discussion. Total PAHs will likely be used for future modeling efforts.
µg/L = microgram(s) per liter; J = estimated concentration, mg/L = milligram(s) per liter; mg/m^3 = milligram(s) per cubic meter; ND = not detected; ng/L = nanogram(s) per liter; P = phosphorus; PAH = polycyclic aromatic hydrocarbon; Total PAH is a sum of the 16 EPA Priority PAHs

Similarly, total zinc concentrations in samples collected for this Study ranged from 6.2 to 30 µg/L. These concentrations of total zinc are comparable to concentrations detected in unburned watersheds for the 2012 SCCWRP Study.

Concentrations for metals detected during this Study's wet weather monitoring events were also low and were similar to concentrations detected in samples from unburned watersheds (Table 5). The Study's wet weather total copper concentrations ranged from 5.2 to 28 µg/L; the 2012 SCCWRP Study reported post-fire concentrations from 40 to 200 µg/L. Zinc concentrations in samples collected during wet weather conductions during the Study ranged from 29 to 84 µg/L and were similar to total zinc concentrations in samples collected from unburned natural areas during the 2012 SCCWRP Study. Post-fire effect mean concentrations (EMCs) for total zinc in the 2012 SCCWRP Study were detected up to 300 µg/L, which far exceed the zinc detections in this Study.

Laboratory reports with analytical results for the two dry weather and three wet weather monitoring events are included in Appendix A.

Table 5. Wet Weather Water Quality Results Highlights

Analyte	F193B-R			F194B-R			ARCAD_WA_CON		
	1/15/2023	2/25/2023	3/11/2023	1/15/2023	2/25/2023	3/11/2023	1/15/2023	2/25/2023	3/11/2023
Copper, Total (µg/L)	20	28	12	13	21	14	8.8	5.4	5.2
Nitrogen, Total (mg/L)	2.3	2.4	2.3	1.5	1.8	2.3	1.4	1.1	1.9
Phosphorus as P (mg/L)	0.22	0.33	0.18	0.20	0.31	0.25	0.24	0.085	0.092
Zinc, Total (µg/L)	74	56	50	75	72	84	39	30	29
Chlorophyll-a (mg/m^3)	ND	ND	3	ND	ND	ND	ND	ND	ND
Total PAH * (ng/L)	114	116	114	120	129	130	120	29	114

*Only naphthalene was detected in PAH results. All other results were ND. NDs were included in the calculation of Total as the MDL.
µg/L = microgram(s) per liter; J = estimated concentration, mg/L = milligram(s) per liter; mg/m^3 = milligram(s) per cubic meter;
ND = not detected; ng/L = nanogram(s) per liter; P = phosphorus; PAH = polycyclic aromatic hydrocarbon, Total PAH is a sum of the 16 EPA Priority PAHs

3.1.4 Data Quality Assurance/Quality Control Table

Data quality assessment tables for dry and wet weather water quality results are provided in Appendix B. Table B-3 in Appendix B details the dry weather QA/quality control (QC) review for the Study's dry weather results, which are summarized below:

- 18 percent of the field duplicate results exceeded the target relative percent difference (RPD) of 25 percent. Because microbiological constituents have an exponential growth curve, their results are log-transformed prior to calculating the RPD value.
- 3 percent of the field blank results were detected above the reporting limit (RL).
- 17 percent of field sample results were qualified with a J flag, indicating an estimated concentration between the method detection limit (MDL) and RL.

Table B-4 in Appendix B details the QA/QC review for the Study's wet weather results, which are summarized below:

- 0 percent of the field duplicate results exceeded the target RPD of 25 percent. Because microbiological constituents have an exponential growth curve, their results are log-transformed prior to calculating the RPD value.
- 0 percent of the field blank results were detected above the RL.
- 15 percent of field sample results were qualified with a J flag, indicating an estimated concentration between the MDL and RL.

3.2 Bioassessment Monitoring

Bioassessment monitoring is conducted to evaluate physical habitat, aquatic life communities, water chemistry, flow regimes, and tree canopy to assess the conditions of a stream. Bioassessment data may be used to assess changes in water quality other than water chemistry.

Bioassessment monitoring was be performed in streams deemed suitable for sampling (e.g., wadeable, with sufficient water flow to establish robust benthic macroinvertebrate [BMI] communities). Streams should flow throughout the wet season so that sampling may occur during the appropriate index period for southern California defined in Ode et al. 2016 (April 15 through July 15).

3.2.1 Bioassessment Monitoring Sites

Two monitoring reaches in the San Gabriel River watershed were assessed under this Study in June 2023. Both of these sites have been sampled historically under the Southern California Regional Monitoring Program (SCRMP) and have pre-fire data available for comparison. Monitoring stations were:

- Site SMC00464 downstream of the Bobcat Fire burn area and below the confluence of the north and west forks of the San Gabriel River
- Site 405BH2A within the Bobcat Fire burn area in the west fork of the San Gabriel River and upstream of the confluence with the north fork of the San Gabriel River

3.2.2 Monitored Event Summary

Table 6 describes the two sites monitored downstream of burned areas. Monitoring was completed on June 29, 2023 during dry weather conditions at sites SMC00464 and 405BH2B.

Table 6. Bioassessment Sites for the SGVCOG Fire Effects Study, 2023

WMA	Stream and Location	Station Code	Date Sampled	Latitude/ Longitude
San Gabriel River	West Fork San Gabriel River Downstream of Confluence with North Fork	SMC00464	6/29/2023	34.2418, -117.8656
	West Fork San Gabriel River Upstream of Confluence with North Fork	405BH2A	6/29/2023	34.2429, -117.8720

SGVCOG = San Gabriel Valley Council of Governments; WMA= Watershed Management Area

3.2.3 Stream Bioassessment Results

Laboratory reports with bioassessment results are provided in Appendix A. Table 7 summarizes IBI and CSCI index scores for BMI community health of the sites monitored in Summer 2023.

Table 7. Summary of BMI Index Scores for the SGVCOG Fire Effects Study Bioassessment Monitoring Sites, 2023

Stream Name	Site Code	IBI	IBI Rating	CSCI	CSCI Condition Category
San Gabriel River Downstream Site	SMC00464	33	Poor	1.00	Likely Intact
San Gabriel River Upstream Site	405BH2A	34	Poor	0.97	Likely Intact

BMI = benthic macroinvertebrate; CSCI = California Stream Condition Index; IBI = Southern California Index of Biotic Integrity; SGVCOG = San Gabriel Valley Council of Governments; WMA = watershed management area

4.0 MODELING

The following subsections summarize the Fire Effects model platform being developed, the range of post-fire impact and climate change scenarios to be simulated, selection of structural control measures to characterize potential impacts to performance based on the above scenarios, and summarize expected outcomes from the fire effects modeling efforts.

4.1 Model Platform

As described in Section 2.2, the model platform is based on the PreSIP Adaptive Management Model, which includes an updated Loading Simulation Program in C++ (LSPC) watershed model for the Upper Los Angeles River and a python-constructed network of BMP models for planned, designed, and completed BMPs in the Upper Los Angeles River.

The LSPC watershed modeling system includes Hydrologic Simulation Program FORTRAN (HSPF) algorithms and additionally integrates a geographical information system (GIS), comprehensive data storage and management capabilities, and a data analysis/post-processing system into a convenient Windows interface. The algorithms of LSPC are identical to a subset of those in the HSPF model, with some additions. LSPC is freely distributed by the United States Environmental Protection Agency (EPA) Office of Research and Development in Athens, Georgia, and is a component of EPA's National TMDL Toolbox. The primary inputs to set up the LSPC model are (1) meteorological data, representing precipitation and evapotranspiration timeseries as a boundary condition to execute the hydrology and water quality modules; (2) subwatersheds, which form the foundation of the model architecture and delineate the landscape into hydrologic units that link the landscape to the downstream receiving water; (3) Hydrologic Response Units (HRUs), representing areas of similar physical characteristics based on land use and land cover conditions; and (4) reach characteristics, which drive the relationship between flow and water depth and affect travel times across the subwatersheds. The PreSIP Adaptive Management Model has recently been updated and specifically calibrated in the Upper Los Angeles River based on the local monitoring data.

Water quality represented in the model will focus on sediments, nutrients, and metals. Baseline model parameterization will be updated for the Fire Effects Model to represent multiple scenarios of a post-fire landscape. In addition to the baseline conditions (i.e., pre-fire), the model will be parameterized to represent impacts of three fire-related variables of (1) total burned area, (2) burn severity, and (3) burn proximity to assessment points. The parameterization will be based on minimal and worst-case scenarios of the three variables and will include all available combinations, resulting in eight total post-fire impact scenarios modeled. Watershed modeling will be used to characterize the changes to baseline pollutant loading in the post-fire environment scenarios.

In addition, the Fire Effect Model will layer the post-fire impact scenarios with projected climate change scenarios. The inclusion of climate changes scenarios is intended to explore potential for further exacerbation of pollutant loadings and impact on receiving water quality conditions. Four different predictive models from the Representative Concentrations Pathways (RCPs) model scenarios 4.5 and 8.5 will be used to update weather data inputs (precipitation and evapotranspiration) for the baseline and post-fire impact scenario watershed models. The eight climate change scenarios layered with the eight post-fire impact scenarios will result in a total of 64 model scenarios to compare with current baseline conditions.

Finally, to inform more resilient management strategies under the represented post-fire and climate change scenarios, these various watershed model scenarios will be used as updated inputs to existing BMP models for constructed or planned BMPs in the Upper Los Angeles River watershed. The BMP models estimate the range of nutrient and metal loads reduced under the various post-fire and climate change impacts. Figure 8 provides an overview of this connected modeling process.

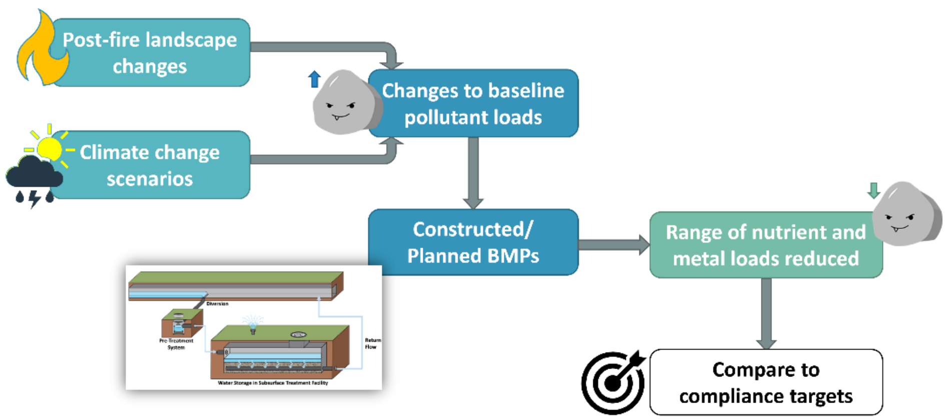


Figure 8. Fire Effects Modeling Process Overview

4.2 Post-Fire Impact Scenarios

Previous studies have shown that after fires, flows exiting burned catchments are increased because of a loss of vegetation, affecting transpiration processes. Accompanying these increased flows usually comes elevated suspended sediment, nutrient loads, and heavy metals. These increases in pollutants have been documented by many studies and have varied behavior in the timing of their post-fire peak loading and eventual return to pre-fire conditions. Total burn area, burn severity, and the fire's proximity to assessment points have been identified as significant factors influencing the magnitude, spatiotemporal distribution, and composition of downstream water quality pollutants. Each of these variables will have a minimal case and worst-case representation assigned, as summarized in Table 8.

These same factors are being explored in the historic monitoring data for the quantitative effect of each of these factors on pollutants of interest in the Study area. The results of the historic data analysis are being utilized to inform adjustments to parameters in the baseline LSPC watershed model. Hydrologic Response Units (HRUs), related to the land use and land cover, within the model projecting potential affects from fires will have their parameters altered based on the variables summarized in Table 8. The burn severity factor will have the greatest influence on the magnitude of adjustments to defined hydrologic and water quality parameters of affected HRUs. The total burn area and fire's proximity to assessment points will primarily be represented in the model based on specifying to which subwatersheds the adjusted HRU parameter sets are applied.

Table 8. Adjustable Variables in Post-Fire Impact Model Scenarios

Variables	Minimal Case Scenario	Worst-Case Scenario
Burned Area	Average (based on historical fires in Region)	Entire Upland Forest
Severity	Low	High
Proximity to Assessment Points	Far	Near

4.3 Climate Change Scenarios

RCPs are modeled climate change scenarios produced by the Intergovernmental Panel on Climate Change (IPCC) representing various outcomes related to greenhouse gas emissions. These scenarios range from RCP 1.9, representing aggressive limiting of greenhouse gas (GHG) emissions resulting in global temperatures increase of 1.5 degrees Celsius in accordance with the Paris Agreement, to RCP 8.5, which is a worst-case scenario where emissions continue to increase throughout the 21st century. For this Study, downscaled climate data from various modeled scenarios under RCP 4.5 and 8.5 will be used to update precipitation and evapotranspiration inputs to the LSPC watershed model. The difference in projected GHG emissions under RCPs 4.5 and 8.5 are shown in Figure 9.

The selected model scenarios are CadESM2, CNRM-CM5, HadGEM2-ES, and MICROC5. Each model provides slightly different values of precipitation and evapotranspiration projections due to differences in model assumptions. A summary of rainfall statistics applicable in the Upper Los Angeles River watershed under these scenarios for RCP 4.5 are listed in Table 9. Each of the post-fire impact scenario models will be run with this ensemble of CMIP5 models to quantify a range of responses under future climatic conditions. This approach provides a measure of confidence and uncertainty embedded in future projections of climatic data.

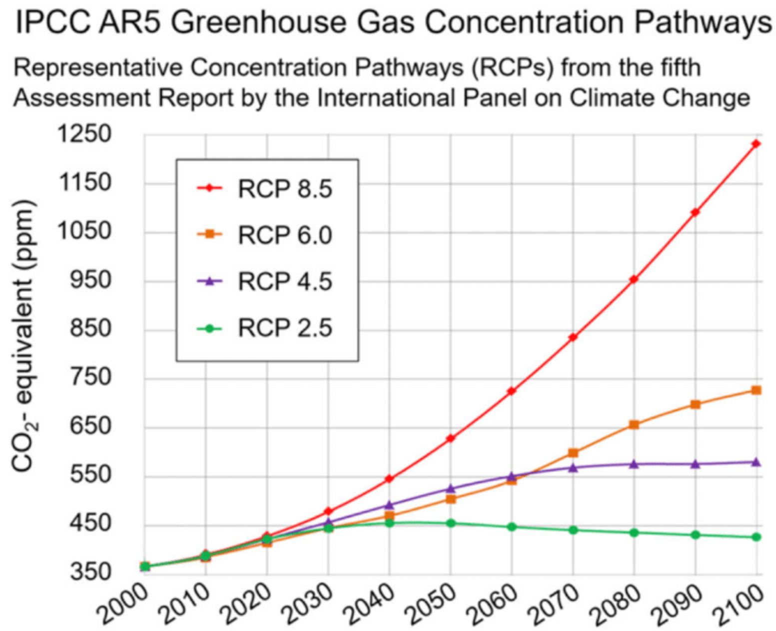


Figure 9. Projected Greenhouse Gas Concentrations Under Representative Concentration Pathways

Table 9. Projected Rainfall Statistics Under Selected RCP 4.5 Model Scenarios in the Upper Los Angeles River

RCP 4.5 – Model Scenarios	2030–2060		
	Average Rainfall per Storm Event (inches)	Maximum Storm Event Rainfall (inches)	Average Number of Storm Events per Year
CadESM2	0.88	13.67	13.9
CNRM-CM5	1.21	17.62	15.2
HadGEM2-ES	0.85	9.91	14.3
MIROC5	0.77	19.63	14.7

RCP = Representative Concentrations Pathway

4.4 Structural Control Measures Represented

In the Upper Los Angeles River watershed management area, 81 structural control measures have been identified as built or are in the design phase with secured funding. These 81 projects are summarized in Table 10, and a subset of these projects will be selected to incorporate in the Fire Effects Model. Selected projects will ensure a range of project types and variety of locations across assessment areas. Feedback from the Technical Advisory Committee will be sought to confirm selected structural control measures to represent from this list.

The updated LSPC model outputs from the post-fire and climate change scenarios will be used to revise inputs to the existing python-based BMP models for the selected projects to evaluate changes in average annual pollutant load reductions across the scenarios as compared with baseline conditions. Selected planned structural control measures will be modeled based on individual performance, excluding potential impacts of nested projects, because the intent is to characterize a range of general impacts to project performance under post-fire and climate change scenarios.

Table 10. List of Built/Planned Structural Control Measures in the Upper Los Angeles River Watershed Management Area

Built/Planned Structural Control Measure Name	Watershed Assessment Area
Arroyo Seco Golf Course Driving Range Wetlands	Arroyo Seco
Arroyo Seco Stormwater Capture Basin	Arroyo Seco
Arroyo Seco Golf Course Constructed Wetlands	Arroyo Seco
Arroyo Seco-San Pascual Treatment Wetlands	Arroyo Seco
Altadena/Lake Avenue Green Improvement	Arroyo Seco
Garvanza Park BMP	Arroyo Seco
Arroyo Seco-San Rafael Treatment Wetlands	Arroyo Seco
Altadena Mariposa Green Street	Arroyo Seco
Glenoaks Greenway	Burbank Western Channel
Glenoaks Bioswales and Dry Wells	Burbank Western Channel
South Los Angeles Wetlands Park	Compton Creek
Westmont/Vermont Avenue Green Improvement	Compton Creek
Broadway Neighborhood Stormwater Greenway	Compton Creek
Broadway-ManchesterGreen Streets Project	Compton Creek
Franklin D. Roosevelt Park Regional Project	Compton Creek
Magic Johnson Park BMP	Compton Creek
Avalon Green Alley South	Compton Creek
Lincoln Park Neighborhood Green Street Network	LA River Reach 2
Walnut Park Project	LA River Reach 2
East L.A. Sustainable Median Stormwater Capture	LA River Reach 2
City Hall North Lawn	LA River Reach 2
South Pasadena Huntington Drive Green Street	LA River Reach 2
Albion Riverside Park	LA River Reach 2
Main Street Green Street Demo Project	LA River Reach 2
Taylor Yard River Park - Parcel G2	LA River Reach 3
Taylor Yard River Park Parcel	LA River Reach 3
Oros Green Street	LA River Reach 3
Valley Plaza Park Stormwater Capture Project	LA River Reach 4
North Hollywood Alley Retrofit BMP	LA River Reach 4
Strathern Park North Stormwater Capture Project	LA River Reach 4
Metro Orange Line Infiltration Project	LA River Reach 4
Metro Orange Line Infiltration Project	LA River Reach 4
Elmer Avenue & Elmer Paseo Retrofit	LA River Reach 4
Magnolia /Vineland to Cahuenga	LA River Reach 4
Metro Orange Line Infiltration Project	LA River Reach 4
Metro Orange Line Infiltration Project	LA River Reach 4
Burbank Blvd. BMP	LA River Reach 4
Metro Orange Line Infiltration Project	LA River Reach 4

Table 10. List of Built/Planned Structural Control Measures in the Upper Los Angeles River Watershed Management Area (continued)

Built/Planned Structural Control Measure Name	Watershed Assessment Area
Victory ES – DROPS	LA River Reach 4
Valley Village Park Stormwater Capture Project	LA River Reach 4
Sun Valley Park	LA River Reach 4
Fernangeles Park Stormwater Capture Project	LA River Reach 4
Metro Orange Line Infiltration Project	LA River Reach 4
Agnes/Vanowen	LA River Reach 4
Whitsett Fields Stormwater Capture Project	LA River Reach 4
Lankershim Boulevard Capture Network Project	LA River Reach 4
Rory M. Shaw Wetlands Park Project	LA River Reach 4
Lankershim Great Street	LA River Reach 4
Whitnall Highway Powerline Easement BMP	LA River Reach 4
Cabellero Creek Confluence Park	LA River Reach 6
Pierce College NE Campus Stormwater Capture	LA River Reach 6
East LA Sustainable Median Stormwater Capture	Rio Hondo Downstream from Whittier Narrows
ELAC Northeast Drainage Area Biofiltration Project	Rio Hondo Downstream from Whittier Narrows
Alhambra Wash Dry-Weather Diversion	Rio Hondo Upstream from Whittier Narrows
Rubio Wash Dry-Weather Diversion	Rio Hondo Upstream from Whittier Narrows
Arcadia Wash Water Conservation Diversion	Rio Hondo Upstream from Whittier Narrows
Eaton Wash Dry-Weather Diversion	Rio Hondo Upstream from Whittier Narrows
Sierra Madre Boulevard Green Street	Rio Hondo Upstream from Whittier Narrows
Rio Hondo Ecosystem Restoration Project	Rio Hondo Upstream from Whittier Narrows
Washington Park Stormwater Capture Project	Rio Hondo Upstream from Whittier Narrows
Mt. Lowe Median Stormwater Capture Project	Rio Hondo Upstream from Whittier Narrows
Merced Avenue Greenway	Rio Hondo Upstream from Whittier Narrows
Sierra Madre Boulevard Green Street	Rio Hondo Upstream from Whittier Narrows
Plymouth School Neighborhood Stormwater Capture	Rio Hondo Upstream from Whittier Narrows
South El Monte High School	Rio Hondo Upstream from Whittier Narrows
San Fernando Gardens	Tujunga Wash
Whiteman Airport BMP	Tujunga Wash
David M. Gonzales Recreation Center Project	Tujunga Wash
San Fernando High School	Tujunga Wash
San Fernando Middle School	Tujunga Wash
Glenoaks-Filmore SWCP	Tujunga Wash
Laurel Canyon Boulevard Green Street	Tujunga Wash
San Fernando Regional Park Infiltration Project	Tujunga Wash
Victory-Goodland Median	Tujunga Wash
Haddon Ave Elementary School	Tujunga Wash
Oro Vista Local Area Urban Flow Management Project	Tujunga Wash
Bradley Green Alley	Tujunga Wash

Table 10. List of Built/Planned Structural Control Measures in the Upper Los Angeles River Watershed Management Area (continued)

Built/Planned Structural Control Measure Name	Watershed Assessment Area
Van Nuys Boulevard Median Infiltration	Tujunga Wash
Canterbury Powerline Easement Stormwater Capture	Tujunga Wash
Woodman Avenue Multi-Beneficial Stormwater Capture	Tujunga Wash
Distributed Drywell System Project	Verdugo Wash

4.5 Outcomes

The post-fire and climate change model scenarios will provide a range of potential changes to baseline hydrology and pollutant loading in the Upper Los Angeles River watershed based on potential fires. This is intended to provide minimal to worst case characterization if future fires occur in the watershed and implications on pollutant conditions. The representation of structural control measures under the range of potential scenarios will be used to help recommend more resilient BMP designs for cost-effective approaches considering potential fire cases and projected climate change. Considerations for operations and maintenance (O&M) improvements may also be incorporated in these BMP recommendations. The range in watershed baseline pollutant loading and corresponding BMP pollutant load reductions will also be evaluated relative to compliance requirements for nutrient and metals TMDLs in the Upper Los Angeles River watershed. This is intended to further support the regulatory engagement on meaningful, realistic post-fire numeric goals related to MS4 Permittee responsibility.

5.0 DATA ANALYSIS

5.1 Modeling Approach for Water Quality Data and Preliminary Results

Historical Data Analysis for Modeling Approach

Monitoring data with records of fire impacts were compiled and analyzed from other sources to better inform updates for the Fire Effects Model Platform described in Section 4. For the initial historical data analysis, Table 11 summarizes the available data sources compiled. As the Study progresses, ongoing efforts have been made to request additional data sources from studies exploring similar impacts of fires on natural water quality. The available data have been reviewed and processed for usability to inform model parameterization and calibration or alternatively provide supplemental supporting proof of fire impacts on receiving water quality.

Table 11. Available Historical Data

Stakeholder	Available Data	Data Timeline
ULAR WMG	CIMP station data	Historical data through 2021
	LARWMP water quality and bioassessment data	2008–present
Ventura County	Water quality and bioassessment data, including burned areas	2015–2021
Orange County	Santiago Fire burn areas	2007–2008 wet season
SCCWRP	SCCWRP Natural resources data Arroyo Seco (Station Fire) Contaminant Loading following wildfires Aerial deposition (Santa Monica Bay)	2001–2010
San Gabriel River Regional Monitoring Program	Monitoring at burn sites (Babcock Fire)	2020–2021
Riverside County	Holy Fire post-fire monitoring report	2018
Various Under the SMC Program	SMC Data	2011–2021

LARWMP = Los Angeles River Watershed Monitoring Program; SCCWRP = Southern California Coastal Water Research Project; CIMP = Coordinated Integrated Monitoring Program, SMC = Stormwater Monitoring Coalition; TBD = to be determined; ULAR = Upper Los Angeles River, WMG = Watershed Management Group

Data collected from stakeholders represent 38,165 unique observations of 400 constituents, including total, particulate, and dissolved heavy metals and nutrients, general water chemistry, flow, suspended sediment, biological assays, and more. The sources, constituents, and sampling timeframes from each data source are listed in Table 11. Of those samples, 19 percent were taken during dry weather, and 81 percent were taken during wet weather. Recent studies have indicated that many of the observed fire impacts are recovered within 2 years after the fire incident. Of the compiled observations, 70 percent were either prior to or within 2 years following at least one of 10 fires that have impacted the drainage areas of the monitoring locations. A total of 132 monitoring locations are represented whose drainage areas total over 2 million acres and have been impacted by fires within their drainage areas ranging from less than 1 to 100 percent. The fires represented within the historical dataset ranged in severity from being entirely classed as low severity to predominantly severe burns.

To align with the variables of interest in the Fire Effects Model Platform, the historical data were analyzed under the context of relevant burn severity and burned area within the monitored drainage areas. Given the HRU-based model parameterization, it was also important to characterize the land uses and cover within the historical monitored drainage areas and burned areas. This required significant geospatial processing, which included for the following layers (shown in Figures 10 through 13):

- Monitoring locations' drainage areas were determined using publicly available storm drain data and USGS Digital Elevation Model (DEM).
- Fire soil burn severity data were collected from the Monitoring Trends in Burn Severity (MTBS) gridded dataset.
- Land use data come from the Southern California Association of Governments (SCAG) 2016 dataset, and imperviousness data were downloaded from the National Land Cover Database (NLCD) 2016 dataset.
- Hydrologic Soil Groups data were downloaded from the Soil Survey Geographic Database (SSURGO).

Spatial analyses of these data included monitoring location drainage area delineation and flow accumulation, intersection of monitoring location drainage areas with soil burn severity, land use, and hydrologic soil group, computation of proportion of burned areas and subsets of soil burn severity classes, and computation of flow distance from burn perimeter to monitoring location, among others.

Rainfall data for the area of interest were also downloaded from the North American Land Data Assimilation System (NLDAS) to characterize the amount of rainfall received in the period prior to sampling and wet/dry weather categorization for each sampling location if it was not clearly noted in the data.

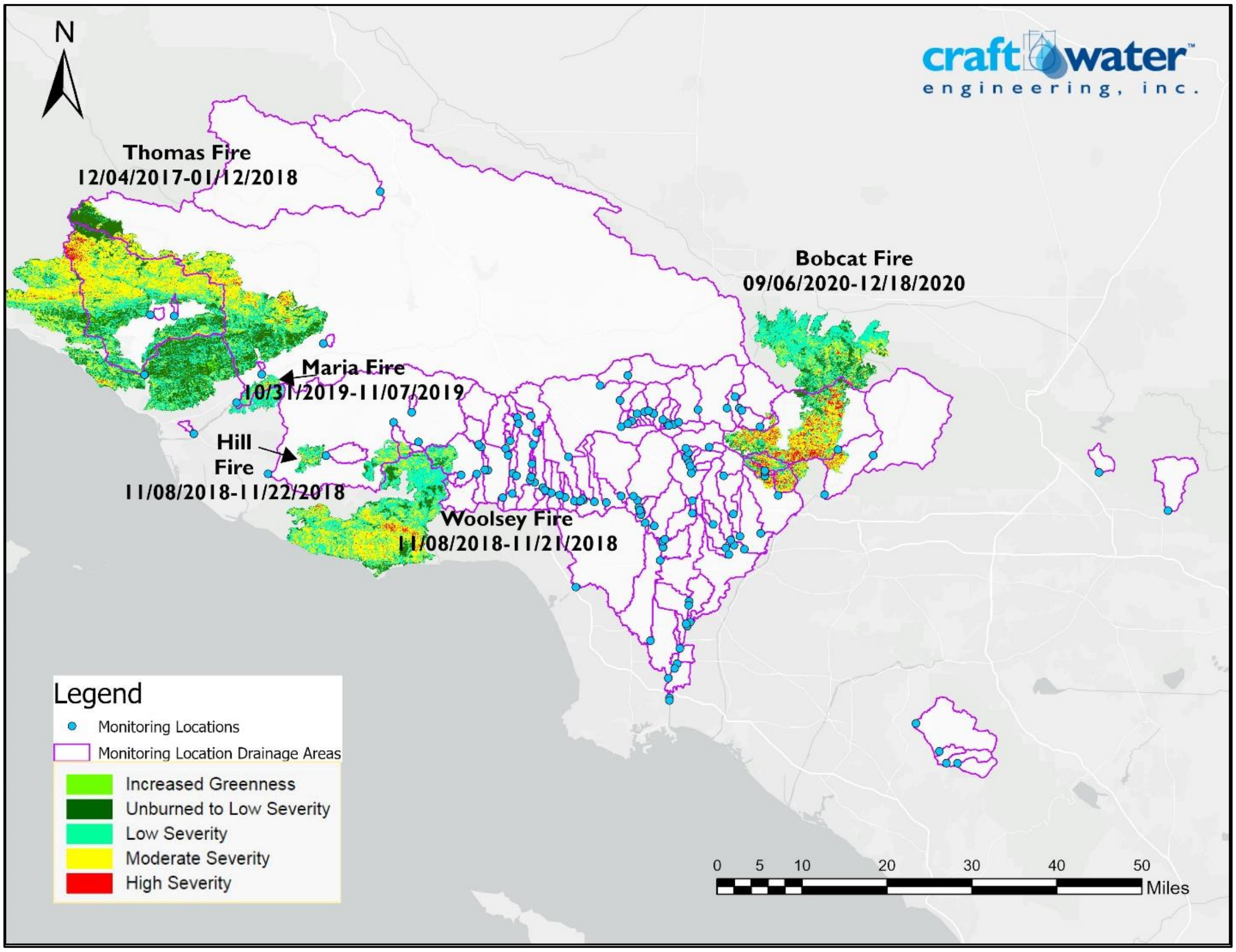


Figure 10. Historical Fire Burn Severity from 2017–2020 for Associated Monitored Drainage Areas

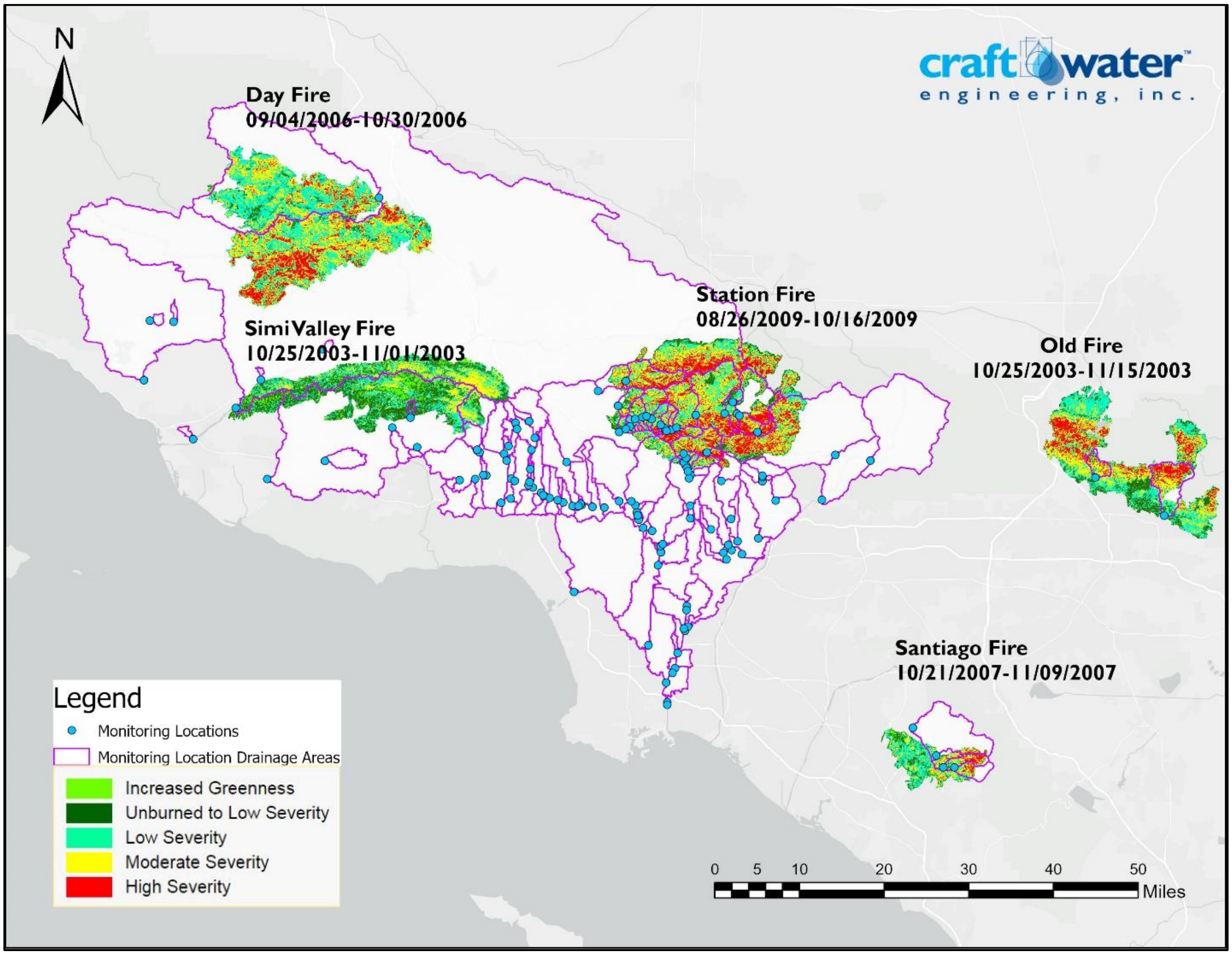


Figure 11. Historical Fire Burn Severity from 2003–2010 for Associated Monitored Drainage Areas

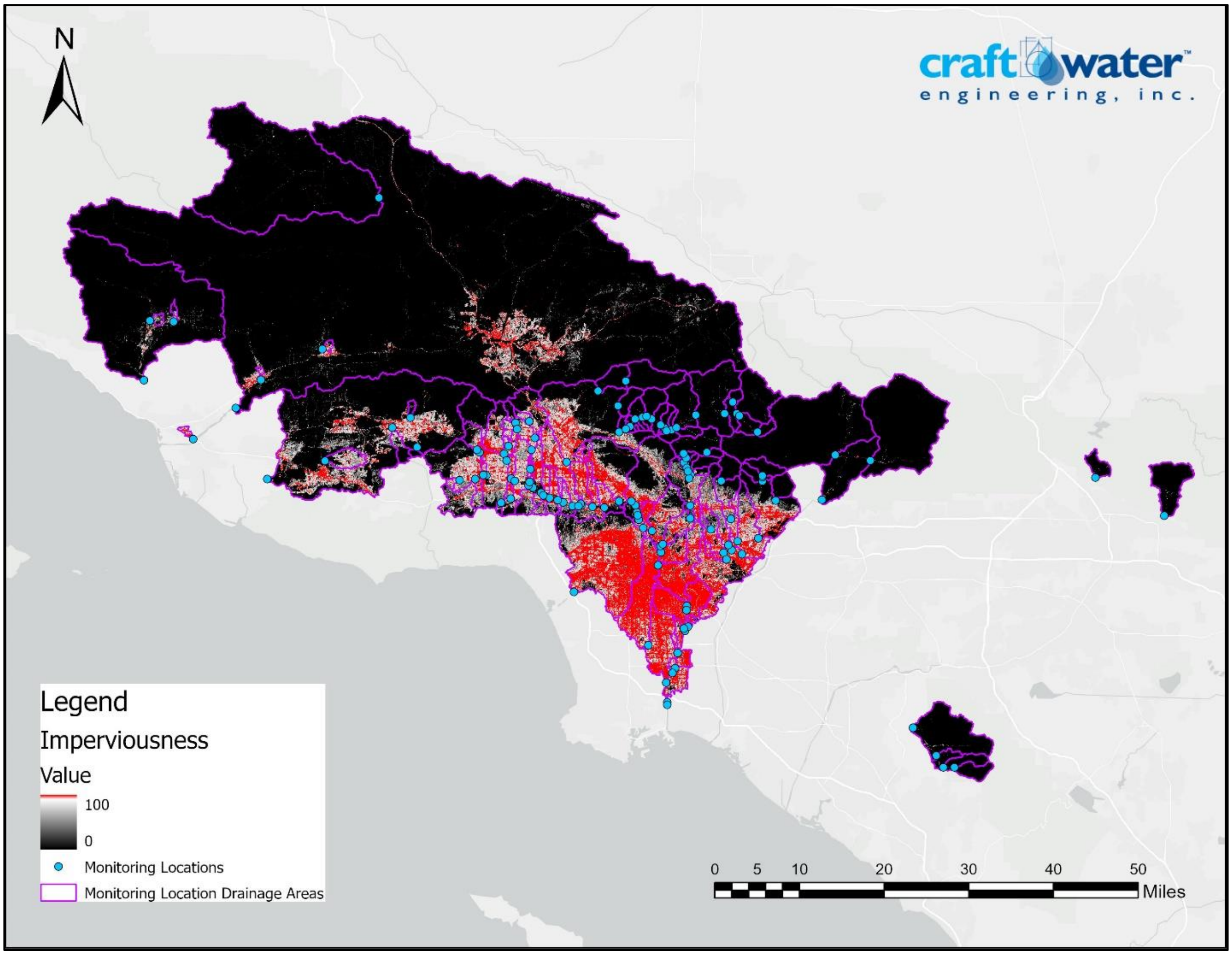


Figure 12. Imperviousness for the Associated Monitored Drainage Areas (NLCD, 2016)

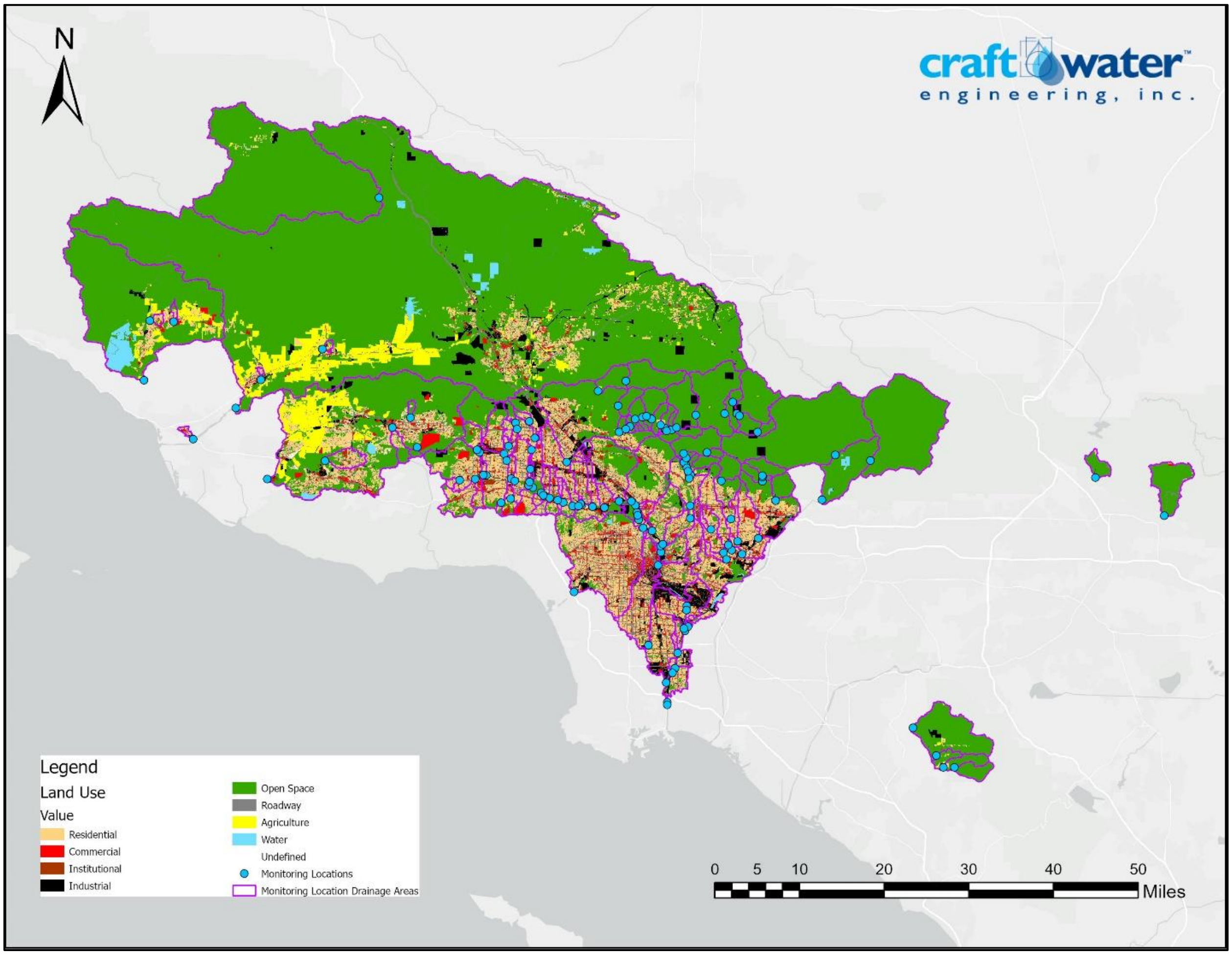


Figure 13. Land Uses Across the Associated Monitored Drainage Areas (SCAG, 2016)

To support the post-fire impact modeling scenarios, analyses were performed using outputs from the spatial analyses to explore the quantitative relationship between water quality constituents of interest for dry and wet weather samples relative to the burn extent, severity, and proximity. These metrics were computed both quantitatively and then assigned a categorical class. Burn area proportion is simply the percentage of the area upstream of a monitoring location that burned, expressed as a decimal. Burn area ratios of less than 0.5 were assigned the class "low," and from 0.5 to 1, "high." For burn severity, the total area of each severity class was computed across each monitoring location's drainage area. The areas representing classes from MTBS "unburned/low severity" and "low severity" were summed, and the "moderate" and "high" severity classes were summed. The ratio of these summations is then the burn severity ratio, with values over 1 being classed as "high severity" and ratios below 1 assigned "low severity."

Key highlighted observations from these analyses are summarized below, and additional statistical figures are provided in Appendix C. Although many constituents were analyzed in the available historical data, the focus of the information presented in this report, consistent with the Study objectives, is on sediment, heavy metals, and nutrients. The following information is being further processed to inform and compare model parameterization most representative of the minimal to worst-case scenarios for the burn area, burned severity, and burn proximity variables.

Combined with the literature review, this analysis is helping to bracket the magnitude and spatiotemporal distribution of the adjusted HRU-based parameterization representative of the post-fire impact model scenarios.

Total Suspended Solids

For total suspended solids, storm events with greater precipitation totals brought an increase in sediment, as expected. However, the overall range of suspended solids from before fire incidents to samples taken after fires only demonstrated a slight increase. Although an increase in the burned area resulted in an increase in suspended solids, higher soil burn severity did not always lead to more suspended sediment. For sites with higher soil burn severity, the higher range of suspended solids concentrations did increase, with a higher median concentration and more samples with concentrations above 1,000 mg/L during wet weather. All categories showed a slight increase post-fire. Figures 14 and 15 show the results for total suspended solids in terms of burn area proportion and burn severity.

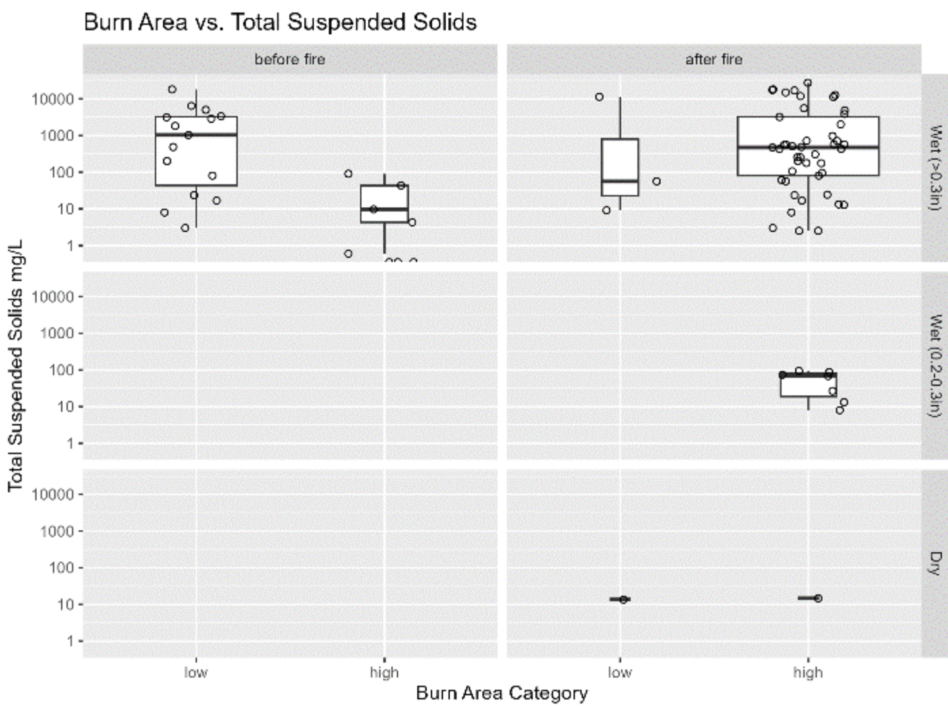


Figure 14. Box Plot of Burn Area Proportion vs. Total Suspended Solids

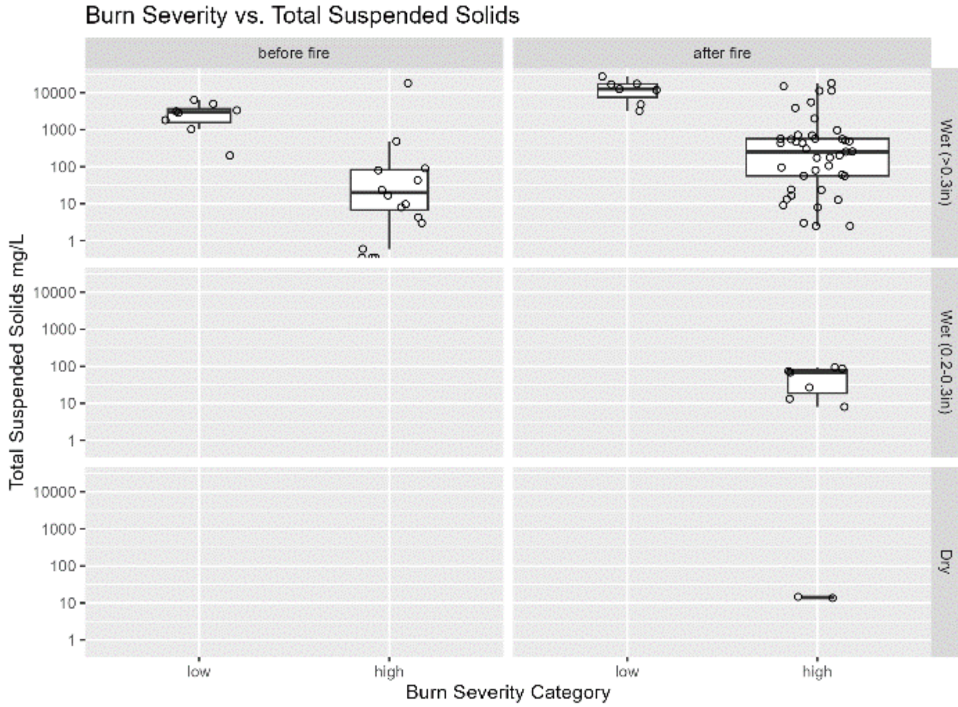


Figure 15. Box Plot of Burn Severity vs. Total Suspended Solids

Phosphorus

Before any fire impacts, orthophosphate sampled only during storm events with higher precipitation totals. In the post-fire samples, orthophosphate concentrations showed an increasing trend with higher burn severity. Not enough data are available to make any observations about dry weather conditions. Total phosphorus concentrations demonstrated a similar pattern as orthophosphate concentrations, except even more pronounced. It appears that total phosphorus concentrations increase with burn severity and burn area, and overall were higher in the post-fire samples, but the data may be biased because of the sample size of those various groups. The greatest range of concentrations were in wet weather samples post-fire. Note that some total phosphorus concentrations in samples were very high (above 100 mg/L as provided) and significantly affect the analysis. Figures 16 through 20 show the results for phosphorus in terms of burn area proportion and burn severity.

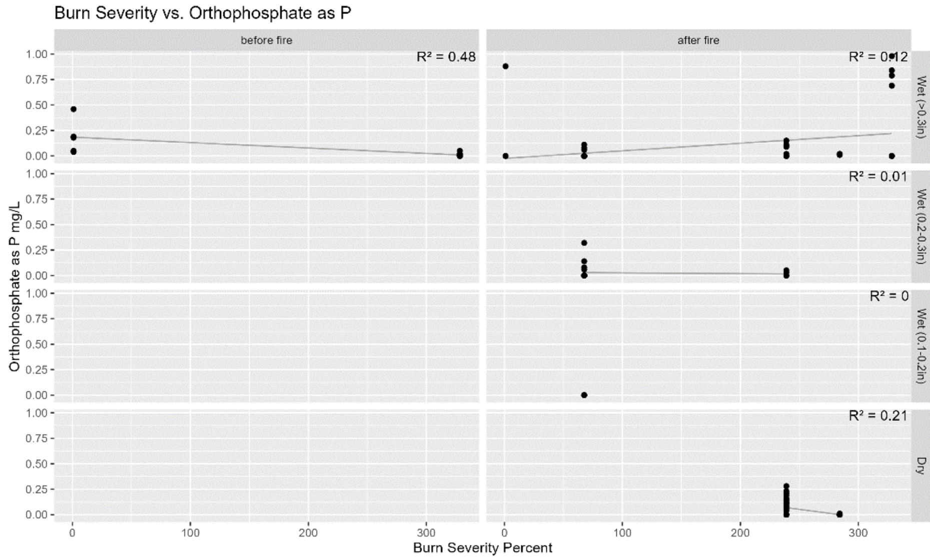


Figure 16. Scatter Plot of Burn Severity vs. Orthophosphate as P

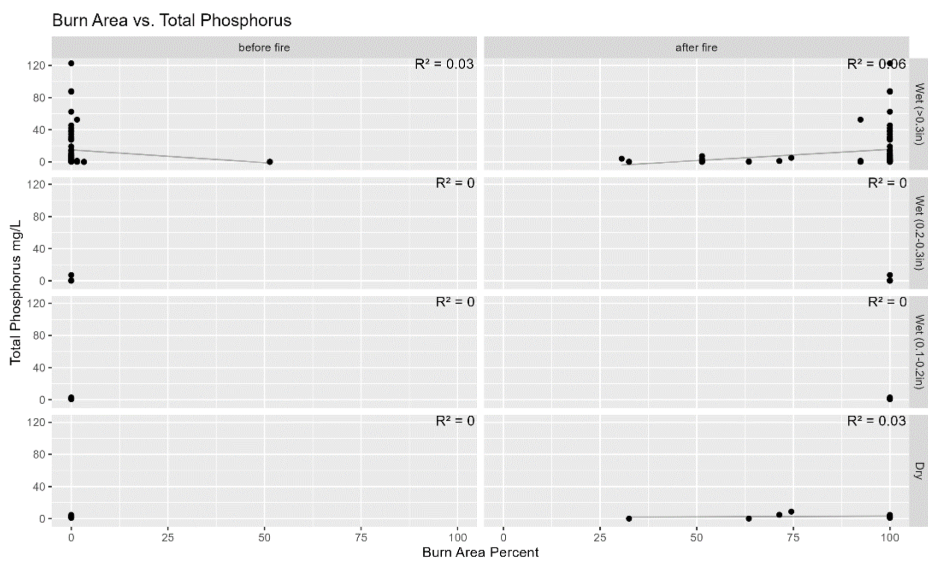


Figure 17. Scatter Plot of Burn Area Proportion vs. Total Phosphorus

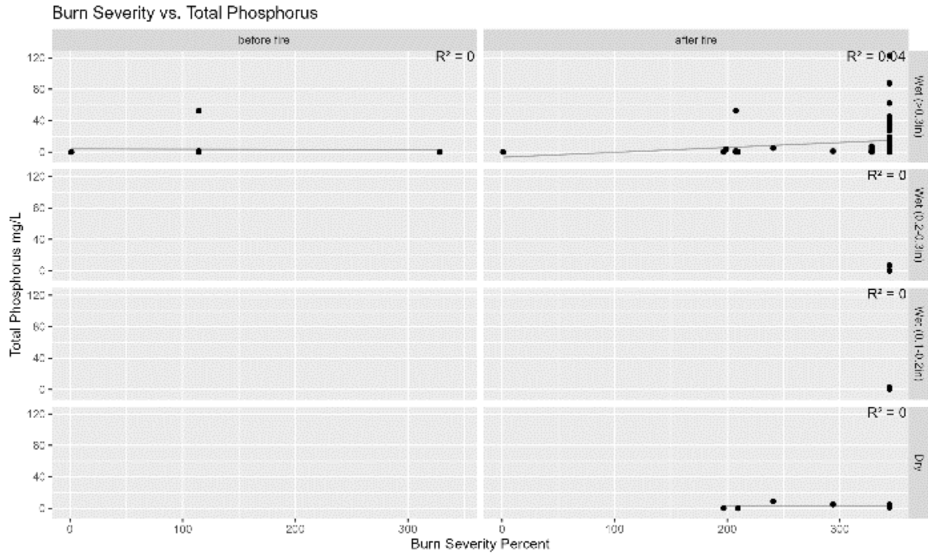


Figure 18. Scatter Plot of Burn Severity vs. Total Phosphorus

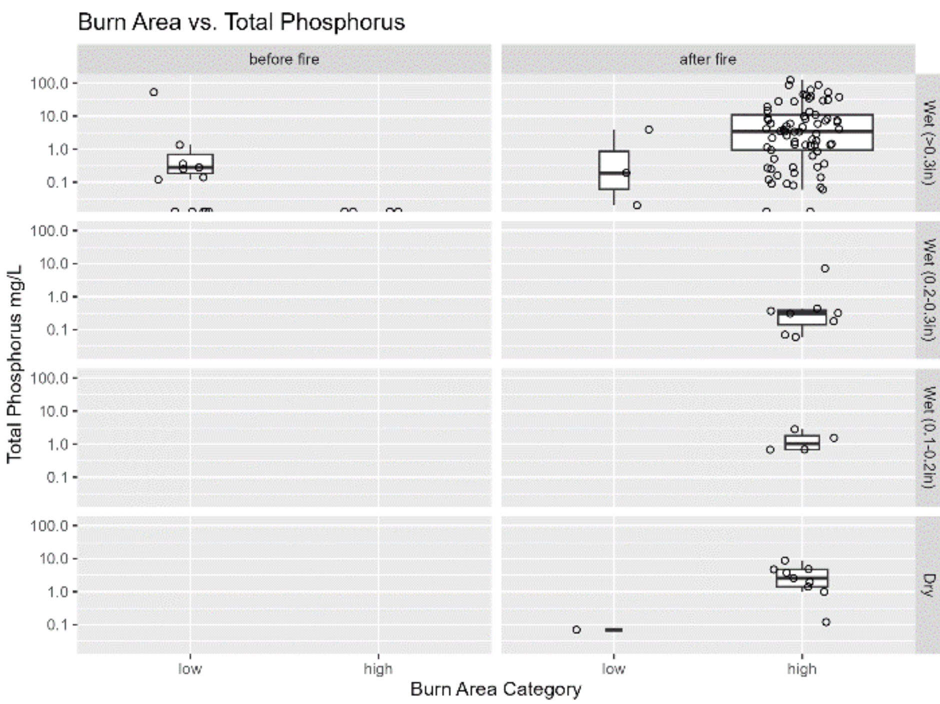


Figure 19. Box Plot of Burn Area Proportion vs. Total Phosphorus

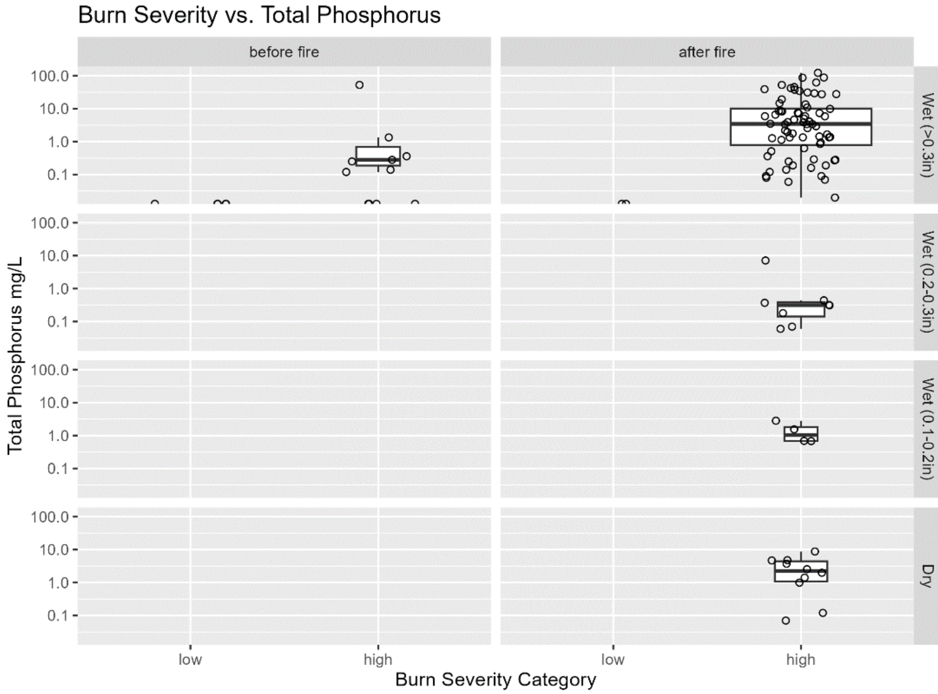


Figure 20. Box Plot of Burn Severity vs. Total Phosphorus

Nitrogen

Nitrogen compounds had significantly more data available where samples were taken post-fire as compared with before any fire impacts. Post-fire, in areas of high burn severity, there were more instances of concentrations exceeding 10 mg/L, which is notably above typical regulatory thresholds for nitrogen compounds. Nitrite concentrations were more variable post-fire, but were overall much lower than nitrate concentrations, which is expected. Limited data are available for nitrate + nitrite N. There appears to be a trend of higher nitrogen concentrations post-fire, but lack of sufficient pre-fire data limit this observation and comparison with former conditions. Figures 21 through 23 show the results for nitrogen in terms of burn area proportion and burn severity.

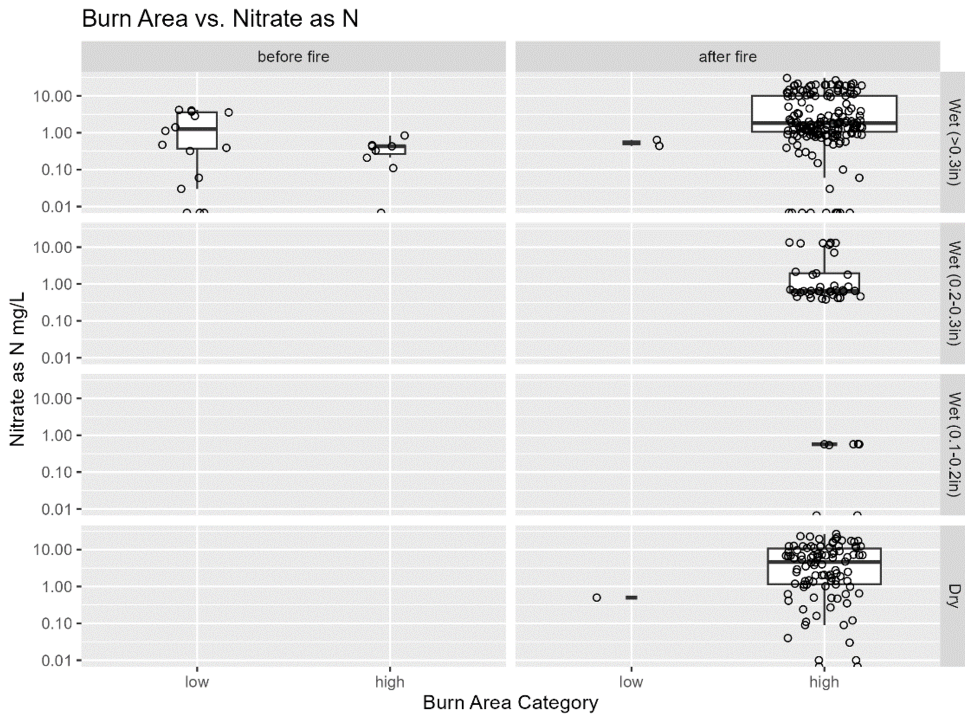


Figure 21. Box Plot of Burn Area Proportion vs. Total Nitrate as N

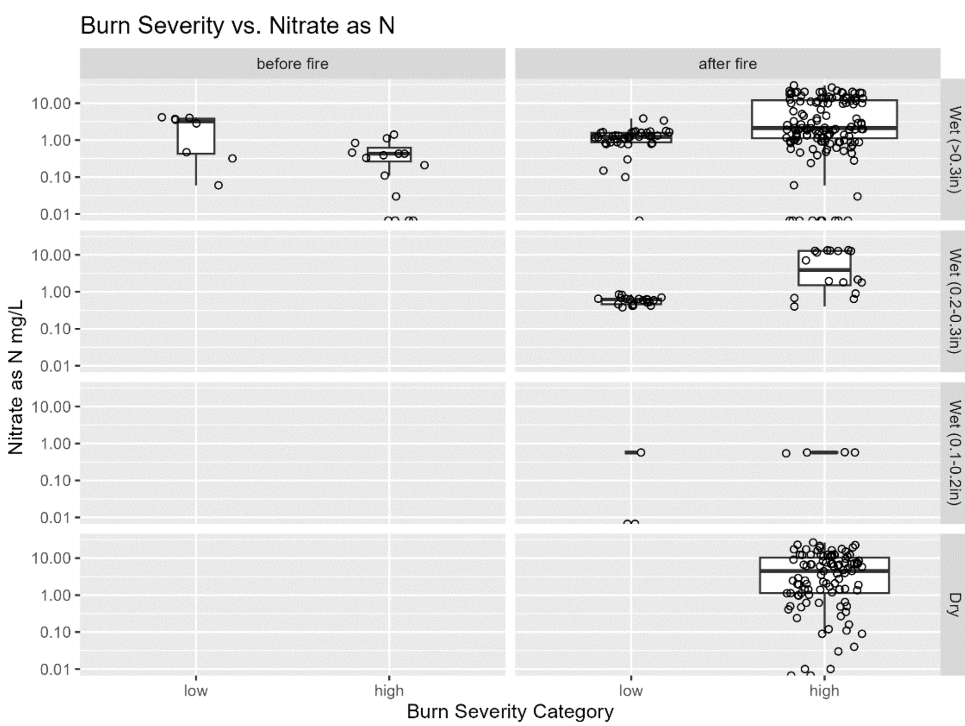


Figure 22. Box Plot of Burn Severity vs. Nitrate as N

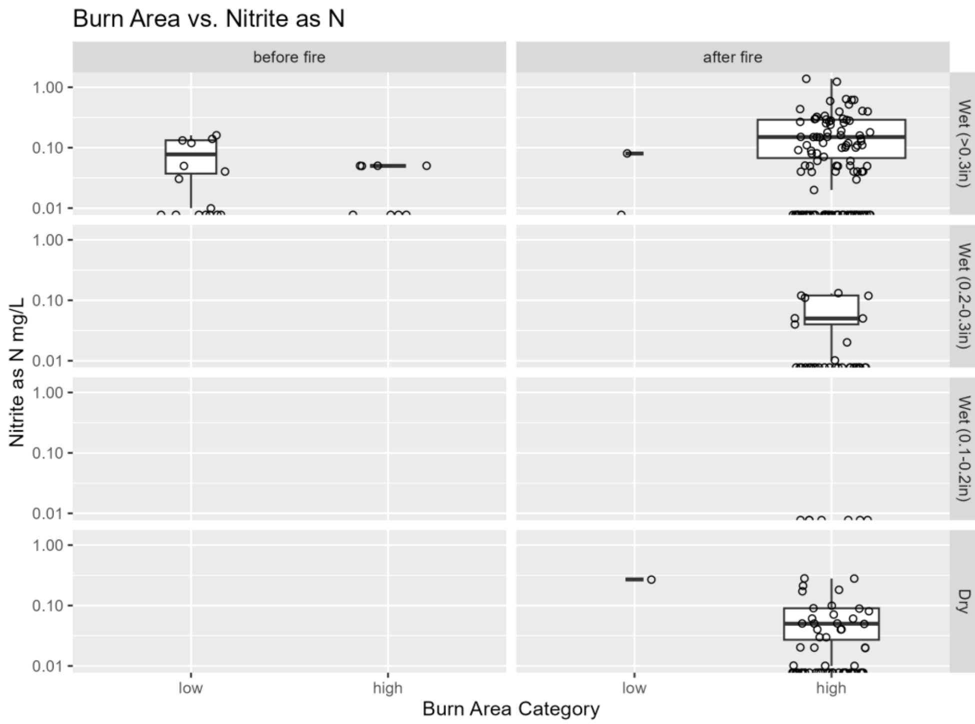


Figure 23. Box Plot of Burn Area Proportion vs. Nitrite as N

Zinc

Dissolved zinc concentrations were generally higher and more variable post-fire, with the highest concentrations in less burned drainage areas in terms of extent. Despite having a smaller sample size, there is a slightly more established trend for both particulate and total zinc concentrations, where an increase in concentration is observed post-fire and in conjunction with increasing burn area. There is also a general increase in zinc concentrations with an increase in precipitation. As observed across all heavy metals, particulate concentrations of zinc in particular demonstrated a clear increase in the post-fire samples as compared to the range before any fire impact. Figures 24 through 27 show the results for zinc in terms of burn area proportion and burn severity.

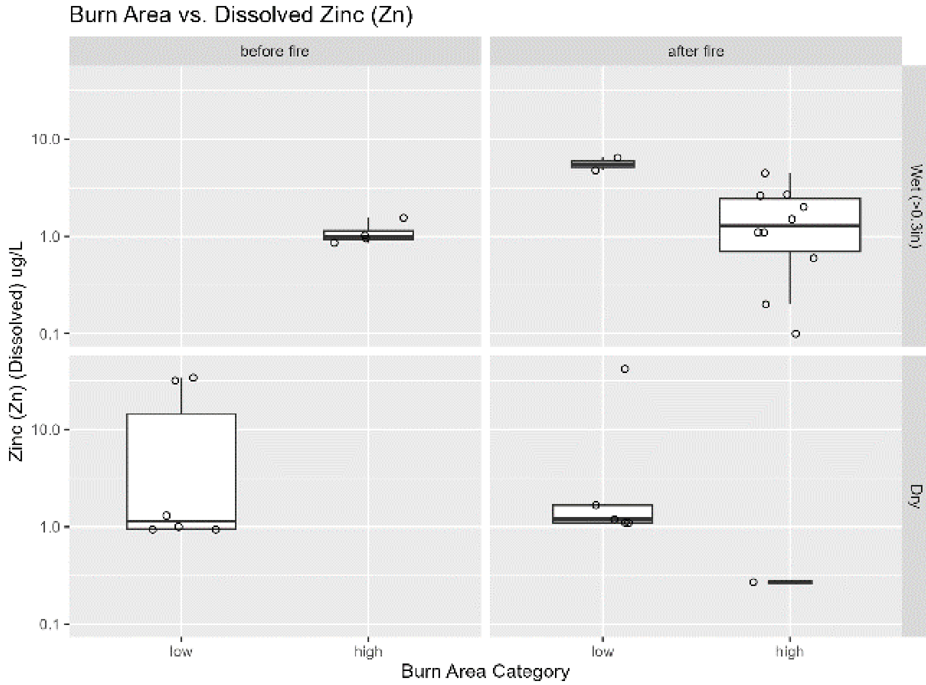


Figure 24. Box Plot of Burn Area Proportion vs. Dissolved Zinc

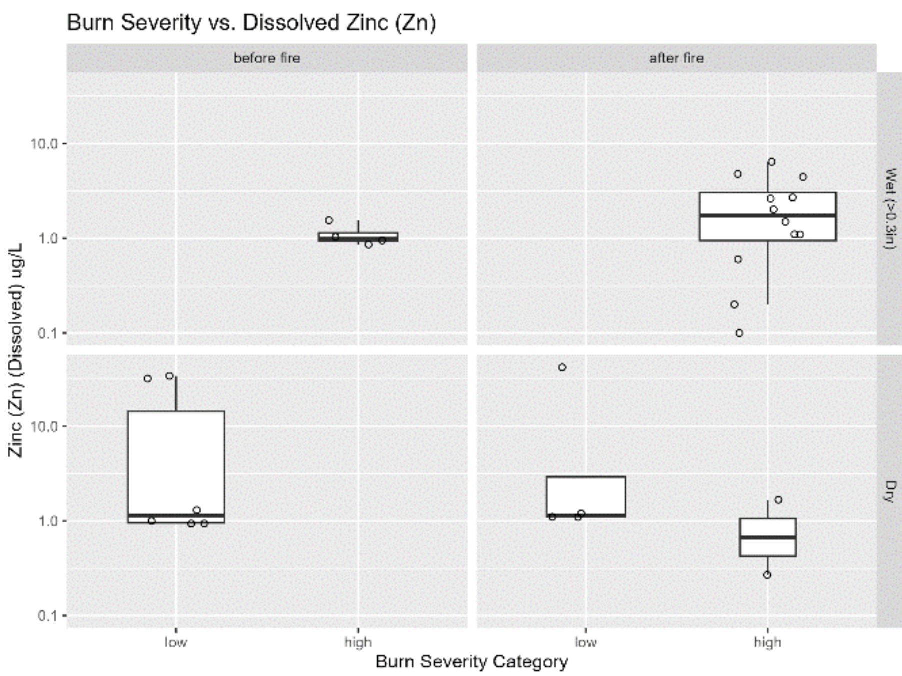


Figure 25. Box Plot of Burn Severity vs. Dissolved Zinc

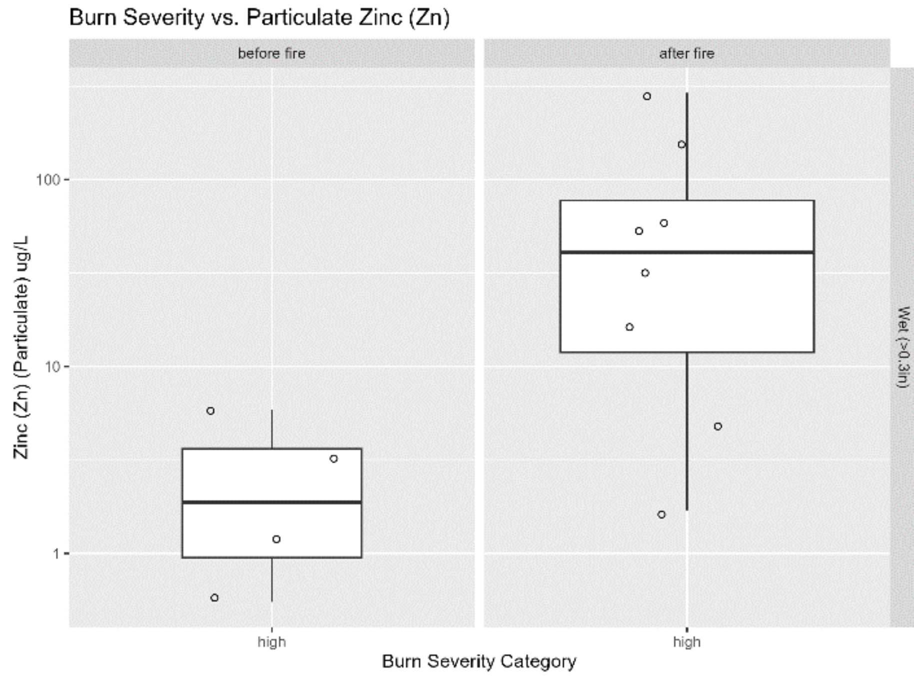


Figure 26. Box Plot of Burn Severity vs. Particulate Zinc

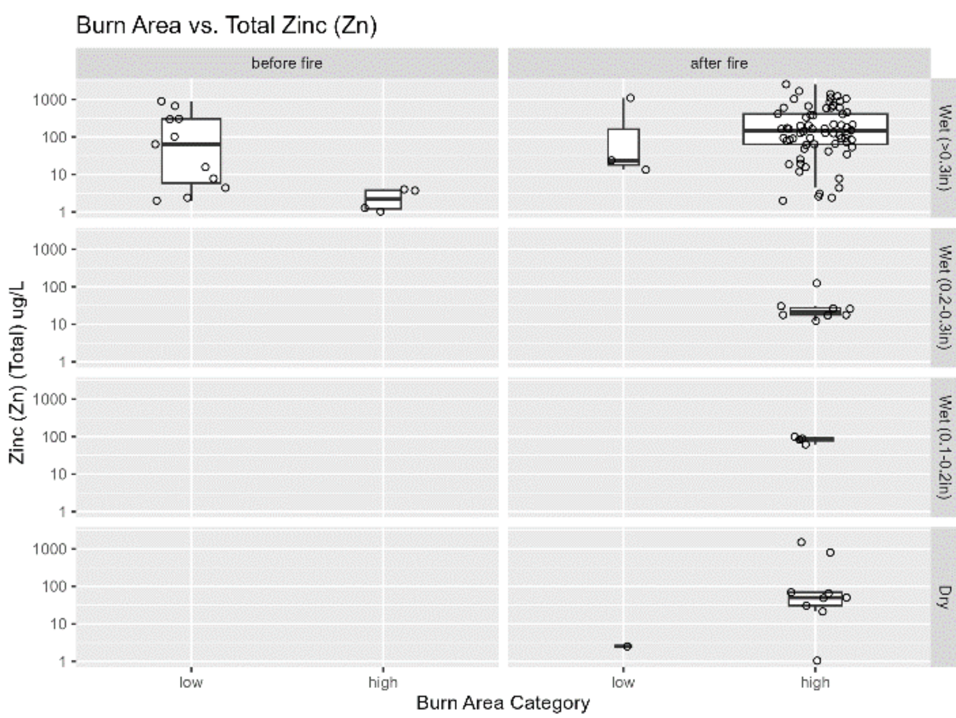


Figure 27. Box Plot of Burn Area Proportion vs. Total Zinc

Cadmium

Particulate and total cadmium concentrations increased following fire impacts, but dissolved cadmium concentrations decreased. Generally higher concentrations of cadmium were observed from low burn severity areas than from high burn severity areas. There was less of a difference in sample concentrations with burned area percentages, but a positive relationship does exist. All of these trends may be influenced by small sample size; however, the total cadmium vs. burn severity trend has more data to support it. Figures 28 through 31 show the results for cadmium in terms of burn area proportion and burn severity.

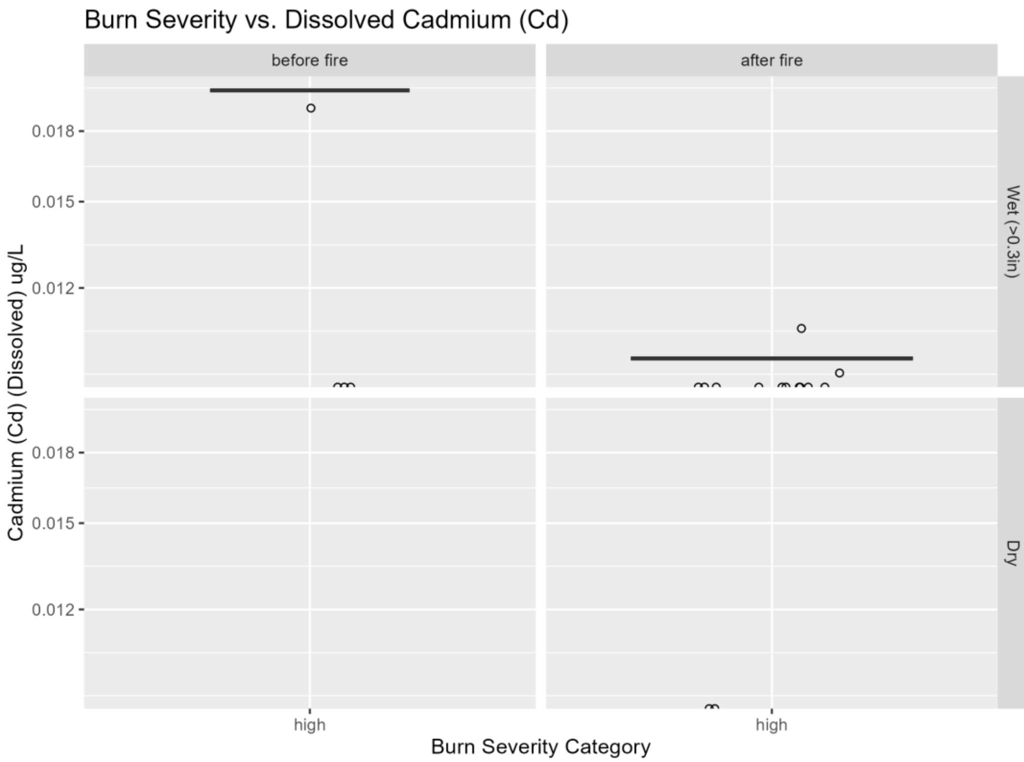


Figure 28. Box Plot of Burn Severity vs. Dissolved Cadmium

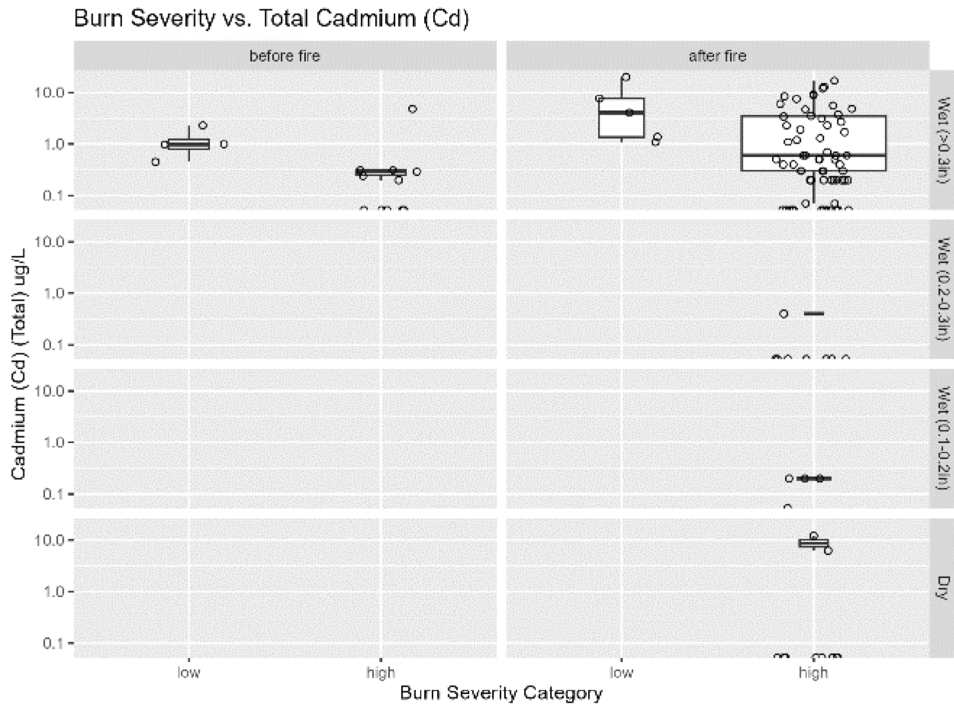


Figure 29. Box Plot of Burn Severity vs. Particulate Cadmium

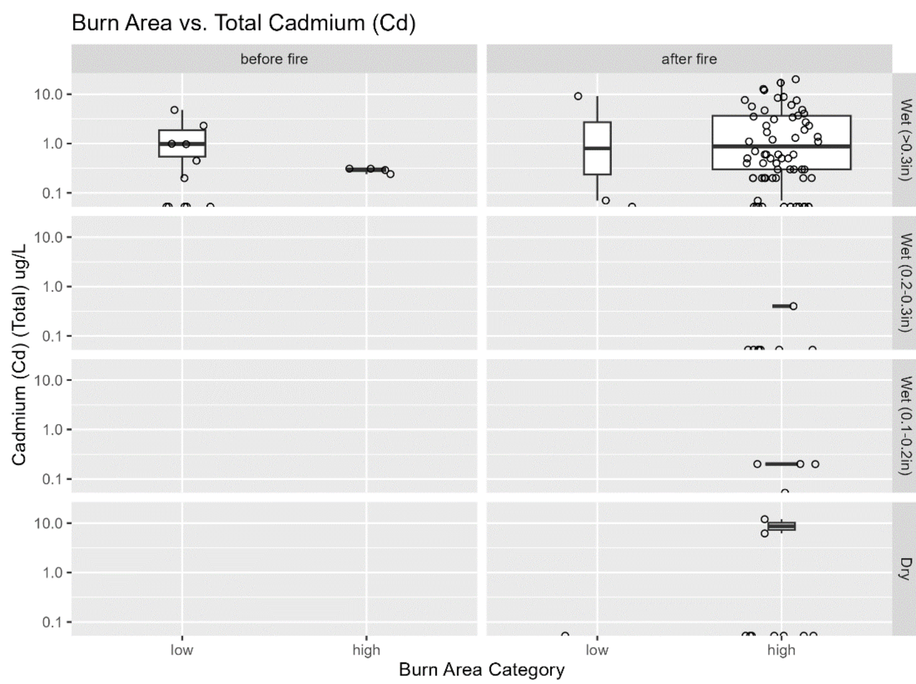


Figure 30. Box Plot of Burn Area Proportion vs. Total Cadmium

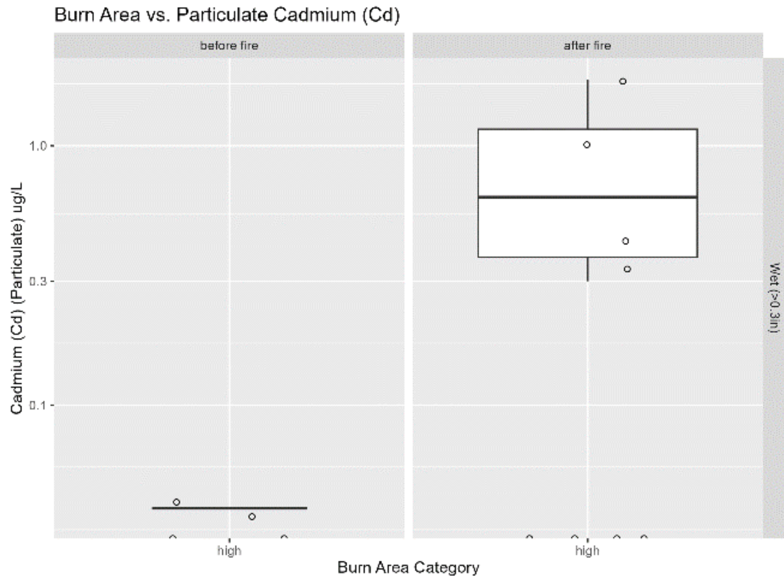


Figure 31. Box Plot of Burn Area Proportion vs. Particulate Cadmium

Lead and Copper

All combinations of lead and copper tend to increase during wet weather. The highest levels of total copper were observed in low burn severity areas, and the highest levels of total lead were observed in high burn severity areas. Burn area appears to play a much bigger role than burn severity for these metals. Increases in all fractions of both metals are observed post-fire. Figures 32 through 37 show the results for lead and copper in terms of burn area proportion and burn severity.

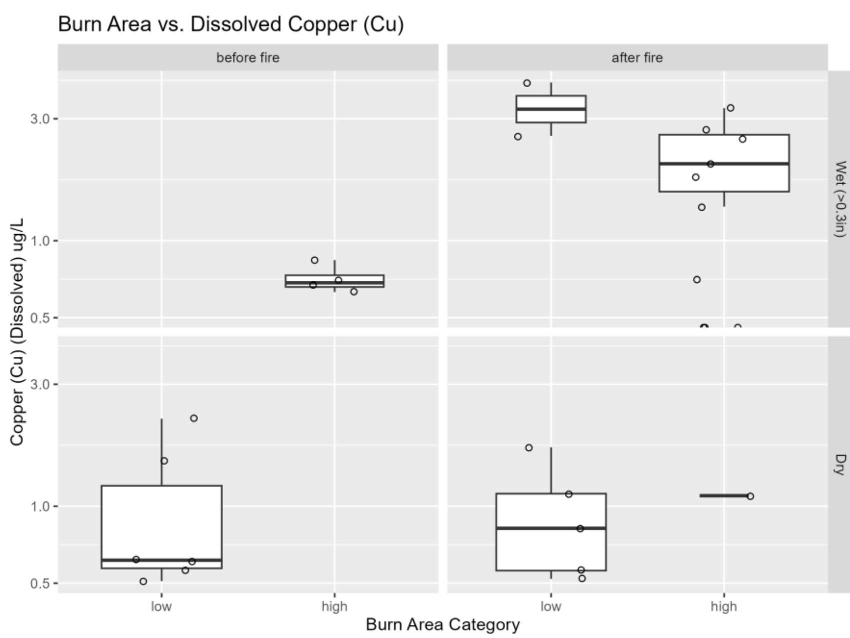


Figure 32. Box Plot of Burn Area Proportion vs. Dissolved Copper

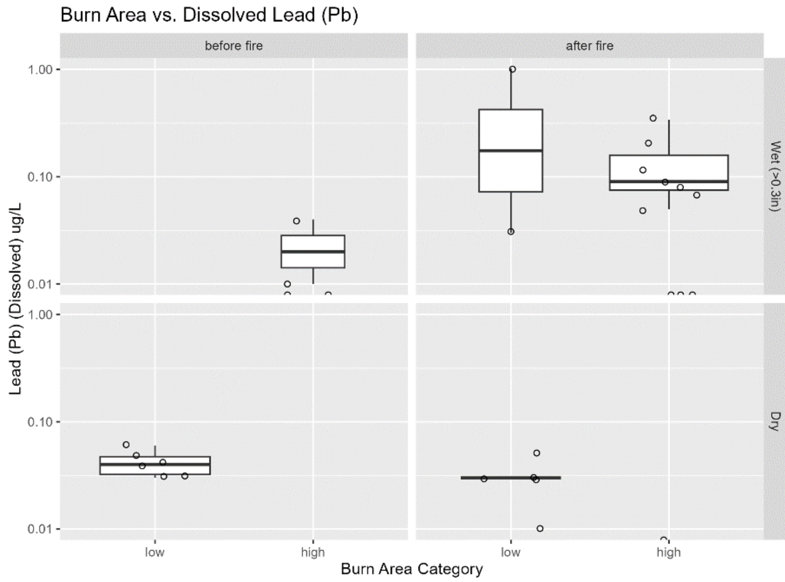


Figure 33. Box Plot of Burn Area Proportion vs Dissolved Lead

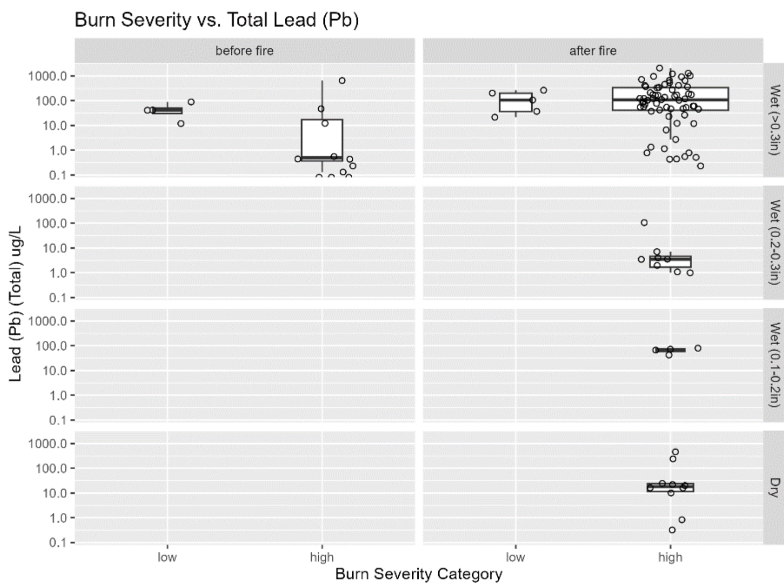


Figure 34. Box Plot of Burn Severity vs. Total Lead

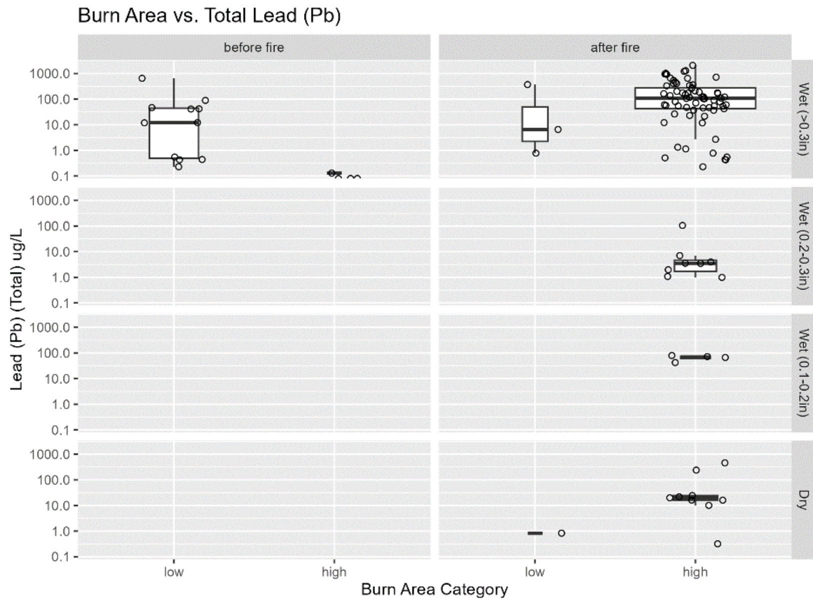


Figure 35. Box Plot of Burn Area Proportion vs. Total Lead

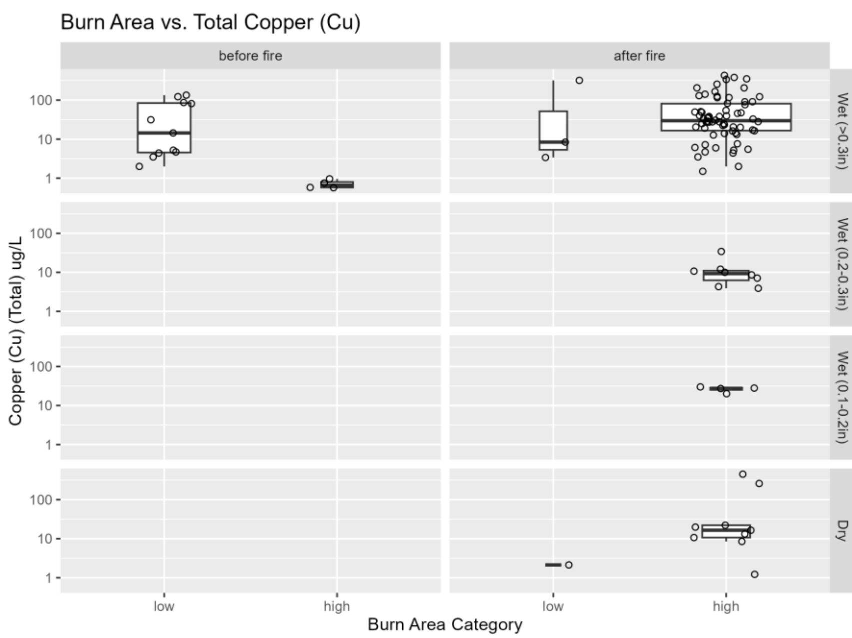


Figure 36. Box Plot of Burn Area Proportion vs. Total Copper

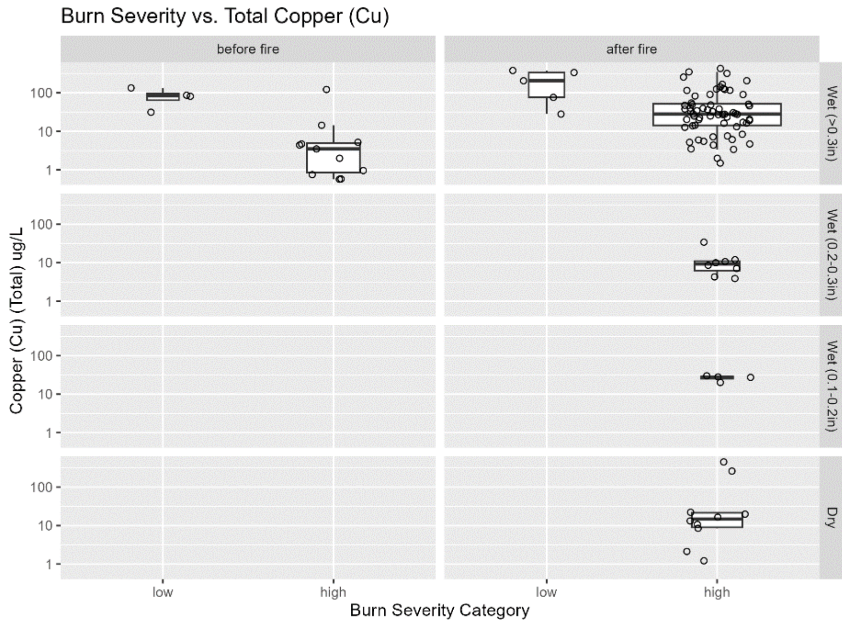


Figure 37. Box Plot of Burn Severity vs. Total Copper

General Remarks

In general, the following remarks apply to the Fire Effects Study:

- Sample sizes were limited in many cases. In addition to their size, most overrepresent or underrepresent given categories of data. Particularly, there is a bias in the dataset toward sampling during wet weather with more 0.3 inch of rain having fallen in the previous 3 days.
- Sampling efforts generally targeted post-fire, and many sites did not also have data compiled pre-fire.
- No clear linear relationships were observed with burn severity or burned area proportion across any constituent.
- General increases in pollutant concentrations were observed post-fire.

Appendix C provides all plots of the historical data analysis.

5.2 Bioassessment Data Analysis

Benthic Macroinvertebrate Community Data Analysis

The IBI assesses the biological integrity of freshwater streams in the southern California coastal region. This measurement combines seven key measures of organism abundance, diversity, sensitivity, and function into a single composite score that varies predictably in response to stressors.

The CSCI combines two indices of biological condition to assess BMI community health: (1) a predictive multi-metric index (pMMI) of biotic integrity that assesses functional attributes of the BMI community (similar to the IBI), and (2) a ratio of observed taxa at a site to the expected taxa at a site (O/E), which assesses taxonomic completeness. The combination of a pMMI and an O/E index improves the accuracy over using the two individually, because past experience has shown that both have limitations when assessing unusual BMI assemblages or sites with unique natural conditions.

Calculation of the CSCI score for an individual site is based on a comparison of the test site with a subset of reference sites within the statewide reference pool that are considered most analogous to the test site based on several natural abiotic ecological factors (i.e., latitude/longitude coordinates, site elevation, watershed topography, geology, and climate variables). CSCI scores for individual sites are then compared with the distribution of statewide reference site CSCI scores (i.e., mean score of 1.0) and placed into one of four biological condition categories based on that distribution (i.e., 1st, 10th, and 30th percentiles; Table 12).

Table 12. Biological Condition Categories for the California Stream Condition Index

Condition Category	CSCI Scoring Range
Likely Intact	≥0.92
Possibly Altered	0.79 to 0.91
Likely Altered	0.63 to 0.78
Very Likely Altered	0.0 to 0.62

CSCI = California Stream Condition Index

Table 13 summarizes selected biological metrics describing the BMI communities.

Table 13. Summary of BMI Biological Metrics of the SGVCOG Fire Effects Study Bioassessment Monitoring Sites

Site Name	North Fork San Gabriel River Downstream	North Fork San Gabriel River Upstream
Site Code	**SMC00464**	**405BH2A**
Number of Organisms Identified	512	524
Estimated Abundance/sq ft[1]	248	254
Taxa Richness	25	20
EPT Taxa Richness	12	12
Dominant Taxon	*Baetis* sp./ *Baetis adonis*	*Baetis* sp./ *Baetis adonis*
Dominant Taxon (%)	65.0	65.3
Dominant Functional Feeding Group	Collector gatherer	Collector gatherer
Dominant Functional Feeding Group (%)	76.2	76.5
Intolerant Individuals (%)	6.6	5.3
Intolerant Taxa Richness	6	5
Tolerant Individuals (%)	1.8	1.1
Shannon-Weaver Index	1.50	1.40
Hilsenhoff Biotic Index	4.36	4.61
Collector-Filterers (%)	14.1	16.6
Collector-Gatherers (%)	76.2	76.6
Predators (%)	2.0	1.3
Scrapers (%)	2.9	2.9
Shredders (%)	2.1	1.3
Other (%)	2.7	1.3

1. Estimate is based on the number of organisms in the subsample, and the sample sorted percentage.

BMI = benthic macroinvertebrate; EPT = ephemeroptera, plecoptera, and trichoptera taxa; SGVCOG = San Gabriel Valley Council of Governments; sq ft = square foot (feet); WMA = watershed management area

Stream Bioassessment Site Discussion: Preliminary Results

The discussion in this section is based on preliminary results of the bioassessment sampling; the results have not been analyzed completely at the time of this interim report. Based on the BMI communities at the two sites, there was very little difference between the upstream and downstream locations. As was intended in the Study design, both sites had similar physical habitat conditions (Figures 38 and 39), with instream habitats dominated by large rocky substrates, high current velocity and flow volume, and few aquatic macrophytes. Both were in high-quality riparian zones dominated by native vegetation with natural, near reference quality water sources. CRAM scores evaluating the instream and riparian wetland habitat quality were essentially identical at both sites (Table 14).

Table 14. Summary of BMI CRAM Scores for the SGVCOG Fire Effects Study Bioassessment Monitoring Sites

Parameter	North Fork San Gabriel River Downstream	North Fork San Gabriel River Upstream
	SMC00464	405BH2A
Stream Corridor Continuity	92	92
Hydrology	100	100
Physical Structure	88	88
Biotic Structure	83	81
Overall Site Score	91	90

SGVCOG = San Gabriel Valley Council of Governments.

Flow was still elevated at the time of sampling on June 29, 2023, after an unusually heavy storm season, and the BMI communities may not have fully recovered from the associated stormwater scour. Regardless, the BMI communities were very similar. Both sites were dominated by the mayfly, *Baetis* sp., and most of the community metric values were similar (Table 13). For example, the dominant taxon (*Baetis* sp.) composed a similar percentage of the communities at both sites, with 65.0 percent and 65.3 percent, respectively. Similarly, intolerant (i.e., sensitive) taxa richness scored 6 and 5, respectively, and percent intolerant individuals scored 6.6 percent and 5.3 percent at the downstream and upstream sites, respectively. Community-based index scores were also similar, with IBI scores of 33 downstream and 34 upstream and CSCI scores of 1.00 downstream and 0.97 upstream (Table 7). Both sites were rated as “Poor” by the IBI but were rated as “Likely Intact” (the highest quality category possible) according to the CSCI. In general, the CSCI is more accurate and is less likely than the IBI to result in false indications of nonreference conditions (Dr. Raphael Mazor, SCCWRP, personal communication). This result is because the IBI scoring system uses a fixed pool of reference sites to set its BMI community threshold criteria, whereas the CSCI adjusts its threshold expectations based on site-specific environmental parameters.

Very little difference was observed in the analytical chemistry for both sites. The only notable difference was in ash-free dry weight of benthic algae sampled (a measure of algal biomass), with results at the downstream site 1.7 times higher than results at the upstream site. However, this finding could just be a product of the sampling methodology in which samples are collected from random locations throughout each reach; without replication, it is not possible to determine whether this is a true difference in sites or an artifact of the sampling methodology.

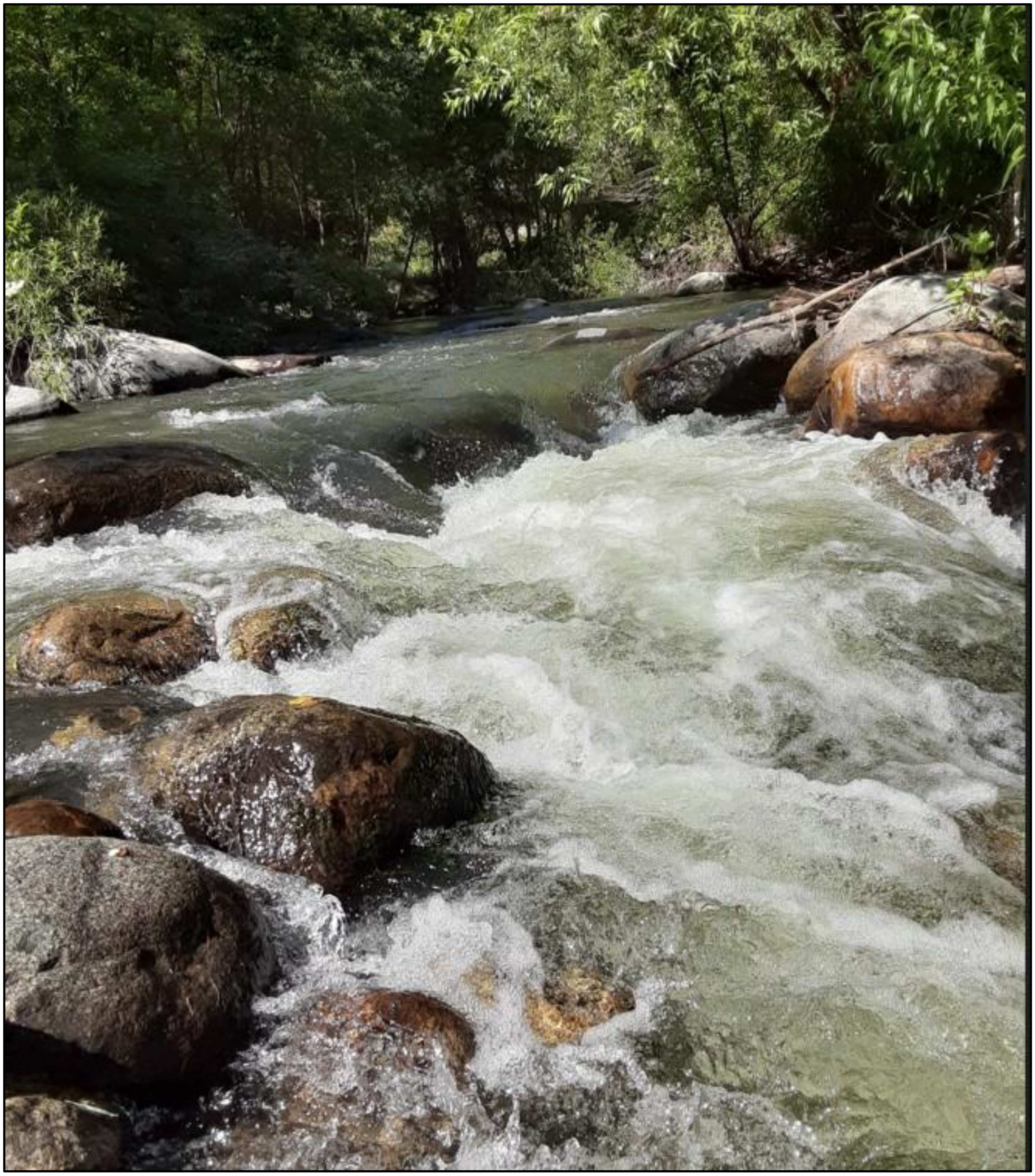


Figure 38. West Fork San Gabriel River Downstream Site SMC00464, Transect E Looking Upstream

Figure 39. West Fork San Gabriel River Upstream Site, Transect F Looking Upstream

Table 15. Summary of Chemistry Analytes for the SGVCOG Fire Effects Study Bioassessment Monitoring Sites

Analyte	Units	North Fork San Gabriel River Downstream	North Fork San Gabriel River Upstream
		SMC00464	405BH2A
Calcium, Total	mg/L	42.6	37.9
Magnesium, Total	mg/L	10.2	10.0
Aluminum, Total	µg/L	270	250
Copper, Total	µg/L	0.94	1.0
Iron, Total	µg/L	370	370
Manganese, Total	µg/L	69	85
Nickel, Total	µg/L	ND	ND
Lead, Total	µg/L	0.36	0.34
Selenium, Total	µg/L	0.092	0.086
Zinc, Total	µg/L	ND	ND
Calcium, Dissolved	µg/L	38.3	42.0
Aluminum, Dissolved	µg/L	12	10
Copper, Dissolved	µg/L	0.61	0.40
Iron, Dissolved	µg/L	20	16
Manganese, Dissolved	µg/L	62	48
Nickel, Dissolved	µg/L	ND	ND
Lead, Dissolved	µg/L	ND	ND
Selenium, Dissolved	µg/L	0.083	0.079
Zinc, Dissolved	µg/L	ND	ND
Nitrogen, Total	mg/L	0.38	0.42
Nitrate as N	mg/L	0.26	0.27
Nitrate + Nitrite as N	µg/L	260	270
Nitrite as N	µg/L	ND	ND
Phosphorus as P, Total	mg/L	0.038	0.051
Phosphorus as P, Dissolved	mg/L	0.025	0.034
Ammonia as N	mg/L	0.032	0.069
Nitrogen, Total Kjeldahl	mg/L	0.13	0.15
Hardness as CaCO3	mg/L	149	136
Total Suspended Solids	mg/L	5	6
Total Dissolved Solids	mg/L	200	190
Total PAHs	µg/L	ND	ND
Chlorophyll a (water column)	mg/m^3	ND	ND
Chlorophyll a (benthic)	mg/m^2	3.78	3.41
Ash-free Dry Weight (benthic)	mg/m^2	12,700	7,420

CaCO3 = calcium carbonate; mg/L = milligram(s) per liter; mg/m^2 = milligram(s) per square foot; mg/m^3 = milligram(s) per cubic foot; N = nitrogen; ND = not detected; P = phosphorus; PAH = polycyclic aromatic hydrocarbon; SGVCOG = San Gabriel Valley Council of Governments

Stream Bioassessment Conclusion

Overall, very little difference was observed between the two locations sampled. Biotic (BMI and algal biomass) and abiotic parameters (physical habitat and analytical chemistry) measured were essentially identical. Additionally, any degradation that might have been previously noted in the biological or chemical measures as a result of the Bobcat Fire had since abated, because all indicators sampled were in near-reference condition.

6.0 STAKEHOLDER ENGAGEMENT

The Study team sought opportunities to engage interested stakeholders in negotiating data sharing, foster inclusivity, and identify collaborators and potential funding partners (Table 16). The Study team also convened meetings to discuss the approach and findings of monitoring and modeling efforts with regulators, nongovernmental organizations, and other stakeholders. Webinars, technical stakeholder meetings, guided tours, and other forms of outreach were used. The Study team also encourages sharing Study outcomes with a broader audience of stakeholders via a website, local symposia, regional stakeholder meetings, and conferences.

Furthermore, the Study team invited Regional Board staff to participate in the Study, receive updates on progress, and provide feedback regarding the methods and findings of the Study. Regional Board input is also considered with regard to how findings can be used to achieve water quality objectives in the Los Angeles region. Regional Board staff are also invited to participate in technical stakeholder group meetings, webinars, guided tours, and other outreach.

The goal of stakeholder outreach is to share findings about wildfire impacts on water quality, coordinate with related studies, leverage potential funding sources, help promote more effective management strategies, and integrate early feedback from decision makers and interested parties on potential policy changes.

Table 16. Fire Effects Study Stakeholders

Technical Stakeholders	Affected Parties	Outcome Stakeholders	General Outreach
SCCWRP Established 1969 Forest Service U.S. Department of Agriculture Academic University USGS science for a changing world	California Water Boards State Water Resources Control Board Regional Water Quality Control Boards California Water Boards Los Angeles - R4 ULAR	National Park Service California Department of Forestry & Fire Protection CAL FIRE Since 1885 TreePeople	Audubon Nature For All Protect • Create • Connect

SCCWRP= Southern California Coastal Water Research Project; USGS = Unites States Geological Survey; ULAR = Upper Los Angeles River

6.1 Regional Engagement and Public Outreach

The Study team has met with the Technical Advisory Committee (TAC) on a semi-monthly basis as needed. Meetings are held when there are sufficient Study updates. These meetings are opportunities for partnering agencies of the ULAR WMG to keep up with the latest Study progress and provide feedback.

Meeting Dates

Meetings were held on the following dates:

- September 22, 2022
- November 16, 2022
- January 18, 2023
- April 19, 2023
- July 19, 2023
- September 27, 2023

Introductory Technical Stakeholder Group Meeting

On April 11, 2023, the Study team convened the first Technical Stakeholder Group (TSG) virtual meeting. The meeting had 47 attendees. Efforts were made to include a wide variety of stakeholders diverse backgrounds and affiliations.

The goals of his meeting were as follows:

- Provide an overview of the project objectives, methodologies, and expected outcomes of the Study.
- Involve technical stakeholders to share expertise and data about the impact of wildfires on water quality.
- Involve technical stakeholders to leverage efforts and coordinate closely related studies.
- Share Study progress and results with stakeholders to promote knowledge on the impacts of wildfires on water quality and develop effective management strategies.
- Integrate early feedback from decision makers and interested parties on potential policy changes related to wildfire impacts.
- Encourage attendees to establish connections with the Study team and foster opportunities for collaboration, knowledge sharing, and data exchange.

6.2 Other Engagement

The Study team has also reached out to a variety of stakeholders conducting similar studies of the effects fire on the watershed to foster opportunities to collaborate. The Study team has met with the following groups or individuals:

- California State University – Council on Ocean Affairs, Science, and Technology (COAST) program directors
- Ken Susilo (Geosyntec)
  - March 16, 2023

- SCCWRP
  - September 17, 2022
  - November 14, 2022
  - March 30, 2023
  - June 19, 2023
- CalFire
  - July 6, 2023

2023 State of the Los Angeles River Watershed Symposium

On September 19, 2023, the Study team was invited to participate in the 2023 State of the Los Angeles River Watershed Symposium (SOW), which was hosted by the Council for Watershed Health (CWH) and held at the Autry Museum of the American West. The Study team was featured in a dedicated breakout session titled "*After the Blaze: Assessing Fire's Impact on Streams, Wildlife, and Water Quality*" (Figure 40). During this session, the Study team delivered a presentation to provide a Study overview, progress, and preliminary findings and insights.

Following the presentations, the panel of speakers engaged with the audience, addressing their questions and facilitating a dynamic exchange of ideas. The breakout session attracted an audience of more than 40 participants, and it was marked by lively discussions and a notable expression of interest in the Study. The opportunity to present at the 2023 SOW Symposium provided valuable exposure for the Study effort and has created a promising avenue for future collaborations.

6.3 Regulatory Support Progress

Quarterly Regional Board Meetings

The Study team has met with the Regional Board on a quarterly basis. These meetings serve as a valuable platform for the Study team to provide updates on the progress of the research and to solicit the input of the Regional Board regarding the potential regulatory actions that may be informed by the outcomes of the Study.

Meeting Dates

Meetings were held on the following dates:

- September 27, 2023
- January 11, 2023
- April 18, 2023
- July 12, 2023
- October 11, 2023

Figure 40. State of the Los Angeles River Watershed Symposium Breakout Session

Upper Photo: Project manager presenting to breakout session attendees. Lower photo: Breakout session panel discussion (from left to right: Matt Rich (WSP USA Environment & Infrastructure Inc.); Pete Wohlgemuth (United States Forest Service); Scott Hauswirth, Ph.D. (California State University Northridge); and Katy Delaney, Ph.D. (National Park Service).

7.0 NEXT STEPS

The Study will continue through December 2024. Continued efforts and next steps are described below.

7.1 Quarterly and Annual Reporting

Quarterly and annual reports will continue to be submitted on the Safe, Clean Water Program (SCWP) quarterly reporting portal for the ULAR and Rio Hondo WASCs. Each quarterly and annual report will include an update on the project schedule, metrics and targets, activities completed, and expenditures during the reporting period, if applicable.

7.2 Monitoring

The Study team will continue fire watch efforts to identify qualifying wildfires within the ULAR WMA that would contribute discharges to water bodies in the ULAR watershed and demonstrate measurable impacts on water quality. The Study team will mobilize for rapid response monitoring if a suitable wildfire occurs. If no new wildfires occur within or near the Study area, the Study team will continue to monitor the stations described in Section 3.1.1 to assess impacts of the Bobcat Fire and evaluate changes in water quality over time.

7.3 Modeling

The results of the historical data analysis will be used to establish subwatershed and HRU-specific parameter sets in the LSPC watershed model representing the range of post-fire scenarios characterized. Each scenario combination will be run and summarized for changes to baseline runoff and pollutant loading. Next, the post-fire scenarios will be layered with updated weather inputs based on the climate change scenarios characterized. Each of these will also be run and summarized for changes to baseline runoff and pollutant loading for a full range of potential implications. The modeling methodologies and results will be summarized as part of the Final Report. The changing baseline pollutant loads under the post-fire and climate change scenarios are intended to support meaningful engagement with regulators regarding appropriate post-fire numeric goals (specifically related to nutrients and metals) for the MS4 Permittees that are still protective of receiving waters beneficial uses but realistic under the influence of such environmental factors.

The list of representative structural control measures for the Fire Effects Model will be finalized in coordination with the Technical Advisory Committee. Once finalized, the updated watershed model outputs from the post-fire and climate change scenarios will be used to run through the python-based BMP models representing the selected projects. The changes to a project’s estimated pollutant load reductions across each scenario will be summarized. The modeling methodologies and results will be summarized in a post-fire BMP performance report. The range of BMP performance results will be used to help recommend more resilient BMP designs for cost-effective approaches considering potential fire cases and projected climate change.

7.4 Stakeholder Engagement

Continuing Efforts

As the Study progresses, existing engagement efforts with the TAC and Regional Board will remain consistent and follow their established regular schedules. The Study team will continue to provide regular updates and incorporate feedback for the Study.

Additionally, the SGVCOG maintains a website to make information about the study available to the public. Appendix D provides an updated Study Fact Sheet that includes updates on Year 1 efforts, which will be available on the website.

Fall 2023 Technical Stakeholder Group Meeting

Another TSG meeting is scheduled for November 2023. In contrast to the previous meeting, the TAC is interested in holding this meeting in person with a virtual option. During this meeting, the primary objectives include the following:

- Provide interim updates on the progress of the research, highlighting significant milestones, findings, and developments since the previous TSG meeting.
- Present updates on the modeling work undertaken, share insights into the methodologies used, and discuss any noteworthy outcomes or adjustments.
- Actively encourage and solicit feedback from TSG members, aiming to incorporate their insights and recommendations into the interim report and ongoing research efforts.

Stakeholder Tour of Lakes and Historical Burn Sites in the ULAR Watershed

A stakeholder tour of lakes and historical burn sites is being considered. The intent of the tour is to provide stakeholders with firsthand exposure to the impact of real-life best management practices on landscape transformation and their potential influence on modeling efforts. Sites suggested by the TAC, TSG, and other stakeholders have been collected.

Final Report Presentation

At the end of the Study, the Study team will organize a final report presentation webinar. During this event, the team will comprehensively discuss the definitive findings and outcomes of the Study research. Significantly, an open invitation will be extended to the public, offering a valuable opportunity for a diverse audience to access insights into the Study results and their broader implications. Public participation and engagement is encouraged. Further details regarding the date, time, and registration for this webinar will be communicated before the event.

Draft Los Angeles County Water Plan

The Los Angeles County Water Plan (CWP) focuses on achieving regional water resilience through collaborative strategies with more than 200 agencies partnering to manage the complexities of the region's water systems and the needs of the communities and environment. The CWP is based on a framework of targets and strategies supported by specific actions.

One of the CWP's 12 strategies for achieving water resilience is mitigating wildfire effects on water supply and water quality through the following actions:

- Organize a regional wildfire prevention collective.
- Create a programmatic permitting tool/process with the United States Army Corps of Engineers for the 404 permit.
- Enhance low-water-use landscaping education programs.
- Collaborate on identifying and pursuing funding opportunities.
- Enhance existing hazard mitigation plans to include regional fire management strategies.
- Advocate for modifications to existing air quality regulations.
- Explore potential land, trail, and forestry management efforts.
- Support exploration of alternatives to fire retardants that contain per- and polyfluoroalkyl substances (PFAS)/ perfluorooctanoic acid (PFOA).

This Study helps further the understanding of post-fire impacts by providing data on pollutant loading from wildfires and other downstream impacts and predictive models that factor land use changes, environmental changes due to wildfires, and climate change scenarios. These resources can inform management on how to best prepare for wildfires and support fire mitigation strategies. Considering that the CWP and this Study aim to achieve similar goals, there may be opportunities for collaboration.

8.0 CONCLUSION AND RECOMMENDATIONS

This Study will continue to review existing data and collect new data to characterize wildfire impacts on water quality, generate predictive models that illustrate water quality changes and BMP effectiveness because of wildfire conditions and climate change scenarios, engage stakeholders, including potential project partners and regulators, and educate the public about wildfire impacts.

This approach will continue to be implemented to achieve the goals set forth in the SCWP, including improving water quality and attaining water quality requirements, leveraging other funding sources to maximize the goals of the SCWP, implementing new technologies and practices, and investing in independent research.

Benefits of the Study include development of effective and resilient environmental management strategies that adapt to the changing landscape of the Los Angeles region. These management strategies will be informed by the data and models developed for the Study and the regional collaboration initiated by the Study team with stakeholders and the public.

A recommendation to this Study's water quality monitoring efforts would be to install automated sampling equipment at monitoring sites. However, permitting and access limitations have prevented the installation of automated sampling equipment, and these types of permissions may not be granted within the timeframe needed to collect wet weather samples.

9.0 REFERENCES

Collins, J.N., E.D. Stein, M. Sutula, R. Clark, A.E. Fetscher, L. Grenier, C. Grosso, and A. Wiskind. 2013. *California Rapid Assessment Method (CRAM) for Wetlands*. Volume 6.1. 157 pp. Available at: http://www.cramwetlands.org/

Mazor, R.D., A. Rehn, P.R. Ode, M. Engeln, K. Schiff, E. Stein, D. Gillett, D. Herbst, C.P. Hawkins. 2016. Bioassessment in complex environments: Designing an index for consistent meaning in different settings. Freshwater Science 35(1):249–271.

National Aeronautics and Space Administration (NASA) Earth Observatory. 2020. *Bobcat Fire Scorches Southern California*. Available at: Bobcat Fire Scorches Southern California (nasa.gov).

Ode P.R., A.C. Rehn, and J.T. May. 2005. A Quantitative Tool for Assessing the Integrity of Southern Coastal California Streams. In *Environmental Management*. 35(1):1–13.

Ode, P.R., A.E. Fetscher, and L.B. Busse. 2016. *Standard Operating Procedures for the Collection of Field Data for Bioassessments of California Wadeable Streams: Benthic Macroinvertebrates, Algae, and Physical Habitat*. California State Water Resources Control Board Surface Water Ambient Monitoring Program (SWAMP) Bioassessment Standard Operating Procedure 004.

Richards, A. and C. Rogers. 2011. *List of Macroinvertebrate Taxa from California and Adjacent States and Ecoregions; and Standard Taxonomic Effort*. Accessed at: http://www.safit.org/Docs/STE_1_March_2011_7MB.pdf. Edited by A. Richards and D. Rogers. March 2011.

Leecaster, M., S. Kenneth, and Tiefenthaler, L. 2000. *Assessment of Efficient Sampling Designs for Urban Stormwater Monitoring*. March 2002. Revised July 1, 2001. Accessed at: https://www.sciencedirect.com/science/article/abs/pii/S0043135401003530

Li, S. and T. Banerjee. 2021. *Spatial and temporal pattern of wildfires in California from 2000 to 2019*. Sci Rep 11, 8779. https://doi.org/10.1038/s41598-021-88131-9

Stein E.D., J.S. Brown, T.S. Hogue, M.P. Burke, and A. Kinoshita. Stormwater contaminant loading following southern California wildfires. *Environ Toxicol Chem*. 2012 Nov;31(11):2625-38. doi: 10.1002/etc.1994. Epub 2012 Sep 18. PMID: 22927117.

Southern California Coastal Water Research Project (SCCWRP). 2009. *Effects of Post-fire Runoff on Surface Water Quality: Development of a Southern California Regional Monitoring Program with Management Questions and Implementation Recommendations*. Technical Report 598 - August 2009.

Surface Water Ambient Monitoring Program (SWAMP). 2016. State Water Resources Control Board.

United States Environmental Protection Agency (USEPA). 2017. *U.S. EPA Interim Revised NPDES Inspection Manual: Chapter 5 – Sampling*. EPA 305-K-17-001.

United States Environmental Protection Agency (USEPA). 1996. *Method 1669, Sampling Ambient Water for Trace Metals at EPA Water Quality Criteria Levels*. July 1996.

WSP USA Environment & Infrastructure (previously Wood Environment and Infrasturcture) et al. 2023. Upper Los Angeles River Watershed Management Area-Fire Effects Study. Work Plan and Quality Assurance Project Plan. Submitted to the SGVCOG. Final November 2022. Amended March 2023.

Woodward, M.E., J. Slusark, and P.R. Ode. 2012. *SWAMP Bioassessment Procedure 2012. Standard Operating Procedures for Laboratory Processing and Identification of Benthic Macroinvertebrates in California*. October 2012. Available at: http://www.waterboards.ca.gov/water_issues/programs/swamp/docs/bmi_lab_sop_final.pdf.

Appendix A. Laboratory Reports

Appendix B. Data Quality Assurance/Quality Control

Appendix C. Historical Data Analysis Modeling Box Plots

Appendix D. Fire Effects Study Webpage

Dry Weather Water Quality Data

WECK LABORATORIES, INC.

Certificate of Analysis

FINAL REPORT

Work Orders:	2L08112	**Report Date:**	1/09/2023
		Received Date:	12/8/2022
Project:	SGVCOG Fire Effects Study	**Turnaround Time:**	Normal
		Phones:	(858) 514-7797
		Fax:	(858) 278-5300
Attn:	Dylan Cawthorne	**P.O. #:**	
Client:	WSP USA E&I Inc. - San Diego 9177 Sky Park Court, Ste A San Diego, CA 92123	**Billing Code:**	

DoD-ELAP ANAB #ADE-2882 • DoD-ISO ANAB # • ELAP-CA #1132 • EPA-UCMR #CA00211 • HW-DOH #4047 • ISO17025 ANAB #L2457.01 • LACSD #10143 • NELAP-OR #4047

This is a complete final report. The information in this report applies to the samples analyzed in accordance with the chain-of-custody document. Weck Laboratories certifies that the test results meet all requirements of TNI unless noted by qualifiers or written in the Case Narrative. This analytical report must be reproduced in its entirety.

Dear Dylan Cawthorne,

Enclosed are the results of analyses for samples received 12/08/22 with the Chain-of-Custody document. The samples were received in good condition, at 4.8 °C and on ice. All analyses met the method criteria except as noted in the case narrative or in the report with data qualifiers.

Reviewed by:

Chris Samatmanakit
Project Manager

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FINAL REPORT

WSP USA E&I Inc. - San Diego
9177 Sky Park Court, Ste A
San Diego, CA 92123

Project Number: SGVCOG Fire Effects Study

Project Manager: Dylan Cawthorne

Reported: 01/09/2023 10:46

Sample Summary

Sample Name	Sampled By	Lab ID	Matrix	Sampled	Qualifiers
F_193_R-FES-D1-120822-P	Client	2L08112-01	Water	12/08/22 07:15	
F_194B_R-FES-D1-120822-P	Client	2L08112-02	Water	12/08/22 08:04	
ARCAD_WA_CON-FES-D1-120822-P	Client	2L08112-03	Water	12/08/22 09:15	
ARCAD_WA_CON-FES-D1-120822-D	Client	2L08112-04	Water	12/08/22 09:15	

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9177 Sky Park Court, Ste A
San Diego, CA 92123

Project Number: SGVCOG Fire Effects Study

Project Manager: Dylan Cawthorne

Reported: 01/09/2023 10:46

Sample Results

Sample: F_193_R-FES-D1-120822-P   Sampled: 12/08/22 7:15 by Client

2L08112-01 (Water)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods							
Method: EPA 350.1			**Instr:** AA06				
Batch ID: W2L0971 **Preparation:** _NONE (WETCHEM)			**Prepared:** 12/13/22 11:52				**Analyst:** ymt
Ammonia as N	**0.033**	0.017	0.10	mg/l	1	12/15/22	J
Method: EPA 351.2			**Instr:** AA06				
Batch ID: W2L1245 **Preparation:** _NONE (WETCHEM)			**Prepared:** 12/15/22 11:39				**Analyst:** YMT
TKN	**1.7**	0.13	0.20	mg/l	1	12/19/22	
Method: EPA 353.2			**Instr:** AA01				
Batch ID: W2L0757 **Preparation:** _NONE (WETCHEM)			**Prepared:** 12/09/22 17:05				**Analyst:** ism
Nitrate as N	**0.086**	0.040	0.20	mg/l	1	12/09/22 18:15	FILT, J
Nitrite as N	ND	42	100	ug/l	1	12/09/22 18:15	FILT
Method: SM 2540C			**Instr:** OVEN01				
Batch ID: W2L1062 **Preparation:** _NONE (WETCHEM)			**Prepared:** 12/14/22 09:45				**Analyst:** tmp
Total Dissolved Solids	**540**	4.0	10	mg/l	1	12/14/22	
Method: SM 2540D			**Instr:** OVEN15				
Batch ID: W2L0904 **Preparation:** _NONE (WETCHEM)			**Prepared:** 12/13/22 09:30				**Analyst:** mes
Total Suspended Solids	**26**		5	mg/l	1	12/13/22	
Hexavalent Chromium by IC							
Method: EPA 218.6			**Instr:** LC13				
Batch ID: W2L1136 **Preparation:** _NONE (LC)			**Prepared:** 12/14/22 14:30				**Analyst:** pjs
Chromium 6+	**0.43**	0.0079	0.020	ug/l	1	12/14/22	
Chromium 6+, Dissolved	**0.48**	0.0079	0.020	ug/l	1	12/14/22	
Metals by EPA 200 Series Methods							
Method: Calculation			**Instr:** [CALC]				
Batch ID: [CALC] **Preparation:** [CALC]			**Prepared:** 12/14/22 12:13				**Analyst:** kvm
Hardness as CaCO3, Total	**409**	0.219	3.31	mg/l	1	12/15/22	
Method: EPA 200.7			**Instr:** ICP03				
Batch ID: W2L1115 **Preparation:** EPA 200.2			**Prepared:** 12/14/22 12:13				**Analyst:** kvm
Calcium, Total	**112**	0.0234	0.500	mg/l	1	12/15/22	
Magnesium, Total	**31.1**	0.0390	0.500	mg/l	1	12/15/22	
Phosphorus, Dissolved	**0.027**	0.018	0.050	mg/l	1	12/15/22	J
Phosphorus, Total	**0.13**	0.018	0.050	mg/l	1	12/15/22	
Method: EPA 200.8			**Instr:** ICPMS06				
Batch ID: W2L1122 **Preparation:** EPA 200.2			**Prepared:** 12/14/22 15:50				**Analyst:** tyc
Aluminum, Dissolved	**57**	4.4	20	ug/l	1	12/15/22	
Aluminum, Total	**1200**	4.4	20	ug/l	1	12/15/22	
Antimony, Dissolved	**0.73**	0.089	0.50	ug/l	1	12/15/22	
Antimony, Total	**0.80**	0.089	0.50	ug/l	1	12/15/22	
Arsenic, Dissolved	**3.4**	0.074	0.40	ug/l	1	12/15/22	

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Project Number: SGVCOG Fire Effects Study

Project Manager: Dylan Cawthorne

Reported: 01/09/2023 10:46

Sample Results

(Continued)

Sample: F_193_R-FES-D1-120822-P — Sampled: 12/08/22 7:15 by Client

2L08112-01 (Water)

(Continued)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Metals by EPA 200 Series Methods (Continued)							
Method: EPA 200.8 — **Instr:** ICPMS06							
Batch ID: W2L1122 — **Preparation:** EPA 200.2 — **Prepared:** 12/14/22 15:50 — **Analyst:** tyc							
Arsenic, Total	**4.2**	0.074	0.40	ug/l	1	12/15/22	
Beryllium, Dissolved	ND	0.062	0.10	ug/l	1	12/15/22	
Beryllium, Total	**0.084**	0.029	0.10	ug/l	1	12/15/22	J
Cadmium, Dissolved	ND	0.042	0.20	ug/l	1	12/15/22	
Cadmium, Total	ND	0.042	0.20	ug/l	1	12/15/22	
Chromium, Dissolved	**0.49**	0.089	0.20	ug/l	1	12/15/22	
Chromium, Total	**1.4**	0.089	0.20	ug/l	1	12/15/22	
Copper, Dissolved	**4.8**	0.23	0.50	ug/l	1	12/15/22	
Copper, Total	**7.9**	0.23	0.50	ug/l	1	12/15/22	
Iron, Dissolved	**71**	3.9	20	ug/l	1	12/15/22	
Iron, Total	**1300**	3.9	20	ug/l	1	12/15/22	
Lead, Dissolved	**0.29**	0.083	0.20	ug/l	1	12/15/22	
Lead, Total	**4.6**	0.083	0.20	ug/l	1	12/15/22	
Nickel, Dissolved	**1.4**	0.16	2.0	ug/l	1	12/15/22	J
Nickel, Total	**2.2**	0.16	2.0	ug/l	1	12/15/22	
Selenium, Dissolved	**0.15**	0.067	0.40	ug/l	1	12/15/22	J
Selenium, Total	**0.17**	0.067	0.40	ug/l	1	12/15/22	J
Silver, Dissolved	ND	0.030	0.20	ug/l	1	12/15/22	
Silver, Total	ND	0.13	0.20	ug/l	1	12/15/22	
Thallium, Dissolved	ND	0.021	0.20	ug/l	1	12/15/22	
Thallium, Total	ND	0.021	0.20	ug/l	1	12/15/22	
Zinc, Dissolved	**1.9**	0.80	10	ug/l	1	12/15/22	J
Zinc, Total	**6.2**	1.7	10	ug/l	1	12/15/22	J
Method: EPA 245.1 — **Instr:** HG03							
Batch ID: W2L1127 — **Preparation:** EPA 245.1 — **Prepared:** 12/14/22 13:21 — **Analyst:** KVM							
Mercury, Dissolved	ND	0.037	0.050	ug/l	1	12/15/22	
Mercury, Total	ND	0.037	0.050	ug/l	1	12/15/22	
Semivolatile Organics - Low Level by Tandem GC/MS/MS							
Method: EPA 625.1 — **Instr:** GCMS15							
Batch ID: W2L1204 — **Preparation:** EPA 3535/SPE — **Prepared:** 12/15/22 08:26 — **Analyst:** EFC							
Acenaphthene	ND	6.0	25	ng/l	1	12/20/22	M-02
Acenaphthylene	ND	5.0	25	ng/l	1	12/20/22	M-02
Anthracene	ND	5.5	25	ng/l	1	12/20/22	M-02
Benzo (a) anthracene	ND	4.6	25	ng/l	1	12/20/22	M-02
Benzo (a) pyrene	ND	4.8	25	ng/l	1	12/20/22	M-02
Benzo (b) fluoranthene	ND	8.0	25	ng/l	1	12/20/22	M-02

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Project Number: SGVCOG Fire Effects Study

Project Manager: Dylan Cawthorne

Reported: 01/09/2023 10:46

Sample Results

(Continued)

Sample: F_193_R-FES-D1-120822-P — Sampled: 12/08/22 7:15 by Client

2L08112-01 (Water) — (Continued)

Semivolatile Organics - Low Level by Tandem GC/MS/MS (Continued)

Method: EPA 625.1 — **Instr:** GCMS15

Batch ID: W2L1204 — **Preparation:** EPA 3535/SPE — **Prepared:** 12/15/22 08:26 — **Analyst:** EFC

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Benzo (g,h,i) perylene	ND	5.0	25	ng/l	1	12/20/22	M-02
Benzo (k) fluoranthene	ND	6.0	25	ng/l	1	12/20/22	M-02
Chrysene	ND	7.0	25	ng/l	1	12/20/22	M-02
Dibenzo (a,h) anthracene	ND	6.0	25	ng/l	1	12/20/22	M-02
Fluoranthene	ND	7.5	25	ng/l	1	12/20/22	M-02
Fluorene	ND	5.5	25	ng/l	1	12/20/22	M-02
Indeno (1,2,3-cd) pyrene	ND	4.8	25	ng/l	1	12/20/22	M-02
Naphthalene	**34**	16	25	ng/l	1	12/20/22	B, M-02
Phenanthrene	ND	15	25	ng/l	1	12/20/22	M-02
Pyrene	ND	7.0	25	ng/l	1	12/20/22	M-02
Surrogate(s)							
1,3-Dimethyl-2-nitrobenzene	*85%*	*Conc: 425*	*62-120*			*12/20/22*	
Perylene-d12	*80%*	*Conc: 402*	*36-120*			*12/20/22*	

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Project Number: SGVCOG Fire Effects Study

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Reported: 01/09/2023 10:46

Sample Results

(Continued)

Sample: F_194B_R-FES-D1-120822-P
2L08112-02 (Water)

Sampled: 12/08/22 8:04 by Client

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods							
Method: EPA 350.1			**Instr:** AA06				
Batch ID: W2L0971 — **Preparation:** _NONE (WETCHEM)			**Prepared:** 12/13/22 11:52				**Analyst:** ymt
Ammonia as N	**0.044**	0.017	0.10	mg/l	1	12/15/22	J
Method: EPA 351.2			**Instr:** AA06				
Batch ID: W2L1245 — **Preparation:** _NONE (WETCHEM)			**Prepared:** 12/15/22 11:39				**Analyst:** YMT
TKN	**2.0**	0.13	0.20	mg/l	1	12/19/22	
Method: EPA 353.2			**Instr:** AA01				
Batch ID: W2L0757 — **Preparation:** _NONE (WETCHEM)			**Prepared:** 12/09/22 17:05				**Analyst:** ism
Nitrate as N	ND	0.040	0.20	mg/l	1	12/09/22 17:57	FILT
Nitrite as N	ND	42	100	ug/l	1	12/09/22 17:57	FILT
Method: SM 2540C			**Instr:** OVEN01				
Batch ID: W2L1062 — **Preparation:** _NONE (WETCHEM)			**Prepared:** 12/14/22 09:45				**Analyst:** tmp
Total Dissolved Solids	**410**	4.0	10	mg/l	1	12/14/22	
Method: SM 2540D			**Instr:** OVEN15				
Batch ID: W2L0904 — **Preparation:** _NONE (WETCHEM)			**Prepared:** 12/13/22 09:30				**Analyst:** mes
Total Suspended Solids	**7**		5	mg/l	1	12/13/22	
Hexavalent Chromium by IC							
Method: EPA 218.6			**Instr:** LC13				
Batch ID: W2L1136 — **Preparation:** _NONE (LC)			**Prepared:** 12/14/22 14:30				**Analyst:** pjs
Chromium 6+	**0.32**	0.0079	0.020	ug/l	1	12/14/22	
Chromium 6+, Dissolved	**0.41**	0.0079	0.020	ug/l	1	12/14/22	
Metals by EPA 200 Series Methods							
Method: Calculation			**Instr:** [CALC]				
Batch ID: [CALC] — **Preparation:** [CALC]			**Prepared:** 12/14/22 12:13				**Analyst:** kvm
Hardness as CaCO3, Total	**332**	0.219	3.31	mg/l	1	12/15/22	
Method: EPA 200.7			**Instr:** ICP03				
Batch ID: W2L1115 — **Preparation:** EPA 200.2			**Prepared:** 12/14/22 12:13				**Analyst:** kvm
Calcium, Total	**88.7**	0.0234	0.500	mg/l	1	12/15/22	
Magnesium, Total	**26.8**	0.0390	0.500	mg/l	1	12/15/22	
Phosphorus, Dissolved	**0.024**	0.018	0.050	mg/l	1	12/15/22	J
Phosphorus, Total	**0.33**	0.018	0.050	mg/l	1	12/15/22	
Method: EPA 200.8			**Instr:** ICPMS06				
Batch ID: W2L1122 — **Preparation:** EPA 200.2			**Prepared:** 12/14/22 15:50				**Analyst:** tyc
Aluminum, Dissolved	**20**	4.4	20	ug/l	1	12/15/22	
Aluminum, Total	**4300**	4.4	20	ug/l	1	12/15/22	
Antimony, Dissolved	**0.53**	0.089	0.50	ug/l	1	12/15/22	
Antimony, Total	**0.88**	0.089	0.50	ug/l	1	12/15/22	
Arsenic, Dissolved	**4.1**	0.074	0.40	ug/l	1	12/15/22	

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Project Number: SGVCOG Fire Effects Study

Project Manager: Dylan Cawthorne

Reported: 01/09/2023 10:46

Sample Results

(Continued)

Sample: F_194B_R-FES-D1-120822-P — Sampled: 12/08/22 8:04 by Client

2L08112-02 (Water) (Continued)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Metals by EPA 200 Series Methods (Continued)							
Method: EPA 200.8			**Instr:** ICPMS06				
Batch ID: W2L1122 — **Preparation:** EPA 200.2			**Prepared:** 12/14/22 15:50				**Analyst:** tyc
Arsenic, Total	**5.8**	0.074	0.40	ug/l	1	12/15/22	
Beryllium, Dissolved	ND	0.062	0.10	ug/l	1	12/15/22	
Beryllium, Total	**0.20**	0.029	0.10	ug/l	1	12/15/22	
Cadmium, Dissolved	ND	0.042	0.20	ug/l	1	12/15/22	
Cadmium, Total	**0.087**	0.042	0.20	ug/l	1	12/15/22	J
Chromium, Dissolved	**0.39**	0.089	0.20	ug/l	1	12/15/22	
Chromium, Total	**5.6**	0.089	0.20	ug/l	1	12/15/22	
Copper, Dissolved	**2.1**	0.23	0.50	ug/l	1	12/15/22	
Copper, Total	**13**	0.23	0.50	ug/l	1	12/15/22	
Iron, Dissolved	**45**	3.9	20	ug/l	1	12/15/22	
Iron, Total	**5600**	3.9	20	ug/l	1	12/15/22	
Lead, Dissolved	**0.24**	0.083	0.20	ug/l	1	12/15/22	
Lead, Total	**11**	0.083	0.20	ug/l	1	12/15/22	
Nickel, Dissolved	**0.75**	0.16	2.0	ug/l	1	12/15/22	J
Nickel, Total	**5.2**	0.16	2.0	ug/l	1	12/15/22	
Selenium, Dissolved	**0.082**	0.067	0.40	ug/l	1	12/15/22	J
Selenium, Total	**0.13**	0.067	0.40	ug/l	1	12/15/22	J
Silver, Dissolved	ND	0.030	0.20	ug/l	1	12/15/22	
Silver, Total	ND	0.13	0.20	ug/l	1	12/15/22	
Thallium, Dissolved	ND	0.021	0.20	ug/l	1	12/15/22	
Thallium, Total	ND	0.021	0.20	ug/l	1	12/15/22	
Zinc, Dissolved	**4.4**	0.80	10	ug/l	1	12/15/22	J
Zinc, Total	**30**	1.7	10	ug/l	1	12/15/22	
Method: EPA 245.1			**Instr:** HG03				
Batch ID: W2L1127 — **Preparation:** EPA 245.1			**Prepared:** 12/14/22 13:21				**Analyst:** KVM
Mercury, Dissolved	ND	0.037	0.050	ug/l	1	12/15/22	
Mercury, Total	**0.037**	0.037	0.050	ug/l	1	12/15/22	J
Semivolatile Organics - Low Level by Tandem GC/MS/MS							
Method: EPA 625.1			**Instr:** GCMS15				
Batch ID: W2L1204 — **Preparation:** EPA 3535/SPE			**Prepared:** 12/15/22 08:26				**Analyst:** EFC
Acenaphthene	ND	6.0	25	ng/l	1	12/20/22	M-02
Acenaphthylene	**28**	5.0	25	ng/l	1	12/20/22	B, M-02
Anthracene	ND	5.5	25	ng/l	1	12/20/22	M-02
Benzo (a) anthracene	ND	4.6	25	ng/l	1	12/20/22	M-02
Benzo (a) pyrene	ND	4.8	25	ng/l	1	12/20/22	M-02
Benzo (b) fluoranthene	ND	8.0	25	ng/l	1	12/20/22	M-02

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Project Manager: Dylan Cawthorne

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Sample Results

(Continued)

Sample: F_194B_R-FES-D1-120822-P — Sampled: 12/08/22 8:04 by Client

2L08112-02 (Water) — (Continued)

Semivolatile Organics - Low Level by Tandem GC/MS/MS (Continued)

Method: EPA 625.1 — **Instr:** GCMS15

Batch ID: W2L1204 — **Preparation:** EPA 3535/SPE — **Prepared:** 12/15/22 08:26 — **Analyst:** EFC

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Benzo (g,h,i) perylene	ND	5.0	25	ng/l	1	12/20/22	M-02
Benzo (k) fluoranthene	ND	6.0	25	ng/l	1	12/20/22	M-02
Chrysene	ND	7.0	25	ng/l	1	12/20/22	M-02
Dibenzo (a,h) anthracene	ND	6.0	25	ng/l	1	12/20/22	M-02
Fluoranthene	ND	7.5	25	ng/l	1	12/20/22	M-02
Fluorene	**6.1**	5.5	25	ng/l	1	12/20/22	M-02, J
Indeno (1,2,3-cd) pyrene	ND	4.8	25	ng/l	1	12/20/22	M-02
Naphthalene	**54**	16	25	ng/l	1	12/20/22	B, M-02
Phenanthrene	**19**	15	25	ng/l	1	12/20/22	M-02, J
Pyrene	ND	7.0	25	ng/l	1	12/20/22	M-02
Surrogate(s)							
1,3-Dimethyl-2-nitrobenzene	*79%*	*Conc: 396*	*62-120*			*12/20/22*	
Perylene-d12	*48%*	*Conc: 240*	*36-120*			*12/20/22*	

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Project Manager: Dylan Cawthorne

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Sample Results

(Continued)

Sample: ARCAD_WA_CON-FES-D1-120822-P — Sampled: 12/08/22 9:15 by Client
2L08112-03 (Water)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods							
Method: EPA 350.1			**Instr:** AA06				
Batch ID: W2L0971 — **Preparation:** _NONE (WETCHEM)			**Prepared:** 12/13/22 11:52				**Analyst:** ymt
Ammonia as N	**0.017**	0.017	0.10	mg/l	1	12/15/22	J
Method: EPA 351.2			**Instr:** AA06				
Batch ID: W2L1365 — **Preparation:** _NONE (WETCHEM)			**Prepared:** 12/17/22 13:39				**Analyst:** YMT
TKN	**1.4**	0.065	0.10	mg/l	1	12/19/22	
Method: EPA 353.2			**Instr:** AA01				
Batch ID: W2L0757 — **Preparation:** _NONE (WETCHEM)			**Prepared:** 12/09/22 17:05				**Analyst:** ism
Nitrate as N	**0.94**	0.040	0.20	mg/l	1	12/09/22 17:59	FILT
Nitrite as N	**77**	42	100	ug/l	1	12/09/22 17:59	FILT, J
Method: SM 2540C			**Instr:** OVEN01				
Batch ID: W2L1062 — **Preparation:** _NONE (WETCHEM)			**Prepared:** 12/14/22 09:45				**Analyst:** tmp
Total Dissolved Solids	**390**	4.0	10	mg/l	1	12/14/22	
Method: SM 2540D			**Instr:** OVEN15				
Batch ID: W2L0904 — **Preparation:** _NONE (WETCHEM)			**Prepared:** 12/13/22 09:30				**Analyst:** mes
Total Suspended Solids	**23**		5	mg/l	1	12/13/22	
Hexavalent Chromium by IC							
Method: EPA 218.6			**Instr:** LC13				
Batch ID: W2L1136 — **Preparation:** _NONE (LC)			**Prepared:** 12/14/22 14:30				**Analyst:** pjs
Chromium 6+	**4.0**	0.0079	0.020	ug/l	1	12/14/22	
Chromium 6+, Dissolved	**4.0**	0.0079	0.020	ug/l	1	12/14/22	
Metals by EPA 200 Series Methods							
Method: Calculation			**Instr:** [CALC]				
Batch ID: [CALC] — **Preparation:** [CALC]			**Prepared:** 12/14/22 12:13				**Analyst:** kvm
Hardness as CaCO3, Total	**209**	0.219	3.31	mg/l	1	12/15/22	
Method: EPA 200.7			**Instr:** ICP03				
Batch ID: W2L1115 — **Preparation:** EPA 200.2			**Prepared:** 12/14/22 12:13				**Analyst:** kvm
Calcium, Total	**57.0**	0.0234	0.500	mg/l	1	12/15/22	
Magnesium, Total	**16.1**	0.0390	0.500	mg/l	1	12/15/22	
Phosphorus, Dissolved	ND	0.018	0.050	mg/l	1	12/15/22	
Phosphorus, Total	**0.042**	0.018	0.050	mg/l	1	12/15/22	J
Method: EPA 200.8			**Instr:** ICPMS06				
Batch ID: W2L1122 — **Preparation:** EPA 200.2			**Prepared:** 12/14/22 15:50				**Analyst:** tyc
Aluminum, Dissolved	**11**	4.4	20	ug/l	1	12/15/22	J
Aluminum, Total	**26**	4.4	20	ug/l	1	12/15/22	
Antimony, Dissolved	**0.47**	0.089	0.50	ug/l	1	12/15/22	J
Antimony, Total	**0.47**	0.089	0.50	ug/l	1	12/15/22	J
Arsenic, Dissolved	**2.2**	0.074	0.40	ug/l	1	12/15/22	

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Project Manager: Dylan Cawthorne

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Sample Results

(Continued)

Sample: ARCAD_WA_CON-FES-D1-120822-P
2L08112-03 (Water)

Sampled: 12/08/22 9:15 by Client

(Continued)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Metals by EPA 200 Series Methods (Continued)							
Method: EPA 200.8			**Instr:** ICPMS06				
Batch ID: W2L1122 **Preparation:** EPA 200.2			**Prepared:** 12/14/22 15:50				**Analyst:** tyc
Arsenic, Total	**2.2**	0.074	0.40	ug/l	1	12/15/22	
Beryllium, Dissolved	ND	0.062	0.10	ug/l	1	12/15/22	
Beryllium, Total	ND	0.029	0.10	ug/l	1	12/15/22	
Cadmium, Dissolved	ND	0.042	0.20	ug/l	1	12/15/22	
Cadmium, Total	ND	0.042	0.20	ug/l	1	12/15/22	
Chromium, Dissolved	**3.7**	0.089	0.20	ug/l	1	12/15/22	
Chromium, Total	**3.7**	0.089	0.20	ug/l	1	12/15/22	
Copper, Dissolved	**8.0**	0.23	0.50	ug/l	1	12/15/22	
Copper, Total	**8.6**	0.23	0.50	ug/l	1	12/15/22	
Iron, Dissolved	**16**	3.9	20	ug/l	1	12/15/22	J
Iron, Total	**31**	3.9	20	ug/l	1	12/15/22	
Lead, Dissolved	**0.18**	0.083	0.20	ug/l	1	12/15/22	J
Lead, Total	**0.20**	0.083	0.20	ug/l	1	12/15/22	
Nickel, Dissolved	**0.60**	0.16	2.0	ug/l	1	12/15/22	J
Nickel, Total	**0.53**	0.16	2.0	ug/l	1	12/15/22	J
Selenium, Dissolved	**0.19**	0.067	0.40	ug/l	1	12/15/22	J
Selenium, Total	**0.22**	0.067	0.40	ug/l	1	12/15/22	J
Silver, Dissolved	ND	0.030	0.20	ug/l	1	12/15/22	
Silver, Total	ND	0.13	0.20	ug/l	1	12/15/22	
Thallium, Dissolved	ND	0.021	0.20	ug/l	1	12/15/22	
Thallium, Total	ND	0.021	0.20	ug/l	1	12/15/22	
Zinc, Dissolved	**5.6**	0.80	10	ug/l	1	12/15/22	J
Zinc, Total	**6.9**	1.7	10	ug/l	1	12/15/22	J
Method: EPA 245.1			**Instr:** HG03				
Batch ID: W2L1127 **Preparation:** EPA 245.1			**Prepared:** 12/14/22 13:21				**Analyst:** KVM
Mercury, Dissolved	ND	0.037	0.050	ug/l	1	12/15/22	
Mercury, Total	ND	0.037	0.050	ug/l	1	12/15/22	
Semivolatile Organics - Low Level by Tandem GC/MS/MS							
Method: EPA 625.1			**Instr:** GCMS15				
Batch ID: W2L1204 **Preparation:** EPA 3535/SPE			**Prepared:** 12/15/22 08:26				**Analyst:** EFC
Acenaphthene	ND	6.0	25	ng/l	1	12/20/22	M-02
Acenaphthylene	**8.5**	5.0	25	ng/l	1	12/20/22	M-02, J
Anthracene	ND	5.5	25	ng/l	1	12/20/22	M-02
Benzo (a) anthracene	ND	4.6	25	ng/l	1	12/20/22	M-02
Benzo (a) pyrene	ND	4.8	25	ng/l	1	12/20/22	M-02
Benzo (b) fluoranthene	ND	8.0	25	ng/l	1	12/20/22	M-02

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Sample Results

(Continued)

Sample: ARCAD_WA_CON-FES-D1-120822-P   Sampled: 12/08/22 9:15 by Client

2L08112-03 (Water)   (Continued)

Semivolatile Organics - Low Level by Tandem GC/MS/MS (Continued)

Method: EPA 625.1   **Instr:** GCMS15

Batch ID: W2L1204   **Preparation:** EPA 3535/SPE   **Prepared:** 12/15/22 08:26   **Analyst:** EFC

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Benzo (g,h,i) perylene	ND	5.0	25	ng/l	1	12/20/22	M-02
Benzo (k) fluoranthene	ND	6.0	25	ng/l	1	12/20/22	M-02
Chrysene	ND	7.0	25	ng/l	1	12/20/22	M-02
Dibenzo (a,h) anthracene	ND	6.0	25	ng/l	1	12/20/22	M-02
Fluoranthene	ND	7.5	25	ng/l	1	12/20/22	M-02
Fluorene	ND	5.5	25	ng/l	1	12/20/22	M-02
Indeno (1,2,3-cd) pyrene	ND	4.8	25	ng/l	1	12/20/22	M-02
Naphthalene	**30**	16	25	ng/l	1	12/20/22	B, M-02
Phenanthrene	ND	15	25	ng/l	1	12/20/22	M-02
Pyrene	ND	7.0	25	ng/l	1	12/20/22	M-02
Surrogate(s)							
1,3-Dimethyl-2-nitrobenzene	*87%*	*Conc: 433*	*62-120*			*12/20/22*	
Perylene-d12	*67%*	*Conc: 335*	*36-120*			*12/20/22*	

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Sample Results

(Continued)

Sample: ARCAD_WA_CON-FES-D1-120822-D — 2L08112-04 (Water) — Sampled: 12/08/22 9:15 by Client

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods							
Method: EPA 350.1 — **Instr:** AA06							
Batch ID: W2L0971 — **Preparation:** _NONE (WETCHEM) — **Prepared:** 12/13/22 11:52 — **Analyst:** ymt							
Ammonia as N	**0.018**	0.017	0.10	mg/l	1	12/15/22	J
Method: EPA 351.2 — **Instr:** AA06							
Batch ID: W2L1365 — **Preparation:** _NONE (WETCHEM) — **Prepared:** 12/17/22 13:39 — **Analyst:** YMT							
TKN	**1.8**	0.065	0.10	mg/l	1	12/19/22	
Method: EPA 353.2 — **Instr:** AA01							
Batch ID: W2L0757 — **Preparation:** _NONE (WETCHEM) — **Prepared:** 12/09/22 17:05 — **Analyst:** ism							
Nitrate as N	**1.1**	0.040	0.20	mg/l	1	12/09/22 18:00	FILT
Nitrite as N	**82**	42	100	ug/l	1	12/09/22 18:00	FILT, J
Method: SM 2540C — **Instr:** OVEN01							
Batch ID: W2L1062 — **Preparation:** _NONE (WETCHEM) — **Prepared:** 12/14/22 09:45 — **Analyst:** tmp							
Total Dissolved Solids	**400**	4.0	10	mg/l	1	12/14/22	
Method: SM 2540D — **Instr:** OVEN15							
Batch ID: W2L0904 — **Preparation:** _NONE (WETCHEM) — **Prepared:** 12/13/22 09:30 — **Analyst:** mes							
Total Suspended Solids	**2**		5	mg/l	1	12/13/22	J
Hexavalent Chromium by IC							
Method: EPA 218.6 — **Instr:** LC13							
Batch ID: W2L1136 — **Preparation:** _NONE (LC) — **Prepared:** 12/14/22 14:30 — **Analyst:** pjs							
Chromium 6+	**4.0**	0.0079	0.020	ug/l	1	12/14/22	
Chromium 6+, Dissolved	**4.0**	0.0079	0.020	ug/l	1	12/14/22	
Metals by EPA 200 Series Methods							
Method: Calculation — **Instr:** [CALC]							
Batch ID: [CALC] — **Preparation:** [CALC] — **Prepared:** 12/14/22 12:13 — **Analyst:** kvm							
Hardness as CaCO3, Total	**206**	0.219	3.31	mg/l	1	12/15/22	
Method: EPA 200.7 — **Instr:** ICP03							
Batch ID: W2L1115 — **Preparation:** EPA 200.2 — **Prepared:** 12/14/22 12:13 — **Analyst:** kvm							
Calcium, Total	**56.2**	0.0234	0.500	mg/l	1	12/15/22	
Magnesium, Total	**16.0**	0.0390	0.500	mg/l	1	12/15/22	
Phosphorus, Dissolved	ND	0.018	0.050	mg/l	1	12/15/22	
Phosphorus, Total	**0.089**	0.018	0.050	mg/l	1	12/15/22	
Method: EPA 200.8 — **Instr:** ICPMS06							
Batch ID: W2L1122 — **Preparation:** EPA 200.2 — **Prepared:** 12/14/22 15:50 — **Analyst:** tyc							
Aluminum, Dissolved	**34**	4.4	20	ug/l	1	12/15/22	
Aluminum, Total	**250**	4.4	20	ug/l	1	12/15/22	
Antimony, Dissolved	**0.47**	0.089	0.50	ug/l	1	12/15/22	J
Antimony, Total	**0.48**	0.089	0.50	ug/l	1	12/15/22	J
Arsenic, Dissolved	**2.1**	0.074	0.40	ug/l	1	12/15/22	

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Sample Results

(Continued)

Sample: ARCAD_WA_CON-FES-D1-120822-D — Sampled: 12/08/22 9:15 by Client

2L08112-04 (Water) (Continued)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Metals by EPA 200 Series Methods (Continued)							
Method: EPA 200.8			**Instr:** ICPMS06				
Batch ID: W2L1122	**Preparation:** EPA 200.2		**Prepared:** 12/14/22 15:50				**Analyst:** tyc
Arsenic, Total	**2.3**	0.074	0.40	ug/l	1	12/15/22	
Beryllium, Dissolved	ND	0.062	0.10	ug/l	1	12/15/22	
Beryllium, Total	ND	0.029	0.10	ug/l	1	12/15/22	
Cadmium, Dissolved	ND	0.042	0.20	ug/l	1	12/15/22	
Cadmium, Total	ND	0.042	0.20	ug/l	1	12/15/22	
Chromium, Dissolved	**3.6**	0.089	0.20	ug/l	1	12/15/22	
Chromium, Total	**4.2**	0.089	0.20	ug/l	1	12/15/22	
Copper, Dissolved	**7.6**	0.23	0.50	ug/l	1	12/15/22	
Copper, Total	**9.9**	0.23	0.50	ug/l	1	12/15/22	
Iron, Dissolved	**19**	3.9	20	ug/l	1	12/15/22	J
Iron, Total	**310**	3.9	20	ug/l	1	12/15/22	
Lead, Dissolved	**0.18**	0.083	0.20	ug/l	1	12/15/22	J
Lead, Total	**1.2**	0.083	0.20	ug/l	1	12/15/22	
Nickel, Dissolved	**0.50**	0.16	2.0	ug/l	1	12/15/22	J
Nickel, Total	**0.86**	0.16	2.0	ug/l	1	12/15/22	J
Selenium, Dissolved	**0.18**	0.067	0.40	ug/l	1	12/15/22	J
Selenium, Total	**0.19**	0.067	0.40	ug/l	1	12/15/22	J
Silver, Dissolved	ND	0.030	0.20	ug/l	1	12/15/22	
Silver, Total	ND	0.13	0.20	ug/l	1	12/15/22	
Thallium, Dissolved	ND	0.021	0.20	ug/l	1	12/15/22	
Thallium, Total	ND	0.021	0.20	ug/l	1	12/15/22	
Zinc, Dissolved	**3.1**	0.80	10	ug/l	1	12/15/22	J
Zinc, Total	**14**	1.7	10	ug/l	1	12/15/22	
Method: EPA 245.1			**Instr:** HG03				
Batch ID: W2L1127	**Preparation:** EPA 245.1		**Prepared:** 12/14/22 13:21				**Analyst:** KVM
Mercury, Dissolved	ND	0.037	0.050	ug/l	1	12/15/22	
Mercury, Total	ND	0.037	0.050	ug/l	1	12/15/22	
Semivolatile Organics - Low Level by Tandem GC/MS/MS							
Method: EPA 625.1			**Instr:** GCMS15				
Batch ID: W2L1204	**Preparation:** EPA 3535/SPE		**Prepared:** 12/15/22 08:26				**Analyst:** EFC
Acenaphthene	ND	6.0	25	ng/l	1	12/20/22	M-02
Acenaphthylene	ND	5.0	25	ng/l	1	12/20/22	M-02
Anthracene	ND	5.5	25	ng/l	1	12/20/22	M-02
Benzo (a) anthracene	ND	4.6	25	ng/l	1	12/20/22	M-02
Benzo (a) pyrene	ND	4.8	25	ng/l	1	12/20/22	M-02
Benzo (b) fluoranthene	ND	8.0	25	ng/l	1	12/20/22	M-02

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Sample Results

(Continued)

Sample: ARCAD_WA_CON-FES-D1-120822-D — Sampled: 12/08/22 9:15 by Client

2L08112-04 (Water) — (Continued)

Semivolatile Organics - Low Level by Tandem GC/MS/MS (Continued)

Method: EPA 625.1 — **Instr:** GCMS15

Batch ID: W2L1204 — **Preparation:** EPA 3535/SPE — **Prepared:** 12/15/22 08:26 — **Analyst:** EFC

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Benzo (g,h,i) perylene	ND	5.0	25	ng/l	1	12/20/22	M-02
Benzo (k) fluoranthene	ND	6.0	25	ng/l	1	12/20/22	M-02
Chrysene	ND	7.0	25	ng/l	1	12/20/22	M-02
Dibenzo (a,h) anthracene	ND	6.0	25	ng/l	1	12/20/22	M-02
Fluoranthene	ND	7.5	25	ng/l	1	12/20/22	M-02
Fluorene	ND	5.5	25	ng/l	1	12/20/22	M-02
Indeno (1,2,3-cd) pyrene	ND	4.8	25	ng/l	1	12/20/22	M-02
Naphthalene	**21**	16	25	ng/l	1	12/20/22	M-02, J
Phenanthrene	ND	15	25	ng/l	1	12/20/22	M-02
Pyrene	ND	7.0	25	ng/l	1	12/20/22	M-02
Surrogate(s)							
1,3-Dimethyl-2-nitrobenzene	*64%*	*Conc: 319*	*62-120*			*12/20/22*	
Perylene-d12	*57%*	*Conc: 283*	*36-120*			*12/20/22*	

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FINAL REPORT

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Project Number: SGVCOG Fire Effects Study

Project Manager: Dylan Cawthorne

Reported: 01/09/2023 10:46

Sample Results Enthalpy Orange

Sample: F_193_R-FES-D1-120822-P
2L08112-01 (Water)

Sampled: 12/08/22 7:15 by Client

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
SM 10200-H							
Method: Chlorophyll **Batch ID:** 303403 **Prepared:** 12/08/22 00:00 **Analyst:** ATP							
Chlorophyll a	**1.0**		1.0	mg/M3	1	12/12/22	ND

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Project Manager: Dylan Cawthorne

Reported: 01/09/2023 10:46

Sample Results Enthalpy Orange (Continued)

Sample: F_194B_R-FES-D1-120822-P
2L08112-02 (Water)

Sampled: 12/08/22 8:04 by Client

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
SM 10200-H							
Method: Chlorophyll **Batch ID:** 303403 **Prepared:** 12/08/22 00:00 **Analyst:** ATP							
Chlorophyll a	**1.2**		1.0	mg/M3	1	12/12/22	

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FINAL REPORT

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Sample Results Enthalpy Orange (Continued)

Sample: ARCAD_WA_CON-FES-D1-120822-P
2L08112-03 (Water)

Sampled: 12/08/22 9:15 by Client

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
SM 10200-H							
Method: Chlorophyll — **Batch ID:** 303403 — **Prepared:** 12/08/22 00:00 — **Analyst:** ATP							
Chlorophyll a	**4.4**		1.0	mg/M3	1	12/12/22	

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Sample Results Enthalpy Orange (Continued)

Sample: ARCAD_WA_CON-FES-D1-120822-D
2L08112-04 (Water)
Sampled: 12/08/22 9:15 by Client

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
SM 10200-H							
Method: Chlorophyll **Batch ID:** 303403 **Prepared:** 12/08/22 00:00 **Analyst:** ATP							
Chlorophyll a	**12**		1.0	mg/M3	1	12/12/22	

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Quality Control Results

Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W2L0757 - EPA 353.2											
Blank (W2L0757-BLK1)					**Prepared & Analyzed: 12/09/22**						
Nitrate as N	ND	0.040	0.20	mg/l							
Nitrite as N	ND	42	100	ug/l							
LCS (W2L0757-BS1)					**Prepared & Analyzed: 12/09/22**						
Nitrate as N	0.962	0.040	0.20	mg/l	1.00		96	90-110			
Nitrite as N	1010	42	100	ug/l	1000		101	90-110			
Duplicate (W2L0757-DUP1)	**Source: 2L08141-01**				**Prepared & Analyzed: 12/09/22**						
Nitrate as N	11.4	0.40	2.0	mg/l		11.3			1	20	
Nitrite as N	58.6	42	100	ug/l		70.1			18	20	J
Matrix Spike (W2L0757-MS1)	**Source: 2L08141-05**				**Prepared & Analyzed: 12/09/22**						
Nitrate as N	12.2	0.040	0.20	mg/l	2.00	9.69	125	90-110			MS-01
Nitrite as N	1020	42	100	ug/l	1000	ND	102	90-110			
Matrix Spike (W2L0757-MS2)	**Source: 2L08141-05**				**Prepared: 12/09/22 Analyzed: 12/10/22**						
Nitrate as N	17.6	0.16	0.80	mg/l	8.00	9.69	99	90-110			
Matrix Spike Dup (W2L0757-MSD1)	**Source: 2L08141-05**				**Prepared & Analyzed: 12/09/22**						
Nitrate as N	12.1	0.040	0.20	mg/l	2.00	9.69	120	90-110	0.8	20	MS-01
Nitrite as N	1030	42	100	ug/l	1000	ND	103	90-110	1	20	
Matrix Spike Dup (W2L0757-MSD2)	**Source: 2L08141-05**				**Prepared: 12/09/22 Analyzed: 12/10/22**						
Nitrate as N	17.6	0.16	0.80	mg/l	8.00	9.69	99	90-110	0.2	20	
Batch: W2L0904 - SM 2540D											
Blank (W2L0904-BLK1)					**Prepared & Analyzed: 12/13/22**						
Total Suspended Solids	ND		5	mg/l							
LCS (W2L0904-BS1)					**Prepared & Analyzed: 12/13/22**						
Total Suspended Solids	69.7		5	mg/l	63.7		109	90-110			
Duplicate (W2L0904-DUP1)	**Source: 2L08098-01**				**Prepared & Analyzed: 12/13/22**						
Total Suspended Solids	107		5	mg/l		109			2	10	
Duplicate (W2L0904-DUP2)	**Source: 2L08112-01**				**Prepared & Analyzed: 12/13/22**						
Total Suspended Solids	26.4		5	mg/l		26.4			0	10	
Batch: W2L0971 - EPA 350.1											
Blank (W2L0971-BLK1)					**Prepared: 12/13/22 Analyzed: 12/15/22**						
Ammonia as N	ND	0.017	0.10	mg/l							
Blank (W2L0971-BLK2)					**Prepared: 12/13/22 Analyzed: 12/15/22**						
Ammonia as N	ND	0.017	0.10	mg/l							
LCS (W2L0971-BS1)					**Prepared: 12/13/22 Analyzed: 12/15/22**						
Ammonia as N	0.256	0.017	0.10	mg/l	0.250		102	90-110			
LCS (W2L0971-BS2)					**Prepared: 12/13/22 Analyzed: 12/15/22**						
Ammonia as N	0.258	0.017	0.10	mg/l	0.250		103	90-110			
Matrix Spike (W2L0971-MS1)	**Source: 2L06166-02**				**Prepared: 12/13/22 Analyzed: 12/15/22**						
Ammonia as N	1.77	0.017	0.10	mg/l	0.250	1.54	92	90-110			

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Quality Control Results

(Continued)

Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W2L0971 - EPA 350.1 (Continued)											
Matrix Spike (W2L0971-MS1)	**Source: 2L06166-02**				**Prepared: 12/13/22 Analyzed: 12/15/22**						
Matrix Spike (W2L0971-MS2)	**Source: 2L08041-01**				**Prepared: 12/13/22 Analyzed: 12/15/22**						
Ammonia as N	0.455	0.017	0.10	mg/l	0.250	0.203	101	90-110			
Matrix Spike Dup (W2L0971-MSD1)	**Source: 2L06166-02**				**Prepared: 12/13/22 Analyzed: 12/15/22**						
Ammonia as N	1.77	0.017	0.10	mg/l	0.250	1.54	93	90-110	0.1	15	
Matrix Spike Dup (W2L0971-MSD2)	**Source: 2L08041-01**				**Prepared: 12/13/22 Analyzed: 12/15/22**						
Ammonia as N	0.464	0.017	0.10	mg/l	0.250	0.203	105	90-110	2	15	
Batch: W2L1062 - SM 2540C											
Blank (W2L1062-BLK1)					**Prepared & Analyzed: 12/14/22**						
Total Dissolved Solids	6.00	4.0	10	mg/l							J
LCS (W2L1062-BS1)					**Prepared & Analyzed: 12/14/22**						
Total Dissolved Solids	844	4.0	10	mg/l	824		102	97-103			
Duplicate (W2L1062-DUP1)	**Source: 2L08111-07**				**Prepared & Analyzed: 12/14/22**						
Total Dissolved Solids	4120	4.0	10	mg/l		4100			0.7	10	
Duplicate (W2L1062-DUP2)	**Source: 2L08111-09**				**Prepared & Analyzed: 12/14/22**						
Total Dissolved Solids	4140	4.0	10	mg/l		4120			0.6	10	
Batch: W2L1245 - EPA 351.2											
Blank (W2L1245-BLK1)					**Prepared: 12/15/22 Analyzed: 12/19/22**						
TKN	ND	0.065	0.10	mg/l							
Blank (W2L1245-BLK2)					**Prepared: 12/15/22 Analyzed: 12/19/22**						
TKN	ND	0.065	0.10	mg/l							
LCS (W2L1245-BS1)					**Prepared: 12/15/22 Analyzed: 12/19/22**						
TKN	1.01	0.065	0.10	mg/l	1.00		101	90-110			
LCS (W2L1245-BS2)					**Prepared: 12/15/22 Analyzed: 12/19/22**						
TKN	1.02	0.065	0.10	mg/l	1.00		102	90-110			
Matrix Spike (W2L1245-MS1)	**Source: 2L07066-04**				**Prepared: 12/15/22 Analyzed: 12/19/22**						
TKN	1.12	0.065	0.10	mg/l	1.00	0.0917	103	90-110			
Matrix Spike (W2L1245-MS2)	**Source: 2L07066-05**				**Prepared: 12/15/22 Analyzed: 12/19/22**						
TKN	0.993	0.065	0.10	mg/l	1.00	ND	99	90-110			
Matrix Spike Dup (W2L1245-MSD1)	**Source: 2L07066-04**				**Prepared: 12/15/22 Analyzed: 12/19/22**						
TKN	1.09	0.065	0.10	mg/l	1.00	0.0917	99	90-110	3	10	
Matrix Spike Dup (W2L1245-MSD2)	**Source: 2L07066-05**				**Prepared: 12/15/22 Analyzed: 12/19/22**						
TKN	1.02	0.065	0.10	mg/l	1.00	ND	102	90-110	2	10	
Batch: W2L1365 - EPA 351.2											
Blank (W2L1365-BLK1)					**Prepared: 12/17/22 Analyzed: 12/19/22**						
TKN	ND	0.065	0.10	mg/l							
LCS (W2L1365-BS1)					**Prepared: 12/17/22 Analyzed: 12/19/22**						
TKN	0.994	0.065	0.10	mg/l	1.00		99	90-110			

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Reported: 01/09/2023 10:46

Quality Control Results

(Continued)

Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W2L1365 - EPA 351.2 (Continued)											
Matrix Spike (W2L1365-MS1)	**Source: 2L15084-01**				**Prepared: 12/17/22 Analyzed: 12/19/22**						
TKN	1.24	0.065	0.10	mg/l	1.00	0.246	99	90-110			
Matrix Spike Dup (W2L1365-MSD1)	**Source: 2L15084-01**				**Prepared: 12/17/22 Analyzed: 12/19/22**						
TKN	1.29	0.065	0.10	mg/l	1.00	0.246	104	90-110	4	10	

Quality Control Results

(Continued)

Hexavalent Chromium by IC

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W2L1136 - EPA 218.6											
Blank (W2L1136-BLK1)					**Prepared & Analyzed: 12/14/22**						
Chromium 6+	ND	0.0079	0.020	ug/l							
Chromium 6+, Dissolved	ND	0.0079	0.020	ug/l							
LCS (W2L1136-BS1)					**Prepared & Analyzed: 12/14/22**						
Chromium 6+	4.82	0.0079	0.020	ug/l	5.00		96	90-110			
Chromium 6+, Dissolved	4.82	0.0079	0.020	ug/l	5.00		96	90-110			
Matrix Spike (W2L1136-MS1)	**Source: 2L08112-01**				**Prepared & Analyzed: 12/14/22**						
Chromium 6+	5.10	0.0079	0.020	ug/l	5.00	0.429	93	88-112			
Chromium 6+, Dissolved	5.10	0.0079	0.020	ug/l	5.00	0.478	92	88-112			
Matrix Spike (W2L1136-MS2)	**Source: 2L08112-02**				**Prepared & Analyzed: 12/14/22**						
Chromium 6+	4.99	0.0079	0.020	ug/l	5.00	0.317	93	88-112			
Chromium 6+, Dissolved	4.99	0.0079	0.020	ug/l	5.00	0.408	92	88-112			
Matrix Spike Dup (W2L1136-MSD1)	**Source: 2L08112-01**				**Prepared & Analyzed: 12/14/22**						
Chromium 6+	5.15	0.0079	0.020	ug/l	5.00	0.429	94	88-112	1	10	
Chromium 6+, Dissolved	5.15	0.0079	0.020	ug/l	5.00	0.478	93	88-112	1	10	
Matrix Spike Dup (W2L1136-MSD2)	**Source: 2L08112-02**				**Prepared & Analyzed: 12/14/22**						
Chromium 6+	5.04	0.0079	0.020	ug/l	5.00	0.317	95	88-112	1	10	
Chromium 6+, Dissolved	5.04	0.0079	0.020	ug/l	5.00	0.408	93	88-112	1	10	

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Quality Control Results

(Continued)

Metals by EPA 200 Series Methods

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W2L1115 - EPA 200.7											
Blank (W2L1115-BLK1)					**Prepared: 12/14/22**	**Analyzed: 12/15/22**					
Calcium, Total	ND	0.0234	0.500	mg/l							
Magnesium, Total	ND	0.0390	0.500	mg/l							
Phosphorus, Dissolved	ND	0.018	0.050	mg/l							
Phosphorus, Total	ND	0.018	0.050	mg/l							
LCS (W2L1115-BS1)					**Prepared: 12/14/22**	**Analyzed: 12/15/22**					
Calcium, Total	45.8	0.0234	0.500	mg/l	50.2		91	85-115			
Magnesium, Total	45.4	0.0390	0.500	mg/l	50.2		91	85-115			
Phosphorus, Dissolved	1.95	0.018	0.050	mg/l	2.00		97	85-115			
Phosphorus, Total	1.95	0.018	0.050	mg/l	2.00		97	85-115			
Matrix Spike (W2L1115-MS1)	**Source: 2K16002-01**				**Prepared: 12/14/22**	**Analyzed: 12/15/22**					
Calcium, Total	102	0.0234	0.500	mg/l	50.2	58.6	87	70-130			
Magnesium, Total	75.8	0.0390	0.500	mg/l	50.2	30.9	89	70-130			
Phosphorus, Dissolved	3.25	0.018	0.050	mg/l	2.00	1.28	98	70-130			
Phosphorus, Total	3.25	0.018	0.050	mg/l	2.00	1.28	98	70-130			
Matrix Spike (W2L1115-MS2)	**Source: 2L08103-01**				**Prepared: 12/14/22**	**Analyzed: 12/15/22**					
Calcium, Total	116	0.0234	0.500	mg/l	50.2	71.3	89	70-130			
Magnesium, Total	73.7	0.0390	0.500	mg/l	50.2	27.4	92	70-130			
Phosphorus, Dissolved	17.3	0.018	0.050	mg/l	2.00	15.1	113	70-130			
Phosphorus, Total	17.3	0.018	0.050	mg/l	2.00	15.1	113	70-130			
Matrix Spike Dup (W2L1115-MSD1)	**Source: 2K16002-01**				**Prepared: 12/14/22**	**Analyzed: 12/15/22**					
Calcium, Total	103	0.0234	0.500	mg/l	50.2	58.6	88	70-130	0.6	30	
Magnesium, Total	76.4	0.0390	0.500	mg/l	50.2	30.9	91	70-130	0.8	30	
Phosphorus, Dissolved	3.27	0.018	0.050	mg/l	2.00	1.28	99	70-130	0.6	30	
Phosphorus, Total	3.27	0.018	0.050	mg/l	2.00	1.28	99	70-130	0.6	30	
Matrix Spike Dup (W2L1115-MSD2)	**Source: 2L08103-01**				**Prepared: 12/14/22**	**Analyzed: 12/15/22**					
Calcium, Total	114	0.0234	0.500	mg/l	50.2	71.3	85	70-130	2	30	
Magnesium, Total	72.5	0.0390	0.500	mg/l	50.2	27.4	90	70-130	2	30	
Phosphorus, Dissolved	17.0	0.018	0.050	mg/l	2.00	15.1	96	70-130	2	30	
Phosphorus, Total	17.0	0.018	0.050	mg/l	2.00	15.1	96	70-130	2	30	
Batch: W2L1122 - EPA 200.8											
Blank (W2L1122-BLK1)					**Prepared: 12/14/22**	**Analyzed: 12/15/22**					
Aluminum, Dissolved	ND	4.4	20	ug/l							
Aluminum, Total	ND	4.4	20	ug/l							
Antimony, Dissolved	ND	0.089	0.50	ug/l							
Antimony, Total	ND	0.089	0.50	ug/l							
Arsenic, Dissolved	ND	0.074	0.40	ug/l							
Arsenic, Total	ND	0.074	0.40	ug/l							
Beryllium, Dissolved	ND	0.062	0.10	ug/l							

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Quality Control Results

(Continued)

Metals by EPA 200 Series Methods (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W2L1122 - EPA 200.8 (Continued)											
Blank (W2L1122-BLK1)					**Prepared: 12/14/22 Analyzed: 12/15/22**						
Beryllium, Total	ND	0.029	0.10	ug/l							
Cadmium, Dissolved	ND	0.042	0.20	ug/l							
Cadmium, Total	ND	0.042	0.20	ug/l							
Chromium, Dissolved	ND	0.089	0.20	ug/l							
Chromium, Total	ND	0.089	0.20	ug/l							
Copper, Dissolved	ND	0.23	0.50	ug/l							
Copper, Total	ND	0.23	0.50	ug/l							
Iron, Dissolved	ND	3.9	20	ug/l							
Iron, Total	ND	3.9	20	ug/l							
Lead, Dissolved	ND	0.083	0.20	ug/l							
Lead, Total	ND	0.083	0.20	ug/l							
Nickel, Dissolved	ND	0.16	2.0	ug/l							
Nickel, Total	ND	0.16	2.0	ug/l							
Selenium, Dissolved	ND	0.067	0.40	ug/l							
Selenium, Total	ND	0.067	0.40	ug/l							
Silver, Dissolved	ND	0.030	0.20	ug/l							
Silver, Total	ND	0.13	0.20	ug/l							
Thallium, Dissolved	ND	0.021	0.20	ug/l							
Thallium, Total	ND	0.021	0.20	ug/l							
Zinc, Dissolved	ND	0.80	10	ug/l							
Zinc, Total	ND	1.7	10	ug/l							
LCS (W2L1122-BS1)					**Prepared: 12/14/22 Analyzed: 12/15/22**						
Aluminum, Dissolved	51.4	4.4	20	ug/l	50.0		103	85-115			
Aluminum, Total	51.4	4.4	20	ug/l	50.0		103	85-115			
Antimony, Dissolved	50.2	0.089	0.50	ug/l	50.0		100	85-115			
Antimony, Total	50.2	0.089	0.50	ug/l	50.0		100	85-115			
Arsenic, Dissolved	52.0	0.074	0.40	ug/l	50.0		104	85-115			
Arsenic, Total	52.0	0.074	0.40	ug/l	50.0		104	85-115			
Beryllium, Dissolved	47.1	0.062	0.10	ug/l	50.0		94	85-115			
Beryllium, Total	47.1	0.029	0.10	ug/l	50.0		94	85-115			
Cadmium, Dissolved	49.4	0.042	0.20	ug/l	50.0		99	85-115			
Cadmium, Total	49.4	0.042	0.20	ug/l	50.0		99	85-115			
Chromium, Dissolved	52.2	0.089	0.20	ug/l	50.0		104	85-115			
Chromium, Total	52.2	0.089	0.20	ug/l	50.0		104	85-115			
Copper, Dissolved	49.6	0.23	0.50	ug/l	50.0		99	85-115			
Copper, Total	49.6	0.23	0.50	ug/l	50.0		99	85-115			
Iron, Dissolved	1120	3.9	20	ug/l	1050		107	85-115			
Iron, Total	1120	3.9	20	ug/l	1050		107	85-115			
Lead, Dissolved	50.5	0.083	0.20	ug/l	50.0		101	85-115			

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Quality Control Results

(Continued)

Metals by EPA 200 Series Methods (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W2L1122 - EPA 200.8 (Continued)											
LCS (W2L1122-BS1)					**Prepared: 12/14/22**	**Analyzed: 12/15/22**					
Lead, Total	50.5	0.083	0.20	ug/l	50.0		101	85-115			
Nickel, Dissolved	50.2	0.16	2.0	ug/l	50.0		100	85-115			
Nickel, Total	50.2	0.16	2.0	ug/l	50.0		100	85-115			
Selenium, Dissolved	49.9	0.067	0.40	ug/l	50.0		100	85-115			
Selenium, Total	49.9	0.067	0.40	ug/l	50.0		100	85-115			
Silver, Dissolved	47.8	0.030	0.20	ug/l	50.0		96	85-115			
Silver, Total	47.8	0.13	0.20	ug/l	50.0		96	85-115			
Thallium, Dissolved	49.7	0.021	0.20	ug/l	50.0		99	85-115			
Thallium, Total	49.7	0.021	0.20	ug/l	50.0		99	85-115			
Zinc, Dissolved	50.2	0.80	10	ug/l	50.0		100	85-115			
Zinc, Total	50.2	1.7	10	ug/l	50.0		100	85-115			
Matrix Spike (W2L1122-MS1)	**Source: 2K16002-04**				**Prepared: 12/14/22**	**Analyzed: 12/15/22**					
Aluminum, Dissolved	52.8	4.4	20	ug/l	50.0	4.73	96	70-130			
Aluminum, Total	52.8	4.4	20	ug/l	50.0	4.73	96	70-130			
Antimony, Dissolved	51.6	0.089	0.50	ug/l	50.0	0.522	102	70-130			
Antimony, Total	51.6	0.089	0.50	ug/l	50.0	0.522	102	70-130			
Arsenic, Dissolved	53.4	0.074	0.40	ug/l	50.0	0.978	105	70-130			
Arsenic, Total	53.4	0.074	0.40	ug/l	50.0	0.978	105	70-130			
Beryllium, Dissolved	49.1	0.062	0.10	ug/l	50.0	ND	98	70-130			
Beryllium, Total	49.1	0.029	0.10	ug/l	50.0	ND	98	70-130			
Cadmium, Dissolved	48.9	0.042	0.20	ug/l	50.0	ND	98	70-130			
Cadmium, Total	48.9	0.042	0.20	ug/l	50.0	ND	98	70-130			
Chromium, Dissolved	51.1	0.089	0.20	ug/l	50.0	0.379	101	70-130			
Chromium, Total	51.1	0.089	0.20	ug/l	50.0	0.379	101	70-130			
Copper, Dissolved	52.8	0.23	0.50	ug/l	50.0	3.17	99	70-130			
Copper, Total	52.8	0.23	0.50	ug/l	50.0	3.17	99	70-130			
Iron, Dissolved	1100	3.9	20	ug/l	1050	18.1	103	70-130			
Iron, Total	1100	3.9	20	ug/l	1050	18.1	103	70-130			
Lead, Dissolved	50.0	0.083	0.20	ug/l	50.0	ND	100	70-130			
Lead, Total	50.0	0.083	0.20	ug/l	50.0	ND	100	70-130			
Nickel, Dissolved	51.4	0.16	2.0	ug/l	50.0	1.57	100	70-130			
Nickel, Total	51.4	0.16	2.0	ug/l	50.0	1.57	100	70-130			
Selenium, Dissolved	48.3	0.067	0.40	ug/l	50.0	0.184	96	70-130			
Selenium, Total	48.3	0.067	0.40	ug/l	50.0	0.184	96	70-130			
Silver, Dissolved	47.0	0.030	0.20	ug/l	50.0	ND	94	70-130			
Silver, Total	47.0	0.13	0.20	ug/l	50.0	ND	94	70-130			
Thallium, Dissolved	49.5	0.021	0.20	ug/l	50.0	ND	99	70-130			
Thallium, Total	49.5	0.021	0.20	ug/l	50.0	ND	99	70-130			
Zinc, Dissolved	77.8	0.80	10	ug/l	50.0	29.5	96	70-130			

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Project Number: SGVCOG Fire Effects Study

Project Manager: Dylan Cawthorne

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Quality Control Results

(Continued)

Metals by EPA 200 Series Methods (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W2L1122 - EPA 200.8 (Continued)											
Matrix Spike (W2L1122-MS1)	**Source: 2K16002-04**				**Prepared: 12/14/22**	**Analyzed: 12/15/22**					
Zinc, Total	77.8	1.7	10	ug/l	50.0	29.5	96	70-130			
Matrix Spike (W2L1122-MS2)	**Source: 2L08014-02**				**Prepared: 12/14/22**	**Analyzed: 12/15/22**					
Aluminum, Dissolved	49.7	4.4	20	ug/l	50.0	ND	99	70-130			
Aluminum, Total	49.7	4.4	20	ug/l	50.0	ND	99	70-130			
Antimony, Dissolved	84.7	0.089	0.50	ug/l	50.0	33.6	102	70-130			
Antimony, Total	84.7	0.089	0.50	ug/l	50.0	33.6	102	70-130			
Arsenic, Dissolved	54.7	0.074	0.40	ug/l	50.0	3.78	102	70-130			
Arsenic, Total	54.7	0.074	0.40	ug/l	50.0	3.78	102	70-130			
Beryllium, Dissolved	49.7	0.062	0.10	ug/l	50.0	ND	99	70-130			
Beryllium, Total	49.7	0.029	0.10	ug/l	50.0	ND	99	70-130			
Cadmium, Dissolved	47.5	0.042	0.20	ug/l	50.0	0.0583	95	70-130			
Cadmium, Total	47.5	0.042	0.20	ug/l	50.0	0.0583	95	70-130			
Chromium, Dissolved	55.9	0.089	0.20	ug/l	50.0	6.86	98	70-130			
Chromium, Total	55.9	0.089	0.20	ug/l	50.0	6.86	98	70-130			
Copper, Dissolved	62.3	0.23	0.50	ug/l	50.0	15.6	93	70-130			
Copper, Total	62.3	0.23	0.50	ug/l	50.0	15.6	93	70-130			
Iron, Dissolved	1190	3.9	20	ug/l	1050	135	100	70-130			
Iron, Total	1190	3.9	20	ug/l	1050	135	100	70-130			
Lead, Dissolved	51.5	0.083	0.20	ug/l	50.0	ND	103	70-130			
Lead, Total	51.5	0.083	0.20	ug/l	50.0	ND	103	70-130			
Nickel, Dissolved	83.1	0.16	2.0	ug/l	50.0	37.0	92	70-130			
Nickel, Total	83.1	0.16	2.0	ug/l	50.0	37.0	92	70-130			
Selenium, Dissolved	47.9	0.067	0.40	ug/l	50.0	0.412	95	70-130			
Selenium, Total	47.9	0.067	0.40	ug/l	50.0	0.412	95	70-130			
Silver, Dissolved	45.7	0.030	0.20	ug/l	50.0	ND	91	70-130			
Silver, Total	45.7	0.13	0.20	ug/l	50.0	ND	91	70-130			
Thallium, Dissolved	51.3	0.021	0.20	ug/l	50.0	ND	103	70-130			
Thallium, Total	51.3	0.021	0.20	ug/l	50.0	ND	103	70-130			
Zinc, Dissolved	84.5	0.80	10	ug/l	50.0	40.2	88	70-130			
Zinc, Total	84.5	1.7	10	ug/l	50.0	40.2	88	70-130			
Matrix Spike Dup (W2L1122-MSD1)	**Source: 2K16002-04**				**Prepared: 12/14/22**	**Analyzed: 12/15/22**					
Aluminum, Dissolved	52.3	4.4	20	ug/l	50.0	4.73	95	70-130	0.9	30	
Aluminum, Total	52.3	4.4	20	ug/l	50.0	4.73	95	70-130	0.9	30	
Antimony, Dissolved	51.5	0.089	0.50	ug/l	50.0	0.522	102	70-130	0.3	30	
Antimony, Total	51.5	0.089	0.50	ug/l	50.0	0.522	102	70-130	0.3	30	
Arsenic, Dissolved	52.7	0.074	0.40	ug/l	50.0	0.978	104	70-130	1	30	
Arsenic, Total	52.7	0.074	0.40	ug/l	50.0	0.978	104	70-130	1	30	
Beryllium, Dissolved	49.4	0.062	0.10	ug/l	50.0	ND	99	70-130	0.6	30	
Beryllium, Total	49.4	0.029	0.10	ug/l	50.0	ND	99	70-130	0.6	30	

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Quality Control Results

(Continued)

Metals by EPA 200 Series Methods (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W2L1122 - EPA 200.8 (Continued)											
Matrix Spike Dup (W2L1122-MSD1)	**Source: 2K16002-04**				**Prepared: 12/14/22**	**Analyzed: 12/15/22**					
Cadmium, Dissolved	48.9	0.042	0.20	ug/l	50.0	ND	98	70-130	0.1	30	
Cadmium, Total	48.9	0.042	0.20	ug/l	50.0	ND	98	70-130	0.1	30	
Chromium, Dissolved	50.8	0.089	0.20	ug/l	50.0	0.379	101	70-130	0.5	30	
Chromium, Total	50.8	0.089	0.20	ug/l	50.0	0.379	101	70-130	0.5	30	
Copper, Dissolved	52.8	0.23	0.50	ug/l	50.0	3.17	99	70-130	0.02	30	
Copper, Total	52.8	0.23	0.50	ug/l	50.0	3.17	99	70-130	0.02	30	
Iron, Dissolved	1110	3.9	20	ug/l	1050	18.1	104	70-130	0.8	30	
Iron, Total	1110	3.9	20	ug/l	1050	18.1	104	70-130	0.8	30	
Lead, Dissolved	50.0	0.083	0.20	ug/l	50.0	ND	100	70-130	0.06	30	
Lead, Total	50.0	0.083	0.20	ug/l	50.0	ND	100	70-130	0.06	30	
Nickel, Dissolved	51.4	0.16	2.0	ug/l	50.0	1.57	100	70-130	0.004	30	
Nickel, Total	51.4	0.16	2.0	ug/l	50.0	1.57	100	70-130	0.004	30	
Selenium, Dissolved	48.4	0.067	0.40	ug/l	50.0	0.184	96	70-130	0.4	30	
Selenium, Total	48.4	0.067	0.40	ug/l	50.0	0.184	96	70-130	0.4	30	
Silver, Dissolved	47.3	0.030	0.20	ug/l	50.0	ND	95	70-130	0.6	30	
Silver, Total	47.3	0.13	0.20	ug/l	50.0	ND	95	70-130	0.6	30	
Thallium, Dissolved	49.5	0.021	0.20	ug/l	50.0	ND	99	70-130	0.02	30	
Thallium, Total	49.5	0.021	0.20	ug/l	50.0	ND	99	70-130	0.02	30	
Zinc, Dissolved	78.5	0.80	10	ug/l	50.0	29.5	98	70-130	0.9	30	
Zinc, Total	78.5	1.7	10	ug/l	50.0	29.5	98	70-130	0.9	30	
Matrix Spike Dup (W2L1122-MSD2)	**Source: 2L08014-02**				**Prepared: 12/14/22**	**Analyzed: 12/15/22**					
Aluminum, Dissolved	52.7	4.4	20	ug/l	50.0	ND	105	70-130	6	30	
Aluminum, Total	52.7	4.4	20	ug/l	50.0	ND	105	70-130	6	30	
Antimony, Dissolved	85.5	0.089	0.50	ug/l	50.0	33.6	104	70-130	1	30	
Antimony, Total	85.5	0.089	0.50	ug/l	50.0	33.6	104	70-130	1	30	
Arsenic, Dissolved	56.5	0.074	0.40	ug/l	50.0	3.78	105	70-130	3	30	
Arsenic, Total	56.5	0.074	0.40	ug/l	50.0	3.78	105	70-130	3	30	
Beryllium, Dissolved	51.6	0.062	0.10	ug/l	50.0	ND	103	70-130	4	30	
Beryllium, Total	51.6	0.029	0.10	ug/l	50.0	ND	103	70-130	4	30	
Cadmium, Dissolved	48.0	0.042	0.20	ug/l	50.0	0.0583	96	70-130	1	30	
Cadmium, Total	48.0	0.042	0.20	ug/l	50.0	0.0583	96	70-130	1	30	
Chromium, Dissolved	56.4	0.089	0.20	ug/l	50.0	6.86	99	70-130	0.9	30	
Chromium, Total	56.4	0.089	0.20	ug/l	50.0	6.86	99	70-130	0.9	30	
Copper, Dissolved	63.0	0.23	0.50	ug/l	50.0	15.6	95	70-130	1	30	
Copper, Total	63.0	0.23	0.50	ug/l	50.0	15.6	95	70-130	1	30	
Iron, Dissolved	1210	3.9	20	ug/l	1050	135	103	70-130	2	30	
Iron, Total	1210	3.9	20	ug/l	1050	135	103	70-130	2	30	
Lead, Dissolved	52.2	0.083	0.20	ug/l	50.0	ND	104	70-130	1	30	
Lead, Total	52.2	0.083	0.20	ug/l	50.0	ND	104	70-130	1	30	

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Quality Control Results

(Continued)

Metals by EPA 200 Series Methods (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W2L1122 - EPA 200.8 (Continued)											
Matrix Spike Dup (W2L1122-MSD2)	**Source: 2L08014-02**				**Prepared: 12/14/22**	**Analyzed: 12/15/22**					
Nickel, Dissolved	84.3	0.16	2.0	ug/l	50.0	37.0	95	70-130	1	30	
Nickel, Total	84.3	0.16	2.0	ug/l	50.0	37.0	95	70-130	1	30	
Selenium, Dissolved	47.9	0.067	0.40	ug/l	50.0	0.412	95	70-130	0.1	30	
Selenium, Total	47.9	0.067	0.40	ug/l	50.0	0.412	95	70-130	0.1	30	
Silver, Dissolved	46.3	0.030	0.20	ug/l	50.0	ND	93	70-130	1	30	
Silver, Total	46.3	0.13	0.20	ug/l	50.0	ND	93	70-130	1	30	
Thallium, Dissolved	51.9	0.021	0.20	ug/l	50.0	ND	104	70-130	1	30	
Thallium, Total	51.9	0.021	0.20	ug/l	50.0	ND	104	70-130	1	30	
Zinc, Dissolved	87.0	0.80	10	ug/l	50.0	40.2	94	70-130	3	30	
Zinc, Total	87.0	1.7	10	ug/l	50.0	40.2	94	70-130	3	30	
Batch: W2L1127 - EPA 245.1											
Blank (W2L1127-BLK1)					**Prepared: 12/14/22**	**Analyzed: 12/15/22**					
Mercury, Dissolved	ND	0.037	0.050	ug/l							
Mercury, Total	ND	0.037	0.050	ug/l							
LCS (W2L1127-BS1)					**Prepared: 12/14/22**	**Analyzed: 12/15/22**					
Mercury, Dissolved	1.05	0.037	0.050	ug/l	1.00		105	85-115			
Mercury, Total	1.05	0.037	0.050	ug/l	1.00		105	85-115			
Matrix Spike (W2L1127-MS1)	**Source: 2L07018-01**				**Prepared: 12/14/22**	**Analyzed: 12/15/22**					
Mercury, Dissolved	1.27	0.037	0.050	ug/l	1.00	ND	127	70-130			
Mercury, Total	1.27	0.037	0.050	ug/l	1.00	ND	127	70-130			
Matrix Spike (W2L1127-MS2)	**Source: 2L08103-01**				**Prepared: 12/14/22**	**Analyzed: 12/15/22**					
Mercury, Dissolved	1.01	0.037	0.050	ug/l	1.00	ND	101	70-130			
Mercury, Total	1.01	0.037	0.050	ug/l	1.00	ND	101	70-130			
Matrix Spike Dup (W2L1127-MSD1)	**Source: 2L07018-01**				**Prepared: 12/14/22**	**Analyzed: 12/15/22**					
Mercury, Dissolved	1.07	0.037	0.050	ug/l	1.00	ND	107	70-130	16	20	
Mercury, Total	1.07	0.037	0.050	ug/l	1.00	ND	107	70-130	16	20	
Matrix Spike Dup (W2L1127-MSD2)	**Source: 2L08103-01**				**Prepared: 12/14/22**	**Analyzed: 12/15/22**					
Mercury, Dissolved	1.05	0.037	0.050	ug/l	1.00	ND	105	70-130	5	20	
Mercury, Total	1.05	0.037	0.050	ug/l	1.00	ND	105	70-130	5	20	

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Quality Control Results

(Continued)

Semivolatile Organics - Low Level by Tandem GC/MS/MS

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W2L1204 - EPA 625.1											
Blank (W2L1204-BLK1)					**Prepared: 12/15/22 Analyzed: 12/20/22**						
Acenaphthene	ND	1.2	5.0	ng/l							
Acenaphthylene	5.83	1.0	5.0	ng/l							B
Anthracene	ND	1.1	5.0	ng/l							
Benzo (a) anthracene	ND	0.92	5.0	ng/l							
Benzo (a) pyrene	ND	0.97	5.0	ng/l							
Benzo (b) fluoranthene	ND	1.6	5.0	ng/l							
Benzo (g,h,i) perylene	ND	1.0	5.0	ng/l							
Benzo (k) fluoranthene	ND	1.2	5.0	ng/l							
Chrysene	ND	1.4	5.0	ng/l							
Dibenzo (a,h) anthracene	ND	1.2	5.0	ng/l							
Fluoranthene	ND	1.5	5.0	ng/l							
Fluorene	1.16	1.1	5.0	ng/l							B-02, J
Indeno (1,2,3-cd) pyrene	ND	0.97	5.0	ng/l							
Naphthalene	7.95	3.2	5.0	ng/l							B
Phenanthrene	3.30	3.0	5.0	ng/l							B-02, J
Pyrene	ND	1.4	5.0	ng/l							
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	*77.8*			*ng/l*	*100*		*78*	*62-120*			
Perylene-d12	*66.0*			*ng/l*	*100*		*66*	*36-120*			
LCS (W2L1204-BS1)					**Prepared: 12/15/22 Analyzed: 12/19/22**						
Acenaphthene	45.6	1.2	5.0	ng/l	50.0		91	60-132			
Acenaphthylene	45.3	1.0	5.0	ng/l	50.0		91	54-126			
Anthracene	47.9	1.1	5.0	ng/l	50.0		96	43-120			
Benzo (a) anthracene	38.9	0.92	5.0	ng/l	50.0		78	42-133			
Benzo (a) pyrene	26.8	0.97	5.0	ng/l	50.0		54	32-148			
Benzo (b) fluoranthene	32.8	1.6	5.0	ng/l	50.0		66	42-140			AN-IP
Benzo (g,h,i) perylene	19.1	1.0	5.0	ng/l	50.0		38	0.1-195			
Benzo (k) fluoranthene	29.9	1.2	5.0	ng/l	50.0		60	25-146			AN-IP
Chrysene	36.0	1.4	5.0	ng/l	50.0		72	44-140			
Dibenzo (a,h) anthracene	19.0	1.2	5.0	ng/l	50.0		38	0.1-200			
Fluoranthene	46.7	1.5	5.0	ng/l	50.0		93	43-121			
Fluorene	48.4	1.1	5.0	ng/l	50.0		97	70-120			
Indeno (1,2,3-cd) pyrene	20.9	0.97	5.0	ng/l	50.0		42	0.1-151			
Naphthalene	46.9	3.2	5.0	ng/l	50.0		94	36-120			
Phenanthrene	49.5	3.0	5.0	ng/l	50.0		99	65-120			
Pyrene	45.2	1.4	5.0	ng/l	50.0		90	70-120			
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	*90.9*			*ng/l*	*100*		*91*	*62-120*			
Perylene-d12	*66.9*			*ng/l*	*100*		*67*	*36-120*			

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Quality Control Results

(Continued)

Semivolatile Organics - Low Level by Tandem GC/MS/MS (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W2L1204 - EPA 625.1 (Continued)											
LCS Dup (W2L1204-BSD1)					**Prepared: 12/15/22**	**Analyzed: 12/19/22**					
Acenaphthene	44.7	1.2	5.0	ng/l	50.0		89	60-132	2	30	
Acenaphthylene	45.7	1.0	5.0	ng/l	50.0		91	54-126	1	30	
Anthracene	44.9	1.1	5.0	ng/l	50.0		90	43-120	6	30	
Benzo (a) anthracene	36.1	0.92	5.0	ng/l	50.0		72	42-133	8	30	
Benzo (a) pyrene	23.3	0.97	5.0	ng/l	50.0		47	32-148	14	30	
Benzo (b) fluoranthene	31.5	1.6	5.0	ng/l	50.0		63	42-140	4	30	AN-IP
Benzo (g,h,i) perylene	15.5	1.0	5.0	ng/l	50.0		31	0.1-195	21	30	
Benzo (k) fluoranthene	25.7	1.2	5.0	ng/l	50.0		51	25-146	15	30	AN-IP
Chrysene	33.6	1.4	5.0	ng/l	50.0		67	44-140	7	30	
Dibenzo (a,h) anthracene	14.4	1.2	5.0	ng/l	50.0		29	0.1-200	28	30	
Fluoranthene	44.8	1.5	5.0	ng/l	50.0		90	43-121	4	30	
Fluorene	47.6	1.1	5.0	ng/l	50.0		95	70-120	2	30	
Indeno (1,2,3-cd) pyrene	16.5	0.97	5.0	ng/l	50.0		33	0.1-151	23	30	
Naphthalene	43.5	3.2	5.0	ng/l	50.0		87	36-120	7	30	
Phenanthrene	47.3	3.0	5.0	ng/l	50.0		95	65-120	5	30	
Pyrene	43.0	1.4	5.0	ng/l	50.0		86	70-120	5	30	
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	*79.5*			*ng/l*	*100*		*79*	*62-120*			
Perylene-d12	*52.9*			*ng/l*	*100*		*53*	*36-120*			

Notes and Definitions

Item	Definition
AN-IP	Sample results for structural isomers may have contribution from their isomeric pair.
B	Blank contamination. The analyte was found in the associated blank as well as in the sample.
B-02	This analyte is detected in the method blank below the MRL, but above the method acceptance criteria.
FILT	The sample was filtered prior to analysis.
J	Estimated conc. detected <MRL and >MDL.
M-02	Due to the nature of matrix interferences, sample was diluted prior to preparation. The MDL and MRL were raised due to the dilution.
MS-01	The spike recovery for this QC sample is outside of established control limits possibly due to sample matrix interference.
ND	Not Detected
%REC	Percent Recovery
Dil	Dilution
MDL	Method Detection Limit
MRL	The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. The MRL is also known as Limit of Quantitation (LOQ)
ND	NOT DETECTED at or above the Method Reporting Limit (MRL). If Method Detection Limit (MDL) is reported, then ND means not detected at or above the MDL.
RPD	Relative Percent Difference
Source	Sample that was matrix spiked or duplicated.

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance.

All results are expressed on wet weight basis unless otherwise specified.

All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS002.

2208112

WSP

Chain of Custody

From:	To:	Lab Notes:
WSP Environment & Infrastructure Solutions 9177 Sky Park Court San Diego, CA 92123 (661) 373-5505 (858) 278-5300 Fax Contact: Brenda Stevens/Kimberly Henry	Weck Laboratories 14859 Clark Avenue Industry, CA 91745 (626) 336-2139 (626) 336-2634 Fax Contact: Chris Samatmanakit	

PO#:	Project Number:	Project Name:	Sample Matrix:
C015102726	5025-22-0004	SGVCOG Fire Effects Study	Water

SampleID	Sample Date	Sample Time	Sample Type	Analysis	Container	Pres	No. of Bottles
F_193B_R-FES-D1-120822-P	12/08/22	0715	Grab	Chlorophyll-a (SM 10200H)	1-L Amber Poly	Unpres.	1
F_193B_R-FES-D1-120822-P	12/08/22	0715	Grab	Total Metals (EPA 200.8); Hardness (EPA 200.7); Total Phosphorus (EPA 200.7)	500-mL Poly-Metals	HNO3	1
F_193B_R-FES-D1-120822-P	12/08/22	0715	Grab	Dissolved Metals (EPA 200.8); Dissolved Phosphorus (EPA 200.7)	500-mL Poly-Metals Diss	Unpres.	1
F_193B_R-FES-D1-120822-P	12/08/22	0715	Grab	Total Hexavalent Chromium (EPA 218.6)	60-mL Poly	(NH4)2SO4/NH4OH(0.6mL)	1
F_193B_R-FES-D1-120822-P	12/08/22	0715	Grab	Dissolved Hexavalent Chromium (EPA 218.6)	60-mL Poly	Unpres.	1
F_193B_R-FES-D1-120822-P	12/08/22	0715	Grab	TDS (SM 2540C); TSS (SM 2540D)	2-L Poly	Unpres.	1
F_193B_R-FES-D1-120822-P	12/08/22	0715	Grab	Ammonia (EPA 350.1); TKN (EPA 351.2)	500-mL Poly	H2SO4	1
F_193B_R-FES-D1-120822-P	12/08/22	0715	Grab	Nitrate N (EPA 353.2); Nitrite N (EPA 353.2)	250-mL Poly	Unpres.	1
F_193B_R-FES-D1-120822-P	12/08/22	0715	Grab	PAH (EPA 625.1)	1-L Amber Glass	Unpres.	2
F_194B_R-FES-D1-120822-P	12/08/22	0804	Grab	Chlorophyll-a (SM 10200H)	1-L Amber Poly	Unpres.	1
F_194B_R-FES-D1-120822-P	12/08/22	0804	Grab	Total Metals (EPA 200.8); Hardness (EPA 200.7); Total Phosphorus (EPA 200.7)	500-mL Poly-Metals	HNO3	1
F_194B_R-FES-D1-120822-P	12/08/22	0804	Grab	Dissolved Metals (EPA 200.8); Dissolved Phosphorus (EPA 200.7)	500-mL Poly-Metals Diss	Unpres.	1

Special Instructions/Comments:

Metals (Dissolved and Total) to include aluminum, antimony, arsenic, beryllium, cadmium, chromium (total), chromium (hexavalent), copper, iron, lead, mercury, nickel, selenium, silver, thallium, and zinc
Please provide results to Brenda Stevens (brenda.stevens@wsp.com) and Luis De La Torre (luis.delatorre@wsp.com)

Sampled and Relinquished By:		Received By:	
Print: Luis De La Torre Sign: Luis De La Torre	Date/Time: 12-8-22 11:05	Print: Sign:	Date/Time: 12-08-22 11:10
Print: Sign:	Date/Time:	Print: Sign:	Date/Time:
Print: Sign:	Date/Time:	Print: Sign:	Date/Time:

4.8c T-0208

21 08112

Chain of Custody

Page 2 of 3

From:	To:	Lab Notes:
WSP Environment & Infrastructure Solutions 9177 Sky Park Court San Diego, CA 92123 (661) 373-5505 (858) 278-5300 Fax Contact: Brenda Stevens/Kimberly Henry	Weck Laboratories 14859 Clark Avenue Industry, CA 91745 (626) 336-2139 (626) 336-2634 Fax Contact: Chris Samatmanakit	

PO#:	Project Number:	Project Name:	Sample Matrix:
C015102726	5025-22-0004	SGVCOG Fire Effects Study	Water

SampleID	Sample Date	Sample Time	Sample Type	Analysis	Container	Pres	No. of Bottles
F_194B_R-FES-D1-120822-P	12/08/22	0804	Grab	Total Hexavalent Chromium (EPA 218.6)	60-mL Poly	(NH4)2SO4/NH4OH(0.6mL)	1
F_194B_R-FES-D1-120822-P	12/08/22	0804	Grab	Dissolved Hexavalent Chromium (EPA 218.6)	60-mL Poly	Unpres.	1
F_194B_R-FES-D1-120822-P	12/08/22	0804	Grab	TDS (SM 2540C); TSS (SM 2540D)	2-L Poly	Unpres.	1
F_194B_R-FES-D1-120822-P	12/08/22	0804	Grab	Ammonia (EPA 350.1); TKN (EPA 351.2)	500-mL Poly	H2SO4	1
F_194B_R-FES-D1-120822-P	12/08/22	0804	Grab	Nitrate N (EPA 353.2); Nitrite N (EPA 353.2)	250-mL Poly	Unpres.	1
F_194B_R-FES-D1-120822-P	12/08/22	0804	Grab	PAH (EPA 625.1)	1-L Amber Glass	Unpres.	2
ARCAD_WA_CON-FES-D1-120822-P	12/08/22	0915	Grab	Chlorophyll-a (SM 10200H)	1-L Amber Poly	Unpres.	1
ARCAD_WA_CON-FES-D1-120822-P	12/08/22	0915	Grab	Total Metals (EPA 200.8); Hardness (EPA 200.7); Total Phosphorus (EPA 200.7)	500-mL Poly-Metals	HNO3	1
ARCAD_WA_CON-FES-D1-120822-P	12/08/22	0915	Grab	Dissolved Metals (EPA 200.8); Dissolved Phosphorus (EPA 200.7)	500-mL Poly-Metals Diss	Unpres.	1
ARCAD_WA_CON-FES-D1-120822-P	12/08/22	0915	Grab	Total Hexavalent Chromium (EPA 218.6)	60-mL Poly	(NH4)2SO4/NH4OH(0.6mL)	1
ARCAD_WA_CON-FES-D1-120822-P	12/08/22	0915	Grab	Dissolved Hexavalent Chromium (EPA 218.6)	60-mL Poly	Unpres.	1
ARCAD_WA_CON-FES-D1-120822-P	12/08/22	0915	Grab	TDS (SM 2540C); TSS (SM 2540D)	2-L Poly	Unpres.	1

Special Instructions/Comments:

Metals (Dissolved and Total) to include aluminum, antimony, arsenic, beryllium, cadmium, chromium (total), chromium (hexavalent), copper, iron, lead, mercury, nickel, selenium, silver, thallium, and zinc
Please provide results to Brenda Stevens (brenda.stevens@wsp.com) and Luis De La Torre (luis.delatorre@wsp.com)

Sampled and Relinquished By:		Received By:	
Print: Luis De La Torre Sign: Luis De La Torre	Date/Time: 12-8-22 11:05	Print: Sign:	Date/Time: 12-08-22 11:10
Print: Sign:	Date/Time:	Print: Sign:	Date/Time:
Print: Sign:	Date/Time:	Print: Sign:	Date/Time:

2108112

WSP

Chain of Custody

From:	To:	Lab Notes:
WSP Environment & Infrastructure Solutions 9177 Sky Park Court San Diego, CA 92123 (661) 373-5505 (858) 278-5300 Fax Contact: Brenda Stevens/Kimberly Henry	Weck Laboratories 14859 Clark Avenue Industry, CA 91745 (626) 336-2139 (626) 336-2634 Fax Contact: Chris Samatmanakit	

PO#:	Project Number:	Project Name:	Sample Matrix:
C015102726	5025-22-0004	SGVCOG Fire Effects Study	Water

SampleID	Sample Date	Sample Time	Sample Type	Analysis	Container	Pres	No. of Bottles
ARCAD_WA_CON-FES-D1-120822-P	12/08/22	0915	Grab	Ammonia (EPA 350.1); TKN (EPA 351.2)	500-mL Poly	H2SO4	1
ARCAD_WA_CON-FES-D1-120822-P	12/08/22	0915	Grab	Nitrate N (EPA 353.2); Nitrite N (EPA 353.2)	250-mL Poly	Unpres.	1
ARCAD_WA_CON-FES-D1-120822-P	12/08/22	0915	Grab	PAH (EPA 625.1)	1-L Amber Glass	Unpres.	2
ARCAD_WA_CON-FES-D1-120822-D	12/08/22	0915	Grab	Chlorophyll-a (SM 10200H)	1-L Amber Poly	Unpres.	1
ARCAD_WA_CON-FES-D1-120822-D	12/08/22	0915	Grab	Total Metals (EPA 200.8); Hardness (EPA 200.7); Total Phosphorus (EPA 200.7)	500-mL Poly-Metals	HNO3	1
ARCAD_WA_CON-FES-D1-120822-D	12/08/22	0915	Grab	Dissolved Metals (EPA 200.8); Dissolved Phosphorus (EPA 200.7)	500-mL Poly-Metals Diss	Unpres.	1
ARCAD_WA_CON-FES-D1-120822-D	12/08/22	0915	Grab	Total Hexavalent Chromium (EPA 218.6)	60-mL Poly	(NH4)2SO4/NH4OH(0.6mL)	1
ARCAD_WA_CON-FES-D1-120822-D	12/08/22	0915	Grab	Dissolved Hexavalent Chromium (EPA 218.6)	60-mL Poly	Unpres.	1
ARCAD_WA_CON-FES-D1-120822-D	12/08/22	0915	Grab	TDS (SM 2540C); TSS (SM 2540D)	2-L Poly	Unpres.	1
ARCAD_WA_CON-FES-D1-120822-D	12/08/22	0915	Grab	Ammonia (EPA 350.1); TKN (EPA 351.2)	500-mL Poly	H2SO4	1
ARCAD_WA_CON-FES-D1-120822-D	12/08/22	0915	Grab	Nitrate N (EPA 353.2); Nitrite N (EPA 353.2)	250-mL Poly	Unpres.	1
ARCAD_WA_CON-FES-D1-120822-D	12/08/22	0915	Grab	PAH (EPA 625.1)	1-L Amber Glass	Unpres.	2

Special Instructions/Comments:

Metals (Dissolved and Total) to include aluminum, antimony, arsenic, beryllium, cadmium, chromium (total), chromium (hexavalent), copper, iron, lead, mercury, nickel, selenium, silver, thallium, and zinc
Please provide results to Brenda Stevens (brenda.stevens@wsp.com) and Luis De La Torre (luis.delatorre@wsp.com)

Sampled and Relinquished By:		Received By:	
Print: Luis De La Torre Sign: Luis De La Torre	Date/Time: 12-8-22 11:05	Print: Sign:	Date/Time: 12-08-22 11:10
Print: Sign:	Date/Time:	Print: Sign:	Date/Time:
Print: Sign:	Date/Time:	Print: Sign:	Date/Time:

WECK LABORATORIES, INC.

Sample Receipt Checklist

Weck WKO: 2L08112
WKO Logged by: Jerico Bolotano
Samples Checked by: Jerico Bolotano

Date/Time Received: 12/08/22 @ 11:10
# of Samples: 04
Delivered by: Client

	Task	Yes	No	N/A	Comments
COC	COC present at receipt?	☒	☐		
	COC properly completed?	☒	☐		
	COC matches sample labels?	☒	☐		
		☐	☐		
	Project Manager notified?	☐	☐	☒	
Receipt Information	Sample Temperature	4.8°C			
	Samples received on ice?	☒	☐		
	Ice Type (Blue/Wet)	Wet			
	All samples intact?	☒	☐		
	Samples in proper containers?	☒	☐		
	Sufficient sample volume?	☒	☐		
	Samples intact?	☒	☐		
	Received within holding time?	☒	☐		
		☐	☐		
	Project Manager notified?	☐	☐	☒	
Sample Preservation Verification?	Sample labels checked for correct preservation?	☒	☐	☐	
	VOC Headspace: (No) none, If Yes (See comment) 524.2, 524.3, 624.1, 8260, 1666 P/T, LUFT	☐	☐	☒	☐ <6mm/Pea size?
	pH verified upon receipt? Metals <2; H2SO4 pres tests <2; 522<4; TOC <2; 525.2<2; 6710B<2; 608.3 5-9	☒	☐	☐	pH paper Lot# 2071882
	Free Chlorine Tested <0.1	☒	☐	☐	Cl Test Strip Lot# 061221E
	O&G pH <2 verified?	☐	☐	☐	pH paper Lot# pH Reading:
	pH adjusted for O&G	☐	☐	☐	Acid Lot# Amt added:
	Project Manager notified?	☐	☐	☐	

PM Comments

Sample Receipt Checklist Prepared by:
Signature: JB
Date: 12/08/22

Enthalpy Analytical
931 West Barkley Ave
Orange, CA 92868
(714) 771-6900

enthalpy.com

Lab Job Number: 474664
Report Level: II
Report Date: 12/22/2022

Analytical Report *prepared for:*

Chris Samatmanakit
Weck Laboratories
14859 Clark Ave.
City of Industry, CA 91745

Location: 2L08112

Authorized for release by:

Quynhgiao Le

Quynhgiao Le, Project Manager
714-7716900
quynhgiao.le@enthalpy.com

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the above signature which applies to this PDF file as well as any associated electronic data deliverable files. The results contained in this report meet all requirements of NELAP and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

CA ELAP# 1338, NELAP# 4038, SCAQMD LAP# 18LA0518, LACSD ID# 10105

Sample Summary

Chris Samatmanakit
Weck Laboratories
14859 Clark Ave.
City of Industry, CA 91745

Lab Job #:	474664
Location:	2L08112
Date Received:	12/09/22

Sample ID	Lab ID	Collected	Matrix
2L08112-01/F_193_R-FES-D1-120822-P	474664-001	12/08/22 07:15	Water
2L08112-02/F_194B_R-FES-D1-120822-P	474664-002	12/08/22 08:04	Water
2L08112-03/ARCAD_WA_CON-FES-D1-120822-P	474664-003	12/08/22 09:15	Water
2L08112-04/ARCAD_WA_CON-FES-D1-120822-D	474664-004	12/08/22 09:15	Water

WECK LABORATORIES INC

Subcontract Order

Subcontracted Laboratory:

Enthalpy Analytical
931 W. Barkley Ave
Orange, CA 92868
Phone: (714) 771-6900
Fax: (714) 538-1209

474664

Turn Around Time: Normal unless noted in comments
Project Manager: Chris Samatmanakit
Project Name: San Gabriel Valley Council of Governn
Project Number: SGVCOG Fire Effects Study
Sampler Employed by:
Drinking Water: Yes / No
Need Transfer File (xls): Yes / No
Tracking Number:

Work Order: 2L08112

Analysis	Expires	Comments
Sample ID: 2L08112-01/F_193_R-FES-D1-120822-P		**Sampled:** 12/08/2022 07:15
Sample comment:		**Matrix:** Water **Sampled By:** Client
Chlorophyll-a - SM 10200H	12/10/2022 07:15	1000mL filtered on 12/8/22 at 19:15. TestAmerica EDD needed.
Containers Supplied:		
Sample ID: 2L08112-02/F_194B_R-FES-D1-120822-P		**Sampled:** 12/08/2022 08:04
Sample comment:		**Matrix:** Water **Sampled By:** Client
Chlorophyll-a - SM 10200H	12/10/2022 08:04	1031mL filtered on 12/8/22 at 19:10. TestAmerica EDD needed.
Containers Supplied:		
Sample ID: 2L08112-03/ARCAD_WA_CON-FES-D1-120822-P		**Sampled:** 12/08/2022 09:15
Sample comment:		**Matrix:** Water **Sampled By:** Client
Chlorophyll-a - SM 10200H	12/10/2022 09:15	1006mL filtered on 12/8/22 at 19:20. TestAmerica EDD needed.
Containers Supplied:		
Sample ID: 2L08112-04/ARCAD_WA_CON-FES-D1-120822-D		**Sampled:** 12/08/2022 09:15
Sample comment:		**Matrix:** Water **Sampled By:** Client
Chlorophyll-a - SM 10200H	12/10/2022 09:15	1030mL filtered on 12/8/22 at 19:25. TestAmerica EDD needed.
Containers Supplied:		

Remarks / Special Comments:

Sample Condition

Temperature: 15.1
Preserved: Yes / No
Evidence Seal Intact: Yes / No
Container Attacked: Yes / No
Preserved at Lab: Yes / No

Relinqished By	Date / Time	Received By	Date / Time
[signature]	12/9/22 1310	[signature]	12/09/22 1310.

Relinqished By — Date / Time — Received By — Date / Time

ENTHALPY ANALYTICAL

SAMPLE ACCEPTANCE CHECKLIST

Section 1

Client: Weck Labs

Project: 2L08112

Date Received: 12/9/22

Sampler's Name Present: ☑ Yes ☐ No

Section 2

Sample(s) received in a cooler? ☐ Yes, How many? ______ ☑ No (skip section 2)

Sample Temp (°C) (No Cooler): 15.1

Sample Temp (°C), One from each cooler: #1: ________ #2: ________ #3: ________ #4: ________

(Acceptance range is < 6°C but not frozen (for Microbiology samples, acceptance range is < 10°C but not frozen). It is acceptable for samples collected the same day as sample receipt to have a higher temperature as long as there is evidence that cooling has begun.)

Shipping Information: ________

Section 3

Was the cooler packed with: ☐ Ice ☐ Ice Packs ☐ Bubble Wrap ☐ Styrofoam ☐ Paper ☐ None ☐ Other ________

Cooler Temp (°C): #1: ________ #2: ________ #3: ________ #4: ________

Section 4	YES	NO	N/A
Was a COC received?	✓		
Are sample IDs present?	✓		
Are sampling dates & times present?	✓		
Is a relinquished signature present?	✓		
Are the tests required clearly indicated on the COC?	✓		
Are custody seals present?		✓	
If custody seals are present, were they intact?			✓
Are all samples sealed in plastic bags? (Recommended for Microbiology samples)			✓
Did all samples arrive intact? If no, indicate in Section 4 below.	✓		
Did all bottle labels agree with COC? (ID, dates and times)	✓		
Were the samples collected in the correct containers for the required tests?	✓		
Are the containers labeled with the correct preservatives?			✓
Is there headspace in the VOA vials greater than 5-6 mm in diameter?			✓
Was a sufficient amount of sample submitted for the requested tests?	✓		

Section 5 Explanations/Comments

Received filters wrapped in tinfoil. Not frozen. Times on containers represent time filtered, not time sampled.

Section 6

For discrepancies, how was the Project Manager notified? ☐ Verbal PM Initials: ______ Date/Time ________

☐ Email (email sent to/on): ______ / ________

Project Manager's response:

Completed By: [signature] Date: 12/9/22

Analysis Results for 474664

Chris Samatmanakit
Weck Laboratories
14859 Clark Ave.
City of Industry, CA 91745

Lab Job #: 474664
Location: 2L08112
Date Received: 12/09/22

Sample ID: **2L08112-01/F_193_R-FES-D1-120822-P** **Lab ID:** **474664-001** **Matrix:** **Water** **Collected:** **12/08/22 07:15**

Received filtered & frozen. Volume: 1000 ml

474664-001 Analyte	Result	Qual	Units	RL	DF	Batch	Prepared	Analyzed	Chemist
Method: SM 10200-H									
Chlorophyll a	ND		mg/M3	1.0	1	303403	12/08/22 19:50	12/12/22 11:33	ATP

Sample ID: **2L08112-02/F_194B_R-FES-D1-120822-P** **Lab ID:** **474664-002** **Matrix:** **Water** **Collected:** **12/08/22 08:04**

Received filtered & frozen. Volume: 1031 mL

474664-002 Analyte	Result	Qual	Units	RL	DF	Batch	Prepared	Analyzed	Chemist
Method: SM 10200-H									
Chlorophyll a	**1.2**		mg/M3	1.0	1	303403	12/08/22 19:10	12/12/22 11:33	ATP

Sample ID: **2L08112-03/ARCAD_WA_CON-FES-D1-120822-P** **Lab ID:** **474664-003** **Matrix:** **Water** **Collected:** **12/08/22 09:15**

Received filtered & frozen. Volume: 1006 mL

474664-003 Analyte	Result	Qual	Units	RL	DF	Batch	Prepared	Analyzed	Chemist
Method: SM 10200-H									
Chlorophyll a	**4.4**		mg/M3	1.0	1	303403	12/08/22 19:20	12/12/22 11:33	ATP

Sample ID: **2L08112-04/ARCAD_WA_CON-FES-D1-120822-D** **Lab ID:** **474664-004** **Matrix:** **Water** **Collected:** **12/08/22 09:15**

Received filtered & frozen. Volume: 1030 mL

474664-004 Analyte	Result	Qual	Units	RL	DF	Batch	Prepared	Analyzed	Chemist
Method: SM 10200-H									
Chlorophyll a	**12**		mg/M3	1.0	1	303403	12/08/22 19:25	12/12/22 11:33	ATP

ND Not Detected

Results for any subcontracted analyses are not included in this section.

Certificate of Analysis

FINAL REPORT

WECK LABORATORIES, INC.

Work Orders:	3F27060	**Report Date:**	8/25/2023
		Received Date:	06/27/2023
Project:	5025-22-0004	**Turnaround Time:**	Normal
		Phones:	(858) 514-7729
		Fax:	(858) 278-5300
Attn:	Brenda Stevens	**P.O. #:**	C015102726
Client:	WSP USA E&I Inc. - San Diego 9177 Sky Park Court, Ste A San Diego, CA 92123	**Billing Code:**	

DoD-ELAP ANAB #ADE-2882 • DoD-ISO ANAB # • ELAP-CA #1132 • EPA-UCMR #CA00211 • ISO17025 ANAB #L2457.01 • LACSD #10143

This is a complete final report. The information in this report applies to the samples analyzed in accordance with the chain-of-custody document. Weck Laboratories certifies that the test results meet all requirements of TNI unless noted by qualifiers or written in the Case Narrative. This analytical report must be reproduced in its entirety.

Dear Brenda Stevens,

Enclosed are the results of analyses for samples received 6/27/23 with the Chain-of-Custody document. The samples were received in good condition, at 1.6 °C and on ice. All analyses met the method criteria except as noted in the case narrative or in the report with data qualifiers.

Reviewed by:

Kim G. Tu
Project Manager

14859 Clark Avenue,City of Industry CA, 91745 | Phone: (626) 336-2139 | Fax: (626) 336-2634
www.wecklabs.com

Certificate of Analysis

FINAL REPORT

WSP USA E&I Inc. - San Diego
9177 Sky Park Court, Ste A
San Diego, CA 92123

Project Number: 5025-22-0004

Project Manager: Brenda Stevens

Reported:
08/25/2023 11:53

Sample Summary

Sample Name	Sampled By	Lab ID	Matrix	Sampled	Qualifiers
F-193B-R_2223_D2_01	Luis De La Torre	3F27060-01	Water	06/27/23 09:21	
F-194B-R_2223_D2_01	Luis De La Torre	3F27060-02	Water	06/27/23 10:20	
ARCAD_WA_CON_2223_D2_01	Luis De La Torre	3F27060-03	Water	06/27/23 11:15	
F-193B-R_2223_D2_03	Luis De La Torre	3F27060-04	Water	06/27/23 09:21	

14859 Clark Avenue,City of Industry CA, 91745 | Phone: (626) 336-2139 | Fax: (626) 336-2634
www.wecklabs.com

Certificate of Analysis

FINAL REPORT

WSP USA E&I Inc. - San Diego
9177 Sky Park Court, Ste A
San Diego, CA 92123

Project Number: 5025-22-0004

Project Manager: Brenda Stevens

Reported:
08/25/2023 11:53

Sample Results

Sample: F-193B-R_2223_D2_01
3F27060-01 (Water)

Sampled: 06/27/23 9:21 by Luis De La Torre

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods							
Method: Calculation			**Instr:** [CALC]				
Batch ID: [CALC] **Preparation:** [CALC]			**Prepared:** 07/14/23 15:08				**Analyst:** YMT
Nitrogen, Total	**1.6**	0.036	0.10	mg/l	1	07/18/23	
Method: EPA 350.1			**Instr:** AA06				
Batch ID: W3G0867 **Preparation:** _NONE (WETCHEM)			**Prepared:** 07/12/23 11:49				**Analyst:** YMT
Ammonia as N	**0.17**	0.017	0.10	mg/l	1	07/14/23	
Method: EPA 351.2			**Instr:** AA06				
Batch ID: W3G1099 **Preparation:** _NONE (WETCHEM)			**Prepared:** 07/14/23 15:08				**Analyst:** YMT
TKN	**1.6**	0.065	0.10	mg/l	1	07/18/23	
Method: EPA 353.2			**Instr:** AA01				
Batch ID: W3F2286 **Preparation:** _NONE (WETCHEM)			**Prepared:** 06/27/23 14:09				**Analyst:** ymt
Nitrate as N	ND	0.040	0.20	mg/l	1	06/27/23 21:29	
Nitrite as N	ND	42	100	ug/l	1	06/27/23 21:29	
NO2+NO3 as N	ND	36	200	ug/l	1	06/27/23	
Method: SM 2540C			**Instr:** OVEN17				
Batch ID: W3F2327 **Preparation:** _NONE (WETCHEM)			**Prepared:** 06/27/23 18:43				**Analyst:** bel
Total Dissolved Solids	**380**	4.0	10	mg/l	1	06/28/23	
Method: SM 2540D			**Instr:** OVEN15				
Batch ID: W3F2487 **Preparation:** _NONE (WETCHEM)			**Prepared:** 06/29/23 09:43				**Analyst:** mes
Total Suspended Solids	**5**		5	mg/l	1	06/29/23	
Hexavalent Chromium by IC							
Method: EPA 218.6			**Instr:** LC13				
Batch ID: W3G0518 **Preparation:** _NONE (LC)			**Prepared:** 07/10/23 10:11				**Analyst:** CLL
Chromium 6+	**2.1**	0.0079	0.020	ug/l	1	07/10/23	
Chromium 6+, Dissolved	**2.1**	0.0079	0.020	ug/l	1	07/10/23	
Metals by EPA 200 Series Methods							
Method: Calculation			**Instr:** [CALC]				
Batch ID: [CALC] **Preparation:** [CALC]			**Prepared:** 07/11/23 11:03				**Analyst:** kvm
Hardness as CaCO3, Total	**164**	0.344	3.31	mg/l	1	07/13/23	
Method: EPA 200.7			**Instr:** ICP03				
Batch ID: W3G0695 **Preparation:** EPA 200.2			**Prepared:** 07/11/23 11:03				**Analyst:** kvm
Calcium, Total	**44.0**	0.0736	0.500	mg/l	1	07/13/23	
Magnesium, Total	**13.0**	0.0390	0.500	mg/l	1	07/13/23	
Phosphorus, Dissolved	**0.028**	0.018	0.050	mg/l	1	07/13/23	J
Phosphorus, Total	**0.068**	0.018	0.050	mg/l	1	07/13/23	
Method: EPA 200.8			**Instr:** ICPMS06				
Batch ID: W3G0711 **Preparation:** EPA 200.2			**Prepared:** 07/11/23 13:50				**Analyst:** tyc
Aluminum, Dissolved	ND	4.4	20	ug/l	1	07/12/23	

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Project Number: 5025-22-0004

Project Manager: Brenda Stevens

Reported: 08/25/2023 11:53

Sample Results

(Continued)

Sample: F-193B-R_2223_D2_01 3F27060-01 (Water)

Sampled: 06/27/23 9:21 by Luis De La Torre

(Continued)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Metals by EPA 200 Series Methods (Continued)							
Method: EPA 200.8			**Instr:** ICPMS06				
Batch ID: W3G0711 **Preparation:** EPA 200.2			**Prepared:** 07/11/23 13:50				**Analyst:** tyc
Aluminum, Total	**19**	4.4	20	ug/l	1	07/12/23	J
Antimony, Dissolved	**0.81**	0.089	0.50	ug/l	1	07/12/23	
Antimony, Total	**0.80**	0.089	0.50	ug/l	1	07/12/23	
Arsenic, Dissolved	**1.2**	0.074	0.40	ug/l	1	07/12/23	
Arsenic, Total	**1.3**	0.074	0.40	ug/l	1	07/12/23	
Beryllium, Dissolved	ND	0.062	0.10	ug/l	1	07/12/23	
Beryllium, Total	ND	0.029	0.10	ug/l	1	07/12/23	
Cadmium, Dissolved	ND	0.042	0.20	ug/l	1	07/12/23	
Cadmium, Total	ND	0.042	0.20	ug/l	1	07/12/23	
Chromium, Dissolved	**2.3**	0.089	0.20	ug/l	1	07/12/23	
Chromium, Total	**2.4**	0.089	0.20	ug/l	1	07/12/23	
Copper, Dissolved	**23**	0.23	0.50	ug/l	1	07/12/23	
Copper, Total	**25**	0.23	0.50	ug/l	1	07/12/23	
Iron, Dissolved	**23**	3.9	20	ug/l	1	07/12/23	
Iron, Total	**45**	3.9	20	ug/l	1	07/12/23	
Lead, Dissolved	**0.14**	0.083	0.20	ug/l	1	07/12/23	J
Lead, Total	**0.25**	0.083	0.20	ug/l	1	07/12/23	
Nickel, Dissolved	**0.53**	0.16	2.0	ug/l	1	07/12/23	J
Nickel, Total	**0.49**	0.40	2.0	ug/l	1	07/12/23	J
Selenium, Dissolved	**0.43**	0.067	0.40	ug/l	1	07/12/23	
Selenium, Total	**0.44**	0.067	0.40	ug/l	1	07/12/23	
Silver, Dissolved	ND	0.030	0.20	ug/l	1	07/12/23	
Silver, Total	ND	0.055	0.20	ug/l	1	07/12/23	
Thallium, Dissolved	ND	0.021	0.20	ug/l	1	07/12/23	
Thallium, Total	ND	0.021	0.20	ug/l	1	07/12/23	
Zinc, Dissolved	**4.4**	1.7	10	ug/l	1	07/12/23	J
Zinc, Total	**5.7**	1.7	10	ug/l	1	07/12/23	J
Method: EPA 245.1			**Instr:** HG03				
Batch ID: W3G0571 **Preparation:** EPA 245.1			**Prepared:** 07/10/23 16:36				**Analyst:** KVM
Mercury, Dissolved	ND	0.037	0.050	ug/l	1	07/12/23	
Mercury, Total	ND	0.037	0.050	ug/l	1	07/12/23	
Semivolatile Organics - Low Level by GC/MS SIM Mode							
Method: EPA 625.1			**Instr:** GCMS06				
Batch ID: W3G0052 **Preparation:** EPA 625/L-L SF			**Prepared:** 07/03/23 09:26				**Analyst:** rmr
1-Methylnaphthalene	ND	0.024	0.10	ug/l	1	07/14/23	
2-Methylnaphthalene	ND	0.026	0.10	ug/l	1	07/14/23	

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Project Manager: Brenda Stevens

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Sample Results

(Continued)

Sample: F-193B-R_2223_D2_01 — Sampled: 06/27/23 9:21 by Luis De La Torre

3F27060-01 (Water) — (Continued)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Semivolatile Organics - Low Level by GC/MS SIM Mode (Continued)							
Method: EPA 625.1			**Instr:** GCMS06				
Batch ID: W3G0052 **Preparation:** EPA 625/L-L SF			**Prepared:** 07/03/23 09:26				**Analyst:** rmr
Acenaphthene	ND	0.028	0.10	ug/l	1	07/14/23	
Acenaphthylene	ND	0.033	0.10	ug/l	1	07/14/23	
Anthracene	ND	0.025	0.10	ug/l	1	07/14/23	
Benzo (a) anthracene	ND	0.051	0.10	ug/l	1	07/14/23	
Benzo (a) pyrene	ND	0.051	0.10	ug/l	1	07/14/23	
Benzo (b) fluoranthene	ND	0.074	0.10	ug/l	1	07/14/23	
Benzo (g,h,i) perylene	ND	0.050	0.10	ug/l	1	07/14/23	
Benzo (k) fluoranthene	ND	0.059	0.10	ug/l	1	07/14/23	
Chrysene	ND	0.074	0.10	ug/l	1	07/14/23	
Dibenzo (a,h) anthracene	ND	0.081	0.10	ug/l	1	07/14/23	
Fluoranthene	ND	0.039	0.10	ug/l	1	07/14/23	
Fluorene	ND	0.029	0.10	ug/l	1	07/14/23	
Indeno (1,2,3-cd) pyrene	ND	0.065	0.10	ug/l	1	07/14/23	
Naphthalene	ND	0.026	0.10	ug/l	1	07/14/23	
Phenanthrene	ND	0.029	0.10	ug/l	1	07/14/23	
Pyrene	ND	0.040	0.10	ug/l	1	07/14/23	
Surrogate(s)							
2-Fluorobiphenyl	*33%*	*Conc: 1.59*	*22-120*			*07/14/23*	
Nitrobenzene-d5	*32%*	*Conc: 1.55*	*47-120*			*07/14/23*	*S-11*
Terphenyl-d14	*17%*	*Conc: 0.824*	*44-129*			*07/14/23*	*S-11*

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(Continued)

Sample Results

Sample: F-194B-R_2223_D2_01 — 3F27060-02 (Water) — Sampled: 06/27/23 10:20 by Luis De La Torre

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods							
Method: Calculation — **Instr:** [CALC]							
Batch ID: [CALC] — **Preparation:** [CALC] — **Prepared:** 07/14/23 15:08 — **Analyst:** YMT							
Nitrogen, Total	**0.63**	0.036	0.10	mg/l	1	07/18/23	
Method: EPA 350.1 — **Instr:** AA06							
Batch ID: W3G0867 — **Preparation:** _NONE (WETCHEM) — **Prepared:** 07/12/23 11:49 — **Analyst:** YMT							
Ammonia as N	**0.10**	0.017	0.10	mg/l	1	07/14/23	
Method: EPA 351.2 — **Instr:** AA06							
Batch ID: W3G1099 — **Preparation:** _NONE (WETCHEM) — **Prepared:** 07/14/23 15:08 — **Analyst:** YMT							
TKN	**0.47**	0.065	0.10	mg/l	1	07/18/23	
Method: EPA 353.2 — **Instr:** AA01							
Batch ID: W3F2286 — **Preparation:** _NONE (WETCHEM) — **Prepared:** 06/27/23 14:09 — **Analyst:** ymt							
Nitrate as N	**0.16**	0.040	0.20	mg/l	1	06/27/23 21:30	J
Nitrite as N	ND	42	100	ug/l	1	06/27/23 21:30	
NO2+NO3 as N	**160**	36	200	ug/l	1	06/27/23	J
Method: SM 2540C — **Instr:** OVEN17							
Batch ID: W3F2327 — **Preparation:** _NONE (WETCHEM) — **Prepared:** 06/27/23 18:43 — **Analyst:** bel							
Total Dissolved Solids	**220**	4.0	10	mg/l	1	06/28/23	
Method: SM 2540D — **Instr:** OVEN15							
Batch ID: W3F2487 — **Preparation:** _NONE (WETCHEM) — **Prepared:** 06/29/23 09:43 — **Analyst:** mes							
Total Suspended Solids	**4**		5	mg/l	1	06/29/23	J
Hexavalent Chromium by IC							
Method: EPA 218.6 — **Instr:** LC13							
Batch ID: W3G0518 — **Preparation:** _NONE (LC) — **Prepared:** 07/10/23 10:11 — **Analyst:** CLL							
Chromium 6+	**0.25**	0.0079	0.020	ug/l	1	07/10/23	
Chromium 6+, Dissolved	**0.14**	0.0079	0.020	ug/l	1	07/10/23	
Metals by EPA 200 Series Methods							
Method: Calculation — **Instr:** [CALC]							
Batch ID: [CALC] — **Preparation:** [CALC] — **Prepared:** 07/11/23 11:03 — **Analyst:** kvm							
Hardness as CaCO3, Total	**146**	0.344	3.31	mg/l	1	07/13/23	
Method: EPA 200.7 — **Instr:** ICP03							
Batch ID: W3G0695 — **Preparation:** EPA 200.2 — **Prepared:** 07/11/23 11:03 — **Analyst:** kvm							
Calcium, Total	**34.8**	0.0736	0.500	mg/l	1	07/13/23	
Magnesium, Total	**14.4**	0.0390	0.500	mg/l	1	07/13/23	
Phosphorus, Dissolved	ND	0.018	0.050	mg/l	1	07/13/23	
Phosphorus, Total	**0.046**	0.018	0.050	mg/l	1	07/13/23	J
Method: EPA 200.8 — **Instr:** ICPMS06							
Batch ID: W3G0711 — **Preparation:** EPA 200.2 — **Prepared:** 07/11/23 13:50 — **Analyst:** tyc							
Aluminum, Dissolved	**16**	4.4	20	ug/l	1	07/12/23	J

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Sample Results

(Continued)

Sample: F-194B-R_2223_D2_01 — 3F27060-02 (Water)

Sampled: 06/27/23 10:20 by Luis De La Torre

(Continued)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Metals by EPA 200 Series Methods (Continued)							
Method: EPA 200.8			**Instr:** ICPMS06				
Batch ID: W3G0711 — **Preparation:** EPA 200.2			**Prepared:** 07/11/23 13:50				**Analyst:** tyc
Aluminum, Total	**270**	4.4	20	ug/l	1	07/12/23	
Antimony, Dissolved	**0.63**	0.089	0.50	ug/l	1	07/12/23	
Antimony, Total	**0.68**	0.089	0.50	ug/l	1	07/12/23	
Arsenic, Dissolved	**2.4**	0.074	0.40	ug/l	1	07/12/23	
Arsenic, Total	**2.6**	0.074	0.40	ug/l	1	07/12/23	
Beryllium, Dissolved	ND	0.062	0.10	ug/l	1	07/12/23	
Beryllium, Total	ND	0.029	0.10	ug/l	1	07/12/23	
Cadmium, Dissolved	ND	0.042	0.20	ug/l	1	07/12/23	
Cadmium, Total	ND	0.042	0.20	ug/l	1	07/12/23	
Chromium, Dissolved	**0.21**	0.089	0.20	ug/l	1	07/12/23	
Chromium, Total	**0.53**	0.089	0.20	ug/l	1	07/12/23	
Copper, Dissolved	**2.0**	0.23	0.50	ug/l	1	07/12/23	
Copper, Total	**2.6**	0.23	0.50	ug/l	1	07/12/23	
Iron, Dissolved	**13**	3.9	20	ug/l	1	07/12/23	J
Iron, Total	**320**	3.9	20	ug/l	1	07/12/23	
Lead, Dissolved	**0.12**	0.083	0.20	ug/l	1	07/12/23	J
Lead, Total	**0.85**	0.083	0.20	ug/l	1	07/12/23	
Nickel, Dissolved	**0.34**	0.16	2.0	ug/l	1	07/12/23	J
Nickel, Total	**0.46**	0.40	2.0	ug/l	1	07/12/23	J
Selenium, Dissolved	**0.13**	0.067	0.40	ug/l	1	07/12/23	J
Selenium, Total	**0.17**	0.067	0.40	ug/l	1	07/12/23	J
Silver, Dissolved	ND	0.030	0.20	ug/l	1	07/12/23	
Silver, Total	ND	0.055	0.20	ug/l	1	07/12/23	
Thallium, Dissolved	ND	0.021	0.20	ug/l	1	07/12/23	
Thallium, Total	ND	0.021	0.20	ug/l	1	07/12/23	
Zinc, Dissolved	ND	1.7	10	ug/l	1	07/12/23	
Zinc, Total	**3.3**	1.7	10	ug/l	1	07/12/23	J
Method: EPA 245.1			**Instr:** HG03				
Batch ID: W3G0571 — **Preparation:** EPA 245.1			**Prepared:** 07/10/23 16:36				**Analyst:** KVM
Mercury, Dissolved	ND	0.037	0.050	ug/l	1	07/12/23	
Mercury, Total	ND	0.037	0.050	ug/l	1	07/12/23	
Semivolatile Organics - Low Level by GC/MS SIM Mode							
Method: EPA 625.1			**Instr:** GCMS06				
Batch ID: W3G0052 — **Preparation:** EPA 625/L-L SF			**Prepared:** 07/03/23 09:26				**Analyst:** rmr
1-Methylnaphthalene	ND	0.024	0.10	ug/l	1	07/14/23	
2-Methylnaphthalene	ND	0.026	0.10	ug/l	1	07/14/23	

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Project Manager: Brenda Stevens

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Sample Results

(Continued)

Sample: F-194B-R_2223_D2_01 — Sampled: 06/27/23 10:20 by Luis De La Torre

3F27060-02 (Water) — (Continued)

Semivolatile Organics - Low Level by GC/MS SIM Mode (Continued)

Method: EPA 625.1 **Instr:** GCMS06

Batch ID: W3G0052 **Preparation:** EPA 625/L-L SF **Prepared:** 07/03/23 09:26 **Analyst:** rmr

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Acenaphthene	ND	0.028	0.10	ug/l	1	07/14/23	
Acenaphthylene	ND	0.033	0.10	ug/l	1	07/14/23	
Anthracene	ND	0.025	0.10	ug/l	1	07/14/23	
Benzo (a) anthracene	ND	0.051	0.10	ug/l	1	07/14/23	
Benzo (a) pyrene	ND	0.051	0.10	ug/l	1	07/14/23	
Benzo (b) fluoranthene	ND	0.074	0.10	ug/l	1	07/14/23	
Benzo (g,h,i) perylene	ND	0.050	0.10	ug/l	1	07/14/23	
Benzo (k) fluoranthene	ND	0.059	0.10	ug/l	1	07/14/23	
Chrysene	ND	0.074	0.10	ug/l	1	07/14/23	
Dibenzo (a,h) anthracene	ND	0.081	0.10	ug/l	1	07/14/23	
Fluoranthene	ND	0.039	0.10	ug/l	1	07/14/23	
Fluorene	ND	0.029	0.10	ug/l	1	07/14/23	
Indeno (1,2,3-cd) pyrene	ND	0.065	0.10	ug/l	1	07/14/23	
Naphthalene	ND	0.026	0.10	ug/l	1	07/14/23	
Phenanthrene	ND	0.029	0.10	ug/l	1	07/14/23	
Pyrene	ND	0.040	0.10	ug/l	1	07/14/23	
Surrogate(s)							
2-Fluorobiphenyl	*72%*	*Conc: 3.46*	*22-120*			*07/14/23*	
Nitrobenzene-d5	*70%*	*Conc: 3.33*	*47-120*			*07/14/23*	
Terphenyl-d14	*78%*	*Conc: 3.70*	*44-129*			*07/14/23*	

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Project Manager: Brenda Stevens

Reported:
08/25/2023 11:53

Sample Results

(Continued)

Sample: ARCAD_WA_CON_2223_D2_01
3F27060-03 (Water)

Sampled: 06/27/23 11:15 by Luis De La Torre

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods							
Method: Calculation			**Instr:** [CALC]				
Batch ID: [CALC] **Preparation:** [CALC]			**Prepared:** 07/14/23 15:08				**Analyst:** YMT
Nitrogen, Total	**1.8**	0.036	0.10	mg/l	1	07/18/23	
Method: EPA 350.1			**Instr:** AA06				
Batch ID: W3G0867 **Preparation:** _NONE (WETCHEM)			**Prepared:** 07/12/23 11:49				**Analyst:** YMT
Ammonia as N	**0.084**	0.017	0.10	mg/l	1	07/14/23	J
Method: EPA 351.2			**Instr:** AA06				
Batch ID: W3G1099 **Preparation:** _NONE (WETCHEM)			**Prepared:** 07/14/23 15:08				**Analyst:** YMT
TKN	**1.8**	0.065	0.10	mg/l	1	07/18/23	
Method: EPA 353.2			**Instr:** AA01				
Batch ID: W3F2286 **Preparation:** _NONE (WETCHEM)			**Prepared:** 06/27/23 14:09				**Analyst:** ymt
Nitrate as N	ND	0.040	0.20	mg/l	1	06/27/23 21:32	
Nitrite as N	ND	42	100	ug/l	1	06/27/23 21:32	
NO2+NO3 as N	ND	36	200	ug/l	1	06/27/23	
Method: SM 2540C			**Instr:** OVEN17				
Batch ID: W3F2444 **Preparation:** _NONE (WETCHEM)			**Prepared:** 06/28/23 17:53				**Analyst:** jls
Total Dissolved Solids	**260**	4.0	10	mg/l	1	06/29/23	
Method: SM 2540D			**Instr:** OVEN15				
Batch ID: W3F2487 **Preparation:** _NONE (WETCHEM)			**Prepared:** 06/29/23 09:43				**Analyst:** mes
Total Suspended Solids	**75**		5	mg/l	1	06/29/23	
Hexavalent Chromium by IC							
Method: EPA 218.6			**Instr:** LC13				
Batch ID: W3G0518 **Preparation:** _NONE (LC)			**Prepared:** 07/10/23 10:11				**Analyst:** CLL
Chromium 6+	**1.8**	0.0079	0.020	ug/l	1	07/10/23	
Chromium 6+, Dissolved	**1.7**	0.0079	0.020	ug/l	1	07/10/23	
Metals by EPA 200 Series Methods							
Method: Calculation			**Instr:** [CALC]				
Batch ID: [CALC] **Preparation:** [CALC]			**Prepared:** 07/11/23 11:03				**Analyst:** kvm
Hardness as CaCO3, Total	**118**	0.344	3.31	mg/l	1	07/13/23	
Method: EPA 200.7			**Instr:** ICP03				
Batch ID: W3G0695 **Preparation:** EPA 200.2			**Prepared:** 07/11/23 11:03				**Analyst:** kvm
Calcium, Total	**32.9**	0.0736	0.500	mg/l	1	07/13/23	
Magnesium, Total	**8.68**	0.0390	0.500	mg/l	1	07/13/23	
Phosphorus, Dissolved	**0.021**	0.018	0.050	mg/l	1	07/13/23	J
Phosphorus, Total	**0.11**	0.018	0.050	mg/l	1	07/13/23	
Method: EPA 200.8			**Instr:** ICPMS06				
Batch ID: W3G0711 **Preparation:** EPA 200.2			**Prepared:** 07/11/23 13:50				**Analyst:** tyc
Aluminum, Dissolved	**5.4**	4.4	20	ug/l	1	07/12/23	J

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San Diego, CA 92123

Project Number: 5025-22-0004

Project Manager: Brenda Stevens

Reported: 08/25/2023 11:53

Sample Results

(Continued)

Sample: ARCAD_WA_CON_2223_D2_01 — Sampled: 06/27/23 11:15 by Luis De La Torre

3F27060-03 (Water) — (Continued)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Metals by EPA 200 Series Methods (Continued)							
Method: EPA 200.8			**Instr:** ICPMS06				
Batch ID: W3G0711 **Preparation:** EPA 200.2			**Prepared:** 07/11/23 13:50				**Analyst:** tyc
Aluminum, Total	**32**	4.4	20	ug/l	1	07/12/23	
Antimony, Dissolved	**0.42**	0.089	0.50	ug/l	1	07/12/23	J
Antimony, Total	**0.66**	0.089	0.50	ug/l	1	07/12/23	
Arsenic, Dissolved	**1.2**	0.074	0.40	ug/l	1	07/12/23	
Arsenic, Total	**2.0**	0.074	0.40	ug/l	1	07/12/23	
Beryllium, Dissolved	ND	0.062	0.10	ug/l	1	07/12/23	
Beryllium, Total	ND	0.029	0.10	ug/l	1	07/12/23	
Cadmium, Dissolved	ND	0.042	0.20	ug/l	1	07/12/23	
Cadmium, Total	**0.048**	0.042	0.20	ug/l	1	07/12/23	J
Chromium, Dissolved	**3.0**	0.089	0.20	ug/l	1	07/12/23	
Chromium, Total	**2.1**	0.089	0.20	ug/l	1	07/12/23	
Copper, Dissolved	**5.7**	0.23	0.50	ug/l	1	07/12/23	
Copper, Total	**12**	0.23	0.50	ug/l	1	07/12/23	
Iron, Dissolved	**7.7**	3.9	20	ug/l	1	07/12/23	J
Iron, Total	**54**	3.9	20	ug/l	1	07/12/23	
Lead, Dissolved	**0.19**	0.083	0.20	ug/l	1	07/12/23	J
Lead, Total	**0.56**	0.083	0.20	ug/l	1	07/12/23	
Nickel, Dissolved	**0.31**	0.16	2.0	ug/l	1	07/12/23	J
Nickel, Total	**1.2**	0.40	2.0	ug/l	1	07/12/23	J
Selenium, Dissolved	**0.24**	0.067	0.40	ug/l	1	07/12/23	J
Selenium, Total	**0.33**	0.067	0.40	ug/l	1	07/12/23	J
Silver, Dissolved	ND	0.030	0.20	ug/l	1	07/12/23	
Silver, Total	ND	0.055	0.20	ug/l	1	07/12/23	
Thallium, Dissolved	ND	0.021	0.20	ug/l	1	07/12/23	
Thallium, Total	ND	0.021	0.20	ug/l	1	07/12/23	
Zinc, Dissolved	**7.0**	1.7	10	ug/l	1	07/12/23	J
Zinc, Total	**16**	1.7	10	ug/l	1	07/12/23	
Method: EPA 245.1			**Instr:** HG03				
Batch ID: W3G0571 **Preparation:** EPA 245.1			**Prepared:** 07/10/23 16:36				**Analyst:** KVM
Mercury, Dissolved	ND	0.037	0.050	ug/l	1	07/12/23	
Mercury, Total	ND	0.037	0.050	ug/l	1	07/12/23	
Semivolatile Organics - Low Level by GC/MS SIM Mode							
Method: EPA 625.1			**Instr:** GCMS06				
Batch ID: W3G0052 **Preparation:** EPA 625/L-L SF			**Prepared:** 07/03/23 09:26				**Analyst:** rmr
1-Methylnaphthalene	ND	0.024	0.10	ug/l	1	07/14/23	
2-Methylnaphthalene	ND	0.026	0.10	ug/l	1	07/14/23	

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Sample Results

(Continued)

Sample: ARCAD_WA_CON_2223_D2_01 — Sampled: 06/27/23 11:15 by Luis De La Torre

3F27060-03 (Water) (Continued)

Semivolatile Organics - Low Level by GC/MS SIM Mode (Continued)

Method: EPA 625.1 **Instr:** GCMS06

Batch ID: W3G0052 **Preparation:** EPA 625/L-L SF **Prepared:** 07/03/23 09:26 **Analyst:** rmr

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Acenaphthene	ND	0.028	0.10	ug/l	1	07/14/23	
Acenaphthylene	ND	0.033	0.10	ug/l	1	07/14/23	
Anthracene	ND	0.025	0.10	ug/l	1	07/14/23	
Benzo (a) anthracene	ND	0.051	0.10	ug/l	1	07/14/23	
Benzo (a) pyrene	ND	0.051	0.10	ug/l	1	07/14/23	
Benzo (b) fluoranthene	ND	0.074	0.10	ug/l	1	07/14/23	
Benzo (g,h,i) perylene	ND	0.050	0.10	ug/l	1	07/14/23	
Benzo (k) fluoranthene	ND	0.059	0.10	ug/l	1	07/14/23	
Chrysene	ND	0.074	0.10	ug/l	1	07/14/23	
Dibenzo (a,h) anthracene	ND	0.081	0.10	ug/l	1	07/14/23	
Fluoranthene	ND	0.039	0.10	ug/l	1	07/14/23	
Fluorene	ND	0.029	0.10	ug/l	1	07/14/23	
Indeno (1,2,3-cd) pyrene	ND	0.065	0.10	ug/l	1	07/14/23	
Naphthalene	ND	0.026	0.10	ug/l	1	07/14/23	
Phenanthrene	ND	0.029	0.10	ug/l	1	07/14/23	
Pyrene	ND	0.040	0.10	ug/l	1	07/14/23	
Surrogate(s)							
2-Fluorobiphenyl	*64%*	*Conc: 3.10*	*22-120*			*07/14/23*	
Nitrobenzene-d5	*61%*	*Conc: 2.94*	*47-120*			*07/14/23*	
Terphenyl-d14	*39%*	*Conc: 1.88*	*44-129*			*07/14/23*	*S-11*

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Project Manager: Brenda Stevens

Reported: 08/25/2023 11:53

Sample Results

(Continued)

Sample: F-193B-R_2223_D2_03
3F27060-04 (Water)

Sampled: 06/27/23 9:21 by Luis De La Torre

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods							
Method: Calculation			**Instr:** [CALC]				
Batch ID: [CALC] **Preparation:** [CALC]			**Prepared:** 07/14/23 15:08				**Analyst:** YMT
Nitrogen, Total	ND	0.036	0.10	mg/l	1	07/18/23	
Method: EPA 350.1			**Instr:** AA06				
Batch ID: W3G0867 **Preparation:** _NONE (WETCHEM)			**Prepared:** 07/12/23 11:49				**Analyst:** YMT
Ammonia as N	**0.086**	0.017	0.10	mg/l	1	07/14/23	J
Method: EPA 351.2			**Instr:** AA06				
Batch ID: W3G1099 **Preparation:** _NONE (WETCHEM)			**Prepared:** 07/14/23 15:08				**Analyst:** YMT
TKN	ND	0.065	0.10	mg/l	1	07/18/23	
Method: EPA 353.2			**Instr:** AA01				
Batch ID: W3F2286 **Preparation:** _NONE (WETCHEM)			**Prepared:** 06/27/23 14:09				**Analyst:** ymt
Nitrate as N	ND	0.040	0.20	mg/l	1	06/27/23 21:33	
Nitrite as N	ND	42	100	ug/l	1	06/27/23 21:33	
NO2+NO3 as N	ND	36	200	ug/l	1	06/27/23	
Method: SM 2540C			**Instr:** OVEN17				
Batch ID: W3F2327 **Preparation:** _NONE (WETCHEM)			**Prepared:** 06/27/23 18:43				**Analyst:** bel
Total Dissolved Solids	**7.0**	4.0	10	mg/l	1	06/28/23	J
Method: SM 2540D			**Instr:** OVEN15				
Batch ID: W3F2487 **Preparation:** _NONE (WETCHEM)			**Prepared:** 06/29/23 09:43				**Analyst:** mes
Total Suspended Solids	**0.1**		5	mg/l	1	06/29/23	J
Hexavalent Chromium by IC							
Method: EPA 218.6			**Instr:** LC13				
Batch ID: W3G0518 **Preparation:** _NONE (LC)			**Prepared:** 07/10/23 10:11				**Analyst:** CLL
Chromium 6+	**0.080**	0.0079	0.020	ug/l	1	07/10/23	
Chromium 6+, Dissolved	**0.023**	0.0079	0.020	ug/l	1	07/10/23	
Metals by EPA 200 Series Methods							
Method: Calculation			**Instr:** [CALC]				
Batch ID: [CALC] **Preparation:** [CALC]			**Prepared:** 07/11/23 11:03				**Analyst:** kvm
Hardness as CaCO3, Total	ND	0.344	3.31	mg/l	1	07/13/23	
Method: EPA 200.7			**Instr:** ICP03				
Batch ID: W3G0695 **Preparation:** EPA 200.2			**Prepared:** 07/11/23 11:03				**Analyst:** kvm
Calcium, Total	ND	0.0736	0.500	mg/l	1	07/13/23	
Magnesium, Total	ND	0.0390	0.500	mg/l	1	07/13/23	
Phosphorus, Dissolved	ND	0.018	0.050	mg/l	1	07/13/23	
Phosphorus, Total	ND	0.018	0.050	mg/l	1	07/13/23	
Method: EPA 200.8			**Instr:** ICPMS06				
Batch ID: W3G0711 **Preparation:** EPA 200.2			**Prepared:** 07/11/23 13:50				**Analyst:** tyc
Aluminum, Dissolved	ND	4.4	20	ug/l	1	07/12/23	

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Project Number: 5025-22-0004

Project Manager: Brenda Stevens

Reported: 08/25/2023 11:53

Sample Results

(Continued)

Sample: F-193B-R_2223_D2_03 Sampled: 06/27/23 9:21 by Luis De La Torre

3F27060-04 (Water) (Continued)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Metals by EPA 200 Series Methods (Continued)							
Method: EPA 200.8			**Instr:** ICPMS06				
Batch ID: W3G0711 **Preparation:** EPA 200.2			**Prepared:** 07/11/23 13:50				**Analyst:** tyc
Aluminum, Total	ND	4.4	20	ug/l	1	07/12/23	
Antimony, Dissolved	ND	0.089	0.50	ug/l	1	07/12/23	
Antimony, Total	ND	0.089	0.50	ug/l	1	07/12/23	
Arsenic, Dissolved	ND	0.074	0.40	ug/l	1	07/12/23	
Arsenic, Total	ND	0.074	0.40	ug/l	1	07/12/23	
Beryllium, Dissolved	ND	0.062	0.10	ug/l	1	07/12/23	
Beryllium, Total	ND	0.029	0.10	ug/l	1	07/12/23	
Cadmium, Dissolved	ND	0.042	0.20	ug/l	1	07/12/23	
Cadmium, Total	ND	0.042	0.20	ug/l	1	07/12/23	
Chromium, Dissolved	ND	0.089	0.20	ug/l	1	07/12/23	
Chromium, Total	**0.10**	0.089	0.20	ug/l	1	07/12/23	J
Copper, Dissolved	ND	0.23	0.50	ug/l	1	07/12/23	
Copper, Total	ND	0.23	0.50	ug/l	1	07/12/23	
Iron, Dissolved	ND	3.9	20	ug/l	1	07/12/23	
Iron, Total	ND	3.9	20	ug/l	1	07/12/23	
Lead, Dissolved	ND	0.083	0.20	ug/l	1	07/12/23	
Lead, Total	ND	0.083	0.20	ug/l	1	07/12/23	
Nickel, Dissolved	ND	0.16	2.0	ug/l	1	07/12/23	
Nickel, Total	ND	0.40	2.0	ug/l	1	07/12/23	
Selenium, Dissolved	ND	0.067	0.40	ug/l	1	07/12/23	
Selenium, Total	ND	0.067	0.40	ug/l	1	07/12/23	
Silver, Dissolved	ND	0.030	0.20	ug/l	1	07/12/23	
Silver, Total	ND	0.055	0.20	ug/l	1	07/12/23	
Thallium, Dissolved	ND	0.021	0.20	ug/l	1	07/12/23	
Thallium, Total	ND	0.021	0.20	ug/l	1	07/12/23	
Zinc, Dissolved	ND	1.7	10	ug/l	1	07/12/23	
Zinc, Total	ND	1.7	10	ug/l	1	07/12/23	
Method: EPA 245.1			**Instr:** HG03				
Batch ID: W3G0571 **Preparation:** EPA 245.1			**Prepared:** 07/10/23 16:36				**Analyst:** KVM
Mercury, Dissolved	ND	0.037	0.050	ug/l	1	07/12/23	
Mercury, Total	ND	0.037	0.050	ug/l	1	07/12/23	
Semivolatile Organics - Low Level by GC/MS SIM Mode							
Method: EPA 625.1			**Instr:** GCMS06				
Batch ID: W3G0052 **Preparation:** EPA 625/L-L SF			**Prepared:** 07/03/23 09:26				**Analyst:** rmr
1-Methylnaphthalene	ND	0.024	0.10	ug/l	1	07/14/23	
2-Methylnaphthalene	ND	0.026	0.10	ug/l	1	07/14/23	

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Sample Results

(Continued)

Sample: F-193B-R_2223_D2_03 — Sampled: 06/27/23 9:21 by Luis De La Torre

3F27060-04 (Water) — (Continued)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Semivolatile Organics - Low Level by GC/MS SIM Mode (Continued)							
Method: EPA 625.1			**Instr:** GCMS06				
Batch ID: W3G0052 **Preparation:** EPA 625/L-L SF			**Prepared:** 07/03/23 09:26				**Analyst:** rmr
Acenaphthene	ND	0.028	0.10	ug/l	1	07/14/23	
Acenaphthylene	ND	0.033	0.10	ug/l	1	07/14/23	
Anthracene	ND	0.025	0.10	ug/l	1	07/14/23	
Benzo (a) anthracene	ND	0.051	0.10	ug/l	1	07/14/23	
Benzo (a) pyrene	ND	0.051	0.10	ug/l	1	07/14/23	
Benzo (b) fluoranthene	ND	0.074	0.10	ug/l	1	07/14/23	
Benzo (g,h,i) perylene	ND	0.050	0.10	ug/l	1	07/14/23	
Benzo (k) fluoranthene	ND	0.059	0.10	ug/l	1	07/14/23	
Chrysene	ND	0.074	0.10	ug/l	1	07/14/23	
Dibenzo (a,h) anthracene	ND	0.081	0.10	ug/l	1	07/14/23	
Fluoranthene	ND	0.039	0.10	ug/l	1	07/14/23	
Fluorene	ND	0.029	0.10	ug/l	1	07/14/23	
Indeno (1,2,3-cd) pyrene	ND	0.065	0.10	ug/l	1	07/14/23	
Naphthalene	ND	0.026	0.10	ug/l	1	07/14/23	
Phenanthrene	ND	0.029	0.10	ug/l	1	07/14/23	
Pyrene	ND	0.040	0.10	ug/l	1	07/14/23	
Surrogate(s)							
2-Fluorobiphenyl	*74%*	*Conc: 3.48*	*22-120*			*07/14/23*	
Nitrobenzene-d5	*66%*	*Conc: 3.10*	*47-120*			*07/14/23*	
Terphenyl-d14	*82%*	*Conc: 3.90*	*44-129*			*07/14/23*	

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Certificate of Analysis

FINAL REPORT

WSP USA E&I Inc. - San Diego
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Project Number: 5025-22-0004

Project Manager: Brenda Stevens

Reported: 08/25/2023 11:53

Sample Results McGlynn Laboratories, Inc. SUB_McGlynn

Sample: F-193B-R_2223_D2_01
3F27060-01 (Water)

Sampled: 06/27/23 9:21 by Luis De La Torre

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods							
Method: SM 10200H **Batch ID:** WL062723 **Prepared:** 06/28/23 08:52 **Analyst:** _SUB							
Chlorophyll-a	**5.1**		1	ug/l	1	08/23/23	

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Project Number: 5025-22-0004

Project Manager: Brenda Stevens

Reported: 08/25/2023 11:53

Sample Results McGlynn Laboratories, Inc. SUB_McGlynn (Continued)

Sample: F-194B-R_2223_D2_01
3F27060-02 (Water)

Sampled: 06/27/23 10:20 by Luis De La Torre

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods							
Method: SM 10200H **Batch ID:** WL062723 **Prepared:** 06/28/23 08:52 **Analyst:** _SUB							
Chlorophyll-a	**7.1**		1	ug/l	1	08/23/23	

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Project Number: 5025-22-0004

Project Manager: Brenda Stevens

Reported: 08/25/2023 11:53

Sample Results McGlynn Laboratories, Inc. SUB_McGlynn (Continued)

Sample: ARCAD_WA_CON_2223_D2_01
3F27060-03 (Water)

Sampled: 06/27/23 11:15 by Luis De La Torre

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods							
Method: SM 10200H **Batch ID:** WL062723 **Prepared:** 06/28/23 08:52 **Analyst:** _SUB							
Chlorophyll-a	**14.6**		1	ug/l	1	08/23/23	

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Project Manager: Brenda Stevens

Reported: 08/25/2023 11:53

Sample Results McGlynn Laboratories, Inc. SUB_McGlynn (Continued)

Sample: F-193B-R_2223_D2_03
3F27060-04 (Water)

Sampled: 06/27/23 9:21 by Luis De La Torre

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods							
Method: SM 10200H **Batch ID:** WL062723 **Prepared:** 06/28/23 08:52 **Analyst:** _SUB							
Chlorophyll-a	0.5		1	ug/l	1	08/23/23	

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Quality Control Results

Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: BATCH-B - SM 10200H										
Blank (BATCH-BLK1 (Water))	**Source: TRUE**			**Prepared & Analyzed:**						
Chlorophyll-a	ND	1	ug/l		TRUE		0-0		0	
LCS (BATCH-BS1 (Water))	**Source: TRUE**			**Prepared & Analyzed:**						
Chlorophyll-a	ND	1	ug/l		TRUE		70-112		20	

Quality Control Results

Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W3F2286 - EPA 353.2											
Blank (W3F2286-BLK1)					**Prepared & Analyzed: 06/27/23**						
Nitrate as N	ND	0.040	0.15	mg/l							
Nitrite as N	ND	42	100	ug/l							
NO2+NO3 as N	ND	36	200	ug/l							
LCS (W3F2286-BS1)					**Prepared & Analyzed: 06/27/23**						
Nitrate as N	1.08	0.040	0.15	mg/l	1.00		108	90-110			
Nitrite as N	976	42	100	ug/l	1000		98	90-110			
NO2+NO3 as N	1080	36	200	ug/l	1000		108	90-110			
Matrix Spike (W3F2286-MS1)	**Source: 3F23002-02**				**Prepared & Analyzed: 06/27/23**						
Nitrate as N	10.6	0.040	0.15	mg/l	2.00	8.52	104	90-110			
Nitrite as N	971	42	100	ug/l	1000	ND	97	90-110			
NO2+NO3 as N	10600	36	200	ug/l	2000	8520	104	90-110			
Matrix Spike (W3F2286-MS2)	**Source: 3F26066-21**				**Prepared & Analyzed: 06/27/23**						
Nitrate as N	10.1	0.040	0.15	mg/l	2.00	7.96	107	90-110			
Nitrite as N	999	42	100	ug/l	1000	ND	100	90-110			
NO2+NO3 as N	10100	36	200	ug/l	2000	7960	107	90-110			
Matrix Spike Dup (W3F2286-MSD1)	**Source: 3F23002-02**				**Prepared & Analyzed: 06/27/23**						
Nitrate as N	10.5	0.040	0.15	mg/l	2.00	8.52	99	90-110	0.9	20	
Nitrite as N	976	42	100	ug/l	1000	ND	98	90-110	0.5	20	
NO2+NO3 as N	10500	36	200	ug/l	2000	8520	99	90-110	0.9	20	
Matrix Spike Dup (W3F2286-MSD2)	**Source: 3F26066-21**				**Prepared & Analyzed: 06/27/23**						
Nitrate as N	10.1	0.040	0.15	mg/l	2.00	7.96	107	90-110	0	20	
Nitrite as N	1000	42	100	ug/l	1000	ND	100	90-110	0.1	20	
NO2+NO3 as N	10100	36	200	ug/l	2000	7960	107	90-110	0	20	
Batch: W3F2327 - SM 2540C											
Blank (W3F2327-BLK1)					**Prepared: 06/27/23 Analyzed: 06/28/23**						
Total Dissolved Solids	ND	4.0	10	mg/l							
LCS (W3F2327-BS1)					**Prepared: 06/27/23 Analyzed: 06/28/23**						
Total Dissolved Solids	810	4.0	10	mg/l	824		98	97-103			

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Project Manager: Brenda Stevens

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Quality Control Results

(Continued)

Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W3F2327 - SM 2540C (Continued)											
Duplicate (W3F2327-DUP1)	**Source: 3F14097-01**				**Prepared: 06/27/23 Analyzed: 06/28/23**						
Total Dissolved Solids	529	4.0	10	mg/l		535			1	10	
Duplicate (W3F2327-DUP2)	**Source: 3F16026-05**				**Prepared: 06/27/23 Analyzed: 06/28/23**						
Total Dissolved Solids	492	4.0	10	mg/l		497			1	10	
Batch: W3F2444 - SM 2540C											
Blank (W3F2444-BLK1)					**Prepared: 06/28/23 Analyzed: 06/29/23**						
Total Dissolved Solids	ND	4.0	10	mg/l							
LCS (W3F2444-BS1)					**Prepared: 06/28/23 Analyzed: 06/29/23**						
Total Dissolved Solids	821	4.0	10	mg/l	824		100	97-103			
Duplicate (W3F2444-DUP1)	**Source: 3F28003-02**				**Prepared: 06/28/23 Analyzed: 06/29/23**						
Total Dissolved Solids	11000	4.0	10	mg/l		10900			0.3	10	
Duplicate (W3F2444-DUP2)	**Source: 3F28101-19**				**Prepared: 06/28/23 Analyzed: 06/29/23**						
Total Dissolved Solids	53000	4.0	10	mg/l		52400			1	10	
Batch: W3F2487 - SM 2540D											
Blank (W3F2487-BLK1)					**Prepared & Analyzed: 06/29/23**						
Total Suspended Solids	ND		1	mg/l							
LCS (W3F2487-BS1)					**Prepared & Analyzed: 06/29/23**						
Total Suspended Solids	50.7		1	mg/l	52.5		97	90-110			
Duplicate (W3F2487-DUP1)	**Source: 3F27013-01**				**Prepared & Analyzed: 06/29/23**						
Total Suspended Solids	34.0		1	mg/l		36.5			7	10	
Duplicate (W3F2487-DUP2)	**Source: 3F28004-30**				**Prepared & Analyzed: 06/29/23**						
Total Suspended Solids	23.3		1	mg/l		21.1			10	10	
Batch: W3G0867 - EPA 350.1											
Blank (W3G0867-BLK1)					**Prepared: 07/12/23 Analyzed: 07/14/23**						
Ammonia as N	ND	0.017	0.10	mg/l							
Blank (W3G0867-BLK2)					**Prepared: 07/12/23 Analyzed: 07/14/23**						
Ammonia as N	ND	0.017	0.10	mg/l							
LCS (W3G0867-BS1)					**Prepared: 07/12/23 Analyzed: 07/14/23**						
Ammonia as N	0.244	0.017	0.10	mg/l	0.250		98	90-110			
LCS (W3G0867-BS2)					**Prepared: 07/12/23 Analyzed: 07/14/23**						
Ammonia as N	0.246	0.017	0.10	mg/l	0.250		98	90-110			
Matrix Spike (W3G0867-MS1)	**Source: 3F16026-12**				**Prepared: 07/12/23 Analyzed: 07/14/23**						
Ammonia as N	0.471	0.017	0.10	mg/l	0.250	0.227	98	90-110			
Matrix Spike (W3G0867-MS2)	**Source: 3F27060-04**				**Prepared: 07/12/23 Analyzed: 07/14/23**						
Ammonia as N	0.331	0.017	0.10	mg/l	0.250	0.0861	98	90-110			
Matrix Spike Dup (W3G0867-MSD1)	**Source: 3F16026-12**				**Prepared: 07/12/23 Analyzed: 07/14/23**						
Ammonia as N	0.474	0.017	0.10	mg/l	0.250	0.227	99	90-110	0.7	15	
Matrix Spike Dup (W3G0867-MSD2)	**Source: 3F27060-04**				**Prepared: 07/12/23 Analyzed: 07/14/23**						

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Quality Control Results

(Continued)

Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W3G0867 - EPA 350.1 (Continued)											
Matrix Spike Dup (W3G0867-MSD2)	**Source: 3F27060-04**				**Prepared: 07/12/23**	**Analyzed: 07/14/23**					
Ammonia as N	0.328	0.017	0.10	mg/l	0.250	0.0861	97	90-110	0.9	15	
Batch: W3G1099 - EPA 351.2											
Blank (W3G1099-BLK1)					**Prepared: 07/14/23**	**Analyzed: 07/18/23**					
TKN	ND	0.065	0.10	mg/l							
Blank (W3G1099-BLK2)					**Prepared: 07/14/23**	**Analyzed: 07/18/23**					
TKN	ND	0.065	0.10	mg/l							
LCS (W3G1099-BS1)					**Prepared: 07/14/23**	**Analyzed: 07/18/23**					
TKN	0.948	0.065	0.10	mg/l	1.00		95	90-110			
LCS (W3G1099-BS2)					**Prepared: 07/14/23**	**Analyzed: 07/18/23**					
TKN	0.944	0.065	0.10	mg/l	1.00		94	90-110			
Duplicate (W3G1099-DUP1)	**Source: 3F28072-01**				**Prepared: 07/14/23**	**Analyzed: 07/18/23**					
TKN	0.445	0.065	0.10	mg/l		0.444			0.1	10	
Matrix Spike (W3G1099-MS1)	**Source: 3F28004-07**				**Prepared: 07/14/23**	**Analyzed: 07/18/23**					
TKN	0.991	0.065	0.10	mg/l	1.00	0.0768	91	90-110			
Matrix Spike (W3G1099-MS2)	**Source: 3F28072-02**				**Prepared: 07/14/23**	**Analyzed: 07/18/23**					
TKN	0.957	0.065	0.10	mg/l	1.00	ND	96	90-110			
Matrix Spike Dup (W3G1099-MSD1)	**Source: 3F28004-07**				**Prepared: 07/14/23**	**Analyzed: 07/18/23**					
TKN	0.990	0.065	0.10	mg/l	1.00	0.0768	91	90-110	0.1	10	
Matrix Spike Dup (W3G1099-MSD2)	**Source: 3F28072-02**				**Prepared: 07/14/23**	**Analyzed: 07/18/23**					
TKN	0.930	0.065	0.10	mg/l	1.00	ND	93	90-110	3	10	

Quality Control Results

(Continued)

Hexavalent Chromium by IC

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W3G0518 - EPA 218.6											
Blank (W3G0518-BLK1)					**Prepared & Analyzed: 07/10/23**						
Chromium 6+	ND	0.0079	0.020	ug/l							
Chromium 6+, Dissolved	ND	0.0079	0.020	ug/l							
LCS (W3G0518-BS1)					**Prepared & Analyzed: 07/10/23**						
Chromium 6+	5.31	0.0079	0.020	ug/l	5.00		106	90-110			
Chromium 6+, Dissolved	5.31	0.0079	0.020	ug/l	5.00		106	90-110			
Matrix Spike (W3G0518-MS1)	**Source: 3F27060-01**				**Prepared & Analyzed: 07/10/23**						
Chromium 6+	6.75	0.0079	0.020	ug/l	5.00	2.11	93	88-112			
Chromium 6+, Dissolved	6.75	0.0079	0.020	ug/l	5.00	2.07	94	88-112			
Matrix Spike Dup (W3G0518-MSD1)	**Source: 3F27060-01**				**Prepared & Analyzed: 07/10/23**						
Chromium 6+	6.50	0.0079	0.020	ug/l	5.00	2.11	88	88-112	4	10	
Chromium 6+, Dissolved	6.50	0.0079	0.020	ug/l	5.00	2.07	89	88-112	4	10	

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Quality Control Results

(Continued)

Metals by EPA 200 Series Methods

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W3G0571 - EPA 245.1											
Blank (W3G0571-BLK1)					**Prepared: 07/10/23**	**Analyzed: 07/12/23**					
Mercury, Dissolved	ND	0.037	0.050	ug/l							
Mercury, Total	ND	0.037	0.050	ug/l							
LCS (W3G0571-BS1)					**Prepared: 07/10/23**	**Analyzed: 07/12/23**					
Mercury, Dissolved	1.07	0.037	0.050	ug/l	1.00		107	85-115			
Mercury, Total	1.07	0.037	0.050	ug/l	1.00		107	85-115			
Matrix Spike (W3G0571-MS1)	**Source: 3F21012-03**				**Prepared: 07/10/23**	**Analyzed: 07/12/23**					
Mercury, Dissolved	1.16	0.037	0.050	ug/l	1.00	ND	116	70-130			
Mercury, Total	1.16	0.037	0.050	ug/l	1.00	ND	116	70-130			
Matrix Spike (W3G0571-MS2)	**Source: 3F28078-01**				**Prepared: 07/10/23**	**Analyzed: 07/12/23**					
Mercury, Dissolved	0.991	0.037	0.050	ug/l	1.00	ND	99	70-130			
Mercury, Total	0.991	0.037	0.050	ug/l	1.00	ND	99	70-130			
Matrix Spike Dup (W3G0571-MSD1)	**Source: 3F21012-03**				**Prepared: 07/10/23**	**Analyzed: 07/12/23**					
Mercury, Dissolved	1.22	0.037	0.050	ug/l	1.00	ND	122	70-130	6	20	
Mercury, Total	1.22	0.037	0.050	ug/l	1.00	ND	122	70-130	6	20	
Matrix Spike Dup (W3G0571-MSD2)	**Source: 3F28078-01**				**Prepared: 07/10/23**	**Analyzed: 07/12/23**					
Mercury, Dissolved	0.990	0.037	0.050	ug/l	1.00	ND	99	70-130	0.1	20	
Mercury, Total	0.990	0.037	0.050	ug/l	1.00	ND	99	70-130	0.1	20	
Batch: W3G0695 - EPA 200.7											
Blank (W3G0695-BLK1)					**Prepared: 07/11/23**	**Analyzed: 07/13/23**					
Calcium, Total	ND	0.0736	0.500	mg/l							
Magnesium, Total	ND	0.0390	0.500	mg/l							
Phosphorus, Dissolved	ND	0.018	0.050	mg/l							
Phosphorus, Total	ND	0.018	0.050	mg/l							
LCS (W3G0695-BS1)					**Prepared: 07/11/23**	**Analyzed: 07/13/23**					
Calcium, Total	49.5	0.0736	0.500	mg/l	50.2		99	85-115			
Magnesium, Total	48.8	0.0390	0.500	mg/l	50.2		97	85-115			
Phosphorus, Dissolved	2.14	0.018	0.050	mg/l	2.00		107	85-115			
Phosphorus, Total	2.14	0.018	0.050	mg/l	2.00		107	85-115			
Matrix Spike (W3G0695-MS1)	**Source: 3F23016-01**				**Prepared: 07/11/23**	**Analyzed: 07/13/23**					
Calcium, Total	180	0.0736	0.500	mg/l	50.2	134	90	70-130			
Magnesium, Total	75.7	0.0390	0.500	mg/l	50.2	27.5	96	70-130			
Phosphorus, Dissolved	5.25	0.018	0.050	mg/l	2.00	3.10	108	70-130			
Phosphorus, Total	5.25	0.018	0.050	mg/l	2.00	3.10	108	70-130			
Matrix Spike (W3G0695-MS2)	**Source: 3F28043-02**				**Prepared: 07/11/23**	**Analyzed: 07/13/23**					
Calcium, Total	141	0.0736	0.500	mg/l	50.2	97.2	88	70-130			
Magnesium, Total	87.8	0.0390	0.500	mg/l	50.2	41.0	93	70-130			
Phosphorus, Dissolved	5.32	0.018	0.050	mg/l	2.00	3.24	104	70-130			
Phosphorus, Total	5.32	0.018	0.050	mg/l	2.00	3.24	104	70-130			

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Quality Control Results

(Continued)

Metals by EPA 200 Series Methods (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W3G0695 - EPA 200.7 (Continued)											
Matrix Spike Dup (W3G0695-MSD1)	**Source: 3F23016-01**				**Prepared: 07/11/23**	**Analyzed: 07/13/23**					
Calcium, Total	181	0.0736	0.500	mg/l	50.2	134	92	70-130	0.3	30	
Magnesium, Total	76.1	0.0390	0.500	mg/l	50.2	27.5	97	70-130	0.5	30	
Phosphorus, Dissolved	5.27	0.018	0.050	mg/l	2.00	3.10	109	70-130	0.5	30	
Phosphorus, Total	5.27	0.018	0.050	mg/l	2.00	3.10	109	70-130	0.5	30	
Matrix Spike Dup (W3G0695-MSD2)	**Source: 3F28043-02**				**Prepared: 07/11/23**	**Analyzed: 07/13/23**					
Calcium, Total	143	0.0736	0.500	mg/l	50.2	97.2	90	70-130	0.7	30	
Magnesium, Total	88.1	0.0390	0.500	mg/l	50.2	41.0	94	70-130	0.4	30	
Phosphorus, Dissolved	5.36	0.018	0.050	mg/l	2.00	3.24	106	70-130	0.7	30	
Phosphorus, Total	5.36	0.018	0.050	mg/l	2.00	3.24	106	70-130	0.7	30	
Batch: W3G0711 - EPA 200.8											
Blank (W3G0711-BLK1)					**Prepared: 07/11/23**	**Analyzed: 07/12/23**					
Aluminum, Dissolved	ND	4.4	20	ug/l							
Aluminum, Total	ND	4.4	20	ug/l							
Antimony, Dissolved	ND	0.089	0.50	ug/l							
Antimony, Total	ND	0.089	0.50	ug/l							
Arsenic, Dissolved	ND	0.074	0.40	ug/l							
Arsenic, Total	ND	0.074	0.40	ug/l							
Beryllium, Dissolved	ND	0.062	0.10	ug/l							
Beryllium, Total	ND	0.029	0.10	ug/l							
Cadmium, Dissolved	ND	0.042	0.20	ug/l							
Cadmium, Total	ND	0.042	0.20	ug/l							
Chromium, Dissolved	ND	0.089	0.20	ug/l							
Chromium, Total	ND	0.089	0.20	ug/l							
Copper, Dissolved	ND	0.23	0.50	ug/l							
Copper, Total	ND	0.23	0.50	ug/l							
Iron, Dissolved	ND	3.9	20	ug/l							
Iron, Total	ND	3.9	20	ug/l							
Lead, Dissolved	ND	0.083	0.20	ug/l							
Lead, Total	ND	0.083	0.20	ug/l							
Nickel, Dissolved	ND	0.16	2.0	ug/l							
Nickel, Total	ND	0.40	2.0	ug/l							
Selenium, Dissolved	ND	0.067	0.40	ug/l							
Selenium, Total	ND	0.067	0.40	ug/l							
Silver, Dissolved	ND	0.030	0.20	ug/l							
Silver, Total	ND	0.055	0.20	ug/l							
Thallium, Dissolved	ND	0.021	0.20	ug/l							
Thallium, Total	ND	0.021	0.20	ug/l							
Zinc, Dissolved	ND	1.7	10	ug/l							
Zinc, Total	ND	1.7	10	ug/l							

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Quality Control Results

(Continued)

Metals by EPA 200 Series Methods (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W3G0711 - EPA 200.8 (Continued)											
Blank (W3G0711-BLK1)				**Prepared: 07/11/23**	**Analyzed: 07/12/23**						
LCS (W3G0711-BS1)				**Prepared: 07/11/23**	**Analyzed: 07/12/23**						
Aluminum, Dissolved	51.3	4.4	20	ug/l	50.0		103	85-115			
Aluminum, Total	51.3	4.4	20	ug/l	50.0		103	85-115			
Antimony, Dissolved	50.1	0.089	0.50	ug/l	50.0		100	85-115			
Antimony, Total	50.1	0.089	0.50	ug/l	50.0		100	85-115			
Arsenic, Dissolved	50.7	0.074	0.40	ug/l	50.0		101	85-115			
Arsenic, Total	50.7	0.074	0.40	ug/l	50.0		101	85-115			
Beryllium, Dissolved	48.7	0.062	0.10	ug/l	50.0		97	85-115			
Beryllium, Total	48.7	0.029	0.10	ug/l	50.0		97	85-115			
Cadmium, Dissolved	49.6	0.042	0.20	ug/l	50.0		99	85-115			
Cadmium, Total	49.6	0.042	0.20	ug/l	50.0		99	85-115			
Chromium, Dissolved	50.8	0.089	0.20	ug/l	50.0		101	85-115			
Chromium, Total	50.8	0.089	0.20	ug/l	50.0		101	85-115			
Copper, Dissolved	51.3	0.23	0.50	ug/l	50.0		102	85-115			
Copper, Total	51.3	0.23	0.50	ug/l	50.0		102	85-115			
Iron, Dissolved	1150	3.9	20	ug/l	1050		110	85-115			
Iron, Total	1150	3.9	20	ug/l	1050		110	85-115			
Lead, Dissolved	50.4	0.083	0.20	ug/l	50.0		101	85-115			
Lead, Total	50.4	0.083	0.20	ug/l	50.0		101	85-115			
Nickel, Dissolved	51.2	0.16	2.0	ug/l	50.0		102	85-115			
Nickel, Total	51.2	0.40	2.0	ug/l	50.0		102	85-115			
Selenium, Dissolved	50.0	0.067	0.40	ug/l	50.0		100	85-115			
Selenium, Total	50.0	0.067	0.40	ug/l	50.0		100	85-115			
Silver, Dissolved	49.7	0.030	0.20	ug/l	50.0		99	85-115			
Silver, Total	49.7	0.055	0.20	ug/l	50.0		99	85-115			
Thallium, Dissolved	50.1	0.021	0.20	ug/l	50.0		100	85-115			
Thallium, Total	50.1	0.021	0.20	ug/l	50.0		100	85-115			
Zinc, Dissolved	51.0	1.7	10	ug/l	50.0		102	85-115			
Zinc, Total	51.0	1.7	10	ug/l	50.0		102	85-115			
Matrix Spike (W3G0711-MS1)	**Source: 3F27060-02**			**Prepared: 07/11/23**	**Analyzed: 07/12/23**						
Aluminum, Total	328	4.4	20	ug/l	50.0	268	119	70-130			
Antimony, Total	51.7	0.089	0.50	ug/l	50.0	0.683	102	70-130			
Arsenic, Total	54.3	0.074	0.40	ug/l	50.0	2.60	103	70-130			
Beryllium, Total	50.6	0.029	0.10	ug/l	50.0	ND	101	70-130			
Cadmium, Total	50.0	0.042	0.20	ug/l	50.0	ND	100	70-130			
Chromium, Total	50.7	0.089	0.20	ug/l	50.0	0.530	100	70-130			
Copper, Total	53.2	0.23	0.50	ug/l	50.0	2.56	101	70-130			
Iron, Total	1490	3.9	20	ug/l	1050	323	111	70-130			
Lead, Total	51.3	0.083	0.20	ug/l	50.0	0.852	101	70-130			

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Reported: 08/25/2023 11:53

Quality Control Results

(Continued)

Metals by EPA 200 Series Methods (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W3G0711 - EPA 200.8 (Continued)											
Matrix Spike (W3G0711-MS1)	**Source: 3F27060-02**				**Prepared: 07/11/23**	**Analyzed: 07/12/23**					
Nickel, Total	50.9	0.40	2.0	ug/l	50.0	0.458	101	70-130			
Selenium, Total	49.3	0.067	0.40	ug/l	50.0	0.166	98	70-130			
Silver, Total	49.6	0.055	0.20	ug/l	50.0	ND	99	70-130			
Thallium, Total	50.2	0.021	0.20	ug/l	50.0	ND	100	70-130			
Zinc, Total	52.5	1.7	10	ug/l	50.0	3.30	98	70-130			
Matrix Spike (W3G0711-MS2)	**Source: 3F30108-01**				**Prepared: 07/11/23**	**Analyzed: 07/12/23**					
Aluminum, Total	122	4.4	20	ug/l	50.0	73.6	97	70-130			
Antimony, Total	51.3	0.089	0.50	ug/l	50.0	0.378	102	70-130			
Arsenic, Total	50.5	0.074	0.40	ug/l	50.0	0.545	100	70-130			
Beryllium, Total	58.5	0.029	0.10	ug/l	50.0	0.0689	117	70-130			
Cadmium, Total	45.5	0.042	0.20	ug/l	50.0	ND	91	70-130			
Chromium, Total	625	0.089	0.20	ug/l	50.0	596	58	70-130			MS-02
Copper, Total	44.7	0.23	0.50	ug/l	50.0	4.53	80	70-130			
Iron, Total	33800	3.9	20	ug/l	1050	34000	NR	70-130			MS-02
Lead, Total	51.4	0.083	0.20	ug/l	50.0	ND	103	70-130			
Nickel, Total	5100	0.40	2.0	ug/l	50.0	5420	NR	70-130			MS-02
Selenium, Total	46.9	0.067	0.40	ug/l	50.0	0.257	93	70-130			
Silver, Total	43.9	0.055	0.20	ug/l	50.0	ND	88	70-130			
Thallium, Total	51.3	0.021	0.20	ug/l	50.0	ND	103	70-130			
Zinc, Total	146	1.7	10	ug/l	50.0	103	86	70-130			
Matrix Spike Dup (W3G0711-MSD1)	**Source: 3F27060-02**				**Prepared: 07/11/23**	**Analyzed: 07/12/23**					
Aluminum, Total	319	4.4	20	ug/l	50.0	268	101	70-130	3	30	
Antimony, Total	51.8	0.089	0.50	ug/l	50.0	0.683	102	70-130	0.08	30	
Arsenic, Total	54.5	0.074	0.40	ug/l	50.0	2.60	104	70-130	0.3	30	
Beryllium, Total	52.1	0.029	0.10	ug/l	50.0	ND	104	70-130	3	30	
Cadmium, Total	49.7	0.042	0.20	ug/l	50.0	ND	99	70-130	0.4	30	
Chromium, Total	51.1	0.089	0.20	ug/l	50.0	0.530	101	70-130	0.7	30	
Copper, Total	52.9	0.23	0.50	ug/l	50.0	2.56	100	70-130	0.7	30	
Iron, Total	1450	3.9	20	ug/l	1050	323	107	70-130	2	30	
Lead, Total	51.4	0.083	0.20	ug/l	50.0	0.852	101	70-130	0.3	30	
Nickel, Total	50.5	0.40	2.0	ug/l	50.0	0.458	100	70-130	0.7	30	
Selenium, Total	49.2	0.067	0.40	ug/l	50.0	0.166	98	70-130	0.3	30	
Silver, Total	49.7	0.055	0.20	ug/l	50.0	ND	99	70-130	0.1	30	
Thallium, Total	50.4	0.021	0.20	ug/l	50.0	ND	101	70-130	0.4	30	
Zinc, Total	52.1	1.7	10	ug/l	50.0	3.30	98	70-130	0.7	30	
Matrix Spike Dup (W3G0711-MSD2)	**Source: 3F30108-01**				**Prepared: 07/11/23**	**Analyzed: 07/12/23**					
Aluminum, Total	125	4.4	20	ug/l	50.0	73.6	102	70-130	2	30	
Antimony, Total	51.4	0.089	0.50	ug/l	50.0	0.378	102	70-130	0.2	30	
Arsenic, Total	49.8	0.074	0.40	ug/l	50.0	0.545	98	70-130	1	30	

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San Diego, CA 92123

Project Number: 5025-22-0004

Project Manager: Brenda Stevens

Reported: 08/25/2023 11:53

Quality Control Results

(Continued)

Metals by EPA 200 Series Methods (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W3G0711 - EPA 200.8 (Continued)											
Matrix Spike Dup (W3G0711-MSD2)	**Source: 3F30108-01**				**Prepared: 07/11/23**	**Analyzed: 07/12/23**					
Beryllium, Total	58.0	0.029	0.10	ug/l	50.0	0.0689	116	70-130	0.9	30	
Cadmium, Total	45.4	0.042	0.20	ug/l	50.0	ND	91	70-130	0.3	30	
Chromium, Total	631	0.089	0.20	ug/l	50.0	596	71	70-130	1	30	
Copper, Total	44.1	0.23	0.50	ug/l	50.0	4.53	79	70-130	1	30	
Iron, Total	34100	3.9	20	ug/l	1050	34000	11	70-130	1	30	MS-02
Lead, Total	51.2	0.083	0.20	ug/l	50.0	ND	102	70-130	0.3	30	
Nickel, Total	5140	0.40	2.0	ug/l	50.0	5420	NR	70-130	0.8	30	MS-02
Selenium, Total	47.3	0.067	0.40	ug/l	50.0	0.257	94	70-130	1	30	
Silver, Total	43.7	0.055	0.20	ug/l	50.0	ND	87	70-130	0.4	30	
Thallium, Total	51.4	0.021	0.20	ug/l	50.0	ND	103	70-130	0.06	30	
Zinc, Total	145	1.7	10	ug/l	50.0	103	83	70-130	0.9	30	

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Project Number: 5025-22-0004

Project Manager: Brenda Stevens

Reported: 08/25/2023 11:53

Quality Control Results

(Continued)

Semivolatile Organics - Low Level by GC/MS SIM Mode

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W3G0052 - EPA 625.1											
Blank (W3G0052-BLK1)					**Prepared: 07/03/23**	**Analyzed: 07/14/23**					
1-Methylnaphthalene	ND	0.024	0.10	ug/l							
2-Methylnaphthalene	ND	0.026	0.10	ug/l							
Acenaphthene	ND	0.028	0.10	ug/l							
Acenaphthylene	ND	0.033	0.10	ug/l							
Anthracene	ND	0.025	0.10	ug/l							
Benzo (a) anthracene	ND	0.051	0.10	ug/l							
Benzo (a) pyrene	ND	0.051	0.10	ug/l							
Benzo (b) fluoranthene	ND	0.074	0.10	ug/l							
Benzo (g,h,i) perylene	ND	0.050	0.10	ug/l							
Benzo (k) fluoranthene	ND	0.059	0.10	ug/l							
Chrysene	ND	0.074	0.10	ug/l							
Dibenzo (a,h) anthracene	ND	0.081	0.10	ug/l							
Fluoranthene	ND	0.039	0.10	ug/l							
Fluorene	ND	0.029	0.10	ug/l							
Indeno (1,2,3-cd) pyrene	ND	0.065	0.10	ug/l							
Naphthalene	ND	0.026	0.10	ug/l							
Phenanthrene	ND	0.029	0.10	ug/l							
Pyrene	ND	0.040	0.10	ug/l							
Surrogate(s)											
2-Fluorobiphenyl	*9.21*			*ug/l*	*20.0*		*46*	*22-120*			
Nitrobenzene-d5	*10.2*			*ug/l*	*20.0*		*51*	*47-120*			
Terphenyl-d14	*4.54*			*ug/l*	*20.0*		*23*	*44-129*			*S-11*
LCS (W3G0052-BS1)					**Prepared: 07/03/23**	**Analyzed: 07/14/23**					
1-Methylnaphthalene	0.600	0.024	0.10	ug/l	1.00		60	0-200			
2-Methylnaphthalene	0.603	0.026	0.10	ug/l	1.00		60	0-200			
Acenaphthene	0.694	0.028	0.10	ug/l	1.00		69	60-132			
Acenaphthylene	0.694	0.033	0.10	ug/l	1.00		69	54-126			
Anthracene	0.831	0.025	0.10	ug/l	1.00		83	43-120			
Benzo (a) anthracene	0.822	0.051	0.10	ug/l	1.00		82	42-133			
Benzo (a) pyrene	0.746	0.051	0.10	ug/l	1.00		75	32-148			
Benzo (b) fluoranthene	0.819	0.074	0.10	ug/l	1.00		82	42-140			AN-IP
Benzo (g,h,i) perylene	0.699	0.050	0.10	ug/l	1.00		70	0.1-195			
Benzo (k) fluoranthene	0.846	0.059	0.10	ug/l	1.00		85	25-146			AN-IP
Chrysene	0.855	0.074	0.10	ug/l	1.00		85	44-140			
Dibenzo (a,h) anthracene	0.638	0.081	0.10	ug/l	1.00		64	0.1-200			
Fluoranthene	0.958	0.039	0.10	ug/l	1.00		96	43-121			
Fluorene	0.764	0.029	0.10	ug/l	1.00		76	70-120			
Indeno (1,2,3-cd) pyrene	0.616	0.065	0.10	ug/l	1.00		62	0.1-151			
Naphthalene	0.618	0.026	0.10	ug/l	1.00		62	36-120			

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San Diego, CA 92123

Project Number: 5025-22-0004

Project Manager: Brenda Stevens

Reported: 08/25/2023 11:53

Quality Control Results

(Continued)

Semivolatile Organics - Low Level by GC/MS SIM Mode (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W3G0052 - EPA 625.1 (Continued)											
LCS (W3G0052-BS1)					**Prepared: 07/03/23 Analyzed: 07/14/23**						
Phenanthrene	0.836	0.029	0.10	ug/l	1.00		84	65-120			
Pyrene	0.957	0.040	0.10	ug/l	1.00		96	70-120			
Surrogate(s)											
2-Fluorobiphenyl	*3.45*			*ug/l*	*5.00*		*69*	*22-120*			
Nitrobenzene-d5	*3.23*			*ug/l*	*5.00*		*65*	*47-120*			
Terphenyl-d14	*4.26*			*ug/l*	*5.00*		*85*	*44-129*			
LCS Dup (W3G0052-BSD1)					**Prepared: 07/03/23 Analyzed: 07/14/23**						
1-Methylnaphthalene	0.569	0.024	0.10	ug/l	1.00		57	0-200	5	200	
2-Methylnaphthalene	0.572	0.026	0.10	ug/l	1.00		57	0-200	5	200	
Acenaphthene	0.644	0.028	0.10	ug/l	1.00		64	60-132	8	30	
Acenaphthylene	0.642	0.033	0.10	ug/l	1.00		64	54-126	8	30	
Anthracene	0.740	0.025	0.10	ug/l	1.00		74	43-120	12	30	
Benzo (a) anthracene	0.736	0.051	0.10	ug/l	1.00		74	42-133	11	30	
Benzo (a) pyrene	0.603	0.051	0.10	ug/l	1.00		60	32-148	21	30	
Benzo (b) fluoranthene	0.694	0.074	0.10	ug/l	1.00		69	42-140	17	30	AN-IP
Benzo (g,h,i) perylene	0.469	0.050	0.10	ug/l	1.00		47	0.1-195	39	30	Q-12
Benzo (k) fluoranthene	0.697	0.059	0.10	ug/l	1.00		70	25-146	19	30	AN-IP
Chrysene	0.768	0.074	0.10	ug/l	1.00		77	44-140	11	30	
Dibenzo (a,h) anthracene	0.408	0.081	0.10	ug/l	1.00		41	0.1-200	44	30	Q-12
Fluoranthene	0.875	0.039	0.10	ug/l	1.00		87	43-121	9	30	
Fluorene	0.696	0.029	0.10	ug/l	1.00		70	70-120	9	30	
Indeno (1,2,3-cd) pyrene	0.455	0.065	0.10	ug/l	1.00		46	0.1-151	30	30	
Naphthalene	0.590	0.026	0.10	ug/l	1.00		59	36-120	5	30	
Phenanthrene	0.752	0.029	0.10	ug/l	1.00		75	65-120	11	30	
Pyrene	0.876	0.040	0.10	ug/l	1.00		88	70-120	9	30	
Surrogate(s)											
2-Fluorobiphenyl	*3.23*			*ug/l*	*5.00*		*65*	*22-120*			
Nitrobenzene-d5	*3.10*			*ug/l*	*5.00*		*62*	*47-120*			
Terphenyl-d14	*3.56*			*ug/l*	*5.00*		*71*	*44-129*			

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Notes and Definitions

Item	Definition
AN-IP	Sample results for structural isomers may have contribution from their isomeric pair.
J	Estimated conc. detected <MRL and >MDL.
MS-02	The RPD and/or percent recovery for this QC spike sample cannot be accurately calculated due to the high concentration of analyte inherent in the sample.
Q-12	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on the percent recoveries and/or other acceptable QC data.
S-11	Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.
%REC	Percent Recovery
Dil	Dilution
MDL	Method Detection Limit
MRL	The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. The MRL is also known as Limit of Quantitation (LOQ)
ND	NOT DETECTED at or above the Method Reporting Limit (MRL). If Method Detection Limit (MDL) is reported, then ND means not detected at or above the MDL.
RPD	Relative Percent Difference
Source	Sample that was matrix spiked or duplicated.

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance.

All results are expressed on wet weight basis unless otherwise specified.

All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS002.

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Chain of Custody

From:	To:	Lab Notes:
WSP Environment & Infrastructure Solutions 9177 Sky Park Court San Diego, CA 92123 (661) 373-5505 (858) 278-5300 Fax Contact: Brenda Stevens/Kimberly Henry	Weck Laboratories 14859 Clark Avenue Industry, CA 91745 (626) 336-2139 (626) 336-2634 Fax Contact: Chris Samatmanakit	

PO#:	Project Number:	Project Name:	Sample Matrix:
C015102726	5025-22-0004	SGVCOG Fire Effects Study	Water

SampleID	Sample Date	Sample Time	Sample Type	Analysis	Container	Pres	No. of Bottles
F-193B-R_2223_D2_01	6/27/2023	0921	Grab	Chlorophyll-a (SM 10200H)	1-L Amber Poly	Unpres.	1
F-193B-R_2223_D2_01	6/27/2023	0921	Grab	Total Metals (EPA 200.8); Hardness (EPA 200.7); Total Phosphorus (EPA 200.7)	500-mL Poly-Metals	HNO3	1
F-193B-R_2223_D2_01	6/27/2023		Grab	Dissolved Metals (EPA 200.8); Dissolved Phosphorus (EPA 200.7)	500-mL Poly-Metals Diss	Unpres.	1
F-193B-R_2223_D2_01	6/27/2023		Grab	Total Hexavalent Chromium (EPA 218.6)	60-mL Poly	(NH4)2SO4/NH4OH(0.6mL)	1
F-193B-R_2223_D2_01	6/27/2023		Grab	Dissolved Hexavalent Chromium (EPA 218.6)	60-mL Poly	Unpres.	1
F-193B-R_2223_D2_01	6/27/2023		Grab	TDS (SM 2540C); TSS (SM 2540D)	2-L Poly	Unpres.	1
F-193B-R_2223_D2_01	6/27/2023		Grab	Ammonia (EPA 350.1); TKN (EPA 351.2)	500-mL Poly	H2SO4	1
F-193B-R_2223_D2_01	6/27/2023		Grab	Nitrate N (EPA 353.2); Nitrite N (EPA 353.2)	250-mL Poly	Unpres.	1
F-193B-R_2223_D2_01	6/27/2023		Grab	PAH (EPA 625.1)	1-L Amber Glass	Unpres.	2
F-194B-R_2223_D2_01	6/27/2023	1020	Grab	Chlorophyll-a (SM 10200H)	1-L Amber Poly	Unpres.	1
F-194B-R_2223_D2_01	6/27/2023		Grab	Total Metals (EPA 200.8); Hardness (EPA 200.7); Total Phosphorus (EPA 200.7)	500-mL Poly-Metals	HNO3	1
F-194B-R_2223_D2_01	6/27/2023		Grab	Dissolved Metals (EPA 200.8); Dissolved Phosphorus (EPA 200.7)	500-mL Poly-Metals Diss	Unpres.	1

Special Instructions/Comments:

Metals (Dissolved and Total) to include aluminum, antimony, arsenic, beryllium, cadmium, chromium (total), chromium (hexavalent), copper, iron, lead, mercury, nickel, selenium, silver, thallium, and zinc
Please provide results to Brenda Stevens (brenda.stevens@wsp.com) and Luis De La Torre (luis.delatorre@wsp.com)

Sampled and Relinquished By:		Received By:	
Print: Luis De La Torre Sign: Luis De La Torre	Date/Time: 6-27-23 12:34	Print: Sign: Lester Abad [illegible] 1.6 - TW4	Date/Time: 6/27/23 12:34
Print: Sign:	Date/Time:	Print: Sign:	Date/Time:
Print: Sign:	Date/Time:	Print: Sign:	Date/Time:

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PO#:	Project Number:	Project Name:	Sample Matrix:
C015102726	5025-22-0004	SGVCOG Fire Effects Study	Water

SampleID	Sample Date	Sample Time	Sample Type	Analysis	Container	Pres	No. of Bottles
F-194B-R_2223_D2_01	6/27/2023	1020	Grab	Total Hexavalent Chromium (EPA 218.6)	60-mL Poly	(NH4)2SO4/NH4OH(0.6mL)	1
F-194B-R_2223_D2_01	6/27/2023		Grab	Dissolved Hexavalent Chromium (EPA 218.6)	60-mL Poly	Unpres.	1
F-194B-R_2223_D2_01	6/27/2023		Grab	TDS (SM 2540C); TSS (SM 2540D)	2-L Poly	Unpres.	1
F-194B-R_2223_D2_01	6/27/2023		Grab	Ammonia (EPA 350.1); TKN (EPA 351.2)	500-mL Poly	H2SO4	1
F-194B-R_2223_D2_01	6/27/2023		Grab	Nitrate N (EPA 353.2); Nitrite N (EPA 353.2)	250-mL Poly	Unpres.	1
F-194B-R_2223_D2_01	6/27/2023	↓	Grab	PAH (EPA 625.1)	1-L Amber Glass	Unpres.	2
ARCAD_WA_CON_2223_D2_01	6/27/2023	1115	Grab	Chlorophyll-a (SM 10200H)	1-L Amber Poly	Unpres.	1
ARCAD_WA_CON_2223_D2_01	6/27/2023		Grab	Total Metals (EPA 200.8); Hardness (EPA 200.7); Total Phosphorus (EPA 200.7)	500-mL Poly-Metals	HNO3	1
ARCAD_WA_CON_2223_D2_01	6/27/2023		Grab	Dissolved Metals (EPA 200.8); Dissolved Phosphorus (EPA 200.7)	500-mL Poly-Metals Diss	Unpres.	1
ARCAD_WA_CON_2223_D2_01	6/27/2023		Grab	Total Hexavalent Chromium (EPA 218.6)	60-mL Poly	(NH4)2SO4/NH4OH(0.6mL)	1
ARCAD_WA_CON_2223_D2_01	6/27/2023		Grab	Dissolved Hexavalent Chromium (EPA 218.6)	60-mL Poly	Unpres.	1
ARCAD_WA_CON_2223_D2_01	6/27/2023	↓	Grab	TDS (SM 2540C); TSS (SM 2540D)	2-L Poly	Unpres.	1

Special Instructions/Comments:

Metals (Dissolved and Total) to include aluminum, antimony, arsenic, beryllium, cadmium, chromium (total), chromium (hexavalent), copper, iron, lead, mercury, nickel, selenium, silver, thallium, and zinc
Please provide results to Brenda Stevens (brenda.stevens@wsp.com) and Luis De La Torre (luis.delatorre@wsp.com)

Sampled and Relinquished By:		Received By:	
Print: Luis De La Torre Sign: [signature]	Date/Time: 6-27-23 12:34	Print: Lester Alad 1.6 - 7221 Sign:	Date/Time: 6/27/23 12:34
Print: Sign:	Date/Time:	Print: Sign:	Date/Time:
Print: Sign:	Date/Time:	Print: Sign:	Date/Time:

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Chain of Custody

From:	To:	Lab Notes:
WSP Environment & Infrastructure Solutions 9177 Sky Park Court San Diego, CA 92123 (661) 373-5505 (858) 278-5300 Fax Contact: Brenda Stevens/Kimberly Henry	Weck Laboratories 14859 Clark Avenue Industry, CA 91745 (626) 336-2139 (626) 336-2634 Fax Contact: Chris Samatmanakit	

PO#:	Project Number:	Project Name:	Sample Matrix:
C015102726	5025-22-0004	SGVCOG Fire Effects Study	Water

SampleID	Sample Date	Sample Time	Sample Type	Analysis	Container	Pres	No. of Bottles
ARCAD_WA_CON_2223_D2_01	6/27/2023	1115	Grab	Ammonia (EPA 350.1); TKN (EPA 351.2)	500-mL Poly	H2SO4	1
ARCAD_WA_CON_2223_D2_01	6/27/2023		Grab	Nitrate N (EPA 353.2); Nitrite N (EPA 353.2)	250-mL Poly	Unpres.	1
ARCAD_WA_CON_2223_D2_01	6/27/2023		Grab	PAH (EPA 625.1)	1-L Amber Glass	Unpres.	2
F-193B-R_2223_D2_03	6/27/2023	0921	Grab	Chlorophyll-a (SM 10200H)	1-L Amber Poly	Unpres.	1
F-193B-R_2223_D2_03	6/27/2023		Grab	Total Metals (EPA 200.8); Hardness (EPA 200.7); Total Phosphorus (EPA 200.7)	500-mL Poly-Metals	HNO3	1
F-193B-R_2223_D2_03	6/27/2023		Grab	Dissolved Metals (EPA 200.8); Dissolved Phosphorus (EPA 200.7)	500-mL Poly-Metals Diss	Unpres.	1
F-193B-R_2223_D2_03	6/27/2023		Grab	Total Hexavalent Chromium (EPA 218.6)	60-mL Poly	(NH4)2SO4/NH4OH(0.6mL)	1
F-193B-R_2223_D2_03	6/27/2023		Grab	Dissolved Hexavalent Chromium (EPA 218.6)	60-mL Poly	Unpres.	1
F-193B-R_2223_D2_03	6/27/2023		Grab	TDS (SM 2540C); TSS (SM 2540D)	2-L Poly	Unpres.	1
F-193B-R_2223_D2_03	6/27/2023		Grab	Ammonia (EPA 350.1); TKN (EPA 351.2)	500-mL Poly	H2SO4	1
F-193B-R_2223_D2_03	6/27/2023		Grab	Nitrate N (EPA 353.2); Nitrite N (EPA 353.2)	250-mL Poly	Unpres.	1
F-193B-R_2223_D2_03	6/27/2023		Grab	PAH (EPA 625.1)	1-L Amber Glass	Unpres.	2

Special Instructions/Comments:

Metals (Dissolved and Total) to include aluminum, antimony, arsenic, beryllium, cadmium, chromium (total), chromium (hexavalent), copper, iron, lead, mercury, nickel, selenium, silver, thallium, and zinc
Please provide results to Brenda Stevens (brenda.stevens@wsp.com) and Luis De La Torre (luis.delatorre@wsp.com)

Sampled and Relinquished By:		Received By:	
Print: Luis De La Torre Sign: [signature]	Date/Time: 6-27-23 12:34	Print: Lester Alvord fol 1.0 - WEL Sign:	Date/Time: 6/27/23 12:34
Print: Sign:	Date/Time:	Print: Sign:	Date/Time:
Print: Sign:	Date/Time:	Print: Sign:	Date/Time:

WECK LABORATORIES, INC.

Sample Receipt Checklist

Weck WKO: **3F27060**
WKO Logged by: Rey Edrosa
Samples Checked by: Lester Abad

Date/Time Received: 06/27/23 @ 12:34
# of Samples: 04
Delivered by: Client

	Task	Yes	No	N/A	Comments
COC	COC present at receipt?	☒	☐		
	COC properly completed?	☒	☐		
	COC matches sample labels?	☒	☐		
	Project Manager notified?	☐	☐	☒	
Receipt Information	Sample Temperature	1.6 °C			
	Samples received on ice?	☒	☐		
	Ice Type (Blue/Wet)	Wet			
	All samples intact?	☒	☐		
	Samples in proper containers?	☒	☐		
	Sufficient sample volume?	☒	☐		
	Received within holding time?	☒	☐		
	Project Manager notified?	☐	☐	☒	
Sample Preservation Verification?	Sample labels checked for correct preservation?	☒	☐	☐	
	VOC Headspace: (No) none, If Yes (See comment) 524.2, 524.3, 624.1, 8260, 1666 P/T, LUFT	☐	☐	☒	☐ <6mm/Pea size?
	pH verified upon receipt? Metals <2; H2SO4 pres tests <2; 522<4; TOC <2; 508.1, 525.2<2; 6710B<2; 608.3 5-9	☐	☐	☒	pH paper Lot#
	Free Chlorine Tested <0.1 (Organics Analyses)	☐	☐	☒	Cl Test Strip Lot#
	O&G pH <2 verified?	☐	☐	☐	pH paper Lot# pH Reading:
	pH adjusted for O&G	☐	☐	☐	Acid Lot# Amt added:
	Project Manager notified?	☐	☐	☒	

PM Comments

Sample Receipt Checklist Prepared by:
Signature: Rey Edrosa
Date: 06/27/2023

QAF-006 V1.0 12/16/2021
C:\Users\samplelogin4\Desktop\221219 Sample Receipt Checklist.docx
[Type here]

Wet Weather Water Quality Data

WECK LABORATORIES, INC.

Certificate of Analysis

FINAL REPORT

Work Orders:	3A15019	**Report Date:**	3/03/2023
		Received Date:	1/15/2023
Project:	SGVCOG Fire Effects Study	**Turnaround Time:**	Normal
		Phones:	(858) 514-7729
		Fax:	(858) 278-5300
Attn:	Brenda Stevens	**P.O. #:**	C015102726
Client:	WSP USA E&I Inc. - San Diego 9177 Sky Park Court, Ste A San Diego, CA 92123	**Billing Code:**	

DoD-ELAP ANAB #ADE-2882 • DoD-ISO ANAB # • ELAP-CA #1132 • EPA-UCMR #CA00211 • ISO17025 ANAB #L2457.01 • LACSD #10143

This is a complete final report. The information in this report applies to the samples analyzed in accordance with the chain-of-custody document. Weck Laboratories certifies that the test results meet all requirements of TNI unless noted by qualifiers or written in the Case Narrative. This analytical report must be reproduced in its entirety.

Dear Brenda Stevens,

Enclosed are the results of analyses for samples received 1/15/23 with the Chain-of-Custody document. The samples were received in good condition, at 2.4 °C and on ice. All analyses met the method criteria except as noted in the case narrative or in the report with data qualifiers.

Reviewed by:

Chris Samatmanakit
Project Manager

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Certificate of Analysis

FINAL REPORT

WSP USA E&I Inc. - San Diego
9177 Sky Park Court, Ste A
San Diego, CA 92123

Project Number: SGVCOG Fire Effects Study

Project Manager: Brenda Stevens

Reported:
03/03/2023 13:52

Sample Summary

Sample Name	Sampled By	Lab ID	Matrix	Sampled	Qualifiers
F_193B_R-2223_W1_01	Luis De La Torre	3A15019-01	Water	01/14/23 22:00	
F_194B_R-2223_W1_01	Luis De La Torre	3A15019-02	Water	01/14/23 22:15	
ARCAD_WA_CON_2223_W1_01	Luis De La Torre	3A15019-03	Water	01/15/23 01:30	
F_193B_R-2223_W1_01	Luis De La Torre	3A15019-04	Water	01/14/23 15:45	
F_194B_R-2223_W1_01	Luis De La Torre	3A15019-05	Water	01/14/23 15:30	
ARCAD_WA_CON_2223_W1_01	Luis De La Torre	3A15019-06	Water	01/14/23 15:28	
F_193B_R-2223_W1_02	Luis De La Torre	3A15019-07	Water	01/14/23 15:45	
F_193B_R-2223_W1_01	Luis De La Torre	3A15019-08	Water	01/14/23 15:45	
F_194B_R-2223_W1_01	Luis De La Torre	3A15019-09	Water	01/14/23 15:30	
ARCAD_WA_CON_2223_W1_01	Luis De La Torre	3A15019-10	Water	01/14/23 15:28	
F_193B_R-2223_W1_02	Luis De La Torre	3A15019-11	Water	01/14/23 15:45	

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FINAL REPORT

WSP USA E&I Inc. - San Diego
9177 Sky Park Court, Ste A
San Diego, CA 92123

Project Number: SGVCOG Fire Effects Study

Project Manager: Brenda Stevens

Reported: 03/03/2023 13:52

Sample Results

Sample: F_193B_R-2223_W1_01 — 3A15019-01 (Water)

Sampled: 01/14/23 22:00 by Luis De La Torre

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods							
Method: Calculation			**Instr:** [CALC]				
Batch ID: [CALC] **Preparation:** [CALC]			**Prepared:** 01/28/23 11:46				**Analyst:** ymt
Nitrogen, Total	**2.3**	0.036	0.20	mg/l	1	01/31/23	
Method: EPA 350.1			**Instr:** AA06				
Batch ID: W3A2084 **Preparation:** _NONE (WETCHEM)			**Prepared:** 01/25/23 11:23				**Analyst:** YMT
Ammonia as N	**0.085**	0.017	0.10	mg/l	1	01/27/23	J
Method: EPA 351.2			**Instr:** AA06				
Batch ID: W3A2387 **Preparation:** _NONE (WETCHEM)			**Prepared:** 01/28/23 11:46				**Analyst:** ymt
TKN	**0.36**	0.13	0.20	mg/l	1	01/31/23	M-02
Method: EPA 353.2			**Instr:** AA01				
Batch ID: W3A1271 **Preparation:** _NONE (WETCHEM)			**Prepared:** 01/16/23 16:32				**Analyst:** YMT
Nitrate as N	**1.9**	0.040	0.20	mg/l	1	01/16/23 19:29	
Nitrite as N	ND	42	100	ug/l	1	01/16/23 19:29	
NO2+NO3 as N	**1900**	36	200	ug/l	1	01/16/23	
Hexavalent Chromium by IC							
Method: EPA 218.6			**Instr:** LC13				
Batch ID: W3A1651 **Preparation:** _NONE (LC)			**Prepared:** 01/19/23 10:00				**Analyst:** PJS
Chromium 6+	**0.21**	0.0079	0.020	ug/l	1	01/19/23	
Chromium 6+, Dissolved	**0.23**	0.0079	0.020	ug/l	1	01/19/23	
Metals by EPA 200 Series Methods							
Method: EPA 200.7			**Instr:** ICP03				
Batch ID: W3A2419 **Preparation:** EPA 200.2			**Prepared:** 01/30/23 09:47				**Analyst:** kvm
Phosphorus, Dissolved	**0.073**	0.018	0.050	mg/l	1	01/31/23	
Phosphorus, Total	**0.22**	0.018	0.050	mg/l	1	01/31/23	
Method: EPA 200.8			**Instr:** ICPMS06				
Batch ID: W3A2421 **Preparation:** EPA 200.2			**Prepared:** 01/30/23 11:44				**Analyst:** tyc
Aluminum, Dissolved	**35**	4.4	20	ug/l	1	02/01/23	
Aluminum, Total	**4900**	4.4	20	ug/l	1	02/01/23	
Antimony, Dissolved	**0.53**	0.089	0.50	ug/l	1	02/01/23	
Antimony, Total	**1.5**	0.089	0.50	ug/l	1	02/01/23	
Arsenic, Dissolved	**0.66**	0.074	0.40	ug/l	1	02/01/23	
Arsenic, Total	**2.3**	0.074	0.40	ug/l	1	02/01/23	
Beryllium, Dissolved	ND	0.062	0.10	ug/l	1	02/01/23	
Beryllium, Total	**0.19**	0.029	0.10	ug/l	1	02/01/23	
Cadmium, Dissolved	ND	0.042	0.20	ug/l	1	02/01/23	
Cadmium, Total	**0.082**	0.042	0.20	ug/l	1	02/01/23	J
Chromium, Dissolved	**0.23**	0.089	0.20	ug/l	1	02/01/23	
Chromium, Total	**6.4**	0.089	0.20	ug/l	1	02/01/23	

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Sample Results

(Continued)

Sample: F_193B_R-2223_W1_01 — 3A15019-01 (Water)

Sampled: 01/14/23 22:00 by Luis De La Torre

(Continued)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Metals by EPA 200 Series Methods (Continued)							
Method: EPA 200.8			**Instr:** ICPMS06				
Batch ID: W3A2421 — **Preparation:** EPA 200.2			**Prepared:** 01/30/23 11:44				**Analyst:** tyc
Copper, Dissolved	**3.4**	0.23	0.50	ug/l	1	02/01/23	
Copper, Total	**20**	0.23	0.50	ug/l	1	02/01/23	
Iron, Dissolved	**27**	3.9	20	ug/l	1	02/01/23	
Iron, Total	**5600**	3.9	20	ug/l	1	02/01/23	
Lead, Dissolved	**0.12**	0.083	0.20	ug/l	1	02/01/23	J
Lead, Total	**9.2**	0.083	0.20	ug/l	1	02/01/23	
Nickel, Dissolved	**0.51**	0.16	2.0	ug/l	1	02/01/23	J
Nickel, Total	**6.2**	0.40	2.0	ug/l	1	02/01/23	
Selenium, Dissolved	**0.083**	0.067	0.40	ug/l	1	02/01/23	J
Selenium, Total	**0.15**	0.067	0.40	ug/l	1	02/01/23	J
Silver, Dissolved	ND	0.030	0.20	ug/l	1	02/01/23	
Silver, Total	ND	0.055	0.20	ug/l	1	02/01/23	
Thallium, Dissolved	ND	0.021	0.20	ug/l	1	02/01/23	
Thallium, Total	**0.029**	0.021	0.20	ug/l	1	02/01/23	J
Zinc, Dissolved	**4.7**	0.80	10	ug/l	1	02/01/23	J
Zinc, Total	**74**	1.7	10	ug/l	1	02/01/23	
Method: EPA 245.1			**Instr:** HG03				
Batch ID: W3A2172 — **Preparation:** EPA 245.1			**Prepared:** 01/26/23 08:30				**Analyst:** KVM
Mercury, Dissolved	ND	0.037	0.050	ug/l	1	01/27/23	
Mercury, Total	ND	0.037	0.050	ug/l	1	01/27/23	
Semivolatile Organics - Low Level by Tandem GC/MS/MS							
Method: EPA 625.1			**Instr:** GCMS15				
Batch ID: W3A1700 — **Preparation:** EPA 3535/SPE			**Prepared:** 01/20/23 08:25				**Analyst:** EFC
Acenaphthene	ND	6.0	25	ng/l	1	01/21/23	M-02
Acenaphthylene	ND	5.0	25	ng/l	1	01/21/23	M-02
Anthracene	ND	5.5	25	ng/l	1	01/21/23	M-02
Benzo (a) anthracene	ND	4.6	25	ng/l	1	01/21/23	M-02
Benzo (a) pyrene	ND	4.8	25	ng/l	1	01/21/23	M-02
Benzo (b) fluoranthene	ND	8.0	25	ng/l	1	01/21/23	M-02
Benzo (g,h,i) perylene	ND	5.0	25	ng/l	1	01/21/23	M-02
Benzo (k) fluoranthene	ND	6.0	25	ng/l	1	01/21/23	M-02
Chrysene	ND	7.0	25	ng/l	1	01/21/23	M-02
Dibenzo (a,h) anthracene	ND	6.0	25	ng/l	1	01/21/23	M-02
Fluoranthene	ND	7.5	25	ng/l	1	01/21/23	M-02
Fluorene	ND	5.5	25	ng/l	1	01/21/23	M-02
Indeno (1,2,3-cd) pyrene	ND	4.8	25	ng/l	1	01/21/23	M-02

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9177 Sky Park Court, Ste A
San Diego, CA 92123

Project Number: SGVCOG Fire Effects Study

Project Manager: Brenda Stevens

Reported: 03/03/2023 13:52

Sample Results

(Continued)

Sample: F_193B_R-2223_W1_01 Sampled: 01/14/23 22:00 by Luis De La Torre

3A15019-01 (Water) (Continued)

Semivolatile Organics - Low Level by Tandem GC/MS/MS (Continued)

Method: EPA 625.1 **Instr:** GCMS15

Batch ID: W3A1700 **Preparation:** EPA 3535/SPE **Prepared:** 01/20/23 08:25 **Analyst:** EFC

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Naphthalene	**21**	16	25	ng/l	1	01/21/23	M-02, J
Phenanthrene	ND	15	25	ng/l	1	01/21/23	M-02
Pyrene	ND	7.0	25	ng/l	1	01/21/23	M-02
Surrogate(s)							
1,3-Dimethyl-2-nitrobenzene	*88%*	*Conc: 440*	*62-120*			*01/21/23*	
Perylene-d12	*52%*	*Conc: 261*	*36-120*			*01/21/23*	

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San Diego, CA 92123

Project Number: SGVCOG Fire Effects Study

Project Manager: Brenda Stevens

Reported: 03/03/2023 13:52

Sample Results

(Continued)

Sample: F_194B_R-2223_W1_01
3A15019-02 (Water)

Sampled: 01/14/23 22:15 by Luis De La Torre

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods							
Method: Calculation			**Instr:** [CALC]				
Batch ID: [CALC] **Preparation:** [CALC]			**Prepared:** 01/28/23 11:46				**Analyst:** ymt
Nitrogen, Total	**1.5**	0.036	0.20	mg/l	1	01/31/23	
Method: EPA 350.1			**Instr:** AA06				
Batch ID: W3A2084 **Preparation:** _NONE (WETCHEM)			**Prepared:** 01/25/23 11:23				**Analyst:** YMT
Ammonia as N	**0.16**	0.017	0.10	mg/l	1	01/27/23	
Method: EPA 351.2			**Instr:** AA06				
Batch ID: W3A2387 **Preparation:** _NONE (WETCHEM)			**Prepared:** 01/28/23 11:46				**Analyst:** ymt
TKN	**0.63**	0.13	0.20	mg/l	1	01/31/23	M-02
Method: EPA 353.2			**Instr:** AA01				
Batch ID: W3A1271 **Preparation:** _NONE (WETCHEM)			**Prepared:** 01/16/23 16:32				**Analyst:** YMT
Nitrate as N	**0.84**	0.040	0.20	mg/l	1	01/16/23 19:30	
Nitrite as N	ND	42	100	ug/l	1	01/16/23 19:30	
NO2+NO3 as N	**870**	36	200	ug/l	1	01/16/23	
Hexavalent Chromium by IC							
Method: EPA 218.6			**Instr:** LC13				
Batch ID: W3A1651 **Preparation:** _NONE (LC)			**Prepared:** 01/19/23 10:00				**Analyst:** PJS
Chromium 6+	**0.30**	0.0079	0.020	ug/l	1	01/19/23	
Chromium 6+, Dissolved	**0.33**	0.0079	0.020	ug/l	1	01/19/23	
Metals by EPA 200 Series Methods							
Method: EPA 200.7			**Instr:** ICP03				
Batch ID: W3A2419 **Preparation:** EPA 200.2			**Prepared:** 01/30/23 09:47				**Analyst:** kvm
Phosphorus, Dissolved	**0.072**	0.018	0.050	mg/l	1	01/31/23	
Phosphorus, Total	**0.20**	0.018	0.050	mg/l	1	01/31/23	
Method: EPA 200.8			**Instr:** ICPMS06				
Batch ID: W3A2421 **Preparation:** EPA 200.2			**Prepared:** 01/30/23 11:44				**Analyst:** tyc
Aluminum, Dissolved	**25**	4.4	20	ug/l	1	02/01/23	
Aluminum, Total	**3600**	4.4	20	ug/l	1	02/01/23	
Antimony, Dissolved	**0.41**	0.089	0.50	ug/l	1	02/01/23	J
Antimony, Total	**0.97**	0.089	0.50	ug/l	1	02/01/23	
Arsenic, Dissolved	**0.52**	0.074	0.40	ug/l	1	02/01/23	
Arsenic, Total	**1.7**	0.074	0.40	ug/l	1	02/01/23	
Beryllium, Dissolved	ND	0.062	0.10	ug/l	1	02/01/23	
Beryllium, Total	**0.20**	0.029	0.10	ug/l	1	02/01/23	
Cadmium, Dissolved	ND	0.042	0.20	ug/l	1	02/01/23	
Cadmium, Total	**0.076**	0.042	0.20	ug/l	1	02/01/23	J
Chromium, Dissolved	**0.29**	0.089	0.20	ug/l	1	02/01/23	
Chromium, Total	**4.9**	0.089	0.20	ug/l	1	02/01/23	

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San Diego, CA 92123

Project Number: SGVCOG Fire Effects Study

Project Manager: Brenda Stevens

Reported: 03/03/2023 13:52

Sample Results

(Continued)

Sample: F_194B_R-2223_W1_01 — Sampled: 01/14/23 22:15 by Luis De La Torre

3A15019-02 (Water) (Continued)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Metals by EPA 200 Series Methods (Continued)							
Method: EPA 200.8			**Instr:** ICPMS06				
Batch ID: W3A2421 **Preparation:** EPA 200.2			**Prepared:** 01/30/23 11:44				**Analyst:** tyc
Copper, Dissolved	**3.0**	0.23	0.50	ug/l	1	02/01/23	
Copper, Total	**13**	0.23	0.50	ug/l	1	02/01/23	
Iron, Dissolved	**24**	3.9	20	ug/l	1	02/01/23	
Iron, Total	**4200**	3.9	20	ug/l	1	02/01/23	
Lead, Dissolved	**0.15**	0.083	0.20	ug/l	1	02/01/23	J
Lead, Total	**10**	0.083	0.20	ug/l	1	02/01/23	
Nickel, Dissolved	**0.40**	0.16	2.0	ug/l	1	02/01/23	J
Nickel, Total	**4.0**	0.40	2.0	ug/l	1	02/01/23	
Selenium, Dissolved	ND	0.067	0.40	ug/l	1	02/01/23	
Selenium, Total	ND	0.067	0.40	ug/l	1	02/01/23	
Silver, Dissolved	ND	0.030	0.20	ug/l	1	02/01/23	
Silver, Total	ND	0.055	0.20	ug/l	1	02/01/23	
Thallium, Dissolved	ND	0.021	0.20	ug/l	1	02/01/23	
Thallium, Total	**0.026**	0.021	0.20	ug/l	1	02/01/23	J
Zinc, Dissolved	**8.7**	0.80	10	ug/l	1	02/01/23	J
Zinc, Total	**75**	1.7	10	ug/l	1	02/01/23	
Method: EPA 245.1			**Instr:** HG03				
Batch ID: W3A2172 **Preparation:** EPA 245.1			**Prepared:** 01/26/23 08:30				**Analyst:** KVM
Mercury, Dissolved	ND	0.037	0.050	ug/l	1	01/27/23	
Mercury, Total	ND	0.037	0.050	ug/l	1	01/27/23	
Semivolatile Organics - Low Level by Tandem GC/MS/MS							
Method: EPA 625.1			**Instr:** GCMS15				
Batch ID: W3A1700 **Preparation:** EPA 3535/SPE			**Prepared:** 01/20/23 08:25				**Analyst:** EFC
Acenaphthene	ND	6.0	25	ng/l	1	01/21/23	M-02
Acenaphthylene	ND	5.0	25	ng/l	1	01/21/23	M-02
Anthracene	ND	5.5	25	ng/l	1	01/21/23	M-02
Benzo (a) anthracene	ND	4.6	25	ng/l	1	01/21/23	M-02
Benzo (a) pyrene	ND	4.8	25	ng/l	1	01/21/23	M-02
Benzo (b) fluoranthene	ND	8.0	25	ng/l	1	01/21/23	M-02
Benzo (g,h,i) perylene	ND	5.0	25	ng/l	1	01/21/23	M-02
Benzo (k) fluoranthene	ND	6.0	25	ng/l	1	01/21/23	M-02
Chrysene	ND	7.0	25	ng/l	1	01/21/23	M-02
Dibenzo (a,h) anthracene	ND	6.0	25	ng/l	1	01/21/23	M-02
Fluoranthene	ND	7.5	25	ng/l	1	01/21/23	M-02
Fluorene	ND	5.5	25	ng/l	1	01/21/23	M-02
Indeno (1,2,3-cd) pyrene	ND	4.8	25	ng/l	1	01/21/23	M-02

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Project Manager: Brenda Stevens

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Sample Results

(Continued)

Sample: F_194B_R-2223_W1_01 — Sampled: 01/14/23 22:15 by Luis De La Torre

3A15019-02 (Water) — (Continued)

Semivolatile Organics - Low Level by Tandem GC/MS/MS (Continued)

Method: EPA 625.1 **Instr:** GCMS15

Batch ID: W3A1700 **Preparation:** EPA 3535/SPE **Prepared:** 01/20/23 08:25 **Analyst:** EFC

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Naphthalene	**22**	16	25	ng/l	1	01/21/23	M-02, J
Phenanthrene	ND	15	25	ng/l	1	01/21/23	M-02
Pyrene	ND	7.0	25	ng/l	1	01/21/23	M-02
Surrogate(s)							
1,3-Dimethyl-2-nitrobenzene	*84%*	*Conc: 420*	*62-120*			*01/21/23*	
Perylene-d12	*57%*	*Conc: 283*	*36-120*			*01/21/23*	

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Sample Results

(Continued)

Sample: ARCAD_WA_CON_2223_W1_01
3A15019-03 (Water)

Sampled: 01/15/23 1:30 by Luis De La Torre

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods							
Method: Calculation			**Instr:** [CALC]				
Batch ID: [CALC] **Preparation:** [CALC]			**Prepared:** 01/28/23 11:46				**Analyst:** ymt
Nitrogen, Total	**1.4**	0.036	0.20	mg/l	1	01/31/23	
Method: EPA 350.1			**Instr:** AA06				
Batch ID: W3A2084 **Preparation:** _NONE (WETCHEM)			**Prepared:** 01/25/23 11:23				**Analyst:** YMT
Ammonia as N	**0.13**	0.017	0.10	mg/l	1	01/27/23	
Method: EPA 351.2			**Instr:** AA06				
Batch ID: W3A2387 **Preparation:** _NONE (WETCHEM)			**Prepared:** 01/28/23 11:46				**Analyst:** ymt
TKN	**0.92**	0.13	0.20	mg/l	1	01/31/23	M-02
Method: EPA 353.2			**Instr:** AA01				
Batch ID: W3A1271 **Preparation:** _NONE (WETCHEM)			**Prepared:** 01/16/23 16:32				**Analyst:** YMT
Nitrate as N	**0.46**	0.040	0.20	mg/l	1	01/16/23 19:31	
Nitrite as N	ND	42	100	ug/l	1	01/16/23 19:31	
NO2+NO3 as N	**490**	36	200	ug/l	1	01/16/23	
Hexavalent Chromium by IC							
Method: EPA 218.6			**Instr:** LC13				
Batch ID: W3A1651 **Preparation:** _NONE (LC)			**Prepared:** 01/19/23 10:00				**Analyst:** PJS
Chromium 6+	**0.33**	0.0079	0.020	ug/l	1	01/19/23	
Chromium 6+, Dissolved	**0.33**	0.0079	0.020	ug/l	1	01/19/23	
Metals by EPA 200 Series Methods							
Method: EPA 200.7			**Instr:** ICP03				
Batch ID: W3A2419 **Preparation:** EPA 200.2			**Prepared:** 01/30/23 09:47				**Analyst:** kvm
Phosphorus, Dissolved	**0.13**	0.018	0.050	mg/l	1	01/31/23	
Phosphorus, Total	**0.24**	0.018	0.050	mg/l	1	01/31/23	
Method: EPA 200.8			**Instr:** ICPMS06				
Batch ID: W3A2421 **Preparation:** EPA 200.2			**Prepared:** 01/30/23 11:44				**Analyst:** tyc
Aluminum, Dissolved	**50**	4.4	20	ug/l	1	02/01/23	
Aluminum, Total	**2600**	4.4	20	ug/l	1	02/01/23	
Antimony, Dissolved	**0.32**	0.089	0.50	ug/l	1	02/01/23	J
Antimony, Total	**0.59**	0.089	0.50	ug/l	1	02/01/23	
Arsenic, Dissolved	**0.75**	0.074	0.40	ug/l	1	02/01/23	
Arsenic, Total	**1.3**	0.074	0.40	ug/l	1	02/01/23	
Beryllium, Dissolved	ND	0.062	0.10	ug/l	1	02/01/23	
Beryllium, Total	**0.081**	0.029	0.10	ug/l	1	02/01/23	J
Cadmium, Dissolved	ND	0.042	0.20	ug/l	1	02/01/23	
Cadmium, Total	**0.057**	0.042	0.20	ug/l	1	02/01/23	J
Chromium, Dissolved	**0.39**	0.089	0.20	ug/l	1	02/01/23	
Chromium, Total	**3.5**	0.089	0.20	ug/l	1	02/01/23	

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Sample Results

(Continued)

Sample: ARCAD_WA_CON_2223_W1_01 — Sampled: 01/15/23 1:30 by Luis De La Torre

3A15019-03 (Water) — (Continued)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Metals by EPA 200 Series Methods (Continued)							
Method: EPA 200.8			**Instr:** ICPMS06				
Batch ID: W3A2421 **Preparation:** EPA 200.2			**Prepared:** 01/30/23 11:44				**Analyst:** tyc
Copper, Dissolved	**3.1**	0.23	0.50	ug/l	1	02/01/23	
Copper, Total	**8.8**	0.23	0.50	ug/l	1	02/01/23	
Iron, Dissolved	**43**	3.9	20	ug/l	1	02/01/23	
Iron, Total	**2200**	3.9	20	ug/l	1	02/01/23	
Lead, Dissolved	**0.26**	0.083	0.20	ug/l	1	02/01/23	
Lead, Total	**4.2**	0.083	0.20	ug/l	1	02/01/23	
Nickel, Dissolved	**0.35**	0.16	2.0	ug/l	1	02/01/23	J
Nickel, Total	**2.2**	0.40	2.0	ug/l	1	02/01/23	
Selenium, Dissolved	ND	0.067	0.40	ug/l	1	02/01/23	
Selenium, Total	**0.072**	0.067	0.40	ug/l	1	02/01/23	J
Silver, Dissolved	ND	0.030	0.20	ug/l	1	02/01/23	
Silver, Total	ND	0.055	0.20	ug/l	1	02/01/23	
Thallium, Dissolved	ND	0.021	0.20	ug/l	1	02/01/23	
Thallium, Total	ND	0.021	0.20	ug/l	1	02/01/23	
Zinc, Dissolved	**12**	0.80	10	ug/l	1	02/01/23	
Zinc, Total	**39**	1.7	10	ug/l	1	02/01/23	
Method: EPA 245.1			**Instr:** HG03				
Batch ID: W3A2172 **Preparation:** EPA 245.1			**Prepared:** 01/26/23 08:30				**Analyst:** KVM
Mercury, Dissolved	ND	0.037	0.050	ug/l	1	01/27/23	
Mercury, Total	ND	0.037	0.050	ug/l	1	01/27/23	
Semivolatile Organics - Low Level by Tandem GC/MS/MS							
Method: EPA 625.1			**Instr:** GCMS15				
Batch ID: W3A1700 **Preparation:** EPA 3535/SPE			**Prepared:** 01/20/23 08:25				**Analyst:** EFC
Acenaphthene	ND	6.0	25	ng/l	1	01/21/23	M-02
Acenaphthylene	ND	5.0	25	ng/l	1	01/21/23	M-02
Anthracene	ND	5.5	25	ng/l	1	01/21/23	M-02
Benzo (a) anthracene	ND	4.6	25	ng/l	1	01/21/23	M-02
Benzo (a) pyrene	ND	4.8	25	ng/l	1	01/21/23	M-02
Benzo (b) fluoranthene	ND	8.0	25	ng/l	1	01/21/23	M-02
Benzo (g,h,i) perylene	ND	5.0	25	ng/l	1	01/21/23	M-02
Benzo (k) fluoranthene	ND	6.0	25	ng/l	1	01/21/23	M-02
Chrysene	ND	7.0	25	ng/l	1	01/21/23	M-02
Dibenzo (a,h) anthracene	ND	6.0	25	ng/l	1	01/21/23	M-02
Fluoranthene	ND	7.5	25	ng/l	1	01/21/23	M-02
Fluorene	ND	5.5	25	ng/l	1	01/21/23	M-02
Indeno (1,2,3-cd) pyrene	ND	4.8	25	ng/l	1	01/21/23	M-02

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Sample Results

(Continued)

Sample: ARCAD_WA_CON_2223_W1_01 — 3A15019-03 (Water)

Sampled: 01/15/23 1:30 by Luis De La Torre

(Continued)

Semivolatile Organics - Low Level by Tandem GC/MS/MS (Continued)

Method: EPA 625.1 | **Instr:** GCMS15

Batch ID: W3A1700 | **Preparation:** EPA 3535/SPE | **Prepared:** 01/20/23 08:25 | **Analyst:** EFC

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Naphthalene	**22**	16	25	ng/l	1	01/21/23	J, M-02
Phenanthrene	ND	15	25	ng/l	1	01/21/23	M-02
Pyrene	ND	7.0	25	ng/l	1	01/21/23	M-02
Surrogate(s)							
1,3-Dimethyl-2-nitrobenzene	*101%*	*Conc: 504*	*62-120*			*01/21/23*	
Perylene-d12	*52%*	*Conc: 261*	*36-120*			*01/21/23*	

Sample Results

(Continued)

Sample: F_193B_R-2223_W1_01 — 3A15019-04 (Water)

Sampled: 01/14/23 15:45 by Luis De La Torre

Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods

Method: SM 2540C | **Instr:** OVEN01

Batch ID: W3A1402 | **Preparation:** _NONE (WETCHEM) | **Prepared:** 01/17/23 17:56 | **Analyst:** tmp

Method: SM 2540D | **Instr:** OVEN15

Batch ID: W3A1715 | **Preparation:** _NONE (WETCHEM) | **Prepared:** 01/20/23 09:33 | **Analyst:** mes

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Total Dissolved Solids	**130**	4.0	10	mg/l	1	01/18/23	
Total Suspended Solids	**210**		5	mg/l	1	01/20/23	

Sample Results

(Continued)

Sample: F_194B_R-2223_W1_01 — 3A15019-05 (Water)

Sampled: 01/14/23 15:30 by Luis De La Torre

Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods

Method: SM 2540C | **Instr:** OVEN01

Batch ID: W3A1402 | **Preparation:** _NONE (WETCHEM) | **Prepared:** 01/17/23 17:56 | **Analyst:** tmp

Method: SM 2540D | **Instr:** OVEN15

Batch ID: W3A1715 | **Preparation:** _NONE (WETCHEM) | **Prepared:** 01/20/23 09:33 | **Analyst:** mes

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Total Dissolved Solids	**100**	4.0	10	mg/l	1	01/18/23	
Total Suspended Solids	**290**		5	mg/l	1	01/20/23	

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Sample Results

(Continued)

Sample: ARCAD_WA_CON_2223_W1_01 — 3A15019-06 (Water) — Sampled: 01/14/23 15:28 by Luis De La Torre

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods							
Method: SM 2540C — **Instr:** OVEN01							
Batch ID: W3A1402 — **Preparation:** _NONE (WETCHEM) — **Prepared:** 01/17/23 17:56 — **Analyst:** tmp							
Total Dissolved Solids	**47**	4.0	10	mg/l	1	01/18/23	
Method: SM 2540D — **Instr:** OVEN15							
Batch ID: W3A1715 — **Preparation:** _NONE (WETCHEM) — **Prepared:** 01/20/23 09:33 — **Analyst:** mes							
Total Suspended Solids	**50**		5	mg/l	1	01/20/23	

Sample Results

(Continued)

Sample: F_193B_R-2223_W1_02 — 3A15019-07 (Water) — Sampled: 01/14/23 15:45 by Luis De La Torre

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods							
Method: SM 2540C — **Instr:** OVEN01							
Batch ID: W3A1402 — **Preparation:** _NONE (WETCHEM) — **Prepared:** 01/17/23 17:56 — **Analyst:** tmp							
Total Dissolved Solids	**120**	4.0	10	mg/l	1	01/18/23	
Method: SM 2540D — **Instr:** OVEN15							
Batch ID: W3A1715 — **Preparation:** _NONE (WETCHEM) — **Prepared:** 01/20/23 09:33 — **Analyst:** mes							
Total Suspended Solids	**210**		5	mg/l	1	01/20/23	

Sample Results

(Continued)

Sample: F_193B_R-2223_W1_01 — 3A15019-08 (Water) — Sampled: 01/14/23 15:45 by Luis De La Torre

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Metals by EPA 200 Series Methods							
Method: Calculation — **Instr:** [CALC]							
Batch ID: [CALC] — **Preparation:** [CALC] — **Prepared:** 01/30/23 09:47 — **Analyst:** kvm							
Hardness as CaCO3, Total	**108**	0.344	3.31	mg/l	1	01/31/23	
Method: EPA 200.7 — **Instr:** ICP03							
Batch ID: W3A2419 — **Preparation:** EPA 200.2 — **Prepared:** 01/30/23 09:47 — **Analyst:** kvm							
Calcium, Total	**26.5**	0.0736	0.500	mg/l	1	01/31/23	
Magnesium, Total	**10.3**	0.0390	0.500	mg/l	1	01/31/23	

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Sample Results

(Continued)

Sample: F_194B_R-2223_W1_01 — 3A15019-09 (Water) — Sampled: 01/14/23 15:30 by Luis De La Torre

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Metals by EPA 200 Series Methods							
Method: Calculation — **Instr:** [CALC]							
Batch ID: [CALC] — **Preparation:** [CALC] — **Prepared:** 01/30/23 09:47 — **Analyst:** kvm							
Hardness as CaCO3, Total	**75.4**	0.344	3.31	mg/l	1	01/31/23	
Method: EPA 200.7 — **Instr:** ICP03							
Batch ID: W3A2419 — **Preparation:** EPA 200.2 — **Prepared:** 01/30/23 09:47 — **Analyst:** kvm							
Calcium, Total	**18.4**	0.0736	0.500	mg/l	1	01/31/23	
Magnesium, Total	**7.18**	0.0390	0.500	mg/l	1	01/31/23	

Sample Results

(Continued)

Sample: ARCAD_WA_CON_2223_W1_01 — 3A15019-10 (Water) — Sampled: 01/14/23 15:28 by Luis De La Torre

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Metals by EPA 200 Series Methods							
Method: Calculation — **Instr:** [CALC]							
Batch ID: [CALC] — **Preparation:** [CALC] — **Prepared:** 01/30/23 09:47 — **Analyst:** kvm							
Hardness as CaCO3, Total	**24.2**	0.344	3.31	mg/l	1	01/31/23	
Method: EPA 200.7 — **Instr:** ICP03							
Batch ID: W3A2419 — **Preparation:** EPA 200.2 — **Prepared:** 01/30/23 09:47 — **Analyst:** kvm							
Calcium, Total	**7.12**	0.0736	0.500	mg/l	1	01/31/23	
Magnesium, Total	**1.55**	0.0390	0.500	mg/l	1	01/31/23	

Sample Results

(Continued)

Sample: F_193B_R-2223_W1_02 — 3A15019-11 (Water) — Sampled: 01/14/23 15:45 by Luis De La Torre

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Metals by EPA 200 Series Methods							
Method: Calculation — **Instr:** [CALC]							
Batch ID: [CALC] — **Preparation:** [CALC] — **Prepared:** 01/30/23 09:47 — **Analyst:** kvm							
Hardness as CaCO3, Total	**114**	0.344	3.31	mg/l	1	01/31/23	
Method: EPA 200.7 — **Instr:** ICP03							
Batch ID: W3A2419 — **Preparation:** EPA 200.2 — **Prepared:** 01/30/23 09:47 — **Analyst:** kvm							
Calcium, Total	**27.9**	0.0736	0.500	mg/l	1	01/31/23	
Magnesium, Total	**10.7**	0.0390	0.500	mg/l	1	01/31/23	

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FINAL REPORT

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Project Manager: Brenda Stevens

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Sample Results Enthalpy Orange

Sample: F_193B_R-2223_W1_01 — 3A15019-01 (Water)

Sampled: 01/14/23 22:00 by Luis De La Torre

SM 10200-H

Method: Chlorophyll **Batch ID:** 306171 **Prepared:** 01/14/23 00:00 **Analyst:** ATP

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Chlorophyll a	ND		1.0	mg/M3	1	01/25/23	ND

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Sample Results Enthalpy Orange (Continued)

Sample: F_194B_R-2223_W1_01 3A15019-02 (Water)

Sampled: 01/14/23 22:15 by Luis De La Torre

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
SM 10200-H							
Method: Chlorophyll **Batch ID:** 306171 **Prepared:** 01/14/23 00:00 **Analyst:** ATP							
Chlorophyll a	ND		1.0	mg/M3	1	01/25/23	ND

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Sample Results Enthalpy Orange (Continued)

Sample: ARCAD_WA_CON_2223_W1_01
3A15019-03 (Water)

Sampled: 01/15/23 1:30 by Luis De La Torre

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
SM 10200-H							
Method: Chlorophyll **Batch ID:** 306171 **Prepared:** 01/15/23 00:00 **Analyst:** ATP							
Chlorophyll a	ND		1.0	mg/M3	1	01/25/23	ND

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Quality Control Results

Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W3A1271 - EPA 353.2											
Blank (W3A1271-BLK1)					**Prepared & Analyzed: 01/16/23**						
Nitrate as N	ND	0.040	0.20	mg/l							
Nitrite as N	ND	42	100	ug/l							
NO2+NO3 as N	ND	36	200	ug/l							
LCS (W3A1271-BS1)					**Prepared & Analyzed: 01/16/23**						
Nitrate as N	1.03	0.040	0.20	mg/l	1.00		103	90-110			
Nitrite as N	1000	42	100	ug/l	1000		100	90-110			
NO2+NO3 as N	1030	36	200	ug/l	1000		103	90-110			
Duplicate (W3A1271-DUP1)	**Source: 3A16034-01**				**Prepared & Analyzed: 01/16/23**						
Nitrate as N	3.97	0.040	0.20	mg/l		4.02			1	20	
Nitrite as N	117	42	100	ug/l		115			2	20	
NO2+NO3 as N	4090	36	200	ug/l		4140			1	20	
Matrix Spike (W3A1271-MS1)	**Source: 3A16037-04**				**Prepared & Analyzed: 01/16/23**						
Nitrate as N	2.07	0.040	0.20	mg/l	2.00	ND	104	90-110			
Nitrite as N	1010	42	100	ug/l	1000	ND	101	90-110			
NO2+NO3 as N	2070	36	200	ug/l	2000	ND	104	90-110			
Matrix Spike Dup (W3A1271-MSD1)	**Source: 3A16037-04**				**Prepared & Analyzed: 01/16/23**						
Nitrate as N	2.06	0.040	0.20	mg/l	2.00	ND	103	90-110	0.5	20	
Nitrite as N	1000	42	100	ug/l	1000	ND	100	90-110	1	20	
NO2+NO3 as N	2060	36	200	ug/l	2000	ND	103	90-110	0.5	20	
Batch: W3A1402 - SM 2540C											
Blank (W3A1402-BLK1)					**Prepared: 01/17/23 Analyzed: 01/18/23**						
Total Dissolved Solids	ND	4.0	10	mg/l							
LCS (W3A1402-BS1)					**Prepared: 01/17/23 Analyzed: 01/18/23**						
Total Dissolved Solids	842	4.0	10	mg/l	824		102	97-103			
Duplicate (W3A1402-DUP1)	**Source: 3A13145-01**				**Prepared: 01/17/23 Analyzed: 01/18/23**						
Total Dissolved Solids	831	4.0	10	mg/l		828			0.4	10	
Duplicate (W3A1402-DUP2)	**Source: 3A16034-01**				**Prepared: 01/17/23 Analyzed: 01/18/23**						
Total Dissolved Solids	863	4.0	10	mg/l		826			4	10	
Batch: W3A1715 - SM 2540D											
Blank (W3A1715-BLK1)					**Prepared & Analyzed: 01/20/23**						
Total Suspended Solids	0.700		5	mg/l							J
LCS (W3A1715-BS1)					**Prepared & Analyzed: 01/20/23**						
Total Suspended Solids	56.5		5	mg/l	52.5		108	90-110			
Duplicate (W3A1715-DUP1)	**Source: 3A15017-01**				**Prepared & Analyzed: 01/20/23**						
Total Suspended Solids	33.6		5	mg/l		30.6			9	10	
Duplicate (W3A1715-DUP2)	**Source: 3A15019-05**				**Prepared & Analyzed: 01/20/23**						
Total Suspended Solids	276		5	mg/l		288			4	10	

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Project Manager: Brenda Stevens

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Quality Control Results

(Continued)

Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W3A2084 - EPA 350.1											
Blank (W3A2084-BLK1)					**Prepared: 01/25/23**	**Analyzed: 01/27/23**					
Ammonia as N	ND	0.017	0.10	mg/l							
Blank (W3A2084-BLK2)					**Prepared: 01/25/23**	**Analyzed: 01/27/23**					
Ammonia as N	ND	0.017	0.10	mg/l							
LCS (W3A2084-BS1)					**Prepared: 01/25/23**	**Analyzed: 01/27/23**					
Ammonia as N	0.251	0.017	0.10	mg/l	0.250		100	90-110			
LCS (W3A2084-BS2)					**Prepared: 01/25/23**	**Analyzed: 01/27/23**					
Ammonia as N	0.250	0.017	0.10	mg/l	0.250		100	90-110			
Matrix Spike (W3A2084-MS1)	**Source: 3A23015-01**				**Prepared: 01/25/23**	**Analyzed: 01/27/23**					
Ammonia as N	0.297	0.017	0.10	mg/l	0.250	0.0549	97	90-110			
Matrix Spike (W3A2084-MS2)	**Source: 3A23026-02**				**Prepared: 01/25/23**	**Analyzed: 01/27/23**					
Ammonia as N	0.366	0.017	0.10	mg/l	0.250	0.123	97	90-110			
Matrix Spike Dup (W3A2084-MSD1)	**Source: 3A23015-01**				**Prepared: 01/25/23**	**Analyzed: 01/27/23**					
Ammonia as N	0.298	0.017	0.10	mg/l	0.250	0.0549	97	90-110	0.4	15	
Matrix Spike Dup (W3A2084-MSD2)	**Source: 3A23026-02**				**Prepared: 01/25/23**	**Analyzed: 01/27/23**					
Ammonia as N	0.370	0.017	0.10	mg/l	0.250	0.123	99	90-110	1	15	
Batch: W3A2387 - EPA 351.2											
Blank (W3A2387-BLK1)					**Prepared: 01/28/23**	**Analyzed: 01/31/23**					
TKN	ND	0.065	0.10	mg/l							
Blank (W3A2387-BLK2)					**Prepared: 01/28/23**	**Analyzed: 01/31/23**					
TKN	ND	0.065	0.10	mg/l							
LCS (W3A2387-BS1)					**Prepared: 01/28/23**	**Analyzed: 01/31/23**					
TKN	0.938	0.065	0.10	mg/l	1.00		94	90-110			
LCS (W3A2387-BS2)					**Prepared: 01/28/23**	**Analyzed: 01/31/23**					
TKN	0.941	0.065	0.10	mg/l	1.00		94	90-110			
Matrix Spike (W3A2387-MS1)	**Source: 3A12149-07**				**Prepared: 01/28/23**	**Analyzed: 01/31/23**					
TKN	1.25	0.065	0.10	mg/l	1.00	0.183	106	90-110			
Matrix Spike (W3A2387-MS2)	**Source: 3A12149-08**				**Prepared: 01/28/23**	**Analyzed: 01/31/23**					
TKN	1.19	0.065	0.10	mg/l	1.00	0.236	95	90-110			
Matrix Spike Dup (W3A2387-MSD1)	**Source: 3A12149-07**				**Prepared: 01/28/23**	**Analyzed: 01/31/23**					
TKN	1.26	0.065	0.10	mg/l	1.00	0.183	108	90-110	1	10	
Matrix Spike Dup (W3A2387-MSD2)	**Source: 3A12149-08**				**Prepared: 01/28/23**	**Analyzed: 01/31/23**					
TKN	1.25	0.065	0.10	mg/l	1.00	0.236	101	90-110	5	10	

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Quality Control Results

(Continued)

Hexavalent Chromium by IC

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W3A1651 - EPA 218.6											
Blank (W3A1651-BLK1)					**Prepared & Analyzed: 01/19/23**						
Chromium 6+	ND	0.0079	0.020	ug/l							
Chromium 6+, Dissolved	ND	0.0079	0.020	ug/l							
LCS (W3A1651-BS1)					**Prepared & Analyzed: 01/19/23**						
Chromium 6+	5.12	0.0079	0.020	ug/l	5.00		102	90-110			
Chromium 6+, Dissolved	5.12	0.0079	0.020	ug/l	5.00		102	90-110			
Matrix Spike (W3A1651-MS1)	**Source: 3A15019-01**				**Prepared & Analyzed: 01/19/23**						
Chromium 6+	5.34	0.0079	0.020	ug/l	5.00	0.205	103	88-112			
Chromium 6+, Dissolved	5.34	0.0079	0.020	ug/l	5.00	0.234	102	88-112			
Matrix Spike Dup (W3A1651-MSD1)	**Source: 3A15019-01**				**Prepared & Analyzed: 01/19/23**						
Chromium 6+	5.46	0.0079	0.020	ug/l	5.00	0.205	105	88-112	2	10	
Chromium 6+, Dissolved	5.46	0.0079	0.020	ug/l	5.00	0.234	105	88-112	2	10	

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Quality Control Results

(Continued)

Metals by EPA 200 Series Methods

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W3A2172 - EPA 245.1											
Blank (W3A2172-BLK1)					**Prepared: 01/26/23**	**Analyzed: 01/27/23**					
Mercury, Dissolved	ND	0.037	0.050	ug/l							
Mercury, Total	ND	0.037	0.050	ug/l							
LCS (W3A2172-BS1)					**Prepared: 01/26/23**	**Analyzed: 01/27/23**					
Mercury, Dissolved	1.14	0.037	0.050	ug/l	1.00		114	85-115			
Mercury, Total	1.14	0.037	0.050	ug/l	1.00		114	85-115			
Matrix Spike (W3A2172-MS1)	**Source: 2L15007-01**				**Prepared: 01/26/23**	**Analyzed: 01/27/23**					
Mercury, Dissolved	0.982	0.037	0.050	ug/l	1.00	ND	98	70-130			
Mercury, Total	0.982	0.037	0.050	ug/l	1.00	ND	98	70-130			
Matrix Spike (W3A2172-MS2)	**Source: 3A17145-03**				**Prepared: 01/26/23**	**Analyzed: 01/27/23**					
Mercury, Dissolved	1.21	0.037	0.050	ug/l	1.00	ND	121	70-130			
Mercury, Total	1.21	0.037	0.050	ug/l	1.00	ND	121	70-130			
Matrix Spike Dup (W3A2172-MSD1)	**Source: 2L15007-01**				**Prepared: 01/26/23**	**Analyzed: 01/27/23**					
Mercury, Dissolved	1.08	0.037	0.050	ug/l	1.00	ND	108	70-130	10	20	
Mercury, Total	1.08	0.037	0.050	ug/l	1.00	ND	108	70-130	10	20	
Matrix Spike Dup (W3A2172-MSD2)	**Source: 3A17145-03**				**Prepared: 01/26/23**	**Analyzed: 01/27/23**					
Mercury, Dissolved	1.07	0.037	0.050	ug/l	1.00	ND	107	70-130	12	20	
Mercury, Total	1.07	0.037	0.050	ug/l	1.00	ND	107	70-130	12	20	
Batch: W3A2419 - EPA 200.7											
Blank (W3A2419-BLK1)					**Prepared: 01/30/23**	**Analyzed: 01/31/23**					
Calcium, Total	ND	0.0736	0.500	mg/l							
Magnesium, Total	ND	0.0390	0.500	mg/l							
Phosphorus, Dissolved	ND	0.018	0.050	mg/l							
Phosphorus, Total	ND	0.018	0.050	mg/l							
LCS (W3A2419-BS1)					**Prepared: 01/30/23**	**Analyzed: 01/31/23**					
Calcium, Total	49.3	0.0736	0.500	mg/l	50.2		98	85-115			
Magnesium, Total	48.5	0.0390	0.500	mg/l	50.2		97	85-115			
Phosphorus, Dissolved	2.12	0.018	0.050	mg/l	2.00		106	85-115			
Phosphorus, Total	2.12	0.018	0.050	mg/l	2.00		106	85-115			
Matrix Spike (W3A2419-MS1)	**Source: 3A15019-01**				**Prepared: 01/30/23**	**Analyzed: 01/31/23**					
Calcium, Total	70.1	0.0736	0.500	mg/l	50.2	21.1	98	70-130			
Magnesium, Total	56.0	0.0390	0.500	mg/l	50.2	7.36	97	70-130			
Phosphorus, Dissolved	2.29	0.018	0.050	mg/l	2.00	0.0726	111	70-130			
Phosphorus, Total	2.29	0.018	0.050	mg/l	2.00	0.219	104	70-130			
Matrix Spike (W3A2419-MS2)	**Source: 3A18050-02**				**Prepared: 01/30/23**	**Analyzed: 01/31/23**					
Calcium, Total	51.0	0.0736	0.500	mg/l	50.2	1.52	99	70-130			
Magnesium, Total	49.2	0.0390	0.500	mg/l	50.2	0.592	97	70-130			
Phosphorus, Dissolved	2.18	0.018	0.050	mg/l	2.00	0.0816	105	70-130			
Phosphorus, Total	2.18	0.018	0.050	mg/l	2.00	0.0816	105	70-130			

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FINAL REPORT

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Project Manager: Brenda Stevens

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Quality Control Results

(Continued)

Metals by EPA 200 Series Methods (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W3A2419 - EPA 200.7 (Continued)											
Matrix Spike Dup (W3A2419-MSD1)	**Source: 3A15019-01**				**Prepared: 01/30/23**	**Analyzed: 01/31/23**					
Calcium, Total	70.4	0.0736	0.500	mg/l	50.2	21.1	98	70-130	0.4	30	
Magnesium, Total	56.4	0.0390	0.500	mg/l	50.2	7.36	98	70-130	0.6	30	
Phosphorus, Dissolved	2.31	0.018	0.050	mg/l	2.00	0.0726	112	70-130	0.8	30	
Phosphorus, Total	2.31	0.018	0.050	mg/l	2.00	0.219	104	70-130	0.8	30	
Matrix Spike Dup (W3A2419-MSD2)	**Source: 3A18050-02**				**Prepared: 01/30/23**	**Analyzed: 01/31/23**					
Calcium, Total	51.2	0.0736	0.500	mg/l	50.2	1.52	99	70-130	0.3	30	
Magnesium, Total	49.5	0.0390	0.500	mg/l	50.2	0.592	97	70-130	0.5	30	
Phosphorus, Dissolved	2.18	0.018	0.050	mg/l	2.00	0.0816	105	70-130	0.06	30	
Phosphorus, Total	2.18	0.018	0.050	mg/l	2.00	0.0816	105	70-130	0.06	30	
Batch: W3A2421 - EPA 200.8											
Blank (W3A2421-BLK1)					**Prepared: 01/30/23**	**Analyzed: 02/01/23**					
Aluminum, Dissolved	ND	4.4	20	ug/l							
Aluminum, Total	ND	4.4	20	ug/l							
Antimony, Dissolved	ND	0.089	0.50	ug/l							
Antimony, Total	ND	0.089	0.50	ug/l							
Arsenic, Dissolved	ND	0.074	0.40	ug/l							
Arsenic, Total	ND	0.074	0.40	ug/l							
Beryllium, Dissolved	ND	0.062	0.10	ug/l							
Beryllium, Total	ND	0.029	0.10	ug/l							
Cadmium, Dissolved	ND	0.042	0.20	ug/l							
Cadmium, Total	ND	0.042	0.20	ug/l							
Chromium, Dissolved	ND	0.089	0.20	ug/l							
Chromium, Total	ND	0.089	0.20	ug/l							
Copper, Dissolved	ND	0.23	0.50	ug/l							
Copper, Total	ND	0.23	0.50	ug/l							
Iron, Dissolved	ND	3.9	20	ug/l							
Iron, Total	ND	3.9	20	ug/l							
Lead, Dissolved	ND	0.083	0.20	ug/l							
Lead, Total	ND	0.083	0.20	ug/l							
Nickel, Dissolved	ND	0.16	2.0	ug/l							
Nickel, Total	ND	0.40	2.0	ug/l							
Selenium, Dissolved	ND	0.067	0.40	ug/l							
Selenium, Total	ND	0.067	0.40	ug/l							
Silver, Dissolved	ND	0.030	0.20	ug/l							
Silver, Total	ND	0.055	0.20	ug/l							
Thallium, Dissolved	ND	0.021	0.20	ug/l							
Thallium, Total	ND	0.021	0.20	ug/l							
Zinc, Dissolved	ND	0.80	10	ug/l							
Zinc, Total	ND	1.7	10	ug/l							

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Quality Control Results

(Continued)

Metals by EPA 200 Series Methods (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W3A2421 - EPA 200.8 (Continued)											
Blank (W3A2421-BLK1)					**Prepared: 01/30/23**	**Analyzed: 02/01/23**					
LCS (W3A2421-BS1)					**Prepared: 01/30/23**	**Analyzed: 02/01/23**					
Aluminum, Dissolved	50.4	4.4	20	ug/l	50.0		101	85-115			
Aluminum, Total	50.4	4.4	20	ug/l	50.0		101	85-115			
Antimony, Dissolved	51.5	0.089	0.50	ug/l	50.0		103	85-115			
Antimony, Total	51.5	0.089	0.50	ug/l	50.0		103	85-115			
Arsenic, Dissolved	51.6	0.074	0.40	ug/l	50.0		103	85-115			
Arsenic, Total	51.6	0.074	0.40	ug/l	50.0		103	85-115			
Beryllium, Dissolved	49.2	0.062	0.10	ug/l	50.0		98	85-115			
Beryllium, Total	49.2	0.029	0.10	ug/l	50.0		98	85-115			
Cadmium, Dissolved	50.4	0.042	0.20	ug/l	50.0		101	85-115			
Cadmium, Total	50.4	0.042	0.20	ug/l	50.0		101	85-115			
Chromium, Dissolved	50.6	0.089	0.20	ug/l	50.0		101	85-115			
Chromium, Total	50.6	0.089	0.20	ug/l	50.0		101	85-115			
Copper, Dissolved	49.9	0.23	0.50	ug/l	50.0		100	85-115			
Copper, Total	49.9	0.23	0.50	ug/l	50.0		100	85-115			
Iron, Dissolved	1050	3.9	20	ug/l	1050		100	85-115			
Iron, Total	1050	3.9	20	ug/l	1050		100	85-115			
Lead, Dissolved	50.5	0.083	0.20	ug/l	50.0		101	85-115			
Lead, Total	50.5	0.083	0.20	ug/l	50.0		101	85-115			
Nickel, Dissolved	49.4	0.16	2.0	ug/l	50.0		99	85-115			
Nickel, Total	49.4	0.40	2.0	ug/l	50.0		99	85-115			
Selenium, Dissolved	50.0	0.067	0.40	ug/l	50.0		100	85-115			
Selenium, Total	50.0	0.067	0.40	ug/l	50.0		100	85-115			
Silver, Dissolved	49.4	0.030	0.20	ug/l	50.0		99	85-115			
Silver, Total	49.4	0.055	0.20	ug/l	50.0		99	85-115			
Thallium, Dissolved	50.0	0.021	0.20	ug/l	50.0		100	85-115			
Thallium, Total	50.0	0.021	0.20	ug/l	50.0		100	85-115			
Zinc, Dissolved	49.7	0.80	10	ug/l	50.0		99	85-115			
Zinc, Total	49.7	1.7	10	ug/l	50.0		99	85-115			
Matrix Spike (W3A2421-MS1)	**Source: 3A15019-02**				**Prepared: 01/30/23**	**Analyzed: 02/01/23**					
Aluminum, Total	4490	4.4	20	ug/l	50.0	3560	NR	70-130			MS-02
Antimony, Total	48.6	0.089	0.50	ug/l	50.0	0.969	95	70-130			
Arsenic, Total	53.1	0.074	0.40	ug/l	50.0	1.74	103	70-130			
Beryllium, Total	50.8	0.029	0.10	ug/l	50.0	0.200	101	70-130			
Cadmium, Total	51.4	0.042	0.20	ug/l	50.0	0.0762	102	70-130			
Chromium, Total	54.2	0.089	0.20	ug/l	50.0	4.86	98	70-130			
Copper, Total	62.3	0.23	0.50	ug/l	50.0	13.0	99	70-130			
Iron, Total	5350	3.9	20	ug/l	1050	4150	114	70-130			
Lead, Total	61.2	0.083	0.20	ug/l	50.0	10.3	102	70-130			

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Quality Control Results

(Continued)

Metals by EPA 200 Series Methods (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W3A2421 - EPA 200.8 (Continued)											
Matrix Spike (W3A2421-MS1)	**Source: 3A15019-02**				**Prepared: 01/30/23**	**Analyzed: 02/01/23**					
Nickel, Total	53.3	0.40	2.0	ug/l	50.0	3.98	99	70-130			
Selenium, Total	50.4	0.067	0.40	ug/l	50.0	ND	101	70-130			
Silver, Total	50.8	0.055	0.20	ug/l	50.0	ND	102	70-130			
Thallium, Total	51.0	0.021	0.20	ug/l	50.0	0.0256	102	70-130			
Zinc, Total	129	1.7	10	ug/l	50.0	75.2	108	70-130			
Matrix Spike (W3A2421-MS2)	**Source: 3A18141-01**				**Prepared: 01/30/23**	**Analyzed: 02/01/23**					
Aluminum, Total	58.5	4.4	20	ug/l	50.0	6.32	104	70-130			
Antimony, Total	52.8	0.089	0.50	ug/l	50.0	0.598	104	70-130			
Arsenic, Total	51.4	0.074	0.40	ug/l	50.0	0.759	101	70-130			
Beryllium, Total	50.8	0.029	0.10	ug/l	50.0	ND	101	70-130			
Cadmium, Total	50.2	0.042	0.20	ug/l	50.0	ND	100	70-130			
Chromium, Total	49.6	0.089	0.20	ug/l	50.0	0.214	99	70-130			
Copper, Total	52.3	0.23	0.50	ug/l	50.0	2.86	99	70-130			
Iron, Total	1110	3.9	20	ug/l	1050	65.2	99	70-130			
Lead, Total	51.1	0.083	0.20	ug/l	50.0	0.137	102	70-130			
Nickel, Total	51.2	0.40	2.0	ug/l	50.0	2.01	98	70-130			
Selenium, Total	49.6	0.067	0.40	ug/l	50.0	0.492	98	70-130			
Silver, Dissolved	49.5	0.030	0.20	ug/l	50.0	ND	99	70-130			
Silver, Total	49.5	0.055	0.20	ug/l	50.0	ND	99	70-130			
Thallium, Total	50.6	0.021	0.20	ug/l	50.0	ND	101	70-130			
Zinc, Total	78.7	1.7	10	ug/l	50.0	29.8	98	70-130			
Matrix Spike Dup (W3A2421-MSD1)	**Source: 3A15019-02**				**Prepared: 01/30/23**	**Analyzed: 02/01/23**					
Aluminum, Total	4520	4.4	20	ug/l	50.0	3560	NR	70-130	0.7	30	MS-02
Antimony, Total	48.3	0.089	0.50	ug/l	50.0	0.969	95	70-130	0.5	30	
Arsenic, Total	52.5	0.074	0.40	ug/l	50.0	1.74	101	70-130	1	30	
Beryllium, Total	49.9	0.029	0.10	ug/l	50.0	0.200	99	70-130	2	30	
Cadmium, Total	52.1	0.042	0.20	ug/l	50.0	0.0762	104	70-130	1	30	
Chromium, Total	55.5	0.089	0.20	ug/l	50.0	4.86	101	70-130	2	30	
Copper, Total	65.4	0.23	0.50	ug/l	50.0	13.0	105	70-130	5	30	
Iron, Total	5680	3.9	20	ug/l	1050	4150	145	70-130	6	30	MS-01
Lead, Total	61.6	0.083	0.20	ug/l	50.0	10.3	102	70-130	0.6	30	
Nickel, Total	55.8	0.40	2.0	ug/l	50.0	3.98	104	70-130	5	30	
Selenium, Total	50.5	0.067	0.40	ug/l	50.0	ND	101	70-130	0.2	30	
Silver, Total	51.8	0.055	0.20	ug/l	50.0	ND	103	70-130	2	30	
Thallium, Total	51.0	0.021	0.20	ug/l	50.0	0.0256	102	70-130	0.1	30	
Zinc, Total	126	1.7	10	ug/l	50.0	75.2	102	70-130	2	30	
Matrix Spike Dup (W3A2421-MSD2)	**Source: 3A18141-01**				**Prepared: 01/30/23**	**Analyzed: 02/01/23**					
Aluminum, Total	58.9	4.4	20	ug/l	50.0	6.32	105	70-130	0.7	30	
Antimony, Total	53.1	0.089	0.50	ug/l	50.0	0.598	105	70-130	0.6	30	

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9177 Sky Park Court, Ste A
San Diego, CA 92123

Project Number: SGVCOG Fire Effects Study

Project Manager: Brenda Stevens

Reported: 03/03/2023 13:52

Quality Control Results

(Continued)

Metals by EPA 200 Series Methods (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W3A2421 - EPA 200.8 (Continued)											
Matrix Spike Dup (W3A2421-MSD2)	**Source: 3A18141-01**				**Prepared: 01/30/23**	**Analyzed: 02/01/23**					
Arsenic, Total	52.2	0.074	0.40	ug/l	50.0	0.759	103	70-130	2	30	
Beryllium, Total	51.5	0.029	0.10	ug/l	50.0	ND	103	70-130	1	30	
Cadmium, Total	50.6	0.042	0.20	ug/l	50.0	ND	101	70-130	0.8	30	
Chromium, Total	51.0	0.089	0.20	ug/l	50.0	0.214	101	70-130	3	30	
Copper, Total	55.6	0.23	0.50	ug/l	50.0	2.86	105	70-130	6	30	
Iron, Total	1150	3.9	20	ug/l	1050	65.2	104	70-130	4	30	
Lead, Total	51.6	0.083	0.20	ug/l	50.0	0.137	103	70-130	1	30	
Nickel, Total	53.4	0.40	2.0	ug/l	50.0	2.01	103	70-130	4	30	
Selenium, Total	50.0	0.067	0.40	ug/l	50.0	0.492	99	70-130	0.9	30	
Silver, Total	50.9	0.055	0.20	ug/l	50.0	ND	102	70-130	3	30	
Thallium, Total	51.7	0.021	0.20	ug/l	50.0	ND	103	70-130	2	30	
Zinc, Total	80.6	1.7	10	ug/l	50.0	29.8	102	70-130	2	30	

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San Diego, CA 92123

Project Number: SGVCOG Fire Effects Study

Project Manager: Brenda Stevens

Reported: 03/03/2023 13:52

Quality Control Results

(Continued)

Semivolatile Organics - Low Level by Tandem GC/MS/MS

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W3A1700 - EPA 625.1											
Blank (W3A1700-BLK1)					**Prepared: 01/20/23**	**Analyzed: 01/21/23**					
Acenaphthene	ND	1.2	5.0	ng/l							
Acenaphthylene	ND	1.0	5.0	ng/l							
Anthracene	ND	1.1	5.0	ng/l							
Benzo (a) anthracene	ND	0.92	5.0	ng/l							
Benzo (a) pyrene	ND	0.97	5.0	ng/l							
Benzo (b) fluoranthene	ND	1.6	5.0	ng/l							
Benzo (g,h,i) perylene	ND	1.0	5.0	ng/l							
Benzo (k) fluoranthene	ND	1.2	5.0	ng/l							
Chrysene	ND	1.4	5.0	ng/l							
Dibenzo (a,h) anthracene	ND	1.2	5.0	ng/l							
Fluoranthene	ND	1.5	5.0	ng/l							
Fluorene	ND	1.1	5.0	ng/l							
Indeno (1,2,3-cd) pyrene	ND	0.97	5.0	ng/l							
Naphthalene	ND	3.2	5.0	ng/l							
Phenanthrene	ND	3.0	5.0	ng/l							
Pyrene	ND	1.4	5.0	ng/l							
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	*103*			*ng/l*	*100*		*103*	*62-120*			
Perylene-d12	*72.4*			*ng/l*	*100*		*72*	*36-120*			
LCS (W3A1700-BS1)					**Prepared: 01/20/23**	**Analyzed: 01/21/23**					
Acenaphthene	40.8	1.2	5.0	ng/l	50.0		82	60-132			
Acenaphthylene	41.0	1.0	5.0	ng/l	50.0		82	54-126			
Anthracene	38.9	1.1	5.0	ng/l	50.0		78	43-120			
Benzo (a) anthracene	33.2	0.92	5.0	ng/l	50.0		66	42-133			
Benzo (a) pyrene	21.8	0.97	5.0	ng/l	50.0		44	32-148			
Benzo (b) fluoranthene	28.3	1.6	5.0	ng/l	50.0		57	42-140			AN-IP
Benzo (g,h,i) perylene	14.7	1.0	5.0	ng/l	50.0		29	0.1-195			
Benzo (k) fluoranthene	24.1	1.2	5.0	ng/l	50.0		48	25-146			AN-IP
Chrysene	30.8	1.4	5.0	ng/l	50.0		62	44-140			
Dibenzo (a,h) anthracene	14.3	1.2	5.0	ng/l	50.0		29	0.1-200			
Fluoranthene	40.2	1.5	5.0	ng/l	50.0		80	43-121			
Fluorene	40.9	1.1	5.0	ng/l	50.0		82	70-120			
Indeno (1,2,3-cd) pyrene	16.5	0.97	5.0	ng/l	50.0		33	0.1-151			
Naphthalene	39.5	3.2	5.0	ng/l	50.0		79	36-120			
Phenanthrene	41.3	3.0	5.0	ng/l	50.0		83	65-120			
Pyrene	38.9	1.4	5.0	ng/l	50.0		78	70-120			
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	*82.3*			*ng/l*	*100*		*82*	*62-120*			
Perylene-d12	*63.2*			*ng/l*	*100*		*63*	*36-120*			

WSP USA E&I Inc. - San Diego
9177 Sky Park Court, Ste A
San Diego, CA 92123

Project Number: SGVCOG Fire Effects Study

Project Manager: Brenda Stevens

Reported: 03/03/2023 13:52

Quality Control Results

(Continued)

Semivolatile Organics - Low Level by Tandem GC/MS/MS (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W3A1700 - EPA 625.1 (Continued)											
LCS Dup (W3A1700-BSD1)					**Prepared: 01/20/23 Analyzed: 01/21/23**						
Acenaphthene	44.0	1.2	5.0	ng/l	50.0		88	60-132	7	30	
Acenaphthylene	44.1	1.0	5.0	ng/l	50.0		88	54-126	7	30	
Anthracene	42.4	1.1	5.0	ng/l	50.0		85	43-120	9	30	
Benzo (a) anthracene	32.9	0.92	5.0	ng/l	50.0		66	42-133	1	30	
Benzo (a) pyrene	20.9	0.97	5.0	ng/l	50.0		42	32-148	4	30	
Benzo (b) fluoranthene	28.7	1.6	5.0	ng/l	50.0		57	42-140	1	30	AN-IP
Benzo (g,h,i) perylene	15.7	1.0	5.0	ng/l	50.0		31	0.1-195	6	30	
Benzo (k) fluoranthene	24.2	1.2	5.0	ng/l	50.0		48	25-146	0.5	30	AN-IP
Chrysene	30.3	1.4	5.0	ng/l	50.0		61	44-140	1	30	
Dibenzo (a,h) anthracene	15.7	1.2	5.0	ng/l	50.0		31	0.1-200	9	30	
Fluoranthene	43.9	1.5	5.0	ng/l	50.0		88	43-121	9	30	
Fluorene	44.8	1.1	5.0	ng/l	50.0		90	70-120	9	30	
Indeno (1,2,3-cd) pyrene	17.2	0.97	5.0	ng/l	50.0		34	0.1-151	4	30	
Naphthalene	44.4	3.2	5.0	ng/l	50.0		89	36-120	12	30	
Phenanthrene	45.1	3.0	5.0	ng/l	50.0		90	65-120	9	30	
Pyrene	42.4	1.4	5.0	ng/l	50.0		85	70-120	8	30	
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	*97.5*			*ng/l*	*100*		*98*	*62-120*			
Perylene-d12	*72.9*			*ng/l*	*100*		*73*	*36-120*			

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WSP USA E&I Inc. - San Diego 9177 Sky Park Court, Ste A San Diego, CA 92123	**Project Number:** SGVCOG Fire Effects Study **Project Manager:** Brenda Stevens	**Reported:** 03/03/2023 13:52

Notes and Definitions

Item	Definition
AN-IP	Sample results for structural isomers may have contribution from their isomeric pair.
J	Estimated conc. detected <MRL and >MDL.
M-02	Due to the nature of matrix interferences, sample was diluted prior to preparation. The MDL and MRL were raised due to the dilution.
MS-01	The spike recovery for this QC sample is outside of established control limits possibly due to sample matrix interference.
MS-02	The RPD and/or percent recovery for this QC spike sample cannot be accurately calculated due to the high concentration of analyte inherent in the sample.
ND	Not Detected
%REC	Percent Recovery
Dil	Dilution
MDL	Method Detection Limit
MRL	The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. The MRL is also known as Limit of Quantitation (LOQ)
ND	NOT DETECTED at or above the Method Reporting Limit (MRL). If Method Detection Limit (MDL) is reported, then ND means not detected at or above the MDL.
RPD	Relative Percent Difference
Source	Sample that was matrix spiked or duplicated.

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance.

All results are expressed on wet weight basis unless otherwise specified.

All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS002.

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3A15019

WSP

Chain of Custody

Page 1 of 1

From:	To:	Lab Notes:
WSP Environment & Infrastructure Solutions 9177 Sky Park Court San Diego, CA 92123 (661) 373-5505 (858) 278-5300 Fax Contact: Brenda Stevens/Kimberly Henry	Weck Laboratories 14859 Clark Avenue Industry, CA 91745 (626) 336-2139 (626) 336-2634 Fax Contact: Chris Samatmanakit	

PO#:	Project Number:	Project Name:	Sample Matrix:
C015102726	5025-22-0004	SGVCOG Fire Effects Study	Water

SampleID	Sample Date	Sample Time	Sample Type	Analysis	Container	Pres	No. of Bottles
F-193B-R_2223_W1_01	1-14-23	2200	Composite	Tot&Diss.Metal,Ammonia, Nutrients(N03,N02,TKN, TotN,TotP,DissP), Chlorophyll-a, PAH	19L Carboy	≤6°C	1
F-194B-R_2223_W1_01	1-14-23	2215	Composite	Tot&Diss.Metal,Ammonia, Nutrients(N03,N02,TKN, TotN,TotP,DissP), Chlorophyll-a, PAH	19L Carboy	≤6°C	1
ARCAD_WA_CON_2223_W1_01	1-15-23	0130	Composite	Tot&Diss.Metal,Ammonia, Nutrients(N03,N02,TKN, TotN,TotP,DissP), Chlorophyll-a, PAH	19L Carboy	≤6°C	1
F-193B-R_2223_W1_01	1-14-23	1545	Grab	TDS (SM 2540C); TSS (SM 2540D)	2-L Poly	Unpres.	1
F-194B-R_2223_W1_01		1530	Grab	TDS (SM 2540C); TSS (SM 2540D)	2-L Poly	Unpres.	1
ARCAD_WA_CON_2223_W1_01		1528	Grab	TDS (SM 2540C); TSS (SM 2540D)	2-L Poly	Unpres.	1
F-193B-R_2223_W1-02		1545	Grab	TDS (SM 2540C); TSS (SM 2540D)	2-L Poly	Unpres.	1
F-193B-R_2223_W1_01		1545	Grab	Total Hardness (EPA 200.7)	500-mL Poly	HNO3	1
F-194B-R_2223_W1_01		1530	Grab	Total Hardness (EPA 200.7)	500-mL Poly	HNO3	1
ARCAD_WA_CON_2223_W1_01		1528	Grab	Total Hardness (EPA 200.7)	500-mL Poly	HNO3	1
F-193B-R_2223_W1-02		1545	Grab	Total Hardness (EPA 200.7)	500-mL Poly	HNO3	1

Special Instructions/Comments:

Metals (Dissolved and Total) to include aluminum, antimony, arsenic, beryllium, cadmium, chromium (total), chromium (hexavalent), copper, iron, lead, mercury, nickel, selenium, silver, thallium, and zinc
Please provide results to Brenda Stevens (brenda.stevens@wsp.com) and Luis De La Torre (luis.delatorre@wsp.com) Sample aliquots delivered. Compositing instructions emailed to Chris S.

Sampled and Relinquished By:		Received By:	
Print: Luis De La Torre Sign: Luis De La Torre	Date/Time: 01-15-23 11:20	Print: Chris Samatmanakit Sign: [signature]	Date/Time: 1/15/23 1120 T-0269 T 2.4°C
Print: Sign:	Date/Time:	Print: Sign:	Date/Time:
Print: Sign:	Date/Time:	Print: Sign:	Date/Time:

ARCAD_WA_CON Bottle Number	Aliquot volume for Composite (mL)
1	267
2	397
3	876
4	909
5	936
6	851
7	744
8	486
9	446
10	555
11	227
12	137
13	102
14	51
15	16
Total composite Volume (mL)	7000

F193B-R Bottle Number	Aliquot volume for Composite (mL)
1	238
2	316
3	806
4	678
5	286
6	719
7	719
8	484
9	989
10	588
11	178
Total composite Volume (mL)	6001

F194B-R Bottle Number	Aliquot volume for Composite (mL)
1	816
2	990
3	782
4	280
5	162
6	280
7	782
8	659
9	620
10	174
11	55
Total composite Volume (mL)	5600

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Subcontract Order

Subcontracted Laboratory:

Enthalpy Analytical
931 W. Barkley Ave
Orange, CA 92868
Phone: (714) 771-6900
Fax: (714) 538-1209

Turn Around Time: Normal unless noted in comments
Project Manager: Chris Samatmanakit
Project Name: San Gabriel Valley Council of Governn
Project Number: SGVCOG Fire Effects Study
Sampler Employed by:
Drinking Water: Yes / No
Need Transfer File (xls): Yes / No
Tracking Number:

Work Order: 3A15019

Analysis	Expires	Comments
Sample ID: 3A15019-01/F_193B_R-2223_W1_01		**Sampled:** 01/14/2023 22:00
Sample comment:		**Matrix:** Water **Sampled By:** Luis De La Torre
Chlorophyll-a - SM 10200H	01/16/2023 22:00	1040mL filtered on 1/15/23 at 15:34 by CSS. TestAmerica EDD needed.
Containers Supplied: Plastic Bag (J)		
Sample ID: 3A15019-02/F_194B_R-2223_W1_01		**Sampled:** 01/14/2023 22:15
Sample comment:		**Matrix:** Water **Sampled By:** Luis De La Torre
Chlorophyll-a - SM 10200H	01/16/2023 22:15	948mL filtered on 1/15/23 at 15:53 by CSS. TestAmerica EDD needed.
Containers Supplied: Plastic Bag (J)		
Sample ID: 3A15019-03/ARCAD_WA_CON_2223_W1_01		**Sampled:** 01/15/2023 01:30
Sample comment:		**Matrix:** Water **Sampled By:** Luis De La Torre
Chlorophyll-a - SM 10200H	01/17/2023 01:30	1028mL filtered on 1/15/23 at 16:24 by CSS. TestAmerica EDD needed.
Containers Supplied: Plastic Bag (J)		

Remarks / Special Comments:

Sample Condition

Temperature: ______
Preserved: Yes / No
Evidence Seal Intact: Yes / No
Container Attacked: Yes / No
Preserved at Lab: Yes / No

Relinqished By	Date / Time	Received By	Date / Time
Relinqished By	Date / Time	Received By	Date / Time

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CSS 1/15/23

WECK LABORATORIES, INC.

Sample Receipt Checklist

Weck WKO:	3A15019	Date/Time Received:	01/15/23 @ 11:20
WKO Logged by:	Jaime Gomez	# of Samples:	10
Samples Checked by:	Jaime Gomez	Delivered by:	Client

	Task	Yes	No	N/A	Comments
COC	COC present at receipt?	☒	☐		
	COC properly completed?	☒	☐		
	COC matches sample labels?	☒	☐		
		☒	☐		
	Project Manager notified?	☐	☐	☒	
Receipt Information	Sample Temperature	2.4 °C			
	Samples received on ice?	☒	☐		
	Ice Type (Blue/Wet)				
	All samples intact?	☒	☐		
	Samples in proper containers?	☒	☐		
	Sufficient sample volume?	☒	☐		
	Samples intact?	☒	☐		
	Received within holding time?	☒	☐		
		☐	☐		
	Project Manager notified?	☐	☐	☒	
Sample Preservation Verification?	Sample labels checked for correct preservation?	☒	☐	☐	
	VOC Headspace: (No) none, If Yes (See comment) 524.2, 524.3, 624.1, 8260, 1666 P/T, LUFT	☐	☐	☒	☐ <6mm/Pea size?
	pH verified upon receipt? Metals <2; H2SO4 pres tests <2; 522<4; TOC <2; 508.1, 525.2<2; 6710B<2; 608.3 5-9	☒	☐	☐	pH paper Lot# 2071882
	Free Chlorine Tested <0.1	☐	☐	☒	Cl Test Strip Lot# 061221E
	O&G pH <2 verified?	☐	☐	☐	pH paper Lot# pH Reading:
	pH adjusted for O&G	☐	☐	☐	Acid Lot# Amt added:
	Project Manager notified?	☐	☐	☐	

PM Comments

Sample Receipt Checklist Prepared by:

Signature: Jaime Gomez Date: 01/16/23

WECK LABORATORIES, INC.

2.3/14.1

Subcontract Order

Subcontracted Laboratory:

Enthalpy Analytical
931 W. Barkley Ave
Orange, CA 92868
Phone: (714) 771-6900
Fax: (714) 538-1209

Turn Around Time: Normal unless noted in comments
Project Manager: Chris Samatmanakit
Project Name: San Gabriel Valley Council of Governn
Project Number: SGVCOG Fire Effects Study
Sampler Employed by: ____
Drinking Water: Yes / No
Need Transfer File (xls): Yes / No
Tracking Number: ____

Work Order: 3A15019

Analysis	Expires	Comments
Sample ID: 3A15019-01/F_193B_R-2223_W1_01		**Sampled:** 01/14/2023 22:00
Sample comment:		**Matrix:** Water **Sampled By:** Luis De La Torre
Chlorophyll-a - SM 10200H	01/16/2023 22:00	1040mL filtered on 1/15/23 at 15:34 by CSS. TestAmerica EDD needed.
Containers Supplied: Plastic Bag (J)		
Sample ID: 3A15019-02/F_194B_R-2223_W1_01		**Sampled:** 01/14/2023 22:15
Sample comment:		**Matrix:** Water **Sampled By:** Luis De La Torre
Chlorophyll-a - SM 10200H	01/16/2023 22:15	948mL filtered on 1/15/23 at 15:53 by CSS. TestAmerica EDD needed.
Containers Supplied: Plastic Bag (J)		
Sample ID: 3A15019-03/ARCAD_WA_CON_2223_W1_01		**Sampled:** 01/15/2023 01:30
Sample comment:		**Matrix:** Water **Sampled By:** Luis De La Torre
Chlorophyll-a - SM 10200H	01/17/2023 01:30	1028mL filtered on 1/15/23 at 16:24 by CSS. TestAmerica EDD needed.
Containers Supplied: Plastic Bag (J)		

Remarks / Special Comments:

Sample Condition

Temperature: ____
Preserved: Yes / No
Evidence Seal Intact: Yes / No
Container Attacked: Yes / No
Preserved at Lab: Yes / No

Relinqished By	Date / Time	Received By	Date / Time
[signature]	1/16/23 1128	[signature]	1/18/23 1328

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Enthalpy Analytical
931 West Barkley Ave
Orange, CA 92868
(714) 771-6900

enthalpy.com

Lab Job Number: 477704
Report Level: II
Report Date: 02/01/2023

Analytical Report *prepared for:*

Chris Samatmanakit
Weck Laboratories
14859 Clark Ave.
City of Industry, CA 91745

Location: 3A15019 SGVCOG Fire Effects Study

Authorized for release by:

Quynhgiao Le

Quynhgiao Le, Project Manager
714-7716900
quynhgiao.le@enthalpy.com

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the above signature which applies to this PDF file as well as any associated electronic data deliverable files. The results contained in this report meet all requirements of NELAP and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

CA ELAP# 1338, NELAP# 4038, SCAQMD LAP# 18LA0518, LACSD ID# 10105

ENTHALPY ANALYTICAL

Sample Summary

Chris Samatmanakit	Lab Job #:	477704
Weck Laboratories	Location:	3A15019 SGVCOG Fire Effects Study
14859 Clark Ave.	Date Received:	01/18/23
City of Industry, CA 91745		

Sample ID	Lab ID	Collected	Matrix
3A15019-01/F_193B_R-2223_W1_01	477704-001	01/14/23 22:00	Water
3A15019-02/F_194B_R-2223_W1_01	477704-002	01/14/23 22:15	Water
3A15019-03/ARCAD_WA_CON_2223_W1_01	477704-003	01/15/23 01:30	Water

WEL
WECK LABORATORIES, INC.

2.3/14.1

Subcontract Order

Subcontracted Laboratory:

Enthalpy Analytical
931 W. Barkley Ave
Orange, CA 92868
Phone: (714) 771-6900
Fax: (714) 538-1209

477704

Turn Around Time: Normal unless noted in comments
Project Manager: Chris Samatmanakit
Project Name: San Gabriel Valley Council of Governn
Project Number: SGVCOG Fire Effects Study
Sampler Employed by:
Drinking Water: Yes / No
Need Transfer File (xls): Yes / No
Tracking Number:

Work Order: 3A15019

Analysis	Expires	Comments

Sample ID: 3A15019-01/F_193B_R-2223_W1_01 **Sampled:** 01/14/2023 22:00
Sample comment: **Matrix:**Water **Sampled By:** Luis De La Torre

Chlorophyll-a - SM 10200H	01/16/2023 22:00	1040mL filtered on 1/15/23 at 15:34 by CSS. TestAmerica EDD needed.

Containers Supplied:
Plastic Bag (J)

Sample ID: 3A15019-02/F_194B_R-2223_W1_01 **Sampled:** 01/14/2023 22:15
Sample comment: **Matrix:**Water **Sampled By:** Luis De La Torre

Chlorophyll-a - SM 10200H	01/16/2023 22:15	948mL filtered on 1/15/23 at 15:53 by CSS. TestAmerica EDD needed.

Containers Supplied:
Plastic Bag (J)

Sample ID: 3A15019-03/ARCAD_WA_CON_2223_W1_01 **Sampled:** 01/15/2023 01:30
Sample comment: **Matrix:**Water **Sampled By:** Luis De La Torre

Chlorophyll-a - SM 10200H	01/17/2023 01:30	1028mL filtered on 1/15/23 at 16:24 by CSS. TestAmerica EDD needed.

Containers Supplied:
Plastic Bag (J)

Remarks / Special Comments:

Sample Condition
Temperature:
Preserved: Yes / No
Evidence Seal Intact: Yes / No
Container Attacked: Yes / No
Preserved at Lab: Yes / No

Relinqished By 1/18/23 1328 Date / Time Received By 1/18/23 1328 Date / Time

Relinqished By Date / Time Received By Date / Time

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1/18/23

ENTHALPY ANALYTICAL

SAMPLE ACCEPTANCE CHECKLIST

Section 1

Client: Weck   Project: 3A15019

Date Received: 1/18/23   Sampler's Name Present: ☐ Yes ☐ No

Section 2

Sample(s) received in a cooler? ☑ Yes, How many? 1 ☐ No (skip section 2)   Sample Temp (°C) (No Cooler): ______

Sample Temp (°C), One from each cooler: #1: 14.1 #2: ______ #3: ______ #4: ______

(Acceptance range is < 6°C but not frozen (for Microbiology samples, acceptance range is < 10°C but not frozen). It is acceptable for samples collected the same day as sample receipt to have a higher temperature as long as there is evidence that cooling has begun.)

Shipping Information: ______

Section 3

Was the cooler packed with: ☑ Ice ☐ Ice Packs ☐ Bubble Wrap ☐ Styrofoam ☐ Paper ☐ None ☐ Other ______

Cooler Temp (°C): #1: 23 #2: ______ #3: ______ #4: ______

Section 4	YES	NO	N/A
Was a COC received?	✓		
Are sample IDs present?	✓		
Are sampling dates & times present?	✓		
Is a relinquished signature present?	✓		
Are the tests required clearly indicated on the COC?	✓		
Are custody seals present?		✓	
If custody seals are present, were they intact?			✓
Are all samples sealed in plastic bags? (Recommended for Microbiology samples)	✓		
Did all samples arrive intact? If no, indicate in Section 4 below.	✓		
Did all bottle labels agree with COC? (ID, dates and times)	✓		
Were the samples collected in the correct containers for the required tests?	✓		
Are the containers labeled with the correct preservatives?			✓
Is there headspace in the VOA vials greater than 5-6 mm in diameter?			✓
Was a sufficient amount of sample submitted for the requested tests?	✓		

Section 5 Explanations/Comments

Section 6

For discrepancies, how was the Project Manager notified? ☐ Verbal PM Initials: ______ Date/Time ______
☐ Email (email sent to/on): ______ / ______

Project Manager's response:

Completed By: [signature]   Date: 1/18/23

ENTHALPY ANALYTICAL

Analysis Results for 477704

Chris Samatmanakit
Weck Laboratories
14859 Clark Ave.
City of Industry, CA 91745

Lab Job #: 477704
Location: 3A15019 SGVCOG Fire Effects Study
Date Received: 01/18/23

Sample ID:	**Lab ID:**	**477704-001**	**Collected:**	**01/14/23 22:00**
3A15019-01/F_193B_R-2223_W1_01	**Matrix:**	**Water**		

Received filtered & frozen. Volume: 1040 mL

477704-001 Analyte	Result	Qual	Units	RL	DF	Batch	Prepared	Analyzed	Chemist
Method: SM 10200-H									
Chlorophyll a	ND		mg/M3	1.0	1	306171	01/14/23 22:00	01/25/23 19:03	ATP

Sample ID:	**Lab ID:**	**477704-002**	**Collected:**	**01/14/23 22:15**
3A15019-02/F_194B_R-2223_W1_01	**Matrix:**	**Water**		

Received filtered & frozen. Volume: 948 mL

477704-002 Analyte	Result	Qual	Units	RL	DF	Batch	Prepared	Analyzed	Chemist
Method: SM 10200-H									
Chlorophyll a	ND		mg/M3	1.0	1	306171	01/14/23 22:15	01/25/23 19:03	ATP

Sample ID:	**Lab ID:**	**477704-003**	**Collected:**	**01/15/23 01:30**
3A15019-03/ARCAD_WA_CON_2223_W1_01	**Matrix:**	**Water**		

Received filtered & frozen. Volume: 1028 mL

477704-003 Analyte	Result	Qual	Units	RL	DF	Batch	Prepared	Analyzed	Chemist
Method: SM 10200-H									
Chlorophyll a	ND		mg/M3	1.0	1	306171	01/15/23 01:30	01/25/23 19:03	ATP

ND Not Detected

Results for any subcontracted analyses are not included in this section.

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Certificate of Analysis

FINAL REPORT

Work Orders:	3B26002	**Report Date:**	4/21/2023
		Received Date:	2/26/2023
Project:	SGVCOG Fire Effects Study	**Turnaround Time:**	Normal
		Phones:	(858) 514-7729
		Fax:	(858) 278-5300
Attn:	Brenda Stevens	**P.O. #:**	C015102726
Client:	WSP USA E&I Inc. - San Diego 9177 Sky Park Court, Ste A San Diego, CA 92123	**Billing Code:**	

DoD-ELAP ANAB #ADE-2882 • DoD-ISO ANAB # • ELAP-CA #1132 • EPA-UCMR #CA00211 • ISO17025 ANAB #L2457.01 • LACSD #10143

This is a complete final report. The information in this report applies to the samples analyzed in accordance with the chain-of-custody document. Weck Laboratories certifies that the test results meet all requirements of TNI unless noted by qualifiers or written in the Case Narrative. This analytical report must be reproduced in its entirety.

Dear Brenda Stevens,

Enclosed are the results of analyses for samples received 2/26/23 with the Chain-of-Custody document. The samples were received in good condition, at 1.3 °C and on ice. All analyses met the method criteria except as noted in the case narrative or in the report with data qualifiers.

Reviewed by:

Chris Samatmanakit
Project Manager

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FINAL REPORT

WSP USA E&I Inc. - San Diego
9177 Sky Park Court, Ste A
San Diego, CA 92123

Project Number: SGVCOG Fire Effects Study

Project Manager: Brenda Stevens

Reported:
04/21/2023 17:40

Sample Summary

Sample Name	Sampled By	Lab ID	Matrix	Sampled	Qualifiers
F_193B_R-2223_W2_01	Luis De La Torre	3B26002-01	Water	02/25/23 16:55	
F_194B_R-2223_W2_01	Luis De La Torre	3B26002-02	Water	02/25/23 17:20	
ARCAD_WA_CON_2223_W2_01	Luis De La Torre	3B26002-03	Water	02/25/23 17:50	
F-193B-R_2223_W2_01	Luis De La Torre	3B26002-04	Water	02/25/23 00:40	
F-194B-R_2223_W2_01	Luis De La Torre	3B26002-05	Water	02/25/23 01:05	
ARCAD_WA_CON_2223_W2_01	Luis De La Torre	3B26002-06	Water	02/25/23 01:45	
F-194B-R_2223_W2_03	Luis De La Torre	3B26002-07	Water	02/25/23 01:05	
F-193B-R_2223_W2_01	Luis De La Torre	3B26002-08	Water	02/25/23 00:40	
F-194B-R_2223_W2_01	Luis De La Torre	3B26002-09	Water	02/25/23 01:05	
ARCAD_WA_CON_2223_W2_01	Luis De La Torre	3B26002-10	Water	02/25/23 01:45	
F-194B-R_2223_W2_03	Luis De La Torre	3B26002-11	Water	02/25/23 01:05	

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Certificate of Analysis

FINAL REPORT

WSP USA E&I Inc. - San Diego
9177 Sky Park Court, Ste A
San Diego, CA 92123

Project Number: SGVCOG Fire Effects Study

Project Manager: Brenda Stevens

Reported: 04/21/2023 17:40

Sample Results

Sample: F_193B_R-2223_W2_01 — 3B26002-01 (Water) — Sampled: 02/25/23 16:55 by Luis De La Torre

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods							
Method: Calculation — **Instr:** [CALC]							
Batch ID: [CALC] — **Preparation:** [CALC] — **Prepared:** 03/11/23 07:33 — **Analyst:** YMT							
Nitrogen, Total	**2.4**	0.036	0.20	mg/l	1	03/14/23	
Method: EPA 350.1 — **Instr:** AA06							
Batch ID: W3C1058 — **Preparation:** _NONE (WETCHEM) — **Prepared:** 03/12/23 11:44 — **Analyst:** HEQ							
Ammonia as N	**0.071**	0.017	0.10	mg/l	1	03/13/23	J
Method: EPA 351.2 — **Instr:** AA06							
Batch ID: W3C1036 — **Preparation:** _NONE (WETCHEM) — **Prepared:** 03/11/23 07:33 — **Analyst:** YMT							
TKN	**1.2**	0.13	0.20	mg/l	1	03/14/23	M-02
Method: EPA 353.2 — **Instr:** AA01							
Batch ID: W3B2201 — **Preparation:** _NONE (WETCHEM) — **Prepared:** 02/27/23 11:45 — **Analyst:** ISM							
Nitrate as N	**1.1**	0.040	0.20	mg/l	1	02/27/23 14:34	
Nitrite as N	**87**	42	100	ug/l	1	02/27/23 14:34	J
NO2+NO3 as N	**1200**	36	200	ug/l	1	02/27/23	
Hexavalent Chromium by IC							
Method: EPA 218.6 — **Instr:** LC13							
Batch ID: W3C0346 — **Preparation:** _NONE (LC) — **Prepared:** 03/06/23 00:00 — **Analyst:** ejm							
Chromium 6+	**0.35**	0.0079	0.020	ug/l	1	03/06/23	
Chromium 6+, Dissolved	**0.40**	0.0079	0.020	ug/l	1	03/06/23	
Metals by EPA 200 Series Methods							
Method: EPA 200.7 — **Instr:** ICP03							
Batch ID: W3C0190 — **Preparation:** EPA 200.2 — **Prepared:** 03/02/23 10:49 — **Analyst:** kvm							
Phosphorus, Dissolved	**0.064**	0.018	0.050	mg/l	1	03/10/23	
Phosphorus, Total	**0.33**	0.036	0.10	mg/l	1	03/10/23	M-02
Method: EPA 200.8 — **Instr:** ICPMS06							
Batch ID: W3C0194 — **Preparation:** EPA 200.2 — **Prepared:** 03/02/23 13:29 — **Analyst:** jol							
Aluminum, Dissolved	**110**	8.9	40	ug/l	1	03/03/23	M-02
Aluminum, Total	**8500**	8.9	40	ug/l	1	03/07/23	M-02
Antimony, Dissolved	**0.97**	0.18	1.0	ug/l	1	03/03/23	M-02, J
Antimony, Total	**1.7**	0.18	1.0	ug/l	1	03/03/23	M-02
Arsenic, Dissolved	**1.4**	0.15	0.80	ug/l	1	03/03/23	M-02
Arsenic, Total	**3.4**	0.15	0.80	ug/l	1	03/03/23	M-02
Beryllium, Dissolved	ND	0.12	0.20	ug/l	1	03/03/23	M-02
Beryllium, Total	**0.43**	0.057	0.20	ug/l	1	03/03/23	M-02
Cadmium, Dissolved	ND	0.083	0.40	ug/l	1	03/03/23	M-02
Cadmium, Total	**0.11**	0.084	0.40	ug/l	1	03/03/23	M-02, J
Chromium, Dissolved	**0.73**	0.18	0.40	ug/l	1	03/03/23	M-02
Chromium, Total	**9.5**	0.18	0.40	ug/l	1	03/03/23	M-02

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Project Number: SGVCOG Fire Effects Study

Project Manager: Brenda Stevens

Reported: 04/21/2023 17:40

Sample Results

(Continued)

Sample: F_193B_R-2223_W2_01 — 3B26002-01 (Water)

Sampled: 02/25/23 16:55 by Luis De La Torre

(Continued)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Metals by EPA 200 Series Methods (Continued)							
Method: EPA 200.8			**Instr:** ICPMS06				
Batch ID: W3C0194 — **Preparation:** EPA 200.2			**Prepared:** 03/02/23 13:29				**Analyst:** jol
Copper, Dissolved	**5.4**	0.45	1.0	ug/l	1	03/03/23	M-02
Copper, Total	**28**	0.46	1.0	ug/l	1	03/03/23	M-02
Iron, Dissolved	**120**	7.9	40	ug/l	1	03/03/23	M-02
Iron, Total	**11000**	7.9	40	ug/l	1	03/03/23	M-02
Lead, Dissolved	**0.30**	0.17	0.40	ug/l	1	03/03/23	M-02, J
Lead, Total	**17**	0.17	0.40	ug/l	1	03/03/23	M-02
Nickel, Dissolved	**0.51**	0.33	4.0	ug/l	1	03/03/23	M-02, J
Nickel, Total	**8.5**	0.81	4.0	ug/l	1	03/03/23	M-02
Selenium, Dissolved	**0.18**	0.13	0.80	ug/l	1	03/03/23	M-02, J
Selenium, Total	**0.17**	0.13	0.80	ug/l	1	03/03/23	M-02, J
Silver, Dissolved	ND	0.060	0.40	ug/l	1	03/03/23	M-02
Silver, Total	ND	0.11	0.40	ug/l	1	03/03/23	M-02
Thallium, Dissolved	ND	0.042	0.40	ug/l	1	03/03/23	M-02
Thallium, Total	**0.052**	0.042	0.40	ug/l	1	03/03/23	M-02, J
Zinc, Dissolved	ND	1.6	20	ug/l	1	03/03/23	M-02
Zinc, Total	**56**	3.3	20	ug/l	1	03/03/23	M-02
Method: EPA 245.1			**Instr:** HG03				
Batch ID: W3C0293 — **Preparation:** EPA 245.1			**Prepared:** 03/03/23 08:25				**Analyst:** KVM
Mercury, Dissolved	**0.038**	0.037	0.050	ug/l	1	03/06/23	J
Mercury, Total	**0.098**	0.037	0.050	ug/l	1	03/06/23	
Semivolatile Organics - Low Level by Tandem GC/MS/MS							
Method: EPA 625.1			**Instr:** GCMS15				
Batch ID: W3C0154 — **Preparation:** EPA 3535/SPE			**Prepared:** 03/02/23 09:05				**Analyst:** EFC
Acenaphthene	ND	6.0	25	ng/l	1	03/14/23	M-02
Acenaphthylene	ND	5.0	25	ng/l	1	03/14/23	M-02
Anthracene	ND	5.5	25	ng/l	1	03/14/23	M-02
Benzo (a) anthracene	ND	4.6	25	ng/l	1	03/14/23	M-02
Benzo (a) pyrene	ND	4.8	25	ng/l	1	03/14/23	M-02
Benzo (b) fluoranthene	ND	8.0	25	ng/l	1	03/14/23	M-02
Benzo (g,h,i) perylene	ND	5.0	25	ng/l	1	03/14/23	M-02
Benzo (k) fluoranthene	ND	6.0	25	ng/l	1	03/14/23	M-02
Chrysene	ND	7.0	25	ng/l	1	03/14/23	M-02
Dibenzo (a,h) anthracene	ND	6.0	25	ng/l	1	03/14/23	M-02
Fluoranthene	ND	7.5	25	ng/l	1	03/14/23	M-02
Fluorene	ND	5.5	25	ng/l	1	03/14/23	M-02
Indeno (1,2,3-cd) pyrene	ND	4.8	25	ng/l	1	03/14/23	M-02

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San Diego, CA 92123

Project Number: SGVCOG Fire Effects Study

Project Manager: Brenda Stevens

Reported: 04/21/2023 17:40

Sample Results

(Continued)

Sample: F_193B_R-2223_W2_01 — Sampled: 02/25/23 16:55 by Luis De La Torre

3B26002-01 (Water) (Continued)

Semivolatile Organics - Low Level by Tandem GC/MS/MS (Continued)

Method: EPA 625.1 **Instr:** GCMS15

Batch ID: W3C0154 **Preparation:** EPA 3535/SPE **Prepared:** 03/02/23 09:05 **Analyst:** EFC

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Naphthalene	**18**	16	25	ng/l	1	03/14/23	M-02, J
Phenanthrene	ND	15	25	ng/l	1	03/14/23	M-02
Pyrene	ND	7.0	25	ng/l	1	03/14/23	M-02
Surrogate(s)							
1,3-Dimethyl-2-nitrobenzene	*67%*	*Conc: 335*	*62-120*			*03/14/23*	
Perylene-d12	*34%*	*Conc: 172*	*36-120*			*03/14/23*	*S-GC*

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Project Number: SGVCOG Fire Effects Study

Project Manager: Brenda Stevens

Reported: 04/21/2023 17:40

Sample Results

(Continued)

Sample: F_194B_R-2223_W2_01 — 3B26002-02 (Water) — Sampled: 02/25/23 17:20 by Luis De La Torre

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods							
Method: Calculation			**Instr:** [CALC]				
Batch ID: [CALC] — **Preparation:** [CALC]			**Prepared:** 03/11/23 07:33				**Analyst:** YMT
Nitrogen, Total	**1.8**	0.036	0.10	mg/l	1	03/14/23	
Method: EPA 350.1			**Instr:** AA06				
Batch ID: W3C1058 — **Preparation:** _NONE (WETCHEM)			**Prepared:** 03/12/23 11:44				**Analyst:** HEQ
Ammonia as N	**0.13**	0.017	0.10	mg/l	1	03/13/23	
Method: EPA 351.2			**Instr:** AA06				
Batch ID: W3C1036 — **Preparation:** _NONE (WETCHEM)			**Prepared:** 03/11/23 07:33				**Analyst:** YMT
TKN	**0.88**	0.065	0.10	mg/l	1	03/14/23	
Method: EPA 353.2			**Instr:** AA01				
Batch ID: W3B2201 — **Preparation:** _NONE (WETCHEM)			**Prepared:** 02/27/23 11:45				**Analyst:** ISM
Nitrate as N	**0.80**	0.040	0.20	mg/l	1	02/27/23 14:35	
Nitrite as N	**130**	42	100	ug/l	1	02/27/23 14:35	
NO2+NO3 as N	**930**	36	200	ug/l	1	02/27/23	
Hexavalent Chromium by IC							
Method: EPA 218.6			**Instr:** LC13				
Batch ID: W3C0346 — **Preparation:** _NONE (LC)			**Prepared:** 03/06/23 00:00				**Analyst:** ejm
Chromium 6+	**0.49**	0.0079	0.020	ug/l	1	03/06/23	
Chromium 6+, Dissolved	**0.49**	0.0079	0.020	ug/l	1	03/06/23	
Metals by EPA 200 Series Methods							
Method: EPA 200.7			**Instr:** ICP03				
Batch ID: W3C0190 — **Preparation:** EPA 200.2			**Prepared:** 03/02/23 10:49				**Analyst:** kvm
Phosphorus, Dissolved	**0.058**	0.018	0.050	mg/l	1	03/10/23	
Phosphorus, Total	**0.31**	0.036	0.10	mg/l	1	03/10/23	M-02
Method: EPA 200.8			**Instr:** ICPMS06				
Batch ID: W3C0194 — **Preparation:** EPA 200.2			**Prepared:** 03/02/23 13:29				**Analyst:** jol
Aluminum, Dissolved	**87**	8.9	40	ug/l	1	03/03/23	M-02
Aluminum, Total	**8700**	8.9	40	ug/l	1	03/07/23	M-02
Antimony, Dissolved	**0.90**	0.18	1.0	ug/l	1	03/03/23	M-02, J
Antimony, Total	**1.2**	0.18	1.0	ug/l	1	03/03/23	M-02
Arsenic, Dissolved	**1.8**	0.15	0.80	ug/l	1	03/03/23	M-02
Arsenic, Total	**4.2**	0.15	0.80	ug/l	1	03/03/23	M-02
Beryllium, Dissolved	ND	0.12	0.20	ug/l	1	03/03/23	M-02
Beryllium, Total	**0.34**	0.057	0.20	ug/l	1	03/03/23	M-02
Cadmium, Dissolved	ND	0.083	0.40	ug/l	1	03/03/23	M-02
Cadmium, Total	**0.12**	0.084	0.40	ug/l	1	03/03/23	J, M-02
Chromium, Dissolved	**0.92**	0.18	0.40	ug/l	1	03/03/23	M-02
Chromium, Total	**12**	0.18	0.40	ug/l	1	03/03/23	M-02

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9177 Sky Park Court, Ste A
San Diego, CA 92123

Project Number: SGVCOG Fire Effects Study

Project Manager: Brenda Stevens

Reported: 04/21/2023 17:40

Sample Results

(Continued)

Sample: F_194B_R-2223_W2_01 — Sampled: 02/25/23 17:20 by Luis De La Torre

3B26002-02 (Water) (Continued)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Metals by EPA 200 Series Methods (Continued)							
Method: EPA 200.8				**Instr:** ICPMS06			
Batch ID: W3C0194	**Preparation:** EPA 200.2			**Prepared:** 03/02/23 13:29			**Analyst:** jol
Copper, Dissolved	**4.4**	0.45	1.0	ug/l	1	03/03/23	M-02
Copper, Total	**21**	0.46	1.0	ug/l	1	03/03/23	M-02
Iron, Dissolved	**100**	7.9	40	ug/l	1	03/03/23	M-02
Iron, Total	**12000**	7.9	40	ug/l	1	03/03/23	M-02
Lead, Dissolved	**0.35**	0.17	0.40	ug/l	1	03/03/23	M-02, J
Lead, Total	**20**	0.17	0.40	ug/l	1	03/03/23	M-02
Nickel, Dissolved	**0.39**	0.33	4.0	ug/l	1	03/03/23	M-02, J
Nickel, Total	**8.5**	0.81	4.0	ug/l	1	03/03/23	M-02
Selenium, Dissolved	**0.20**	0.13	0.80	ug/l	1	03/03/23	M-02, J
Selenium, Total	**0.20**	0.13	0.80	ug/l	1	03/03/23	J, M-02
Silver, Dissolved	ND	0.060	0.40	ug/l	1	03/03/23	M-02
Silver, Total	ND	0.11	0.40	ug/l	1	03/03/23	M-02
Thallium, Dissolved	ND	0.042	0.40	ug/l	1	03/03/23	M-02
Thallium, Total	**0.060**	0.042	0.40	ug/l	1	03/03/23	M-02, J
Zinc, Dissolved	**2.5**	1.6	20	ug/l	1	03/03/23	M-02, J
Zinc, Total	**72**	3.3	20	ug/l	1	03/03/23	M-02
Method: EPA 245.1				**Instr:** HG03			
Batch ID: W3C0293	**Preparation:** EPA 245.1			**Prepared:** 03/03/23 08:25			**Analyst:** KVM
Mercury, Dissolved	ND	0.037	0.050	ug/l	1	03/06/23	
Mercury, Total	**0.075**	0.037	0.050	ug/l	1	03/06/23	
Semivolatile Organics - Low Level by Tandem GC/MS/MS							
Method: EPA 625.1				**Instr:** GCMS15			
Batch ID: W3C0154	**Preparation:** EPA 3535/SPE			**Prepared:** 03/02/23 09:05			**Analyst:** EFC
Acenaphthene	ND	6.0	25	ng/l	1	03/14/23	M-02
Acenaphthylene	ND	5.0	25	ng/l	1	03/14/23	M-02
Anthracene	ND	5.5	25	ng/l	1	03/14/23	M-02
Benzo (a) anthracene	ND	4.6	25	ng/l	1	03/14/23	M-02
Benzo (a) pyrene	ND	4.8	25	ng/l	1	03/14/23	M-02
Benzo (b) fluoranthene	ND	8.0	25	ng/l	1	03/14/23	M-02
Benzo (g,h,i) perylene	ND	5.0	25	ng/l	1	03/14/23	M-02
Benzo (k) fluoranthene	ND	6.0	25	ng/l	1	03/14/23	M-02
Chrysene	ND	7.0	25	ng/l	1	03/14/23	M-02
Dibenzo (a,h) anthracene	ND	6.0	25	ng/l	1	03/14/23	M-02
Fluoranthene	ND	7.5	25	ng/l	1	03/14/23	M-02
Fluorene	ND	5.5	25	ng/l	1	03/14/23	M-02
Indeno (1,2,3-cd) pyrene	ND	4.8	25	ng/l	1	03/14/23	M-02

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Sample Results

(Continued)

Sample: F_194B_R-2223_W2_01 — Sampled: 02/25/23 17:20 by Luis De La Torre

3B26002-02 (Water) — (Continued)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Semivolatile Organics - Low Level by Tandem GC/MS/MS (Continued)							
Method: EPA 625.1			**Instr:** GCMS15				
Batch ID: W3C0154 **Preparation:** EPA 3535/SPE			**Prepared:** 03/02/23 09:05				**Analyst:** EFC
Naphthalene	**31**	16	25	ng/l	1	03/14/23	M-02
Phenanthrene	ND	15	25	ng/l	1	03/14/23	M-02
Pyrene	ND	7.0	25	ng/l	1	03/14/23	M-02
Surrogate(s)							
1,3-Dimethyl-2-nitrobenzene	*71%*	*Conc: 353*	*62-120*			*03/14/23*	
Perylene-d12	*33%*	*Conc: 164*	*36-120*			*03/14/23*	*S-GC*

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Project Number: SGVCOG Fire Effects Study

Project Manager: Brenda Stevens

Reported: 04/21/2023 17:40

Sample Results

(Continued)

Sample: ARCAD_WA_CON_2223_W2_01 — Sampled: 02/25/23 17:50 by Luis De La Torre

3B26002-03 (Water)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods							
Method: Calculation — **Instr:** [CALC]							
Batch ID: [CALC] — **Preparation:** [CALC] — **Prepared:** 03/11/23 07:33 — **Analyst:** YMT							
Nitrogen, Total	**1.1**	0.036	0.10	mg/l	1	03/14/23	
Method: EPA 350.1 — **Instr:** AA06							
Batch ID: W3C1058 — **Preparation:** _NONE (WETCHEM) — **Prepared:** 03/12/23 11:44 — **Analyst:** HEQ							
Ammonia as N	**0.074**	0.017	0.10	mg/l	1	03/13/23	J
Method: EPA 351.2 — **Instr:** AA06							
Batch ID: W3C1036 — **Preparation:** _NONE (WETCHEM) — **Prepared:** 03/11/23 07:33 — **Analyst:** YMT							
TKN	**0.42**	0.065	0.10	mg/l	1	03/14/23	
Method: EPA 353.2 — **Instr:** AA01							
Batch ID: W3B2201 — **Preparation:** _NONE (WETCHEM) — **Prepared:** 02/27/23 11:45 — **Analyst:** ISM							
Nitrate as N	**0.65**	0.040	0.20	mg/l	1	02/27/23 14:23	
Nitrite as N	ND	42	100	ug/l	1	02/27/23 14:23	
NO2+NO3 as N	**680**	36	200	ug/l	1	02/27/23	
Hexavalent Chromium by IC							
Method: EPA 218.6 — **Instr:** LC13							
Batch ID: W3C0346 — **Preparation:** _NONE (LC) — **Prepared:** 03/06/23 00:00 — **Analyst:** ejm							
Chromium 6+	**0.37**	0.0079	0.020	ug/l	1	03/06/23	
Chromium 6+, Dissolved	**0.44**	0.0079	0.020	ug/l	1	03/06/23	
Metals by EPA 200 Series Methods							
Method: EPA 200.7 — **Instr:** ICP03							
Batch ID: W3C0190 — **Preparation:** EPA 200.2 — **Prepared:** 03/02/23 10:49 — **Analyst:** kvm							
Phosphorus, Dissolved	**0.032**	0.018	0.050	mg/l	1	03/10/23	J
Phosphorus, Total	**0.085**	0.018	0.050	mg/l	1	03/10/23	
Method: EPA 200.8 — **Instr:** ICPMS06							
Batch ID: W3C0194 — **Preparation:** EPA 200.2 — **Prepared:** 03/02/23 13:29 — **Analyst:** jol							
Aluminum, Dissolved	**36**	4.4	20	ug/l	1	03/03/23	
Aluminum, Total	**1100**	4.4	20	ug/l	1	03/07/23	
Antimony, Dissolved	**0.47**	0.089	0.50	ug/l	1	03/03/23	J
Antimony, Total	**0.70**	0.089	0.50	ug/l	1	03/03/23	
Arsenic, Dissolved	**1.7**	0.074	0.40	ug/l	1	03/03/23	
Arsenic, Total	**2.2**	0.074	0.40	ug/l	1	03/03/23	
Beryllium, Dissolved	ND	0.062	0.10	ug/l	1	03/03/23	
Beryllium, Total	**0.042**	0.029	0.10	ug/l	1	03/03/23	J
Cadmium, Dissolved	ND	0.042	0.20	ug/l	1	03/03/23	
Cadmium, Total	**0.043**	0.042	0.20	ug/l	1	03/03/23	J
Chromium, Dissolved	**0.36**	0.089	0.20	ug/l	1	03/03/23	
Chromium, Total	**1.9**	0.089	0.20	ug/l	1	03/03/23	

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Project Number: SGVCOG Fire Effects Study

Project Manager: Brenda Stevens

Reported: 04/21/2023 17:40

Sample Results

(Continued)

Sample: ARCAD_WA_CON_2223_W2_01 — 3B26002-03 (Water)

Sampled: 02/25/23 17:50 by Luis De La Torre

(Continued)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Metals by EPA 200 Series Methods (Continued)							
Method: EPA 200.8			**Instr:** ICPMS06				
Batch ID: W3C0194 — **Preparation:** EPA 200.2			**Prepared:** 03/02/23 13:29				**Analyst:** jol
Copper, Dissolved	**2.1**	0.23	0.50	ug/l	1	03/03/23	
Copper, Total	**5.4**	0.23	0.50	ug/l	1	03/03/23	
Iron, Dissolved	**24**	3.9	20	ug/l	1	03/03/23	
Iron, Total	**1100**	3.9	20	ug/l	1	03/03/23	
Lead, Dissolved	**0.11**	0.083	0.20	ug/l	1	03/03/23	J
Lead, Total	**3.6**	0.083	0.20	ug/l	1	03/03/23	
Nickel, Dissolved	**0.21**	0.16	2.0	ug/l	1	03/03/23	J
Nickel, Total	**1.2**	0.40	2.0	ug/l	1	03/03/23	J
Selenium, Dissolved	**0.12**	0.067	0.40	ug/l	1	03/03/23	J
Selenium, Total	**0.15**	0.067	0.40	ug/l	1	03/03/23	J
Silver, Dissolved	ND	0.030	0.20	ug/l	1	03/03/23	
Silver, Total	ND	0.055	0.20	ug/l	1	03/03/23	
Thallium, Dissolved	ND	0.021	0.20	ug/l	1	03/03/23	
Thallium, Total	ND	0.021	0.20	ug/l	1	03/03/23	
Zinc, Dissolved	**7.9**	0.80	10	ug/l	1	03/03/23	J
Zinc, Total	**30**	1.7	10	ug/l	1	03/03/23	
Method: EPA 245.1			**Instr:** HG03				
Batch ID: W3C0293 — **Preparation:** EPA 245.1			**Prepared:** 03/03/23 08:25				**Analyst:** KVM
Mercury, Dissolved	**0.053**	0.037	0.050	ug/l	1	03/06/23	
Mercury, Total	**0.042**	0.037	0.050	ug/l	1	03/06/23	J
Semivolatile Organics - Low Level by Tandem GC/MS/MS							
Method: EPA 625.1			**Instr:** GCMS15				
Batch ID: W3C0154 — **Preparation:** EPA 3535/SPE			**Prepared:** 03/02/23 09:05				**Analyst:** EFC
Acenaphthene	ND	1.2	5.0	ng/l	1	03/14/23	
Acenaphthylene	ND	1.0	5.0	ng/l	1	03/14/23	
Anthracene	ND	1.1	5.0	ng/l	1	03/14/23	
Benzo (a) anthracene	ND	0.92	5.0	ng/l	1	03/14/23	
Benzo (a) pyrene	ND	0.97	5.0	ng/l	1	03/14/23	
Benzo (b) fluoranthene	ND	1.6	5.0	ng/l	1	03/14/23	
Benzo (g,h,i) perylene	**1.1**	1.0	5.0	ng/l	1	03/14/23	J
Benzo (k) fluoranthene	ND	1.2	5.0	ng/l	1	03/14/23	
Chrysene	ND	1.4	5.0	ng/l	1	03/14/23	
Dibenzo (a,h) anthracene	ND	1.2	5.0	ng/l	1	03/14/23	
Fluoranthene	**2.7**	1.5	5.0	ng/l	1	03/14/23	J
Fluorene	ND	1.1	5.0	ng/l	1	03/14/23	
Indeno (1,2,3-cd) pyrene	ND	0.97	5.0	ng/l	1	03/14/23	

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Sample Results

(Continued)

Sample: ARCAD_WA_CON_2223_W2_01 — 3B26002-03 (Water) — Sampled: 02/25/23 17:50 by Luis De La Torre

(Continued)

Semivolatile Organics - Low Level by Tandem GC/MS/MS (Continued)

Method: EPA 625.1 — **Instr:** GCMS15

Batch ID: W3C0154 — **Preparation:** EPA 3535/SPE — **Prepared:** 03/02/23 09:05 — **Analyst:** EFC

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Naphthalene	**5.3**	3.2	5.0	ng/l	1	03/14/23	
Phenanthrene	**4.6**	3.0	5.0	ng/l	1	03/14/23	J
Pyrene	**2.6**	1.4	5.0	ng/l	1	03/14/23	J
Surrogate(s)							
1,3-Dimethyl-2-nitrobenzene	*58%*	*Conc: 57.6*	*62-120*			*03/14/23*	*S-11*
Perylene-d12	*47%*	*Conc: 47.3*	*36-120*			*03/14/23*	

Sample Results

(Continued)

Sample: F-193B-R_2223_W2_01 — 3B26002-04 (Water) — Sampled: 02/25/23 0:40 by Luis De La Torre

Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods

Method: SM 2540C — **Instr:** OVEN17

Batch ID: W3B2303 — **Preparation:** _NONE (WETCHEM) — **Prepared:** 02/28/23 12:35 — **Analyst:** bel

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Total Dissolved Solids	**79**	4.0	10	mg/l	1	02/28/23	

Method: SM 2540D — **Instr:** OVEN15

Batch ID: W3C0076 — **Preparation:** _NONE (WETCHEM) — **Prepared:** 03/01/23 12:15 — **Analyst:** mes

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Total Suspended Solids	**690**		5	mg/l	1	03/01/23	

Sample Results

(Continued)

Sample: F-194B-R_2223_W2_01 — 3B26002-05 (Water) — Sampled: 02/25/23 1:05 by Luis De La Torre

Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods

Method: SM 2540C — **Instr:** OVEN17

Batch ID: W3B2303 — **Preparation:** _NONE (WETCHEM) — **Prepared:** 02/28/23 12:35 — **Analyst:** bel

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Total Dissolved Solids	**77**	4.0	10	mg/l	1	02/28/23	

Method: SM 2540D — **Instr:** OVEN15

Batch ID: W3C0076 — **Preparation:** _NONE (WETCHEM) — **Prepared:** 03/01/23 12:15 — **Analyst:** mes

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Total Suspended Solids	**590**		5	mg/l	1	03/01/23	

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Sample Results

(Continued)

Sample: ARCAD_WA_CON_2223_W2_01 — Sampled: 02/25/23 1:45 by Luis De La Torre

3B26002-06 (Water)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods							
Method: SM 2540C — **Instr:** OVEN17							
Batch ID: W3B2303 — **Preparation:** _NONE (WETCHEM) — **Prepared:** 02/28/23 12:35 — **Analyst:** bel							
Total Dissolved Solids	**140**	4.0	10	mg/l	1	02/28/23	
Method: SM 2540D — **Instr:** OVEN15							
Batch ID: W3C0076 — **Preparation:** _NONE (WETCHEM) — **Prepared:** 03/01/23 12:15 — **Analyst:** mes							
Total Suspended Solids	**16**		5	mg/l	1	03/01/23	

Sample Results

(Continued)

Sample: F-194B-R_2223_W2_03 — Sampled: 02/25/23 1:05 by Luis De La Torre

3B26002-07 (Water)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods							
Method: SM 2540C — **Instr:** OVEN17							
Batch ID: W3B2303 — **Preparation:** _NONE (WETCHEM) — **Prepared:** 02/28/23 12:35 — **Analyst:** bel							
Total Dissolved Solids	ND	4.0	10	mg/l	1	02/28/23	
Method: SM 2540D — **Instr:** OVEN15							
Batch ID: W3C0076 — **Preparation:** _NONE (WETCHEM) — **Prepared:** 03/01/23 12:15 — **Analyst:** mes							
Total Suspended Solids	ND		5	mg/l	1	03/01/23	

Sample Results

(Continued)

Sample: F-193B-R_2223_W2_01 — Sampled: 02/25/23 0:40 by Luis De La Torre

3B26002-08 (Water)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Metals by EPA 200 Series Methods							
Method: Calculation — **Instr:** [CALC]							
Batch ID: [CALC] — **Preparation:** [CALC] — **Prepared:** 03/02/23 10:49 — **Analyst:** kvm							
Hardness as CaCO3, Total	**113**	0.689	6.62	mg/l	1	03/10/23	
Method: EPA 200.7 — **Instr:** ICP03							
Batch ID: W3C0190 — **Preparation:** EPA 200.2 — **Prepared:** 03/02/23 10:49 — **Analyst:** kvm							
Calcium, Total	**23.3**	0.147	1.00	mg/l	1	03/10/23	M-02
Magnesium, Total	**13.4**	0.0780	1.00	mg/l	1	03/10/23	M-02

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Sample Results

(Continued)

Sample: F-194B-R_2223_W2_01
3B26002-09 (Water)

Sampled: 02/25/23 1:05 by Luis De La Torre

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Metals by EPA 200 Series Methods							
Method: Calculation			**Instr:** [CALC]				
Batch ID: [CALC] **Preparation:** [CALC]			**Prepared:** 03/02/23 10:49				**Analyst:** kvm
Hardness as CaCO3, Total	**126**	0.689	6.62	mg/l	1	03/10/23	
Method: EPA 200.7			**Instr:** ICP03				
Batch ID: W3C0190 **Preparation:** EPA 200.2			**Prepared:** 03/02/23 10:49				**Analyst:** kvm
Calcium, Total	**26.9**	0.147	1.00	mg/l	1	03/10/23	M-02
Magnesium, Total	**14.2**	0.0780	1.00	mg/l	1	03/10/23	M-02

Sample Results

(Continued)

Sample: ARCAD_WA_CON_2223_W2_01
3B26002-10 (Water)

Sampled: 02/25/23 1:45 by Luis De La Torre

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Metals by EPA 200 Series Methods							
Method: Calculation			**Instr:** [CALC]				
Batch ID: [CALC] **Preparation:** [CALC]			**Prepared:** 03/02/23 10:49				**Analyst:** kvm
Hardness as CaCO3, Total	**108**	0.344	3.31	mg/l	1	03/10/23	
Method: EPA 200.7			**Instr:** ICP03				
Batch ID: W3C0190 **Preparation:** EPA 200.2			**Prepared:** 03/02/23 10:49				**Analyst:** kvm
Calcium, Total	**31.2**	0.0736	0.500	mg/l	1	03/10/23	
Magnesium, Total	**7.35**	0.0390	0.500	mg/l	1	03/10/23	

Sample Results

(Continued)

Sample: F-194B-R_2223_W2_03
3B26002-11 (Water)

Sampled: 02/25/23 1:05 by Luis De La Torre

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Metals by EPA 200 Series Methods							
Method: Calculation			**Instr:** [CALC]				
Batch ID: [CALC] **Preparation:** [CALC]			**Prepared:** 03/02/23 10:49				**Analyst:** kvm
Hardness as CaCO3, Total	ND	0.344	3.31	mg/l	1	03/10/23	
Method: EPA 200.7			**Instr:** ICP03				
Batch ID: W3C0190 **Preparation:** EPA 200.2			**Prepared:** 03/02/23 10:49				**Analyst:** kvm
Calcium, Total	ND	0.0736	0.500	mg/l	1	03/10/23	
Magnesium, Total	ND	0.0390	0.500	mg/l	1	03/10/23	

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Sample Results Enthalpy Orange

Sample: F_193B_R-2223_W2_01
3B26002-01 (Water)

Sampled: 02/25/23 16:55 by Luis De La Torre

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
SM 10200-H							
Method: Chlorophyll **Batch ID:** 310182 **Prepared:** 02/25/23 15:57 **Analyst:** ATP							
Chlorophyll a	ND		1.0	mg/M3	1	03/21/23	ND

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Sample Results Enthalpy Orange (Continued)

Sample: F_194B_R-2223_W2_01
3B26002-02 (Water)

Sampled: 02/25/23 17:20 by Luis De La Torre

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
SM 10200-H							
Method: Chlorophyll	**Batch ID:** 310182		**Prepared:** 02/25/23 17:48				**Analyst:** ATP
Chlorophyll a	ND		1.0	mg/M3	1	03/21/23	ND

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Sample Results Enthalpy Orange

(Continued)

Sample: ARCAD_WA_CON_2223_W2_01
3B26002-03 (Water)

Sampled: 02/25/23 17:50 by Luis De La Torre

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
SM 10200-H							
Method: Chlorophyll **Batch ID:** 310182 **Prepared:** 02/25/23 17:32 **Analyst:** ATP							
Chlorophyll a	ND		1.0	mg/M3	1	03/21/23	ND

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Quality Control Results

Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W3B2201 - EPA 353.2											
Blank (W3B2201-BLK1)					**Prepared & Analyzed: 02/27/23**						
Nitrate as N	ND	0.040	0.20	mg/l							
Nitrite as N	ND	42	100	ug/l							
NO2+NO3 as N	ND	36	200	ug/l							
LCS (W3B2201-BS1)					**Prepared & Analyzed: 02/27/23**						
Nitrate as N	0.975	0.040	0.20	mg/l	1.00		98	90-110			
Nitrite as N	997	42	100	ug/l	1000		100	90-110			
NO2+NO3 as N	975	36	200	ug/l	1000		98	90-110			
Matrix Spike (W3B2201-MS1)	**Source: 3B26002-03**				**Prepared & Analyzed: 02/27/23**						
Nitrate as N	2.58	0.040	0.20	mg/l	2.00	0.655	96	90-110			
Nitrite as N	1030	42	100	ug/l	1000	ND	103	90-110			
NO2+NO3 as N	2580	36	200	ug/l	2000	680	95	90-110			
Matrix Spike Dup (W3B2201-MSD1)	**Source: 3B26002-03**				**Prepared & Analyzed: 02/27/23**						
Nitrate as N	2.67	0.040	0.20	mg/l	2.00	0.655	101	90-110	3	20	
Nitrite as N	1030	42	100	ug/l	1000	ND	103	90-110	0	20	
NO2+NO3 as N	2670	36	200	ug/l	2000	680	100	90-110	3	20	
Batch: W3B2303 - SM 2540C											
Blank (W3B2303-BLK1)					**Prepared & Analyzed: 02/28/23**						
Total Dissolved Solids	ND	4.0	10	mg/l							
LCS (W3B2303-BS1)					**Prepared & Analyzed: 02/28/23**						
Total Dissolved Solids	823	4.0	10	mg/l	824		100	97-103			
Duplicate (W3B2303-DUP1)	**Source: 3B24032-01**				**Prepared & Analyzed: 02/28/23**						
Total Dissolved Solids	102000	4.0	10	mg/l		100000			2	10	
Duplicate (W3B2303-DUP2)	**Source: 3B23010-09**				**Prepared & Analyzed: 02/28/23**						
Total Dissolved Solids	965	4.0	10	mg/l		970			0.5	10	
Batch: W3C0076 - SM 2540D											
Blank (W3C0076-BLK1)					**Prepared & Analyzed: 03/01/23**						
Total Suspended Solids	ND		5	mg/l							
LCS (W3C0076-BS1)					**Prepared & Analyzed: 03/01/23**						
Total Suspended Solids	52.8		5	mg/l	50.9		104	90-110			
Duplicate (W3C0076-DUP1)	**Source: 3B24140-01**				**Prepared & Analyzed: 03/01/23**						
Total Suspended Solids	39.6		5	mg/l		38.2			4	10	
Duplicate (W3C0076-DUP2)	**Source: 3B27020-02**				**Prepared & Analyzed: 03/01/23**						
Total Suspended Solids	99.0		5	mg/l		98.5			0.5	10	
Batch: W3C1036 - EPA 351.2											
Blank (W3C1036-BLK1)					**Prepared: 03/11/23 Analyzed: 03/14/23**						
TKN	ND	0.065	0.10	mg/l							
Blank (W3C1036-BLK2)					**Prepared: 03/11/23 Analyzed: 03/14/23**						
TKN	ND	0.065	0.10	mg/l							

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Project Manager: Brenda Stevens

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Quality Control Results

(Continued)

Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W3C1036 - EPA 351.2 (Continued)											
Blank (W3C1036-BLK2)					**Prepared: 03/11/23**	**Analyzed: 03/14/23**					
Blank (W3C1036-BLK3)					**Prepared: 03/11/23**	**Analyzed: 03/21/23**					
TKN	ND	0.065	0.10	mg/l							
LCS (W3C1036-BS1)					**Prepared: 03/11/23**	**Analyzed: 03/14/23**					
TKN	0.944	0.065	0.10	mg/l	1.00		94	90-110			
LCS (W3C1036-BS2)					**Prepared: 03/11/23**	**Analyzed: 03/14/23**					
TKN	0.967	0.065	0.10	mg/l	1.00		97	90-110			
LCS (W3C1036-BS3)					**Prepared: 03/11/23**	**Analyzed: 03/21/23**					
TKN	1.00	0.065	0.10	mg/l	1.00		100	90-110			
Matrix Spike (W3C1036-MS1)	**Source: 3C02078-05RE1**				**Prepared: 03/11/23**	**Analyzed: 03/14/23**					
TKN	1.19	0.065	0.10	mg/l	1.00	0.227	96	90-110			
Matrix Spike (W3C1036-MS2)	**Source: 3C02078-07**				**Prepared: 03/11/23**	**Analyzed: 03/14/23**					
TKN	1.25	0.065	0.10	mg/l	1.00	0.228	103	90-110			
Matrix Spike (W3C1036-MS3)	**Source: 3C02078-05RE1**				**Prepared: 03/11/23**	**Analyzed: 03/21/23**					
TKN	1.27	0.065	0.10	mg/l	1.00	0.227	104	90-110			
Matrix Spike Dup (W3C1036-MSD1)	**Source: 3C02078-05RE1**				**Prepared: 03/11/23**	**Analyzed: 03/14/23**					
TKN	1.21	0.065	0.10	mg/l	1.00	0.227	98	90-110	1	10	
Matrix Spike Dup (W3C1036-MSD2)	**Source: 3C02078-07**				**Prepared: 03/11/23**	**Analyzed: 03/14/23**					
TKN	1.23	0.065	0.10	mg/l	1.00	0.228	100	90-110	2	10	
Matrix Spike Dup (W3C1036-MSD3)	**Source: 3C02078-05RE1**				**Prepared: 03/11/23**	**Analyzed: 03/21/23**					
TKN	1.25	0.065	0.10	mg/l	1.00	0.227	102	90-110	2	10	
Batch: W3C1058 - EPA 350.1											
Blank (W3C1058-BLK1)					**Prepared: 03/12/23**	**Analyzed: 03/13/23**					
Ammonia as N	ND	0.017	0.10	mg/l							
Blank (W3C1058-BLK2)					**Prepared: 03/12/23**	**Analyzed: 03/13/23**					
Ammonia as N	ND	0.017	0.10	mg/l							
LCS (W3C1058-BS1)					**Prepared: 03/12/23**	**Analyzed: 03/13/23**					
Ammonia as N	0.255	0.017	0.10	mg/l	0.250		102	90-110			
LCS (W3C1058-BS2)					**Prepared: 03/12/23**	**Analyzed: 03/13/23**					
Ammonia as N	0.264	0.017	0.10	mg/l	0.250		105	90-110			
Matrix Spike (W3C1058-MS1)	**Source: 3B24027-07**				**Prepared: 03/12/23**	**Analyzed: 03/13/23**					
Ammonia as N	0.386	0.017	0.10	mg/l	0.250	0.133	101	90-110			
Matrix Spike (W3C1058-MS2)	**Source: 3B28212-01**				**Prepared: 03/12/23**	**Analyzed: 03/13/23**					
Ammonia as N	0.677	0.017	0.10	mg/l	0.250	0.424	101	90-110			
Matrix Spike Dup (W3C1058-MSD1)	**Source: 3B24027-07**				**Prepared: 03/12/23**	**Analyzed: 03/13/23**					
Ammonia as N	0.387	0.017	0.10	mg/l	0.250	0.133	101	90-110	0.08	15	
Matrix Spike Dup (W3C1058-MSD2)	**Source: 3B28212-01**				**Prepared: 03/12/23**	**Analyzed: 03/13/23**					
Ammonia as N	0.675	0.017	0.10	mg/l	0.250	0.424	100	90-110	0.3	15	

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Quality Control Results

(Continued)

Hexavalent Chromium by IC

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W3C0346 - EPA 218.6											
Blank (W3C0346-BLK1)					**Prepared & Analyzed: 03/06/23**						
Chromium 6+	ND	0.0079	0.020	ug/l							
Chromium 6+, Dissolved	ND	0.0079	0.020	ug/l							
LCS (W3C0346-BS1)					**Prepared & Analyzed: 03/06/23**						
Chromium 6+	5.39	0.0079	0.020	ug/l	5.00		108	90-110			
Chromium 6+, Dissolved	5.39	0.0079	0.020	ug/l	5.00		108	90-110			
Matrix Spike (W3C0346-MS1)	**Source: 3B21165-01**				**Prepared & Analyzed: 03/06/23**						
Chromium 6+	5.18	0.0079	0.020	ug/l	5.00	0.344	97	88-112			
Chromium 6+, Dissolved	5.18	0.0079	0.020	ug/l	5.00	0.283	98	88-112			
Matrix Spike (W3C0346-MS2)	**Source: 3B26002-01**				**Prepared & Analyzed: 03/06/23**						
Chromium 6+	5.54	0.0079	0.020	ug/l	5.00	0.351	104	88-112			
Chromium 6+, Dissolved	5.54	0.0079	0.020	ug/l	5.00	0.400	103	88-112			
Matrix Spike Dup (W3C0346-MSD1)	**Source: 3B21165-01**				**Prepared & Analyzed: 03/06/23**						
Chromium 6+	5.40	0.0079	0.020	ug/l	5.00	0.344	101	88-112	4	10	
Chromium 6+, Dissolved	5.40	0.0079	0.020	ug/l	5.00	0.283	102	88-112	4	10	
Matrix Spike Dup (W3C0346-MSD2)	**Source: 3B26002-01**				**Prepared & Analyzed: 03/06/23**						
Chromium 6+	5.47	0.0079	0.020	ug/l	5.00	0.351	102	88-112	1	10	
Chromium 6+, Dissolved	5.47	0.0079	0.020	ug/l	5.00	0.400	101	88-112	1	10	

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Quality Control Results

(Continued)

Metals by EPA 200 Series Methods

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W3C0190 - EPA 200.7											
Blank (W3C0190-BLK1)					**Prepared: 03/02/23**	**Analyzed: 03/10/23**					
Calcium, Total	ND	0.0736	0.500	mg/l							
Magnesium, Total	ND	0.0390	0.500	mg/l							
Phosphorus, Dissolved	ND	0.018	0.050	mg/l							
Phosphorus, Total	ND	0.018	0.050	mg/l							
LCS (W3C0190-BS1)					**Prepared: 03/02/23**	**Analyzed: 03/10/23**					
Calcium, Total	48.1	0.0736	0.500	mg/l	50.2		96	85-115			
Magnesium, Total	49.2	0.0390	0.500	mg/l	50.2		98	85-115			
Phosphorus, Dissolved	2.10	0.018	0.050	mg/l	2.00		105	85-115			
Phosphorus, Total	2.10	0.018	0.050	mg/l	2.00		105	85-115			
Matrix Spike (W3C0190-MS1)	**Source: 3B26002-03**				**Prepared: 03/02/23**	**Analyzed: 03/10/23**					
Calcium, Total	73.8	0.0736	0.500	mg/l	50.2	26.8	94	70-130			
Magnesium, Total	55.3	0.0390	0.500	mg/l	50.2	6.18	98	70-130			
Phosphorus, Dissolved	2.20	0.018	0.050	mg/l	2.00	0.0320	109	70-130			
Phosphorus, Total	2.20	0.018	0.050	mg/l	2.00	0.0848	106	70-130			
Matrix Spike (W3C0190-MS2)	**Source: 3B27030-01**				**Prepared: 03/02/23**	**Analyzed: 03/10/23**					
Calcium, Total	54.9	0.0736	0.500	mg/l	50.2	7.11	95	70-130			
Magnesium, Total	49.8	0.0390	0.500	mg/l	50.2	0.564	98	70-130			
Phosphorus, Dissolved	2.64	0.018	0.050	mg/l	2.00	0.519	106	70-130			
Phosphorus, Total	2.64	0.018	0.050	mg/l	2.00	0.519	106	70-130			
Matrix Spike Dup (W3C0190-MSD1)	**Source: 3B26002-03**				**Prepared: 03/02/23**	**Analyzed: 03/10/23**					
Calcium, Total	75.3	0.0736	0.500	mg/l	50.2	26.8	97	70-130	2	30	
Magnesium, Total	56.1	0.0390	0.500	mg/l	50.2	6.18	99	70-130	1	30	
Phosphorus, Dissolved	2.22	0.018	0.050	mg/l	2.00	0.0320	110	70-130	0.9	30	
Phosphorus, Total	2.22	0.018	0.050	mg/l	2.00	0.0848	107	70-130	0.9	30	
Matrix Spike Dup (W3C0190-MSD2)	**Source: 3B27030-01**				**Prepared: 03/02/23**	**Analyzed: 03/10/23**					
Calcium, Total	55.5	0.0736	0.500	mg/l	50.2	7.11	96	70-130	1	30	
Magnesium, Total	50.3	0.0390	0.500	mg/l	50.2	0.564	99	70-130	1	30	
Phosphorus, Dissolved	2.68	0.018	0.050	mg/l	2.00	0.519	108	70-130	2	30	
Phosphorus, Total	2.68	0.018	0.050	mg/l	2.00	0.519	108	70-130	2	30	
Batch: W3C0194 - EPA 200.8											
Blank (W3C0194-BLK1)					**Prepared: 03/02/23**	**Analyzed: 03/03/23**					
Aluminum, Dissolved	ND	4.4	20	ug/l							
Aluminum, Total	ND	4.4	20	ug/l							
Antimony, Dissolved	ND	0.089	0.50	ug/l							
Antimony, Total	ND	0.089	0.50	ug/l							
Arsenic, Dissolved	ND	0.074	0.40	ug/l							
Arsenic, Total	ND	0.074	0.40	ug/l							
Beryllium, Dissolved	ND	0.062	0.10	ug/l							

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Quality Control Results

(Continued)

Metals by EPA 200 Series Methods (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W3C0194 - EPA 200.8 (Continued)											
Blank (W3C0194-BLK1)					**Prepared: 03/02/23 Analyzed: 03/03/23**						
Beryllium, Total	ND	0.029	0.10	ug/l							
Cadmium, Dissolved	ND	0.042	0.20	ug/l							
Cadmium, Total	ND	0.042	0.20	ug/l							
Chromium, Dissolved	ND	0.089	0.20	ug/l							
Chromium, Total	ND	0.089	0.20	ug/l							
Copper, Dissolved	ND	0.23	0.50	ug/l							
Copper, Total	ND	0.23	0.50	ug/l							
Iron, Dissolved	ND	3.9	20	ug/l							
Iron, Total	ND	3.9	20	ug/l							
Lead, Dissolved	ND	0.083	0.20	ug/l							
Lead, Total	ND	0.083	0.20	ug/l							
Nickel, Dissolved	ND	0.16	2.0	ug/l							
Nickel, Total	ND	0.40	2.0	ug/l							
Selenium, Dissolved	ND	0.067	0.40	ug/l							
Selenium, Total	ND	0.067	0.40	ug/l							
Silver, Dissolved	ND	0.030	0.20	ug/l							
Silver, Total	ND	0.055	0.20	ug/l							
Thallium, Dissolved	ND	0.021	0.20	ug/l							
Thallium, Total	ND	0.021	0.20	ug/l							
Zinc, Dissolved	ND	0.80	10	ug/l							
Zinc, Total	ND	1.7	10	ug/l							
Blank (W3C0194-BLK2)					**Prepared: 03/02/23 Analyzed: 03/07/23**						
Aluminum, Total	ND	4.4	20	ug/l							
LCS (W3C0194-BS1)					**Prepared: 03/02/23 Analyzed: 03/03/23**						
Aluminum, Dissolved	49.4	4.4	20	ug/l	50.0		99	85-115			
Aluminum, Total	49.4	4.4	20	ug/l	50.0		99	85-115			
Antimony, Dissolved	50.8	0.089	0.50	ug/l	50.0		101	85-115			
Antimony, Total	50.8	0.089	0.50	ug/l	50.0		101	85-115			
Arsenic, Dissolved	50.1	0.074	0.40	ug/l	50.0		100	85-115			
Arsenic, Total	50.1	0.074	0.40	ug/l	50.0		100	85-115			
Beryllium, Dissolved	46.4	0.062	0.10	ug/l	50.0		93	85-115			
Beryllium, Total	46.4	0.029	0.10	ug/l	50.0		93	85-115			
Cadmium, Dissolved	49.5	0.042	0.20	ug/l	50.0		99	85-115			
Cadmium, Total	49.5	0.042	0.20	ug/l	50.0		99	85-115			
Chromium, Dissolved	49.8	0.089	0.20	ug/l	50.0		100	85-115			
Chromium, Total	49.8	0.089	0.20	ug/l	50.0		100	85-115			
Copper, Dissolved	50.4	0.23	0.50	ug/l	50.0		101	85-115			
Copper, Total	50.4	0.23	0.50	ug/l	50.0		101	85-115			
Iron, Dissolved	1110	3.9	20	ug/l	1050		106	85-115			

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Quality Control Results

(Continued)

Metals by EPA 200 Series Methods (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W3C0194 - EPA 200.8 (Continued)											
LCS (W3C0194-BS1)					**Prepared: 03/02/23**	**Analyzed: 03/03/23**					
Iron, Total	1110	3.9	20	ug/l	1050		106	85-115			
Lead, Dissolved	49.9	0.083	0.20	ug/l	50.0		100	85-115			
Lead, Total	49.9	0.083	0.20	ug/l	50.0		100	85-115			
Nickel, Dissolved	50.1	0.16	2.0	ug/l	50.0		100	85-115			
Nickel, Total	50.1	0.40	2.0	ug/l	50.0		100	85-115			
Selenium, Dissolved	48.9	0.067	0.40	ug/l	50.0		98	85-115			
Selenium, Total	48.9	0.067	0.40	ug/l	50.0		98	85-115			
Silver, Dissolved	49.8	0.030	0.20	ug/l	50.0		100	85-115			
Silver, Total	49.8	0.055	0.20	ug/l	50.0		100	85-115			
Thallium, Dissolved	49.2	0.021	0.20	ug/l	50.0		98	85-115			
Thallium, Total	49.2	0.021	0.20	ug/l	50.0		98	85-115			
Zinc, Dissolved	49.5	0.80	10	ug/l	50.0		99	85-115			
Zinc, Total	49.5	1.7	10	ug/l	50.0		99	85-115			
LCS (W3C0194-BS2)					**Prepared: 03/02/23**	**Analyzed: 03/07/23**					
Aluminum, Total	50.2	4.4	20	ug/l	50.0		100	85-115			
Matrix Spike (W3C0194-MS1)	**Source: 3B26001-02**				**Prepared: 03/02/23**	**Analyzed: 03/03/23**					
Aluminum, Total	1550	4.4	20	ug/l	50.0	1090	914	70-130			MS-02
Antimony, Total	51.3	0.089	0.50	ug/l	50.0	0.930	101	70-130			
Arsenic, Total	50.4	0.074	0.40	ug/l	50.0	1.31	98	70-130			
Beryllium, Total	46.8	0.029	0.10	ug/l	50.0	ND	93	70-130			
Cadmium, Total	49.8	0.042	0.20	ug/l	50.0	ND	99	70-130			
Chromium, Total	52.8	0.089	0.20	ug/l	50.0	2.70	100	70-130			
Copper, Total	58.6	0.23	0.50	ug/l	50.0	8.41	100	70-130			
Iron, Total	2550	3.9	20	ug/l	1050	1410	109	70-130			
Lead, Total	55.3	0.083	0.20	ug/l	50.0	5.54	99	70-130			
Nickel, Total	51.9	0.40	2.0	ug/l	50.0	1.47	101	70-130			
Selenium, Total	48.3	0.067	0.40	ug/l	50.0	0.110	96	70-130			
Silver, Total	50.0	0.055	0.20	ug/l	50.0	ND	100	70-130			
Thallium, Total	49.3	0.021	0.20	ug/l	50.0	ND	98	70-130			
Zinc, Total	89.5	1.7	10	ug/l	50.0	41.2	96	70-130			
Matrix Spike (W3C0194-MS2)	**Source: 3B26001-04**				**Prepared: 03/02/23**	**Analyzed: 03/03/23**					
Aluminum, Total	1140	4.4	20	ug/l	50.0	747	781	70-130			MS-02
Antimony, Total	52.3	0.089	0.50	ug/l	50.0	1.81	101	70-130			
Arsenic, Total	50.1	0.074	0.40	ug/l	50.0	1.24	98	70-130			
Beryllium, Total	45.9	0.029	0.10	ug/l	50.0	0.0312	92	70-130			
Cadmium, Total	49.5	0.042	0.20	ug/l	50.0	ND	99	70-130			
Chromium, Total	52.6	0.089	0.20	ug/l	50.0	1.77	101	70-130			
Copper, Total	59.2	0.23	0.50	ug/l	50.0	7.97	102	70-130			
Iron, Total	2120	3.9	20	ug/l	1050	873	119	70-130			

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San Diego, CA 92123

Project Number: SGVCOG Fire Effects Study

Project Manager: Brenda Stevens

Reported: 04/21/2023 17:40

Quality Control Results

(Continued)

Metals by EPA 200 Series Methods (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W3C0194 - EPA 200.8 (Continued)											
Matrix Spike (W3C0194-MS2)	**Source: 3B26001-04**				**Prepared: 03/02/23**	**Analyzed: 03/03/23**					
Lead, Total	53.6	0.083	0.20	ug/l	50.0	3.57	100	70-130			
Nickel, Total	51.1	0.40	2.0	ug/l	50.0	0.971	100	70-130			
Selenium, Total	48.4	0.067	0.40	ug/l	50.0	0.202	96	70-130			
Silver, Total	50.1	0.055	0.20	ug/l	50.0	ND	100	70-130			
Thallium, Total	49.6	0.021	0.20	ug/l	50.0	ND	99	70-130			
Zinc, Total	96.1	1.7	10	ug/l	50.0	48.6	95	70-130			
Matrix Spike (W3C0194-MS3)	**Source: 3B26001-02**				**Prepared: 03/02/23**	**Analyzed: 03/07/23**					
Aluminum, Total	1560	4.4	20	ug/l	50.0	1090	932	70-130			MS-02
Matrix Spike Dup (W3C0194-MSD1)	**Source: 3B26001-02**				**Prepared: 03/02/23**	**Analyzed: 03/03/23**					
Aluminum, Total	1560	4.4	20	ug/l	50.0	1090	933	70-130	0.6	30	MS-02
Antimony, Total	51.6	0.089	0.50	ug/l	50.0	0.930	101	70-130	0.6	30	
Arsenic, Total	51.0	0.074	0.40	ug/l	50.0	1.31	99	70-130	1	30	
Beryllium, Total	46.3	0.029	0.10	ug/l	50.0	ND	92	70-130	1	30	
Cadmium, Total	49.9	0.042	0.20	ug/l	50.0	ND	100	70-130	0.2	30	
Chromium, Total	53.3	0.089	0.20	ug/l	50.0	2.70	101	70-130	1	30	
Copper, Total	59.8	0.23	0.50	ug/l	50.0	8.41	103	70-130	2	30	
Iron, Total	2560	3.9	20	ug/l	1050	1410	109	70-130	0.05	30	
Lead, Total	55.9	0.083	0.20	ug/l	50.0	5.54	101	70-130	1	30	
Nickel, Total	52.3	0.40	2.0	ug/l	50.0	1.47	102	70-130	0.7	30	
Selenium, Total	49.2	0.067	0.40	ug/l	50.0	0.110	98	70-130	2	30	
Silver, Total	50.5	0.055	0.20	ug/l	50.0	ND	101	70-130	1	30	
Thallium, Total	49.5	0.021	0.20	ug/l	50.0	ND	99	70-130	0.4	30	
Zinc, Total	90.6	1.7	10	ug/l	50.0	41.2	99	70-130	1	30	
Matrix Spike Dup (W3C0194-MSD2)	**Source: 3B26001-04**				**Prepared: 03/02/23**	**Analyzed: 03/03/23**					
Aluminum, Total	1160	4.4	20	ug/l	50.0	747	819	70-130	2	30	MS-02
Antimony, Total	52.2	0.089	0.50	ug/l	50.0	1.81	101	70-130	0.2	30	
Arsenic, Total	50.9	0.074	0.40	ug/l	50.0	1.24	99	70-130	2	30	
Beryllium, Total	46.1	0.029	0.10	ug/l	50.0	0.0312	92	70-130	0.5	30	
Cadmium, Total	49.5	0.042	0.20	ug/l	50.0	ND	99	70-130	0.07	30	
Chromium, Total	52.0	0.089	0.20	ug/l	50.0	1.77	100	70-130	1	30	
Copper, Total	58.8	0.23	0.50	ug/l	50.0	7.97	102	70-130	0.7	30	
Iron, Total	2110	3.9	20	ug/l	1050	873	118	70-130	0.3	30	
Lead, Total	53.5	0.083	0.20	ug/l	50.0	3.57	100	70-130	0.2	30	
Nickel, Total	51.5	0.40	2.0	ug/l	50.0	0.971	101	70-130	0.6	30	
Selenium, Total	48.6	0.067	0.40	ug/l	50.0	0.202	97	70-130	0.3	30	
Silver, Total	50.2	0.055	0.20	ug/l	50.0	ND	100	70-130	0.2	30	
Thallium, Total	49.5	0.021	0.20	ug/l	50.0	ND	99	70-130	0.2	30	
Zinc, Total	98.7	1.7	10	ug/l	50.0	48.6	100	70-130	3	30	

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Project Number: SGVCOG Fire Effects Study

Project Manager: Brenda Stevens

Reported: 04/21/2023 17:40

Quality Control Results

(Continued)

Metals by EPA 200 Series Methods (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W3C0194 - EPA 200.8 (Continued)											
Matrix Spike Dup (W3C0194-MSD3)	**Source: 3B26001-02**				**Prepared: 03/02/23**	**Analyzed: 03/07/23**					
Aluminum, Total	1550	4.4	20	ug/l	50.0	1090	922	70-130	0.3	30	MS-02
Batch: W3C0293 - EPA 245.1											
Blank (W3C0293-BLK1)					**Prepared: 03/03/23**	**Analyzed: 03/06/23**					
Mercury, Dissolved	ND	0.037	0.050	ug/l							
Mercury, Total	ND	0.037	0.050	ug/l							
LCS (W3C0293-BS1)					**Prepared: 03/03/23**	**Analyzed: 03/06/23**					
Mercury, Dissolved	1.06	0.037	0.050	ug/l	1.00		106	85-115			
Mercury, Total	1.06	0.037	0.050	ug/l	1.00		106	85-115			
Matrix Spike (W3C0293-MS1)	**Source: 3B26001-01**				**Prepared: 03/03/23**	**Analyzed: 03/06/23**					
Mercury, Dissolved	1.21	0.037	0.050	ug/l	1.00	ND	121	70-130			
Mercury, Total	1.21	0.037	0.050	ug/l	1.00	0.0453	117	70-130			
Matrix Spike (W3C0293-MS2)	**Source: 3B26002-03**				**Prepared: 03/03/23**	**Analyzed: 03/06/23**					
Mercury, Dissolved	1.06	0.037	0.050	ug/l	1.00	0.0527	100	70-130			
Mercury, Total	1.06	0.037	0.050	ug/l	1.00	0.0419	101	70-130			
Matrix Spike Dup (W3C0293-MSD1)	**Source: 3B26001-01**				**Prepared: 03/03/23**	**Analyzed: 03/06/23**					
Mercury, Total	0.921	0.037	0.050	ug/l	1.00	0.0453	88	70-130	27	20	MS-02
Matrix Spike Dup (W3C0293-MSD2)	**Source: 3B26002-03**				**Prepared: 03/03/23**	**Analyzed: 03/06/23**					
Mercury, Total	1.44	0.037	0.050	ug/l	1.00	0.0419	140	70-130	31	20	MS-02

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Project Manager: Brenda Stevens

Reported: 04/21/2023 17:40

Quality Control Results

(Continued)

Semivolatile Organics - Low Level by Tandem GC/MS/MS

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W3C0154 - EPA 625.1											
Blank (W3C0154-BLK1)					**Prepared: 03/02/23 Analyzed: 03/14/23**						
Acenaphthene	ND	1.2	5.0	ng/l							
Acenaphthylene	ND	1.0	5.0	ng/l							
Anthracene	ND	1.1	5.0	ng/l							
Benzo (a) anthracene	ND	0.92	5.0	ng/l							
Benzo (a) pyrene	ND	0.97	5.0	ng/l							
Benzo (b) fluoranthene	ND	1.6	5.0	ng/l							
Benzo (g,h,i) perylene	ND	1.0	5.0	ng/l							
Benzo (k) fluoranthene	ND	1.2	5.0	ng/l							
Chrysene	ND	1.4	5.0	ng/l							
Dibenzo (a,h) anthracene	ND	1.2	5.0	ng/l							
Fluoranthene	ND	1.5	5.0	ng/l							
Fluorene	ND	1.1	5.0	ng/l							
Indeno (1,2,3-cd) pyrene	ND	0.97	5.0	ng/l							
Naphthalene	ND	3.2	5.0	ng/l							
Phenanthrene	ND	3.0	5.0	ng/l							
Pyrene	ND	1.4	5.0	ng/l							
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	*62.6*			*ng/l*	*100*		*63*	*62-120*			
Perylene-d12	*45.6*			*ng/l*	*100*		*46*	*36-120*			
LCS (W3C0154-BS1)					**Prepared: 03/02/23 Analyzed: 03/14/23**						
Acenaphthene	42.3	1.2	5.0	ng/l	50.0		85	60-132			
Acenaphthylene	38.3	1.0	5.0	ng/l	50.0		77	54-126			
Anthracene	34.5	1.1	5.0	ng/l	50.0		69	43-120			
Benzo (a) anthracene	29.2	0.92	5.0	ng/l	50.0		58	42-133			
Benzo (a) pyrene	24.2	0.97	5.0	ng/l	50.0		48	32-148			
Benzo (b) fluoranthene	29.6	1.6	5.0	ng/l	50.0		59	42-140			AN-IP
Benzo (g,h,i) perylene	28.4	1.0	5.0	ng/l	50.0		57	0.1-195			
Benzo (k) fluoranthene	27.1	1.2	5.0	ng/l	50.0		54	25-146			AN-IP
Chrysene	28.4	1.4	5.0	ng/l	50.0		57	44-140			
Dibenzo (a,h) anthracene	30.5	1.2	5.0	ng/l	50.0		61	0.1-200			
Fluoranthene	37.5	1.5	5.0	ng/l	50.0		75	43-121			
Fluorene	40.1	1.1	5.0	ng/l	50.0		80	70-120			
Indeno (1,2,3-cd) pyrene	28.9	0.97	5.0	ng/l	50.0		58	0.1-151			
Naphthalene	42.2	3.2	5.0	ng/l	50.0		84	36-120			
Phenanthrene	39.7	3.0	5.0	ng/l	50.0		79	65-120			
Pyrene	38.2	1.4	5.0	ng/l	50.0		76	70-120			
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	*72.6*			*ng/l*	*100*		*73*	*62-120*			
Perylene-d12	*40.4*			*ng/l*	*100*		*40*	*36-120*			

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Project Number: SGVCOG Fire Effects Study

Project Manager: Brenda Stevens

Reported: 04/21/2023 17:40

Quality Control Results

(Continued)

Semivolatile Organics - Low Level by Tandem GC/MS/MS (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W3C0154 - EPA 625.1 (Continued)											
LCS Dup (W3C0154-BSD1)					**Prepared: 03/02/23 Analyzed: 03/14/23**						
Acenaphthene	40.3	1.2	5.0	ng/l	50.0		81	60-132	5	30	
Acenaphthylene	38.7	1.0	5.0	ng/l	50.0		77	54-126	1	30	
Anthracene	33.0	1.1	5.0	ng/l	50.0		66	43-120	4	30	
Benzo (a) anthracene	28.5	0.92	5.0	ng/l	50.0		57	42-133	3	30	
Benzo (a) pyrene	22.6	0.97	5.0	ng/l	50.0		45	32-148	7	30	
Benzo (b) fluoranthene	29.5	1.6	5.0	ng/l	50.0		59	42-140	0.4	30	AN-IP
Benzo (g,h,i) perylene	26.3	1.0	5.0	ng/l	50.0		53	0.1-195	8	30	
Benzo (k) fluoranthene	28.2	1.2	5.0	ng/l	50.0		56	25-146	4	30	AN-IP
Chrysene	30.8	1.4	5.0	ng/l	50.0		62	44-140	8	30	
Dibenzo (a,h) anthracene	30.2	1.2	5.0	ng/l	50.0		60	0.1-200	1	30	
Fluoranthene	36.7	1.5	5.0	ng/l	50.0		73	43-121	2	30	
Fluorene	38.8	1.1	5.0	ng/l	50.0		78	70-120	3	30	
Indeno (1,2,3-cd) pyrene	28.0	0.97	5.0	ng/l	50.0		56	0.1-151	3	30	
Naphthalene	38.8	3.2	5.0	ng/l	50.0		78	36-120	8	30	
Phenanthrene	38.6	3.0	5.0	ng/l	50.0		77	65-120	3	30	
Pyrene	36.9	1.4	5.0	ng/l	50.0		74	70-120	3	30	
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	*60.6*			*ng/l*	*100*		*61*	*62-120*			*S-11*
Perylene-d12	*38.9*			*ng/l*	*100*		*39*	*36-120*			

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Project Number: SGVCOG Fire Effects Study

Project Manager: Brenda Stevens

Reported: 04/21/2023 17:40

Notes and Definitions

Item	Definition
AN-IP	Sample results for structural isomers may have contribution from their isomeric pair.
J	Estimated conc. detected <MRL and >MDL.
M-02	Due to the nature of matrix interferences, sample was diluted prior to preparation. The MDL and MRL were raised due to the dilution.
MS-02	The RPD and/or percent recovery for this QC spike sample cannot be accurately calculated due to the high concentration of analyte inherent in the sample.
ND	Not Detected
S-11	Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.
S-GC	Surrogate recovery outside of control limits due to a possible matrix effect . The data was accepted based on valid recovery of the remaining surrogate.
%REC	Percent Recovery
Dil	Dilution
MDL	Method Detection Limit
MRL	The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. The MRL is also known as Limit of Quantitation (LOQ)
ND	NOT DETECTED at or above the Method Reporting Limit (MRL). If Method Detection Limit (MDL) is reported, then ND means not detected at or above the MDL.
RPD	Relative Percent Difference
Source	Sample that was matrix spiked or duplicated.

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance.

All results are expressed on wet weight basis unless otherwise specified.

All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS002.

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2B26002

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Chain of Custody

Page 1 of 1

From:	To:	Lab Notes:
WSP Environment & Infrastructure Solutions 9177 Sky Park Court San Diego, CA 92123 (661) 373-5505 (858) 278-5300 Fax Contact: Brenda Stevens/Kimberly Henry	Weck Laboratories 14859 Clark Avenue Industry, CA 91745 (626) 336-2139 (626) 336-2634 Fax Contact: Chris Samatmanakit	

PO#:	Project Number:	Project Name:	Sample Matrix:
C015102726	5025-22-0004	SGVCOG Fire Effects Study	Water

SampleID	Sample Date	Sample Time	Sample Type	Analysis	Container	Pres	No. of Bottles
F-193B-R_2223_W2_01	2-25-23	1655	Composite	Tot&Diss.Metal,Ammonia, Nutrients(N03,N02,TKN, TotN,TotP,DissP), Chlorophyll-a, PAH	1-L Amber Glass	≤6°C	18
F-194B-R_2223_W2_01		1720	Composite	Tot&Diss.Metal,Ammonia, Nutrients(N03,N02,TKN, TotN,TotP,DissP), Chlorophyll-a, PAH	1-L Amber Glass	≤6°C	18
ARCAD_WA_CON_2223_W2_01		1750	Composite	Tot&Diss.Metal,Ammonia, Nutrients(N03,N02,TKN, TotN,TotP,DissP), Chlorophyll-a, PAH	1-L Amber Glass	≤6°C	18
F-193B-R_2223_W2_01		0040	Grab	TDS (SM 2540C); TSS (SM 2540D)	2-L Poly	Unpres.	1
F-194B-R_2223_W2_01		0105	Grab	TDS (SM 2540C); TSS (SM 2540D)	2-L Poly	Unpres.	1
ARCAD_WA_CON_2223_W2_01		0145	Grab	TDS (SM 2540C); TSS (SM 2540D)	2-L Poly	Unpres.	1
F-194B-R_2223_W2-03		0105	Grab	TDS (SM 2540C); TSS (SM 2540D)	2-L Poly	Unpres.	1
F-193B-R_2223_W2_01		0040	Grab	Total Hardness (EPA 200.7)	500-mL Poly	HNO3	1
F-194B-R_2223_W2_01		0105	Grab	Total Hardness (EPA 200.7)	500-mL Poly	HNO3	1
ARCAD_WA_CON_2223_W2_01		0145	Grab	Total Hardness (EPA 200.7)	500-mL Poly	HNO3	1
F-194B-R_2223_W2-03	↓	0105	Grab	Total Hardness (EPA 200.7)	500-mL Poly	HNO3	1

Special Instructions/Comments:

Metals (Dissolved and Total) to include aluminum, antimony, arsenic, beryllium, cadmium, chromium (total), chromium (hexavalent), copper, iron, lead, mercury, nickel, selenium, silver, thallium, and zinc
Please provide results to Brenda Stevens (brenda.stevens@wsp.com) and Luis De La Torre (luis.delatorre@wsp.com) Refer to email for compositing instructions

Sampled and Relinquished By:		Received By:	
Print: Luis De La Torre Sign: Luis De La Torre	Date/Time: 2-26-23 1210	Print: Chris Samatmanakit Sign: [signature]	Date/Time: 2/26/23 1220
Print: Sign:	Date/Time:	Print: Sign:	Date/Time:
Print: Sign:	Date/Time:	Print: Sign:	Date/Time:

1.3°C T-027

WECK LABORATORIES, INC.

Subcontract Order

Subcontracted Laboratory:

Enthalpy Analytical
931 W. Barkley Ave
Orange, CA 92868
Phone: (714) 771-6900
Fax: (714) 538-1209

Turn Around Time:	Normal unless noted in comments
Client Manager:	Chris Samatmanakit
Project Name:	San Gabriel Valley Council of Governmer
Sampler Employed by:	
Drinking Water:	Yes / No
Need Transfer File (xls):	Yes / No
Tracking Number:	

Project Number: 3B26002

Analysis	Expires	Comments
Sample Name: 3B26002-01/F_193B_R-2223_W2_01		
Sampled: 02/25/2023 16:55	**Matrix:** Water	**Sampled By:** Luis De La Torre
Chlorophyll-a - SM 10200H	02/27/2023 16:55	1011mL filtered on 2/26/23 at 15:57 by HEQ. TestAmerica EDD needed.
Sample Name: 3B26002-02/F_194B_R-2223_W2_01		
Sampled: 02/25/2023 17:20	**Matrix:** Water	**Sampled By:** Luis De La Torre
Chlorophyll-a - SM 10200H	02/27/2023 17:20	1008mL filtered on 2/26/23 at 17:48 by HEQ. TestAmerica EDD needed.
Sample Name: 3B26002-03/ARCAD_WA_CON_2223_W2_01		
Sampled: 02/25/2023 17:50	**Matrix:** Water	**Sampled By:** Luis De La Torre
Chlorophyll-a - SM 10200H	02/27/2023 17:50	1016mL filtered on 2/26/23 at 17:32 by HEQ. TestAmerica EDD needed.

Remarks / Special Comments:

Sample Condition

Temperature: ____________
Preserved: Yes / No
Evidence Seal Intact: Yes / No
Container Attacked: Yes / No
Preserved at Lab: Yes / No

Relinqished By	Date / Time	Received By	Date / Time
Relinqished By	Date / Time	Received By	Date / Time

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WECK LABORATORIES, INC.

Subcontract Order

Subcontracted Laboratory:

Enthalpy Analytical
931 W. Barkley Ave
Orange, CA 92868
Phone: (714) 771-6900
Fax: (714) 538-1209

Turn Around Time: Normal unless noted in comments
Client Manager: Chris Samatmanakit
Project Name: San Gabriel Valley Council of Governmer
Sampler Employed by: ____________
Drinking Water: Yes / No
Need Transfer File (xls): Yes / No
Tracking Number: ____________

Project Number: 3B26002

Analysis	Expires	Comments
Sample Name: 3B26002-01/F_193B_R-2223_W2_01 **Sampled:** 02/25/2023 16:55 Chlorophyll-a - SM 10200H	**Matrix:** Water 02/27/2023 16:55	**Sampled By:** Luis De La Torre 1011mL filtered on 2/26/23 at 15:57 by HEQ. TestAmerica EDD needed.
Sample Name: 3B26002-02/F_194B_R-2223_W2_01 **Sampled:** 02/25/2023 17:20 Chlorophyll-a - SM 10200H	**Matrix:** Water 02/27/2023 17:20	**Sampled By:** Luis De La Torre 1008mL filtered on 2/26/23 at 17:48 by HEQ. TestAmerica EDD needed.
Sample Name: 3B26002-03/ARCAD_WA_CON_2223_W2_01 **Sampled:** 02/25/2023 17:50 Chlorophyll-a - SM 10200H	**Matrix:** Water 02/27/2023 17:50	**Sampled By:** Luis De La Torre 1016mL filtered on 2/26/23 at 17:32 by HEQ. TestAmerica EDD needed.

Remarks / Special Comments:

Sample Condition

Temperature: ____________
Preserved: Yes / No
Evidence Seal Intact: Yes / No
Container Attacked: Yes / No
Preserved at Lab: Yes / No

Allan G 3/10/23 1529 | 03/10/23 3:33

Relinqished By | Date / Time | Received By | Date / Time

VA 03/10/2023 3:33

Relinqished By | Date / Time | Received By | Date / Time

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Enthalpy Analytical
931 West Barkley Ave
Orange, CA 92868
(714) 771-6900

enthalpy.com

Lab Job Number: 481271
Report Level: II
Report Date: 03/24/2023

Analytical Report *prepared for:*

Chris Samatmanakit
Weck Laboratories
14859 Clark Ave.
City of Industry, CA 91745

Location: 3B26002 San Gabriel Valley Council of Gov.

Authorized for release by:

Quynhgiao Le, Project Manager
714-7716900
quynhgiao.le@enthalpy.com

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the above signature which applies to this PDF file as well as any associated electronic data deliverable files. The results contained in this report meet all requirements of NELAP and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

CA ELAP# 1338, NELAP# 4038, SCAQMD LAP# 18LA0518, LACSD ID# 10105

Sample Summary

Chris Samatmanakit Weck Laboratories 14859 Clark Ave. City of Industry, CA 91745	Lab Job #: Location: Date Received:	481271 3B26002 San Gabriel Valley Council of Gov. 03/10/23

Sample ID	Lab ID	Collected	Matrix
3B260002-01/F_193B_R-2223_W2_01	481271-001	02/25/23 16:55	Water
3B26002-02/F_194B_R-2223_W2_01	481271-002	02/25/23 17:20	Water
3B26002-03/ARCAD_WA_CON2223_W2_01	481271-003	02/25/23 17:50	Water

WECK LABORATORIES, INC.

Subcontract Order

Subcontracted Laboratory:

Enthalpy Analytical
931 W. Barkley Ave
Orange, CA 92868
Phone: (714) 771-6900
Fax: (714) 538-1209

Turn Around Time:	Normal unless noted in comments
Client Manager:	Chris Samatmanakit
Project Name:	San Gabriel Valley Council of Governmer
Sampler Employed by:	
Drinking Water:	Yes / No
Need Transfer File (xls):	Yes / No
Tracking Number:	

Project Number: 3B26002

Analysis	Expires	Comments
Sample Name: 3B26002-01/F_193B_R-2223_W2_01 **Sampled:** 02/25/2023 16:55 Chlorophyll-a - SM 10200H	**Matrix:** Water 02/27/2023 16:55	**Sampled By:** Luis De La Torre 1011mL filtered on 2/26/23 at 15:57 by HEQ. TestAmerica EDD needed.
Sample Name: 3B26002-02/F_194B_R-2223_W2_01 **Sampled:** 02/25/2023 17:20 Chlorophyll-a - SM 10200H	**Matrix:** Water 02/27/2023 17:20	**Sampled By:** Luis De La Torre 1008mL filtered on 2/26/23 at 17:48 by HEQ. TestAmerica EDD needed.
Sample Name: 3B26002-03/ARCAD_WA_CON_2223_W2_01 **Sampled:** 02/25/2023 17:50 Chlorophyll-a - SM 10200H	**Matrix:** Water 02/27/2023 17:50	**Sampled By:** Luis De La Torre 1016mL filtered on 2/26/23 at 17:32 by HEQ. TestAmerica EDD needed.

Remarks / Special Comments:

Sample Condition

Temperature: ____________

Preserved: Yes / No

Evidence Seal Intact: Yes / No

Container Attacked: Yes / No

Preserved at Lab: Yes / No

Allan G	3/10/23 1529		03/10/23 3:33
Relinqished By	Date / Time	Received By	Date / Time
	VA 03/10/23 3:33		
Relinqished By	Date / Time	Received By	Date / Time

ENTHALPY ANALYTICAL

SAMPLE ACCEPTANCE CHECKLIST

Section 1

Client: Weck Laboratories, Inc. Project: 3B26002

Date Received: 03/10/23 Sampler's Name Present: [X] Yes [ ] No

Section 2

Sample(s) received in a cooler? [X] Yes, How many? 1 [ ] No (skip section 2) Sample Temp (°C) (No Cooler): ____

Sample Temp (°C), One from each cooler: #1: 19.2 #2: ____ #3: ____ #4: ____

(Acceptance range is < 6°C but not frozen (for Microbiology samples, acceptance range is < 10°C but not frozen). It is acceptable for samples collected the same day as sample receipt to have a higher temperature as long as there is evidence that cooling has begun.)

Shipping Information: ____

Section 3

Was the cooler packed with: [X] Ice [ ] Ice Packs [ ] Bubble Wrap [ ] Styrofoam [ ] Paper [ ] None [ ] Other ____

Cooler Temp (°C): #1: 3.6 #2: ____ #3: ____ #4: ____

Section 4	YES	NO	N/A
Was a COC received?	✓		
Are sample IDs present?	✓		
Are sampling dates & times present?	✓		
Is a relinquished signature present?	✓		
Are the tests required clearly indicated on the COC?	✓		
Are custody seals present?		✓	
If custody seals are present, were they intact?			✓
Are all samples sealed in plastic bags? (Recommended for Microbiology samples)			✓
Did all samples arrive intact? If no, indicate in Section 4 below.	✓		
Did all bottle labels agree with COC? (ID, dates and times)	✓		
Were the samples collected in the correct containers for the required tests?	✓		
Are the containers labeled with the correct preservatives?			✓
Is there headspace in the VOA vials greater than 5-6 mm in diameter?			✓
Was a sufficient amount of sample submitted for the requested tests?	✓		

Section 5 Explanations/Comments

Section 6

For discrepancies, how was the Project Manager notified? [ ] Verbal PM Initials: ____ Date/Time ____
[ ] Email (email sent to/on): ____ / ____

Project Manager's response:

Completed By: [signature] Date: 03·10·23

ENTHALPY ANALYTICAL

Analysis Results for 481271

Chris Samatmanakit
Weck Laboratories
14859 Clark Ave.
City of Industry, CA 91745

Lab Job #: 481271
Location: 3B26002 San Gabriel Valley Council of Gov.
Date Received: 03/10/23

Sample ID: 3B260002-01/F_193B_R-2223_W2_01	Lab ID: 481271-001	Collected: 02/25/23 16:55
	Matrix: Water	

Received filtered & frozen. Volume: 1011 mL

481271-001 Analyte	Result	Qual	Units	RL	DF	Batch	Prepared	Analyzed	Chemist
Method: SM 10200-H									
Chlorophyll a	ND		mg/M3	1.0	1	310182	02/25/23 15:57	03/21/23 17:27	ATP

Sample ID: 3B26002-02/F_194B_R-2223_W2_01	Lab ID: 481271-002	Collected: 02/25/23 17:20
	Matrix: Water	

Received filtered & frozen. Volume: 1008 mL

481271-002 Analyte	Result	Qual	Units	RL	DF	Batch	Prepared	Analyzed	Chemist
Method: SM 10200-H									
Chlorophyll a	ND		mg/M3	1.0	1	310182	02/25/23 17:48	03/21/23 17:27	ATP

Sample ID: 3B26002-03/ARCAD_WA_CON2223_W2_01	Lab ID: 481271-003	Collected: 02/25/23 17:50
	Matrix: Water	

Received filtered & frozen. Volume: 1016 mL

481271-003 Analyte	Result	Qual	Units	RL	DF	Batch	Prepared	Analyzed	Chemist
Method: SM 10200-H									
Chlorophyll a	ND		mg/M3	1.0	1	310182	02/25/23 17:32	03/21/23 17:27	ATP

ND Not Detected

Results for any subcontracted analyses are not included in this section.

Certificate of Analysis

FINAL REPORT

WECK LABORATORIES, INC.

Work Orders:	3C10137	**Report Date:**	4/21/2023
		Received Date:	3/12/2023
Project:	SGVCOG Fire Effects Study	**Turnaround Time:**	Normal
		Phones:	(858) 514-7729
		Fax:	(858) 278-5300
Attn:	Brenda Stevens	**P.O. #:**	C015102726
Client:	WSP USA E&I Inc. - San Diego 9177 Sky Park Court, Ste A San Diego, CA 92123	**Billing Code:**	

DoD-ELAP ANAB #ADE-2882 • DoD-ISO ANAB # • ELAP-CA #1132 • EPA-UCMR #CA00211 • ISO17025 ANAB #L2457.01 • LACSD #10143

This is a complete final report. The information in this report applies to the samples analyzed in accordance with the chain-of-custody document. Weck Laboratories certifies that the test results meet all requirements of TNI unless noted by qualifiers or written in the Case Narrative. This analytical report must be reproduced in its entirety.

Dear Brenda Stevens,

Enclosed are the results of analyses for samples received 3/12/23 with the Chain-of-Custody document. The samples were received in good condition, at 1.1 °C and on ice. All analyses met the method criteria except as noted in the case narrative or in the report with data qualifiers.

Reviewed by:

Chris Samatmanakit
Project Manager

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Certificate of Analysis

FINAL REPORT

WSP USA E&I Inc. - San Diego
9177 Sky Park Court, Ste A
San Diego, CA 92123

Project Number: SGVCOG Fire Effects Study

Project Manager: Brenda Stevens

Reported: 04/21/2023 15:37

Sample Summary

Sample Name	Sampled By	Lab ID	Matrix	Sampled	Qualifiers
F_193B_R-2223_W3_01	Luis De La Torre	3C10137-01	Water	03/11/23 02:00	
F_194B_R-2223_W3_01	Luis De La Torre	3C10137-02	Water	03/11/23 02:20	
ARCAD_WA_CON_2223_W3_01	Luis De La Torre	3C10137-03	Water	03/11/23 02:00	
F-193B-R_2223_W3_01	Luis De La Torre	3C10137-04	Water	03/10/23 15:45	
F-194B-R_2223_W3_01	Luis De La Torre	3C10137-05	Water	03/10/23 16:10	
ARCAD_WA_CON_2223_W3_01	Luis De La Torre	3C10137-06	Water	03/10/23 15:00	
ARCAD_WA_CON_2223_W3_02	Luis De La Torre	3C10137-07	Water	03/10/23 15:00	
F-193B-R_2223_W3_01	Luis De La Torre	3C10137-08	Water	03/10/23 15:45	
F-194B-R_2223_W3_01	Luis De La Torre	3C10137-09	Water	03/10/23 16:10	
ARCAD_WA_CON_2223_W3_01	Luis De La Torre	3C10137-10	Water	03/10/23 15:00	
ARCAD_WA_CON_2223_W3_02	Luis De La Torre	3C10137-11	Water	03/10/23 15:00	

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Certificate of Analysis

FINAL REPORT

WECK LABORATORIES, INC.

WSP USA E&I Inc. - San Diego
9177 Sky Park Court, Ste A
San Diego, CA 92123

Project Number: SGVCOG Fire Effects Study

Project Manager: Brenda Stevens

Reported: 04/21/2023 15:37

Sample Results

Sample: F_193B_R-2223_W3_01
3C10137-01 (Water)

Sampled: 03/11/23 2:00 by Luis De La Torre

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods							
Method: Calculation			**Instr:** [CALC]				
Batch ID: [CALC] **Preparation:** [CALC]			**Prepared:** 03/21/23 13:00				**Analyst:** YMT
Nitrogen, Total	**2.3**	0.036	0.20	mg/l	1	03/24/23	
Method: EPA 350.1			**Instr:** AA06				
Batch ID: W3C1631 **Preparation:** _NONE (WETCHEM)			**Prepared:** 03/19/23 09:28				**Analyst:** HEQ
Ammonia as N	**0.028**	0.017	0.10	mg/l	1	03/20/23	J
Method: EPA 351.2			**Instr:** AA06				
Batch ID: W3C1819 **Preparation:** _NONE (WETCHEM)			**Prepared:** 03/21/23 13:00				**Analyst:** YMT
TKN	**0.55**	0.13	0.20	mg/l	1	03/24/23	M-02
Method: EPA 353.2			**Instr:** AA01				
Batch ID: W3C1246 **Preparation:** _NONE (WETCHEM)			**Prepared:** 03/14/23 13:24				**Analyst:** ism
Nitrate as N	**1.8**	0.040	0.20	mg/l	1	03/14/23 16:32	FILT, O-04
Nitrite as N	ND	42	100	ug/l	1	03/14/23 16:32	FILT, O-04
NO2+NO3 as N	**1800**	36	200	ug/l	1	03/14/23	FILT
Hexavalent Chromium by IC							
Method: EPA 218.6			**Instr:** LC13				
Batch ID: W3C1989 **Preparation:** _NONE (LC)			**Prepared:** 03/22/23 14:38				**Analyst:** JAN
Chromium 6+	**0.46**	0.0079	0.020	ug/l	1	03/22/23	
Chromium 6+, Dissolved	**0.46**	0.0079	0.020	ug/l	1	03/22/23	O-09, P-6
Metals by EPA 200 Series Methods							
Method: EPA 200.7			**Instr:** ICP03				
Batch ID: W3C1904 **Preparation:** EPA 200.2			**Prepared:** 03/22/23 10:11				**Analyst:** kvm
Phosphorus, Dissolved	**0.050**	0.018	0.050	mg/l	1	03/23/23	
Phosphorus, Total	**0.18**	0.018	0.050	mg/l	1	03/23/23	
Method: EPA 200.8			**Instr:** ICPMS06				
Batch ID: W3C1908 **Preparation:** EPA 200.2			**Prepared:** 03/22/23 15:46				**Analyst:** jol
Aluminum, Dissolved	**27**	4.4	20	ug/l	1	03/23/23	
Aluminum, Total	**4100**	4.4	20	ug/l	1	03/24/23	
Antimony, Dissolved	**0.54**	0.089	0.50	ug/l	1	03/23/23	
Antimony, Total	**1.1**	0.089	0.50	ug/l	1	03/23/23	
Arsenic, Dissolved	**0.67**	0.074	0.40	ug/l	1	03/23/23	
Arsenic, Total	**2.2**	0.074	0.40	ug/l	1	03/23/23	
Beryllium, Dissolved	ND	0.062	0.10	ug/l	1	03/23/23	
Beryllium, Total	**0.21**	0.029	0.10	ug/l	1	03/23/23	
Cadmium, Dissolved	ND	0.042	0.20	ug/l	1	03/23/23	
Cadmium, Total	ND	0.042	0.20	ug/l	1	03/23/23	
Chromium, Dissolved	**0.55**	0.089	0.20	ug/l	1	03/23/23	
Chromium, Total	**5.2**	0.089	0.20	ug/l	1	03/23/23	

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9177 Sky Park Court, Ste A
San Diego, CA 92123

Project Number: SGVCOG Fire Effects Study

Project Manager: Brenda Stevens

Reported: 04/21/2023 15:37

Sample Results

(Continued)

Sample: F_193B_R-2223_W3_01 — Sampled: 03/11/23 2:00 by Luis De La Torre

3C10137-01 (Water) (Continued)

Metals by EPA 200 Series Methods (Continued)

Method: EPA 200.8 — **Instr:** ICPMS06

Batch ID: W3C1908 — **Preparation:** EPA 200.2 — **Prepared:** 03/22/23 15:46 — **Analyst:** jol

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Copper, Dissolved	**1.9**	0.23	0.50	ug/l	1	03/23/23	
Copper, Total	**12**	0.23	0.50	ug/l	1	03/23/23	
Iron, Dissolved	**21**	3.9	20	ug/l	1	03/23/23	
Iron, Total	**5200**	3.9	20	ug/l	1	03/23/23	
Lead, Dissolved	ND	0.083	0.20	ug/l	1	03/23/23	
Lead, Total	**7.4**	0.083	0.20	ug/l	1	03/23/23	
Nickel, Dissolved	**0.24**	0.16	2.0	ug/l	1	03/23/23	J
Nickel, Total	**4.2**	0.40	2.0	ug/l	1	03/23/23	
Selenium, Dissolved	**0.080**	0.067	0.40	ug/l	1	03/23/23	J
Selenium, Total	**0.12**	0.067	0.40	ug/l	1	03/23/23	J
Silver, Dissolved	ND	0.030	0.20	ug/l	1	03/23/23	
Silver, Total	ND	0.055	0.20	ug/l	1	03/23/23	
Thallium, Dissolved	ND	0.021	0.20	ug/l	1	03/23/23	
Thallium, Total	**0.030**	0.021	0.20	ug/l	1	03/23/23	J
Zinc, Dissolved	**2.9**	1.7	10	ug/l	1	03/23/23	J
Zinc, Total	**50**	1.7	10	ug/l	1	03/23/23	

Method: EPA 245.1 — **Instr:** HG03

Batch ID: W3C1735 — **Preparation:** EPA 245.1 — **Prepared:** 03/21/23 09:11 — **Analyst:** KVM

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Mercury, Dissolved	ND	0.037	0.050	ug/l	1	03/22/23	
Mercury, Total	ND	0.037	0.050	ug/l	1	03/22/23	

Semivolatile Organics - Low Level by Tandem GC/MS/MS

Method: EPA 625.1 — **Instr:** GCMS15

Batch ID: W3C1531 — **Preparation:** EPA 3535/SPE — **Prepared:** 03/17/23 08:20 — **Analyst:** EFC

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Acenaphthene	ND	6.0	25	ng/l	1	04/14/23	M-02
Acenaphthylene	ND	5.0	25	ng/l	1	04/14/23	M-02
Anthracene	ND	5.5	25	ng/l	1	04/14/23	M-02
Benzo (a) anthracene	ND	4.6	25	ng/l	1	04/14/23	M-02
Benzo (a) pyrene	ND	4.8	25	ng/l	1	04/14/23	M-02
Benzo (b) fluoranthene	ND	8.0	25	ng/l	1	04/14/23	M-02
Benzo (g,h,i) perylene	ND	5.0	25	ng/l	1	04/14/23	M-02
Benzo (k) fluoranthene	ND	6.0	25	ng/l	1	04/14/23	M-02
Chrysene	ND	7.0	25	ng/l	1	04/14/23	M-02
Dibenzo (a,h) anthracene	ND	6.0	25	ng/l	1	04/14/23	M-02
Fluoranthene	ND	7.5	25	ng/l	1	04/14/23	M-02
Fluorene	ND	5.5	25	ng/l	1	04/14/23	M-02
Indeno (1,2,3-cd) pyrene	ND	4.8	25	ng/l	1	04/14/23	M-02

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San Diego, CA 92123

Project Number: SGVCOG Fire Effects Study

Project Manager: Brenda Stevens

Reported: 04/21/2023 15:37

Sample Results

(Continued)

Sample: F_193B_R-2223_W3_01 | Sampled: 03/11/23 2:00 by Luis De La Torre

3C10137-01 (Water) (Continued)

Semivolatile Organics - Low Level by Tandem GC/MS/MS (Continued)

Method: EPA 625.1 **Instr:** GCMS15

Batch ID: W3C1531 **Preparation:** EPA 3535/SPE **Prepared:** 03/17/23 08:20 **Analyst:** EFC

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Naphthalene	ND	16	25	ng/l	1	04/14/23	M-02
Phenanthrene	ND	15	25	ng/l	1	04/14/23	M-02
Pyrene	ND	7.0	25	ng/l	1	04/14/23	M-02
Surrogate(s)							
1,3-Dimethyl-2-nitrobenzene	*65%*	*Conc: 324*	*62-120*			*04/14/23*	
Perylene-d12	*34%*	*Conc: 171*	*36-120*			*04/14/23*	*S-11*

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9177 Sky Park Court, Ste A
San Diego, CA 92123

Project Number: SGVCOG Fire Effects Study

Project Manager: Brenda Stevens

Reported: 04/21/2023 15:37

Sample Results

(Continued)

Sample: F_194B_R-2223_W3_01 — 3C10137-02 (Water) — Sampled: 03/11/23 2:20 by Luis De La Torre

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods							
Method: Calculation			**Instr:** [CALC]				
Batch ID: [CALC] **Preparation:** [CALC]			**Prepared:** 03/21/23 13:00				**Analyst:** YMT
Nitrogen, Total	**2.3**	0.036	0.20	mg/l	1	03/24/23	
Method: EPA 350.1			**Instr:** AA06				
Batch ID: W3C1631 **Preparation:** _NONE (WETCHEM)			**Prepared:** 03/19/23 09:28				**Analyst:** HEQ
Ammonia as N	**0.094**	0.017	0.10	mg/l	1	03/20/23	J
Method: EPA 351.2			**Instr:** AA06				
Batch ID: W3C1819 **Preparation:** _NONE (WETCHEM)			**Prepared:** 03/21/23 13:00				**Analyst:** YMT
TKN	**0.47**	0.13	0.20	mg/l	1	03/24/23	M-02
Method: EPA 353.2			**Instr:** AA01				
Batch ID: W3C1246 **Preparation:** _NONE (WETCHEM)			**Prepared:** 03/14/23 13:24				**Analyst:** ism
Nitrate as N	**1.8**	0.040	0.20	mg/l	1	03/14/23 16:33	FILT, O-04
Nitrite as N	ND	42	100	ug/l	1	03/14/23 16:33	FILT, O-04
NO2+NO3 as N	**1900**	36	200	ug/l	1	03/14/23	FILT
Hexavalent Chromium by IC							
Method: EPA 218.6			**Instr:** LC13				
Batch ID: W3C1989 **Preparation:** _NONE (LC)			**Prepared:** 03/22/23 14:38				**Analyst:** JAN
Chromium 6+	**0.57**	0.0079	0.020	ug/l	1	03/22/23	
Chromium 6+, Dissolved	**0.56**	0.0079	0.020	ug/l	1	03/22/23	O-09, P-6
Metals by EPA 200 Series Methods							
Method: EPA 200.7			**Instr:** ICP03				
Batch ID: W3C1904 **Preparation:** EPA 200.2			**Prepared:** 03/22/23 10:11				**Analyst:** kvm
Phosphorus, Dissolved	**0.064**	0.018	0.050	mg/l	1	03/23/23	
Phosphorus, Total	**0.25**	0.018	0.050	mg/l	1	03/23/23	
Method: EPA 200.8			**Instr:** ICPMS06				
Batch ID: W3C1908 **Preparation:** EPA 200.2			**Prepared:** 03/22/23 15:46				**Analyst:** jol
Aluminum, Dissolved	**31**	4.4	20	ug/l	1	03/23/23	
Aluminum, Total	**4900**	4.4	20	ug/l	1	03/24/23	
Antimony, Dissolved	**0.80**	0.089	0.50	ug/l	1	03/23/23	
Antimony, Total	**1.2**	0.089	0.50	ug/l	1	03/23/23	
Arsenic, Dissolved	**0.93**	0.074	0.40	ug/l	1	03/23/23	
Arsenic, Total	**2.8**	0.074	0.40	ug/l	1	03/23/23	
Beryllium, Dissolved	ND	0.062	0.10	ug/l	1	03/23/23	
Beryllium, Total	**0.20**	0.029	0.10	ug/l	1	03/23/23	
Cadmium, Dissolved	ND	0.042	0.20	ug/l	1	03/23/23	
Cadmium, Total	**0.092**	0.042	0.20	ug/l	1	03/23/23	J
Chromium, Dissolved	**0.64**	0.089	0.20	ug/l	1	03/23/23	
Chromium, Total	**6.4**	0.089	0.20	ug/l	1	03/23/23	

WSP USA E&I Inc. - San Diego
9177 Sky Park Court, Ste A
San Diego, CA 92123

Project Number: SGVCOG Fire Effects Study

Project Manager: Brenda Stevens

Reported: 04/21/2023 15:37

Sample Results

(Continued)

Sample: F_194B_R-2223_W3_01 — Sampled: 03/11/23 2:20 by Luis De La Torre

3C10137-02 (Water) (Continued)

Metals by EPA 200 Series Methods (Continued)

Method: EPA 200.8 — **Instr:** ICPMS06

Batch ID: W3C1908 — **Preparation:** EPA 200.2 — **Prepared:** 03/22/23 15:46 — **Analyst:** jol

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Copper, Dissolved	**2.7**	0.23	0.50	ug/l	1	03/23/23	
Copper, Total	**14**	0.23	0.50	ug/l	1	03/23/23	
Iron, Dissolved	**25**	3.9	20	ug/l	1	03/23/23	
Iron, Total	**7200**	3.9	20	ug/l	1	03/23/23	
Lead, Dissolved	**0.13**	0.083	0.20	ug/l	1	03/23/23	J
Lead, Total	**13**	0.083	0.20	ug/l	1	03/23/23	
Nickel, Dissolved	**0.48**	0.16	2.0	ug/l	1	03/23/23	J
Nickel, Total	**4.9**	0.40	2.0	ug/l	1	03/23/23	
Selenium, Dissolved	**0.12**	0.067	0.40	ug/l	1	03/23/23	J
Selenium, Total	**0.20**	0.067	0.40	ug/l	1	03/23/23	J
Silver, Dissolved	ND	0.030	0.20	ug/l	1	03/23/23	
Silver, Total	ND	0.055	0.20	ug/l	1	03/23/23	
Thallium, Dissolved	ND	0.021	0.20	ug/l	1	03/23/23	
Thallium, Total	**0.039**	0.021	0.20	ug/l	1	03/23/23	J
Zinc, Dissolved	**4.9**	1.7	10	ug/l	1	03/23/23	J
Zinc, Total	**84**	1.7	10	ug/l	1	03/23/23	

Method: EPA 245.1 — **Instr:** HG03

Batch ID: W3C1735 — **Preparation:** EPA 245.1 — **Prepared:** 03/21/23 09:11 — **Analyst:** KVM

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Mercury, Dissolved	ND	0.037	0.050	ug/l	1	03/22/23	
Mercury, Total	**0.044**	0.037	0.050	ug/l	1	03/22/23	J

Semivolatile Organics - Low Level by Tandem GC/MS/MS

Method: EPA 625.1 — **Instr:** GCMS15

Batch ID: W3C1531 — **Preparation:** EPA 3535/SPE — **Prepared:** 03/17/23 08:20 — **Analyst:** EFC

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Acenaphthene	ND	6.0	25	ng/l	1	04/14/23	M-02
Acenaphthylene	ND	5.0	25	ng/l	1	04/14/23	M-02
Anthracene	ND	5.5	25	ng/l	1	04/14/23	M-02
Benzo (a) anthracene	ND	4.6	25	ng/l	1	04/14/23	M-02
Benzo (a) pyrene	ND	4.8	25	ng/l	1	04/14/23	M-02
Benzo (b) fluoranthene	ND	8.0	25	ng/l	1	04/14/23	M-02
Benzo (g,h,i) perylene	ND	5.0	25	ng/l	1	04/14/23	M-02
Benzo (k) fluoranthene	ND	6.0	25	ng/l	1	04/14/23	M-02
Chrysene	ND	7.0	25	ng/l	1	04/14/23	M-02
Dibenzo (a,h) anthracene	ND	6.0	25	ng/l	1	04/14/23	M-02
Fluoranthene	ND	7.5	25	ng/l	1	04/14/23	M-02
Fluorene	ND	5.5	25	ng/l	1	04/14/23	M-02
Indeno (1,2,3-cd) pyrene	ND	4.8	25	ng/l	1	04/14/23	M-02

Sample Results

(Continued)

Sample: F_194B_R-2223_W3_01 — Sampled: 03/11/23 2:20 by Luis De La Torre

3C10137-02 (Water) — (Continued)

Semivolatile Organics - Low Level by Tandem GC/MS/MS (Continued)

Method: EPA 625.1 — **Instr:** GCMS15

Batch ID: W3C1531 — **Preparation:** EPA 3535/SPE — **Prepared:** 03/17/23 08:20 — **Analyst:** EFC

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Naphthalene	**32**	16	25	ng/l	1	04/14/23	M-02
Phenanthrene	ND	15	25	ng/l	1	04/14/23	M-02
Pyrene	ND	7.0	25	ng/l	1	04/14/23	M-02
Surrogate(s)							
1,3-Dimethyl-2-nitrobenzene	*62%*	*Conc: 309*	*62-120*			*04/14/23*	
Perylene-d12	*36%*	*Conc: 178*	*36-120*			*04/14/23*	

Sample Results

(Continued)

Sample: ARCAD_WA_CON_2223_W3_01 — 3C10137-03 (Water) — Sampled: 03/11/23 2:00 by Luis De La Torre

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods							
Method: Calculation — **Instr:** [CALC]							
Batch ID: [CALC] — **Preparation:** [CALC] — **Prepared:** 03/21/23 13:00 — **Analyst:** YMT							
Nitrogen, Total	**1.9**	0.036	0.20	mg/l	1	03/24/23	
Method: EPA 350.1 — **Instr:** AA06							
Batch ID: W3C1631 — **Preparation:** _NONE (WETCHEM) — **Prepared:** 03/19/23 09:28 — **Analyst:** HEQ							
Ammonia as N	**0.054**	0.017	0.10	mg/l	1	03/20/23	J
Method: EPA 351.2 — **Instr:** AA06							
Batch ID: W3C1819 — **Preparation:** _NONE (WETCHEM) — **Prepared:** 03/21/23 13:00 — **Analyst:** YMT							
TKN	**0.39**	0.13	0.20	mg/l	1	03/24/23	M-02
Method: EPA 353.2 — **Instr:** AA01							
Batch ID: W3C1246 — **Preparation:** _NONE (WETCHEM) — **Prepared:** 03/14/23 13:24 — **Analyst:** ism							
Nitrate as N	**1.4**	0.040	0.20	mg/l	1	03/14/23 16:38	FILT, O-04
Nitrite as N	ND	42	100	ug/l	1	03/14/23 16:38	FILT, O-04
NO2+NO3 as N	**1500**	36	200	ug/l	1	03/14/23	FILT
Hexavalent Chromium by IC							
Method: EPA 218.6 — **Instr:** LC13							
Batch ID: W3C1989 — **Preparation:** _NONE (LC) — **Prepared:** 03/22/23 14:38 — **Analyst:** JAN							
Chromium 6+	**0.37**	0.0079	0.020	ug/l	1	03/22/23	
Chromium 6+, Dissolved	**0.41**	0.0079	0.020	ug/l	1	03/22/23	O-09, P-6
Metals by EPA 200 Series Methods							
Method: EPA 200.7 — **Instr:** ICP03							
Batch ID: W3C1904 — **Preparation:** EPA 200.2 — **Prepared:** 03/22/23 10:11 — **Analyst:** kvm							
Phosphorus, Dissolved	**0.035**	0.018	0.050	mg/l	1	03/23/23	J
Phosphorus, Total	**0.092**	0.018	0.050	mg/l	1	03/23/23	
Method: EPA 200.8 — **Instr:** ICPMS06							
Batch ID: W3C1908 — **Preparation:** EPA 200.2 — **Prepared:** 03/22/23 15:46 — **Analyst:** jol							
Aluminum, Dissolved	**31**	4.4	20	ug/l	1	03/23/23	
Aluminum, Total	**950**	4.4	20	ug/l	1	03/24/23	
Antimony, Dissolved	**0.51**	0.089	0.50	ug/l	1	03/23/23	
Antimony, Total	**0.71**	0.089	0.50	ug/l	1	03/23/23	
Arsenic, Dissolved	**0.81**	0.074	0.40	ug/l	1	03/23/23	
Arsenic, Total	**1.1**	0.074	0.40	ug/l	1	03/23/23	
Beryllium, Dissolved	ND	0.062	0.10	ug/l	1	03/23/23	
Beryllium, Total	ND	0.029	0.10	ug/l	1	03/23/23	
Cadmium, Dissolved	ND	0.042	0.20	ug/l	1	03/23/23	
Cadmium, Total	ND	0.042	0.20	ug/l	1	03/23/23	
Chromium, Dissolved	**0.49**	0.089	0.20	ug/l	1	03/23/23	
Chromium, Total	**1.7**	0.089	0.20	ug/l	1	03/23/23	

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Project Manager: Brenda Stevens

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Sample Results

(Continued)

Sample: ARCAD_WA_CON_2223_W3_01 — 3C10137-03 (Water)
Sampled: 03/11/23 2:00 by Luis De La Torre
(Continued)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Metals by EPA 200 Series Methods (Continued)							
Method: EPA 200.8 — **Instr:** ICPMS06							
Batch ID: W3C1908 — **Preparation:** EPA 200.2 — **Prepared:** 03/22/23 15:46 — **Analyst:** jol							
Copper, Dissolved	**2.5**	0.23	0.50	ug/l	1	03/23/23	
Copper, Total	**5.2**	0.23	0.50	ug/l	1	03/23/23	
Iron, Dissolved	**19**	3.9	20	ug/l	1	03/23/23	J
Iron, Total	**1100**	3.9	20	ug/l	1	03/23/23	
Lead, Dissolved	ND	0.083	0.20	ug/l	1	03/23/23	
Lead, Total	**2.2**	0.083	0.20	ug/l	1	03/23/23	
Nickel, Dissolved	**0.31**	0.16	2.0	ug/l	1	03/23/23	J
Nickel, Total	**1.3**	0.40	2.0	ug/l	1	03/23/23	J
Selenium, Dissolved	**0.11**	0.067	0.40	ug/l	1	03/23/23	J
Selenium, Total	**0.098**	0.067	0.40	ug/l	1	03/23/23	J
Silver, Dissolved	ND	0.030	0.20	ug/l	1	03/23/23	
Silver, Total	ND	0.055	0.20	ug/l	1	03/23/23	
Thallium, Dissolved	ND	0.021	0.20	ug/l	1	03/23/23	
Thallium, Total	ND	0.021	0.20	ug/l	1	03/23/23	
Zinc, Dissolved	**8.3**	1.7	10	ug/l	1	03/23/23	J
Zinc, Total	**29**	1.7	10	ug/l	1	03/23/23	
Method: EPA 245.1 — **Instr:** HG03							
Batch ID: W3C1735 — **Preparation:** EPA 245.1 — **Prepared:** 03/21/23 09:11 — **Analyst:** KVM							
Mercury, Total	ND	0.037	0.050	ug/l	1	03/22/23	
Method: EPA 245.1 — **Instr:** HG03							
Batch ID: W3C1950 — **Preparation:** EPA 245.1 — **Prepared:** 03/22/23 12:46 — **Analyst:** KVM							
Mercury, Dissolved	ND	0.037	0.050	ug/l	1	03/23/23	
Semivolatile Organics - Low Level by Tandem GC/MS/MS							
Method: EPA 625.1 — **Instr:** GCMS15							
Batch ID: W3C1531 — **Preparation:** EPA 3535/SPE — **Prepared:** 03/17/23 08:20 — **Analyst:** EFC							
Acenaphthene	ND	6.0	25	ng/l	1	04/14/23	M-02
Acenaphthylene	ND	5.0	25	ng/l	1	04/14/23	M-02
Anthracene	ND	5.5	25	ng/l	1	04/14/23	M-02
Benzo (a) anthracene	ND	4.6	25	ng/l	1	04/14/23	M-02
Benzo (a) pyrene	ND	4.8	25	ng/l	1	04/14/23	M-02
Benzo (b) fluoranthene	ND	8.0	25	ng/l	1	04/14/23	M-02
Benzo (g,h,i) perylene	ND	5.0	25	ng/l	1	04/14/23	M-02
Benzo (k) fluoranthene	ND	6.0	25	ng/l	1	04/14/23	M-02
Chrysene	ND	7.0	25	ng/l	1	04/14/23	M-02
Dibenzo (a,h) anthracene	ND	6.0	25	ng/l	1	04/14/23	M-02
Fluoranthene	ND	7.5	25	ng/l	1	04/14/23	M-02

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Sample Results

(Continued)

Sample: ARCAD_WA_CON_2223_W3_01 — 3C10137-03 (Water) — Sampled: 03/11/23 2:00 by Luis De La Torre (Continued)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Semivolatile Organics - Low Level by Tandem GC/MS/MS (Continued)							
Method: EPA 625.1 — **Instr:** GCMS15							
Batch ID: W3C1531 — **Preparation:** EPA 3535/SPE — **Prepared:** 03/17/23 08:20 — **Analyst:** EFC							
Fluorene	ND	5.5	25	ng/l	1	04/14/23	M-02
Indeno (1,2,3-cd) pyrene	ND	4.8	25	ng/l	1	04/14/23	M-02
Naphthalene	ND	16	25	ng/l	1	04/14/23	M-02
Phenanthrene	ND	15	25	ng/l	1	04/14/23	M-02
Pyrene	ND	7.0	25	ng/l	1	04/14/23	M-02
Surrogate(s)							
1,3-Dimethyl-2-nitrobenzene	*75%*	*Conc: 374*	*62-120*			*04/14/23*	
Perylene-d12	*45%*	*Conc: 223*	*36-120*			*04/14/23*	

Sample Results

(Continued)

Sample: F-193B-R_2223_W3_01 — 3C10137-04 (Water) — Sampled: 03/10/23 15:45 by Luis De La Torre

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods							
Method: SM 2540C — **Instr:** OVEN17							
Batch ID: W3C1435 — **Preparation:** _NONE (WETCHEM) — **Prepared:** 03/16/23 09:25 — **Analyst:** bel							
Total Dissolved Solids	**150**	4.0	10	mg/l	1	03/16/23	
Method: SM 2540D — **Instr:** OVEN15							
Batch ID: W3C1445 — **Preparation:** _NONE (WETCHEM) — **Prepared:** 03/16/23 09:50 — **Analyst:** mes							
Total Suspended Solids	**1900**		5	mg/l	1	03/16/23	

Sample Results

(Continued)

Sample: F-194B-R_2223_W3_01 — 3C10137-05 (Water) — Sampled: 03/10/23 16:10 by Luis De La Torre

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods							
Method: SM 2540C — **Instr:** OVEN17							
Batch ID: W3C1435 — **Preparation:** _NONE (WETCHEM) — **Prepared:** 03/16/23 09:25 — **Analyst:** bel							
Total Dissolved Solids	**72**	4.0	10	mg/l	1	03/16/23	
Method: SM 2540D — **Instr:** OVEN15							
Batch ID: W3C1445 — **Preparation:** _NONE (WETCHEM) — **Prepared:** 03/16/23 09:50 — **Analyst:** mes							
Total Suspended Solids	**350**		5	mg/l	1	03/16/23	

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Sample Results

(Continued)

Sample: ARCAD_WA_CON_2223_W3_01 — 3C10137-06 (Water) — Sampled: 03/10/23 15:00 by Luis De La Torre

Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Method: SM 2540C; **Instr:** OVEN17							
Batch ID: W3C1435; **Preparation:** _NONE (WETCHEM); **Prepared:** 03/16/23 09:25; **Analyst:** bel							
Total Dissolved Solids	**60**	4.0	10	mg/l	1	03/16/23	
Method: SM 2540D; **Instr:** OVEN15							
Batch ID: W3C1445; **Preparation:** _NONE (WETCHEM); **Prepared:** 03/16/23 09:50; **Analyst:** mes							
Total Suspended Solids	**32**		5	mg/l	1	03/16/23	

Sample Results

(Continued)

Sample: ARCAD_WA_CON_2223_W3_02 — 3C10137-07 (Water) — Sampled: 03/10/23 15:00 by Luis De La Torre

Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Method: SM 2540C; **Instr:** OVEN17							
Batch ID: W3C1435; **Preparation:** _NONE (WETCHEM); **Prepared:** 03/16/23 09:25; **Analyst:** bel							
Total Dissolved Solids	**63**	4.0	10	mg/l	1	03/16/23	
Method: SM 2540D; **Instr:** OVEN15							
Batch ID: W3C1445; **Preparation:** _NONE (WETCHEM); **Prepared:** 03/16/23 09:50; **Analyst:** mes							
Total Suspended Solids	**32**		5	mg/l	1	03/16/23	

Sample Results

(Continued)

Sample: F-193B-R_2223_W3_01 — 3C10137-08 (Water) — Sampled: 03/10/23 15:45 by Luis De La Torre

Metals by EPA 200 Series Methods

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Method: Calculation; **Instr:** [CALC]							
Batch ID: [CALC]; **Preparation:** [CALC]; **Prepared:** 03/22/23 10:11; **Analyst:** kvm							
Hardness as CaCO3, Total	**259**	0.689	6.62	mg/l	1	03/23/23	
Method: EPA 200.7; **Instr:** ICP03							
Batch ID: W3C1904; **Preparation:** EPA 200.2; **Prepared:** 03/22/23 10:11; **Analyst:** kvm							
Calcium, Total	**50.8**	0.147	1.00	mg/l	1	03/23/23	M-02
Magnesium, Total	**32.0**	0.0780	1.00	mg/l	1	03/23/23	M-02

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Sample Results

(Continued)

Sample: F-194B-R_2223_W3_01 3C10137-09 (Water) — Sampled: 03/10/23 16:10 by Luis De La Torre

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Metals by EPA 200 Series Methods							
Method: Calculation — **Instr:** [CALC]							
Batch ID: [CALC] — **Preparation:** [CALC] — **Prepared:** 03/22/23 10:11 — **Analyst:** kvm							
Hardness as CaCO3, Total	**78.6**	0.344	3.31	mg/l	1	03/23/23	
Method: EPA 200.7 — **Instr:** ICP03							
Batch ID: W3C1904 — **Preparation:** EPA 200.2 — **Prepared:** 03/22/23 10:11 — **Analyst:** kvm							
Calcium, Total	**18.6**	0.0736	0.500	mg/l	1	03/23/23	
Magnesium, Total	**7.77**	0.0390	0.500	mg/l	1	03/23/23	

Sample Results

(Continued)

Sample: ARCAD_WA_CON_2223_W3_01 3C10137-10 (Water) — Sampled: 03/10/23 15:00 by Luis De La Torre

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Metals by EPA 200 Series Methods							
Method: Calculation — **Instr:** [CALC]							
Batch ID: [CALC] — **Preparation:** [CALC] — **Prepared:** 03/22/23 10:11 — **Analyst:** kvm							
Hardness as CaCO3, Total	**46.2**	0.344	3.31	mg/l	1	03/23/23	
Method: EPA 200.7 — **Instr:** ICP03							
Batch ID: W3C1904 — **Preparation:** EPA 200.2 — **Prepared:** 03/22/23 10:11 — **Analyst:** kvm							
Calcium, Total	**12.7**	0.0736	0.500	mg/l	1	03/23/23	
Magnesium, Total	**3.51**	0.0390	0.500	mg/l	1	03/23/23	

Sample Results

(Continued)

Sample: ARCAD_WA_CON_2223_W3_02 3C10137-11 (Water) — Sampled: 03/10/23 15:00 by Luis De La Torre

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Metals by EPA 200 Series Methods							
Method: Calculation — **Instr:** [CALC]							
Batch ID: [CALC] — **Preparation:** [CALC] — **Prepared:** 03/22/23 10:11 — **Analyst:** kvm							
Hardness as CaCO3, Total	**46.9**	0.344	3.31	mg/l	1	03/23/23	
Method: EPA 200.7 — **Instr:** ICP03							
Batch ID: W3C1904 — **Preparation:** EPA 200.2 — **Prepared:** 03/22/23 10:11 — **Analyst:** kvm							
Calcium, Total	**12.9**	0.0736	0.500	mg/l	1	03/23/23	
Magnesium, Total	**3.54**	0.0390	0.500	mg/l	1	03/23/23	

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Sample Results Enthalpy Orange

Sample: F_193B_R-2223_W3_01
3C10137-01 (Water)

Sampled: 03/11/23 2:00 by Luis De La Torre

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
SM 10200-H							
Method: Chlorophyll **Batch ID:** 310182 **Prepared:** 03/12/23 11:50 **Analyst:** ATP							
Chlorophyll a	**3.0**		1.0	mg/M3	1	03/21/23	

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Sample Results Enthalpy Orange

(Continued)

Sample: F_194B_R-2223_W3_01
3C10137-02 (Water)

Sampled: 03/11/23 2:20 by Luis De La Torre

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
SM 10200-H							
Method: Chlorophyll **Batch ID:** 310182 **Prepared:** 03/12/23 12:19 **Analyst:** ATP							
Chlorophyll a	ND		1.0	mg/M3	1	03/21/23	ND

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Sample Results Enthalpy Orange

(Continued)

Sample: ARCAD_WA_CON_2223_W3_01
3C10137-03 (Water)

Sampled: 03/11/23 2:00 by Luis De La Torre

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
SM 10200-H							
Method: Chlorophyll **Batch ID:** 310182 **Prepared:** 02/12/23 13:04 **Analyst:** ATP							
Chlorophyll a	ND		1.0	mg/M3	1	03/21/23	ND

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Quality Control Results

Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W3C1246 - EPA 353.2											
Blank (W3C1246-BLK1)					**Prepared & Analyzed: 03/14/23**						
Nitrate as N	ND	0.040	0.15	mg/l							
Nitrite as N	ND	42	100	ug/l							
NO2+NO3 as N	ND	36	200	ug/l							
LCS (W3C1246-BS1)					**Prepared & Analyzed: 03/14/23**						
Nitrate as N	1.00	0.040	0.15	mg/l	1.00		100	90-110			
Nitrite as N	952	42	100	ug/l	1000		95	90-110			
NO2+NO3 as N	1000	36	200	ug/l	1000		100	90-110			
Matrix Spike (W3C1246-MS1)	**Source: 3C10012-02**				**Prepared & Analyzed: 03/14/23**						
Nitrate as N	9.66	0.040	0.15	mg/l	2.00	7.78	94	90-110			
Nitrite as N	937	42	100	ug/l	1000	ND	94	90-110			
NO2+NO3 as N	9660	36	200	ug/l	2000	7780	94	90-110			
Matrix Spike (W3C1246-MS2)	**Source: 3C13046-07**				**Prepared & Analyzed: 03/14/23**						
Nitrate as N	5.24	0.040	0.15	mg/l	2.00	3.31	96	90-110			
Nitrite as N	923	42	100	ug/l	1000	ND	92	90-110			
NO2+NO3 as N	5240	36	200	ug/l	2000	3310	96	90-110			
Matrix Spike Dup (W3C1246-MSD1)	**Source: 3C10012-02**				**Prepared & Analyzed: 03/14/23**						
Nitrate as N	9.63	0.040	0.15	mg/l	2.00	7.78	92	90-110	0.3	20	
Nitrite as N	950	42	100	ug/l	1000	ND	95	90-110	1	20	
NO2+NO3 as N	9630	36	200	ug/l	2000	7780	92	90-110	0.3	20	
Matrix Spike Dup (W3C1246-MSD2)	**Source: 3C13046-07**				**Prepared & Analyzed: 03/14/23**						
Nitrate as N	5.24	0.040	0.15	mg/l	2.00	3.31	96	90-110	0	20	
Nitrite as N	942	42	100	ug/l	1000	ND	94	90-110	2	20	
NO2+NO3 as N	5240	36	200	ug/l	2000	3310	96	90-110	0	20	
Batch: W3C1435 - SM 2540C											
Blank (W3C1435-BLK1)					**Prepared & Analyzed: 03/16/23**						
Total Dissolved Solids	ND	4.0	10	mg/l							
LCS (W3C1435-BS1)					**Prepared & Analyzed: 03/16/23**						
Total Dissolved Solids	816	4.0	10	mg/l	824		99	97-103			
Duplicate (W3C1435-DUP1)	**Source: 3C10032-09**				**Prepared & Analyzed: 03/16/23**						
Total Dissolved Solids	9470	4.0	10	mg/l		9370			1	10	
Duplicate (W3C1435-DUP2)	**Source: 3C10032-06**				**Prepared & Analyzed: 03/16/23**						
Total Dissolved Solids	9170	4.0	10	mg/l		9230			0.7	10	
Batch: W3C1445 - SM 2540D											
Blank (W3C1445-BLK1)					**Prepared & Analyzed: 03/16/23**						
Total Suspended Solids	ND		5	mg/l							
LCS (W3C1445-BS1)					**Prepared & Analyzed: 03/16/23**						
Total Suspended Solids	60.0		5	mg/l	62.3		96	90-110			
Duplicate (W3C1445-DUP1)	**Source: 3C13076-05**				**Prepared & Analyzed: 03/16/23**						

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Quality Control Results

(Continued)

Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W3C1445 - SM 2540D (Continued)											
Duplicate (W3C1445-DUP1)	**Source: 3C13076-05**				**Prepared & Analyzed: 03/16/23**						
Total Suspended Solids	44.8		5	mg/l		42.0			6	10	
Duplicate (W3C1445-DUP2)	**Source: 3C14018-01**				**Prepared & Analyzed: 03/16/23**						
Total Suspended Solids	90.7		5	mg/l		99.3			9	10	
Batch: W3C1631 - EPA 350.1											
Blank (W3C1631-BLK1)					**Prepared: 03/19/23 Analyzed: 03/20/23**						
Ammonia as N	ND	0.017	0.10	mg/l							
Blank (W3C1631-BLK2)					**Prepared: 03/19/23 Analyzed: 03/20/23**						
Ammonia as N	ND	0.017	0.10	mg/l							
LCS (W3C1631-BS1)					**Prepared: 03/19/23 Analyzed: 03/20/23**						
Ammonia as N	0.261	0.017	0.10	mg/l	0.250		104	90-110			
LCS (W3C1631-BS2)					**Prepared: 03/19/23 Analyzed: 03/20/23**						
Ammonia as N	0.261	0.017	0.10	mg/l	0.250		104	90-110			
Matrix Spike (W3C1631-MS1)	**Source: 3C14015-01**				**Prepared: 03/19/23 Analyzed: 03/20/23**						
Ammonia as N	0.268	0.017	0.10	mg/l	0.250	ND	107	90-110			
Matrix Spike (W3C1631-MS2)	**Source: 3C14094-01**				**Prepared: 03/19/23 Analyzed: 03/20/23**						
Ammonia as N	0.315	0.017	0.10	mg/l	0.250	0.0599	102	90-110			
Matrix Spike Dup (W3C1631-MSD1)	**Source: 3C14015-01**				**Prepared: 03/19/23 Analyzed: 03/20/23**						
Ammonia as N	0.268	0.017	0.10	mg/l	0.250	ND	107	90-110	0.05	15	
Matrix Spike Dup (W3C1631-MSD2)	**Source: 3C14094-01**				**Prepared: 03/19/23 Analyzed: 03/20/23**						
Ammonia as N	0.315	0.017	0.10	mg/l	0.250	0.0599	102	90-110	0.07	15	
Batch: W3C1819 - EPA 351.2											
Blank (W3C1819-BLK1)					**Prepared: 03/21/23 Analyzed: 03/24/23**						
TKN	ND	0.065	0.10	mg/l							
Blank (W3C1819-BLK2)					**Prepared: 03/21/23 Analyzed: 03/24/23**						
TKN	ND	0.065	0.10	mg/l							
LCS (W3C1819-BS1)					**Prepared: 03/21/23 Analyzed: 03/24/23**						
TKN	1.02	0.065	0.10	mg/l	1.00		102	90-110			
LCS (W3C1819-BS2)					**Prepared: 03/21/23 Analyzed: 03/24/23**						
TKN	1.03	0.065	0.10	mg/l	1.00		103	90-110			
Matrix Spike (W3C1819-MS1)	**Source: 3C14094-01**				**Prepared: 03/21/23 Analyzed: 03/24/23**						
TKN	1.08	0.065	0.10	mg/l	1.00	0.0881	100	90-110			
Matrix Spike (W3C1819-MS2)	**Source: 3C16114-01**				**Prepared: 03/21/23 Analyzed: 03/24/23**						
TKN	1.36	0.065	0.10	mg/l	1.00	0.355	100	90-110			
Matrix Spike Dup (W3C1819-MSD1)	**Source: 3C14094-01**				**Prepared: 03/21/23 Analyzed: 03/24/23**						
TKN	1.06	0.065	0.10	mg/l	1.00	0.0881	97	90-110	2	10	
Matrix Spike Dup (W3C1819-MSD2)	**Source: 3C16114-01**				**Prepared: 03/21/23 Analyzed: 03/24/23**						
TKN	1.44	0.065	0.10	mg/l	1.00	0.355	108	90-110	6	10	

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Quality Control Results

(Continued)

Hexavalent Chromium by IC

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W3C1989 - EPA 218.6											
Blank (W3C1989-BLK1)					**Prepared & Analyzed: 03/22/23**						
Chromium 6+	ND	0.0079	0.020	ug/l							
Chromium 6+, Dissolved	ND	0.0079	0.020	ug/l							
LCS (W3C1989-BS1)					**Prepared & Analyzed: 03/22/23**						
Chromium 6+	4.98	0.0079	0.020	ug/l	5.00		100	90-110			
Chromium 6+, Dissolved	4.98	0.0079	0.020	ug/l	5.00		100	90-110			
Matrix Spike (W3C1989-MS1)	**Source: 3C10137-01**				**Prepared & Analyzed: 03/22/23**						
Chromium 6+	5.52	0.0079	0.020	ug/l	5.00	0.465	101	88-112			
Chromium 6+, Dissolved	5.52	0.0079	0.020	ug/l	5.00	0.459	101	88-112			
Matrix Spike (W3C1989-MS2)	**Source: 3C10137-02**				**Prepared & Analyzed: 03/22/23**						
Chromium 6+	5.69	0.0079	0.020	ug/l	5.00	0.571	102	88-112			
Chromium 6+, Dissolved	5.69	0.0079	0.020	ug/l	5.00	0.563	103	88-112			
Matrix Spike Dup (W3C1989-MSD1)	**Source: 3C10137-01**				**Prepared & Analyzed: 03/22/23**						
Chromium 6+	5.71	0.0079	0.020	ug/l	5.00	0.465	105	88-112	3	10	
Chromium 6+, Dissolved	5.71	0.0079	0.020	ug/l	5.00	0.459	105	88-112	3	10	
Matrix Spike Dup (W3C1989-MSD2)	**Source: 3C10137-02**				**Prepared & Analyzed: 03/22/23**						
Chromium 6+	5.69	0.0079	0.020	ug/l	5.00	0.571	102	88-112	0.1	10	
Chromium 6+, Dissolved	5.69	0.0079	0.020	ug/l	5.00	0.563	102	88-112	0.1	10	

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Quality Control Results

(Continued)

Metals by EPA 200 Series Methods

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W3C1735 - EPA 245.1											
Blank (W3C1735-BLK1)					**Prepared: 03/21/23**	**Analyzed: 03/22/23**					
Mercury, Dissolved	ND	0.037	0.050	ug/l							
Mercury, Total	ND	0.037	0.050	ug/l							
LCS (W3C1735-BS1)					**Prepared: 03/21/23**	**Analyzed: 03/22/23**					
Mercury, Dissolved	1.14	0.037	0.050	ug/l	1.00		114	85-115			
Mercury, Total	1.14	0.037	0.050	ug/l	1.00		114	85-115			
Matrix Spike (W3C1735-MS1)	**Source: 3C10137-01**				**Prepared: 03/21/23**	**Analyzed: 03/22/23**					
Mercury, Dissolved	1.07	0.037	0.050	ug/l	1.00	ND	107	70-130			
Mercury, Total	1.07	0.037	0.050	ug/l	1.00	ND	107	70-130			
Matrix Spike (W3C1735-MS2)	**Source: 3C10137-03**				**Prepared: 03/21/23**	**Analyzed: 03/22/23**					
Mercury, Total	1.11	0.037	0.050	ug/l	1.00	ND	111	70-130			
Matrix Spike Dup (W3C1735-MSD1)	**Source: 3C10137-01**				**Prepared: 03/21/23**	**Analyzed: 03/22/23**					
Mercury, Dissolved	1.21	0.037	0.050	ug/l	1.00	ND	121	70-130	12	20	
Mercury, Total	1.21	0.037	0.050	ug/l	1.00	ND	121	70-130	12	20	
Matrix Spike Dup (W3C1735-MSD2)	**Source: 3C10137-03**				**Prepared: 03/21/23**	**Analyzed: 03/22/23**					
Mercury, Total	1.04	0.037	0.050	ug/l	1.00	ND	104	70-130	7	20	
Batch: W3C1904 - EPA 200.7											
Blank (W3C1904-BLK1)					**Prepared: 03/22/23**	**Analyzed: 03/23/23**					
Calcium, Total	ND	0.0736	0.500	mg/l							
Magnesium, Total	ND	0.0390	0.500	mg/l							
Phosphorus, Dissolved	ND	0.018	0.050	mg/l							
Phosphorus, Total	ND	0.018	0.050	mg/l							
LCS (W3C1904-BS1)					**Prepared: 03/22/23**	**Analyzed: 03/23/23**					
Calcium, Total	48.1	0.0736	0.500	mg/l	50.2		96	85-115			
Magnesium, Total	47.5	0.0390	0.500	mg/l	50.2		95	85-115			
Phosphorus, Dissolved	2.14	0.018	0.050	mg/l	2.00		107	85-115			
Phosphorus, Total	2.14	0.018	0.050	mg/l	2.00		107	85-115			
Matrix Spike (W3C1904-MS1)	**Source: 3C13103-01**				**Prepared: 03/22/23**	**Analyzed: 03/23/23**					
Calcium, Total	114	0.0736	0.500	mg/l	50.2	67.6	92	70-130			
Magnesium, Total	67.5	0.0390	0.500	mg/l	50.2	19.9	95	70-130			
Phosphorus, Dissolved	17.1	0.018	0.050	mg/l	2.00	14.9	111	70-130			
Phosphorus, Total	17.1	0.018	0.050	mg/l	2.00	14.9	111	70-130			
Matrix Spike (W3C1904-MS2)	**Source: 3C15130-01**				**Prepared: 03/22/23**	**Analyzed: 03/23/23**					
Calcium, Total	49.5	0.0736	0.500	mg/l	50.2	1.51	96	70-130			
Magnesium, Total	47.5	0.0390	0.500	mg/l	50.2	0.142	95	70-130			
Phosphorus, Dissolved	2.16	0.018	0.050	mg/l	2.00	0.0220	107	70-130			
Phosphorus, Total	2.16	0.018	0.050	mg/l	2.00	0.0220	107	70-130			
Matrix Spike Dup (W3C1904-MSD1)	**Source: 3C13103-01**				**Prepared: 03/22/23**	**Analyzed: 03/23/23**					
Calcium, Total	112	0.0736	0.500	mg/l	50.2	67.6	88	70-130	2	30	

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Quality Control Results

(Continued)

Metals by EPA 200 Series Methods (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W3C1904 - EPA 200.7 (Continued)											
Matrix Spike Dup (W3C1904-MSD1)	**Source: 3C13103-01**				**Prepared: 03/22/23**	**Analyzed: 03/23/23**					
Magnesium, Total	66.3	0.0390	0.500	mg/l	50.2	19.9	93	70-130	2	30	
Phosphorus, Dissolved	16.8	0.018	0.050	mg/l	2.00	14.9	94	70-130	2	30	
Phosphorus, Total	16.8	0.018	0.050	mg/l	2.00	14.9	94	70-130	2	30	
Matrix Spike Dup (W3C1904-MSD2)	**Source: 3C15130-01**				**Prepared: 03/22/23**	**Analyzed: 03/23/23**					
Calcium, Total	49.5	0.0736	0.500	mg/l	50.2	1.51	96	70-130	0.02	30	
Magnesium, Total	47.5	0.0390	0.500	mg/l	50.2	0.142	94	70-130	0.07	30	
Phosphorus, Dissolved	2.16	0.018	0.050	mg/l	2.00	0.0220	107	70-130	0.009	30	
Phosphorus, Total	2.16	0.018	0.050	mg/l	2.00	0.0220	107	70-130	0.009	30	
Batch: W3C1908 - EPA 200.8											
Blank (W3C1908-BLK1)					**Prepared: 03/22/23**	**Analyzed: 03/23/23**					
Aluminum, Dissolved	ND	4.4	20	ug/l							
Aluminum, Total	ND	4.4	20	ug/l							
Antimony, Dissolved	ND	0.089	0.50	ug/l							
Antimony, Total	ND	0.089	0.50	ug/l							
Arsenic, Dissolved	ND	0.074	0.40	ug/l							
Arsenic, Total	ND	0.074	0.40	ug/l							
Beryllium, Dissolved	ND	0.062	0.10	ug/l							
Beryllium, Total	ND	0.029	0.10	ug/l							
Cadmium, Dissolved	ND	0.042	0.20	ug/l							
Cadmium, Total	ND	0.042	0.20	ug/l							
Chromium, Dissolved	ND	0.089	0.20	ug/l							
Chromium, Total	ND	0.089	0.20	ug/l							
Copper, Dissolved	ND	0.23	0.50	ug/l							
Copper, Total	ND	0.23	0.50	ug/l							
Iron, Dissolved	ND	3.9	20	ug/l							
Iron, Total	ND	3.9	20	ug/l							
Lead, Dissolved	ND	0.083	0.20	ug/l							
Lead, Total	ND	0.083	0.20	ug/l							
Nickel, Dissolved	ND	0.16	2.0	ug/l							
Nickel, Total	ND	0.40	2.0	ug/l							
Selenium, Dissolved	ND	0.067	0.40	ug/l							
Selenium, Total	ND	0.067	0.40	ug/l							
Silver, Dissolved	ND	0.030	0.20	ug/l							
Silver, Total	ND	0.055	0.20	ug/l							
Thallium, Dissolved	ND	0.021	0.20	ug/l							
Thallium, Total	ND	0.021	0.20	ug/l							
Zinc, Dissolved	ND	1.7	10	ug/l							
Zinc, Total	ND	1.7	10	ug/l							

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Quality Control Results

(Continued)

Metals by EPA 200 Series Methods (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W3C1908 - EPA 200.8 (Continued)											
LCS (W3C1908-BS1)					**Prepared: 03/22/23**	**Analyzed: 03/23/23**					
Aluminum, Dissolved	51.6	4.4	20	ug/l	50.0		103	85-115			
Aluminum, Total	49.7	4.4	20	ug/l	50.0		99	85-115			
Antimony, Dissolved	50.5	0.089	0.50	ug/l	50.0		101	85-115			
Antimony, Total	50.5	0.089	0.50	ug/l	50.0		101	85-115			
Arsenic, Dissolved	52.0	0.074	0.40	ug/l	50.0		104	85-115			
Arsenic, Total	52.0	0.074	0.40	ug/l	50.0		104	85-115			
Beryllium, Dissolved	43.1	0.062	0.10	ug/l	50.0		86	85-115			
Beryllium, Total	43.1	0.029	0.10	ug/l	50.0		86	85-115			
Cadmium, Dissolved	49.7	0.042	0.20	ug/l	50.0		99	85-115			
Cadmium, Total	49.7	0.042	0.20	ug/l	50.0		99	85-115			
Chromium, Dissolved	49.9	0.089	0.20	ug/l	50.0		100	85-115			
Chromium, Total	49.9	0.089	0.20	ug/l	50.0		100	85-115			
Copper, Dissolved	50.0	0.23	0.50	ug/l	50.0		100	85-115			
Copper, Total	50.0	0.23	0.50	ug/l	50.0		100	85-115			
Iron, Dissolved	1140	3.9	20	ug/l	1050		109	85-115			
Iron, Total	1140	3.9	20	ug/l	1050		109	85-115			
Lead, Dissolved	49.9	0.083	0.20	ug/l	50.0		100	85-115			
Lead, Total	49.9	0.083	0.20	ug/l	50.0		100	85-115			
Nickel, Dissolved	49.6	0.16	2.0	ug/l	50.0		99	85-115			
Nickel, Total	49.6	0.40	2.0	ug/l	50.0		99	85-115			
Selenium, Dissolved	49.9	0.067	0.40	ug/l	50.0		100	85-115			
Selenium, Total	49.9	0.067	0.40	ug/l	50.0		100	85-115			
Silver, Dissolved	49.7	0.030	0.20	ug/l	50.0		99	85-115			
Silver, Total	49.7	0.055	0.20	ug/l	50.0		99	85-115			
Thallium, Dissolved	50.0	0.021	0.20	ug/l	50.0		100	85-115			
Thallium, Total	50.0	0.021	0.20	ug/l	50.0		100	85-115			
Zinc, Dissolved	49.9	1.7	10	ug/l	50.0		100	85-115			
Zinc, Total	49.9	1.7	10	ug/l	50.0		100	85-115			
Matrix Spike (W3C1908-MS1)	**Source: 3C10137-03**				**Prepared: 03/22/23**	**Analyzed: 03/23/23**					
Aluminum, Dissolved	1190	4.4	20	ug/l	50.0	30.7	NR	70-130			
Aluminum, Total	1130	4.4	20	ug/l	50.0	948	356	70-130			MS-02
Antimony, Dissolved	50.0	0.089	0.50	ug/l	50.0	0.513	99	70-130			
Antimony, Total	50.0	0.089	0.50	ug/l	50.0	0.714	99	70-130			
Arsenic, Dissolved	51.2	0.074	0.40	ug/l	50.0	0.814	101	70-130			
Arsenic, Total	51.2	0.074	0.40	ug/l	50.0	1.13	100	70-130			
Beryllium, Dissolved	42.5	0.062	0.10	ug/l	50.0	ND	85	70-130			
Beryllium, Total	42.5	0.029	0.10	ug/l	50.0	ND	85	70-130			
Cadmium, Dissolved	49.0	0.042	0.20	ug/l	50.0	ND	98	70-130			
Cadmium, Total	49.0	0.042	0.20	ug/l	50.0	ND	98	70-130			

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San Diego, CA 92123

Project Number: SGVCOG Fire Effects Study

Project Manager: Brenda Stevens

Reported: 04/21/2023 15:37

Quality Control Results

(Continued)

Metals by EPA 200 Series Methods (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W3C1908 - EPA 200.8 (Continued)											
Matrix Spike (W3C1908-MS1)	**Source: 3C10137-03**				**Prepared: 03/22/23**	**Analyzed: 03/23/23**					
Chromium, Dissolved	51.1	0.089	0.20	ug/l	50.0	0.490	101	70-130			
Chromium, Total	51.1	0.089	0.20	ug/l	50.0	1.69	99	70-130			
Copper, Dissolved	53.7	0.23	0.50	ug/l	50.0	2.48	102	70-130			
Copper, Total	53.7	0.23	0.50	ug/l	50.0	5.15	97	70-130			
Iron, Dissolved	2180	3.9	20	ug/l	1050	19.3	206	70-130			
Iron, Total	2180	3.9	20	ug/l	1050	1110	103	70-130			
Lead, Dissolved	51.8	0.083	0.20	ug/l	50.0	ND	103	70-130			
Lead, Total	51.8	0.083	0.20	ug/l	50.0	2.16	99	70-130			
Nickel, Dissolved	50.1	0.16	2.0	ug/l	50.0	0.310	99	70-130			
Nickel, Total	50.1	0.40	2.0	ug/l	50.0	1.25	98	70-130			
Selenium, Dissolved	49.1	0.067	0.40	ug/l	50.0	0.109	98	70-130			
Selenium, Total	49.1	0.067	0.40	ug/l	50.0	0.0981	98	70-130			
Silver, Dissolved	49.2	0.030	0.20	ug/l	50.0	ND	98	70-130			
Silver, Total	49.2	0.055	0.20	ug/l	50.0	ND	98	70-130			
Thallium, Dissolved	49.4	0.021	0.20	ug/l	50.0	ND	99	70-130			
Thallium, Total	49.4	0.021	0.20	ug/l	50.0	ND	99	70-130			
Zinc, Dissolved	77.5	1.7	10	ug/l	50.0	8.33	138	70-130			
Zinc, Total	77.5	1.7	10	ug/l	50.0	29.2	97	70-130			
Matrix Spike (W3C1908-MS2)	**Source: 3C16060-01**				**Prepared: 03/22/23**	**Analyzed: 03/23/23**					
Aluminum, Dissolved	48.4	4.4	20	ug/l	50.0	ND	97	70-130			
Aluminum, Total	48.4	4.4	20	ug/l	50.0	ND	97	70-130			
Antimony, Dissolved	48.5	0.089	0.50	ug/l	50.0	ND	97	70-130			
Antimony, Total	48.5	0.089	0.50	ug/l	50.0	ND	97	70-130			
Arsenic, Dissolved	49.4	0.074	0.40	ug/l	50.0	0.602	97	70-130			
Arsenic, Total	49.4	0.074	0.40	ug/l	50.0	0.602	97	70-130			
Beryllium, Dissolved	44.0	0.062	0.10	ug/l	50.0	ND	88	70-130			
Beryllium, Total	44.0	0.029	0.10	ug/l	50.0	ND	88	70-130			
Cadmium, Dissolved	46.5	0.042	0.20	ug/l	50.0	ND	93	70-130			
Cadmium, Total	46.5	0.042	0.20	ug/l	50.0	ND	93	70-130			
Chromium, Dissolved	47.1	0.089	0.20	ug/l	50.0	0.396	93	70-130			
Chromium, Total	47.1	0.089	0.20	ug/l	50.0	0.396	93	70-130			
Copper, Dissolved	48.4	0.23	0.50	ug/l	50.0	1.82	93	70-130			
Copper, Total	48.4	0.23	0.50	ug/l	50.0	1.82	93	70-130			
Iron, Dissolved	1070	3.9	20	ug/l	1050	ND	101	70-130			
Iron, Total	1070	3.9	20	ug/l	1050	ND	101	70-130			
Lead, Dissolved	47.4	0.083	0.20	ug/l	50.0	0.127	95	70-130			
Lead, Total	47.4	0.083	0.20	ug/l	50.0	0.127	95	70-130			
Nickel, Dissolved	46.2	0.16	2.0	ug/l	50.0	0.535	91	70-130			
Nickel, Total	46.2	0.40	2.0	ug/l	50.0	0.535	91	70-130			

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Quality Control Results

(Continued)

Metals by EPA 200 Series Methods (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W3C1908 - EPA 200.8 (Continued)											
Matrix Spike (W3C1908-MS2)	**Source: 3C16060-01**				**Prepared: 03/22/23**	**Analyzed: 03/23/23**					
Selenium, Dissolved	50.5	0.067	0.40	ug/l	50.0	1.66	98	70-130			
Selenium, Total	50.5	0.067	0.40	ug/l	50.0	1.66	98	70-130			
Silver, Dissolved	46.3	0.030	0.20	ug/l	50.0	ND	93	70-130			
Silver, Total	46.3	0.055	0.20	ug/l	50.0	ND	93	70-130			
Thallium, Dissolved	46.6	0.021	0.20	ug/l	50.0	ND	93	70-130			
Thallium, Total	46.6	0.021	0.20	ug/l	50.0	ND	93	70-130			
Zinc, Dissolved	52.7	1.7	10	ug/l	50.0	8.09	89	70-130			
Zinc, Total	52.7	1.7	10	ug/l	50.0	8.09	89	70-130			
Matrix Spike Dup (W3C1908-MSD1)	**Source: 3C10137-03**				**Prepared: 03/22/23**	**Analyzed: 03/23/23**					
Aluminum, Dissolved	1160	4.4	20	ug/l	50.0	30.7	NR	70-130	2	30	
Aluminum, Total	1150	4.4	20	ug/l	50.0	948	393	70-130	2	30	MS-02
Antimony, Dissolved	50.6	0.089	0.50	ug/l	50.0	0.513	100	70-130	1	30	
Antimony, Total	50.6	0.089	0.50	ug/l	50.0	0.714	100	70-130	1	30	
Arsenic, Dissolved	51.2	0.074	0.40	ug/l	50.0	0.814	101	70-130	0.009	30	
Arsenic, Total	51.2	0.074	0.40	ug/l	50.0	1.13	100	70-130	0.009	30	
Beryllium, Dissolved	42.9	0.062	0.10	ug/l	50.0	ND	86	70-130	0.8	30	
Beryllium, Total	42.9	0.029	0.10	ug/l	50.0	ND	86	70-130	0.8	30	
Cadmium, Dissolved	48.7	0.042	0.20	ug/l	50.0	ND	97	70-130	0.7	30	
Cadmium, Total	48.7	0.042	0.20	ug/l	50.0	ND	97	70-130	0.7	30	
Chromium, Dissolved	50.6	0.089	0.20	ug/l	50.0	0.490	100	70-130	0.8	30	
Chromium, Total	50.6	0.089	0.20	ug/l	50.0	1.69	98	70-130	0.8	30	
Copper, Dissolved	53.8	0.23	0.50	ug/l	50.0	2.48	102	70-130	0.2	30	
Copper, Total	53.8	0.23	0.50	ug/l	50.0	5.15	97	70-130	0.2	30	
Iron, Dissolved	2170	3.9	20	ug/l	1050	19.3	205	70-130	0.6	30	
Iron, Total	2170	3.9	20	ug/l	1050	1110	101	70-130	0.6	30	
Lead, Dissolved	51.4	0.083	0.20	ug/l	50.0	ND	103	70-130	0.6	30	
Lead, Total	51.4	0.083	0.20	ug/l	50.0	2.16	98	70-130	0.6	30	
Nickel, Dissolved	49.2	0.16	2.0	ug/l	50.0	0.310	98	70-130	2	30	
Nickel, Total	49.2	0.40	2.0	ug/l	50.0	1.25	96	70-130	2	30	
Selenium, Dissolved	49.1	0.067	0.40	ug/l	50.0	0.109	98	70-130	0.1	30	
Selenium, Total	49.1	0.067	0.40	ug/l	50.0	0.0981	98	70-130	0.1	30	
Silver, Dissolved	48.8	0.030	0.20	ug/l	50.0	ND	98	70-130	0.8	30	
Silver, Total	48.8	0.055	0.20	ug/l	50.0	ND	98	70-130	0.8	30	
Thallium, Dissolved	49.1	0.021	0.20	ug/l	50.0	ND	98	70-130	0.7	30	
Thallium, Total	49.1	0.021	0.20	ug/l	50.0	ND	98	70-130	0.7	30	
Zinc, Dissolved	75.9	1.7	10	ug/l	50.0	8.33	135	70-130	2	30	
Zinc, Total	75.9	1.7	10	ug/l	50.0	29.2	93	70-130	2	30	
Matrix Spike Dup (W3C1908-MSD2)	**Source: 3C16060-01**				**Prepared: 03/22/23**	**Analyzed: 03/23/23**					
Aluminum, Dissolved	47.2	4.4	20	ug/l	50.0	ND	94	70-130	2	30	

Quality Control Results

(Continued)

Metals by EPA 200 Series Methods (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W3C1908 - EPA 200.8 (Continued)											
Matrix Spike Dup (W3C1908-MSD2)	**Source: 3C16060-01**				**Prepared: 03/22/23**	**Analyzed: 03/23/23**					
Aluminum, Total	47.2	4.4	20	ug/l	50.0	ND	94	70-130	2	30	
Antimony, Dissolved	48.1	0.089	0.50	ug/l	50.0	ND	96	70-130	0.9	30	
Antimony, Total	48.1	0.089	0.50	ug/l	50.0	ND	96	70-130	0.9	30	
Arsenic, Dissolved	49.2	0.074	0.40	ug/l	50.0	0.602	97	70-130	0.4	30	
Arsenic, Total	49.2	0.074	0.40	ug/l	50.0	0.602	97	70-130	0.4	30	
Beryllium, Dissolved	42.2	0.062	0.10	ug/l	50.0	ND	84	70-130	4	30	
Beryllium, Total	42.2	0.029	0.10	ug/l	50.0	ND	84	70-130	4	30	
Cadmium, Dissolved	46.3	0.042	0.20	ug/l	50.0	ND	92	70-130	0.4	30	
Cadmium, Total	46.3	0.042	0.20	ug/l	50.0	ND	92	70-130	0.4	30	
Chromium, Dissolved	47.1	0.089	0.20	ug/l	50.0	0.396	93	70-130	0.1	30	
Chromium, Total	47.1	0.089	0.20	ug/l	50.0	0.396	93	70-130	0.1	30	
Copper, Dissolved	48.3	0.23	0.50	ug/l	50.0	1.82	93	70-130	0.1	30	
Copper, Total	48.3	0.23	0.50	ug/l	50.0	1.82	93	70-130	0.1	30	
Iron, Dissolved	1080	3.9	20	ug/l	1050	ND	103	70-130	1	30	
Iron, Total	1080	3.9	20	ug/l	1050	ND	103	70-130	1	30	
Lead, Dissolved	47.4	0.083	0.20	ug/l	50.0	0.127	94	70-130	0.04	30	
Lead, Total	47.4	0.083	0.20	ug/l	50.0	0.127	94	70-130	0.04	30	
Nickel, Dissolved	46.2	0.16	2.0	ug/l	50.0	0.535	91	70-130	0.1	30	
Nickel, Total	46.2	0.40	2.0	ug/l	50.0	0.535	91	70-130	0.1	30	
Selenium, Dissolved	50.2	0.067	0.40	ug/l	50.0	1.66	97	70-130	0.5	30	
Selenium, Total	50.2	0.067	0.40	ug/l	50.0	1.66	97	70-130	0.5	30	
Silver, Dissolved	46.2	0.030	0.20	ug/l	50.0	ND	92	70-130	0.3	30	
Silver, Total	46.2	0.055	0.20	ug/l	50.0	ND	92	70-130	0.3	30	
Thallium, Dissolved	46.5	0.021	0.20	ug/l	50.0	ND	93	70-130	0.3	30	
Thallium, Total	46.5	0.021	0.20	ug/l	50.0	ND	93	70-130	0.3	30	
Zinc, Dissolved	55.6	1.7	10	ug/l	50.0	8.09	95	70-130	5	30	
Zinc, Total	55.6	1.7	10	ug/l	50.0	8.09	95	70-130	5	30	
Batch: W3C1950 - EPA 245.1											
Blank (W3C1950-BLK1)					**Prepared: 03/22/23**	**Analyzed: 03/23/23**					
Mercury, Dissolved	ND	0.037	0.050	ug/l							
LCS (W3C1950-BS1)					**Prepared: 03/22/23**	**Analyzed: 03/23/23**					
Mercury, Dissolved	0.998	0.037	0.050	ug/l	1.00		100	85-115			
Matrix Spike (W3C1950-MS1)	**Source: 3C10016-01**				**Prepared: 03/22/23**	**Analyzed: 03/23/23**					
Mercury, Dissolved	0.994	0.037	0.050	ug/l	1.00	ND	99	70-130			
Matrix Spike Dup (W3C1950-MSD1)	**Source: 3C10016-01**				**Prepared: 03/22/23**	**Analyzed: 03/23/23**					
Mercury, Dissolved	1.01	0.037	0.050	ug/l	1.00	ND	101	70-130	1	20	

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Quality Control Results

(Continued)

Semivolatile Organics - Low Level by Tandem GC/MS/MS

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W3C1531 - EPA 625.1											
Blank (W3C1531-BLK1)					**Prepared: 03/17/23 Analyzed: 04/14/23**						
Acenaphthene	ND	1.2	5.0	ng/l							
Acenaphthylene	ND	1.0	5.0	ng/l							
Anthracene	ND	1.1	5.0	ng/l							
Benzo (a) anthracene	ND	0.92	5.0	ng/l							
Benzo (a) pyrene	ND	0.97	5.0	ng/l							
Benzo (b) fluoranthene	ND	1.6	5.0	ng/l							
Benzo (g,h,i) perylene	ND	1.0	5.0	ng/l							
Benzo (k) fluoranthene	ND	1.2	5.0	ng/l							
Chrysene	ND	1.4	5.0	ng/l							
Dibenzo (a,h) anthracene	ND	1.2	5.0	ng/l							
Fluoranthene	ND	1.5	5.0	ng/l							
Fluorene	ND	1.1	5.0	ng/l							
Indeno (1,2,3-cd) pyrene	ND	0.97	5.0	ng/l							
Naphthalene	ND	3.2	5.0	ng/l							
Phenanthrene	ND	3.0	5.0	ng/l							
Pyrene	ND	1.4	5.0	ng/l							
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	*69.9*			*ng/l*	*100*		*70*	*62-120*			
Perylene-d12	*38.2*			*ng/l*	*100*		*38*	*36-120*			
LCS (W3C1531-BS1)					**Prepared: 03/17/23 Analyzed: 04/14/23**						
Acenaphthene	41.8	1.2	5.0	ng/l	50.0		84	60-132			
Acenaphthylene	40.1	1.0	5.0	ng/l	50.0		80	54-126			
Anthracene	37.2	1.1	5.0	ng/l	50.0		74	43-120			
Benzo (a) anthracene	31.3	0.92	5.0	ng/l	50.0		63	42-133			
Benzo (a) pyrene	25.4	0.97	5.0	ng/l	50.0		51	32-148			
Benzo (b) fluoranthene	30.6	1.6	5.0	ng/l	50.0		61	42-140			AN-IP
Benzo (g,h,i) perylene	30.8	1.0	5.0	ng/l	50.0		62	0.1-195			
Benzo (k) fluoranthene	32.5	1.2	5.0	ng/l	50.0		65	25-146			AN-IP
Chrysene	32.4	1.4	5.0	ng/l	50.0		65	44-140			
Dibenzo (a,h) anthracene	31.7	1.2	5.0	ng/l	50.0		63	0.1-200			
Fluoranthene	39.3	1.5	5.0	ng/l	50.0		79	43-121			
Fluorene	40.8	1.1	5.0	ng/l	50.0		82	70-120			
Indeno (1,2,3-cd) pyrene	26.5	0.97	5.0	ng/l	50.0		53	0.1-151			
Naphthalene	40.3	3.2	5.0	ng/l	50.0		81	36-120			
Phenanthrene	40.0	3.0	5.0	ng/l	50.0		80	65-120			
Pyrene	38.7	1.4	5.0	ng/l	50.0		77	70-120			
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	*79.9*			*ng/l*	*100*		*80*	*62-120*			
Perylene-d12	*32.4*			*ng/l*	*100*		*32*	*36-120*			*S-11*

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Certificate of Analysis

FINAL REPORT

WSP USA E&I Inc. - San Diego
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Project Manager: Brenda Stevens

Reported: 04/21/2023 15:37

Quality Control Results

(Continued)

Semivolatile Organics - Low Level by Tandem GC/MS/MS (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W3C1531 - EPA 625.1 (Continued)											
LCS Dup (W3C1531-BSD1)					**Prepared: 03/17/23 Analyzed: 04/14/23**						
Acenaphthene	38.8	1.2	5.0	ng/l	50.0		78	60-132	7	30	
Acenaphthylene	39.0	1.0	5.0	ng/l	50.0		78	54-126	3	30	
Anthracene	39.3	1.1	5.0	ng/l	50.0		79	43-120	5	30	
Benzo (a) anthracene	32.6	0.92	5.0	ng/l	50.0		65	42-133	4	30	
Benzo (a) pyrene	28.3	0.97	5.0	ng/l	50.0		57	32-148	11	30	
Benzo (b) fluoranthene	31.8	1.6	5.0	ng/l	50.0		64	42-140	4	30	AN-IP
Benzo (g,h,i) perylene	30.5	1.0	5.0	ng/l	50.0		61	0.1-195	0.9	30	
Benzo (k) fluoranthene	32.7	1.2	5.0	ng/l	50.0		65	25-146	0.6	30	AN-IP
Chrysene	31.1	1.4	5.0	ng/l	50.0		62	44-140	4	30	
Dibenzo (a,h) anthracene	30.6	1.2	5.0	ng/l	50.0		61	0.1-200	3	30	
Fluoranthene	39.7	1.5	5.0	ng/l	50.0		79	43-121	1	30	
Fluorene	39.5	1.1	5.0	ng/l	50.0		79	70-120	3	30	
Indeno (1,2,3-cd) pyrene	29.3	0.97	5.0	ng/l	50.0		59	0.1-151	10	30	
Naphthalene	37.9	3.2	5.0	ng/l	50.0		76	36-120	6	30	
Phenanthrene	40.4	3.0	5.0	ng/l	50.0		81	65-120	0.8	30	
Pyrene	39.1	1.4	5.0	ng/l	50.0		78	70-120	1	30	
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	*75.8*			*ng/l*	*100*		*76*	*62-120*			
Perylene-d12	*30.9*			*ng/l*	*100*		*31*	*36-120*			*S-11*

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Notes and Definitions

Item	Definition
AN-IP	Sample results for structural isomers may have contribution from their isomeric pair.
FILT	The sample was filtered prior to analysis.
J	Estimated conc. detected <MRL and >MDL.
M-02	Due to the nature of matrix interferences, sample was diluted prior to preparation. The MDL and MRL were raised due to the dilution.
MS-02	The RPD and/or percent recovery for this QC spike sample cannot be accurately calculated due to the high concentration of analyte inherent in the sample.
ND	Not Detected
O-04	This analysis was performed outside the EPA recommended holding time.
O-09	This sample was received with the EPA recommended holding time expired.
P-6	The sample was filtered and preserved prior to analysis.
S-11	Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.
%REC	Percent Recovery
Dil	Dilution
MDL	Method Detection Limit
MRL	The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. The MRL is also known as Limit of Quantitation (LOQ)
ND	NOT DETECTED at or above the Method Reporting Limit (MRL). If Method Detection Limit (MDL) is reported, then ND means not detected at or above the MDL.
RPD	Relative Percent Difference
Source	Sample that was matrix spiked or duplicated.

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance.

All results are expressed on wet weight basis unless otherwise specified.

All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS002.

3C10137

wsp

Chain of Custody

Page 1 of 1

From:	To:	Lab Notes:
WSP Environment & Infrastructure Solutions 9177 Sky Park Court San Diego, CA 92123 (661) 373-5505 (858) 278-5300 Fax Contact: Brenda Stevens/Kimberly Henry	Weck Laboratories 14859 Clark Avenue Industry, CA 91745 (626) 336-2139 (626) 336-2634 Fax Contact: Chris Samatmanakit	

PO#:	Project Number:	Project Name:	Sample Matrix:
C015102726	5025-22-0004	SGVCOG Fire Effects Study	Water

SampleID	Sample Date	Sample Time	Sample Type	Analysis	Container	Pres	No. of Bottles
F-193B-R_2223_W3_01	03/11/23	0200	Composite	Tot&Diss.Metal,Ammonia, Nutrients(N03,N02,TKN, TotN,TotP,DissP), Chlorophyll-a, PAH	1-L Amber Glass	≤6°C	16
F-194B-R_2223_W3_01	↓	0220	Composite	Tot&Diss.Metal,Ammonia, Nutrients(N03,N02,TKN, TotN,TotP,DissP), Chlorophyll-a, PAH	1-L Amber Glass	≤6°C	16
ARCAD_WA_CON_2223_W3_01	↓	0200	Composite	Tot&Diss.Metal,Ammonia, Nutrients(N03,N02,TKN, TotN,TotP,DissP), Chlorophyll-a, PAH	1-L Amber Glass	≤6°C	16
F-193B-R_2223_W3_01	03/10/23	1545	Grab	TDS (SM 2540C); TSS (SM 2540D)	2-L Poly	Unpres.	1
F-194B-R_2223_W3_01	↓	1610	Grab	TDS (SM 2540C); TSS (SM 2540D)	2-L Poly	Unpres.	1
ARCAD_WA_CON_2223_W3_01	↓	1500	Grab	TDS (SM 2540C); TSS (SM 2540D)	2-L Poly	Unpres.	1
ARCAD_WA_CON_2223_W3_02	↓	1500	Grab	TDS (SM 2540C); TSS (SM 2540D)	2-L Poly	Unpres.	1
F-193B-R_2223_W3_01	↓	1545	Grab	Total Hardness (EPA 200.7)	500-mL Poly	HNO3	1
F-194B-R_2223_W3_01	↓	1610	Grab	Total Hardness (EPA 200.7)	500-mL Poly	HNO3	1
ARCAD_WA_CON_2223_W3_01	↓	1500	Grab	Total Hardness (EPA 200.7)	500-mL Poly	HNO3	1
ARCAD_WA_CON_2223_W3_02	↓	1500	Grab	Total Hardness (EPA 200.7)	500-mL Poly	HNO3	1

Special Instructions/Comments:

Metals (Dissolved and Total) to include aluminum, antimony, arsenic, beryllium, cadmium, chromium (total), chromium (hexavalent), copper, iron, lead, mercury, nickel, selenium, silver, thallium, and zinc
Please provide results to Brenda Stevens (brenda.stevens@wsp.com) and Luis De La Torre (luis.delatorre@wsp.com) Refer to compositing instructions sent via email

Sampled and Relinquished By:		Received By:	
Print: Luis DeLaTorre Sign: Luis De La Torre	Date/Time: 3-12-23 0955	Print: Helen Quach Sign: [signature]	Date/Time: 3/12/23 9:59 T269 1.1°C
Print: Sign:	Date/Time:	Print: Sign:	Date/Time:
Print: Sign:	Date/Time:	Print: Sign:	Date/Time:

WECK LABORATORIES, INC.

Sample Receipt Checklist

Weck WKO: 3C10137
WKO Logged by: Lester Abad
Samples Checked by: Lester Abad

Date/Time Received: 03/12/23 09:59
# of Samples: 11
Delivered by: Luis

	Task	Yes	No	N/A	Comments
COC	COC present at receipt?	☒	☐		
	COC properly completed?	☒	☐		
	COC matches sample labels?	☒	☐		
	Project Manager notified?	☐	☐	☒	
Receipt Information	Sample Temperature	1.1 °C			
	Samples received on ice?	☒	☐		
	Ice Type (Blue/Wet)	WET			
	All samples intact?	☒	☐		
	Samples in proper containers?	☒	☐		
	Sufficient sample volume?	☒	☐		
	Received within holding time?	☒	☐		
	Project Manager notified?	☐	☐	☒	
Sample Preservation Verification?	Sample labels checked for correct preservation?	☒	☐	☐	
	VOC Headspace: (No) none, If Yes (See comment) 524.2, 524.3, 624.1, 8260, 1666 P/T, LUFT	☐	☐	☐	☐ <6mm/Pea size?
	pH verified upon receipt? Metals <2; H2SO4 pres tests <2; 522<4; TOC <2; 508.1, 525.2<2; 6710B<2; 608.3 5-9	☒	☐	☐	pH paper Lot#
	Free Chlorine Tested <0.1 (Organics Analyses)	☒	☐	☐	Cl Test Strip Lot#
	O&G pH <2 verified?	☐	☐	☐	pH paper Lot# / pH Reading:
	pH adjusted for O&G	☐	☐	☐	Acid Lot# / Amt added:
	Project Manager notified?	☐	☐	☒	

PM Comments

Sample Receipt Checklist Prepared by:
Signature: Lester Abad
Date: 03/12/23

0.7116.5

Subcontract Order

WECK LABORATORIES, INC.

Subcontracted Laboratory:

Enthalpy Analytical
931 W. Barkley Ave
Orange, CA 92868
Phone: (714) 771-6900
Fax: (714) 538-1209

Turn Around Time:	Normal unless noted in comments
Client Manager:	Chris Samatmanakit
Project Name:	San Gabriel Valley Council of Governmer
Sampler Employed by:	
Drinking Water:	Yes / No
Need Transfer File (xls):	Yes / No
Tracking Number:	

Project Number: 3C10137

Analysis	Expires	Comments
Sample Name: 3C10137-01/F_193B_R-2223_W3_01 Sampled: 03/11/2023 02:00 Chlorophyll-a - SM 10200H	Matrix: Water 03/13/2023 02:00	Sampled By: Luis De La Torre 1035mL filtered on 3/12/23 at 11:50am by HEQ.
Sample Name: 3C10137-02/F_194B_R-2223_W3_01 Sampled: 03/11/2023 02:20 Chlorophyll-a - SM 10200H	Matrix: Water 03/13/2023 02:20	Sampled By: Luis De La Torre 1030mL filtered on 3/12/23 at 12:19am by HEQ.
Sample Name: 3C10137-03/ARCAD_WA_CON_2223_W3_01 Sampled: 03/11/2023 02:00 Chlorophyll-a - SM 10200H	Matrix: Water 03/13/2023 02:00	Sampled By: Luis De La Torre 1040mL filtered on 3/12/23 at 13:04 by HEQ.

Remarks / Special Comments:

Sample Condition

Temperature: ____________
Preserved: Yes / No
Evidence Seal Intact: Yes / No
Container Attacked: Yes / No
Preserved at Lab: Yes / No

Relinqished By	Date / Time	Received By	Date / Time
[signature]	3/14/23 1115	[signature]	3/14/23 1315

Relinqished By — Date / Time — Received By — Date / Time

Enthalpy Analytical
931 West Barkley Ave
Orange, CA 92868
(714) 771-6900

enthalpy.com

Lab Job Number: 481475
Report Level: II
Report Date: 03/28/2023

Analytical Report *prepared for:*

Chris Samatmanakit
Weck Laboratories
14859 Clark Ave.
City of Industry, CA 91745

Location: 3C10137 San Gabriel Valley Council of Government

Authorized for release by:

Quynhgiao Le

Quynhgiao Le, Project Manager
714-7716900
quynhgiao.le@enthalpy.com

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the above signature which applies to this PDF file as well as any associated electronic data deliverable files. The results contained in this report meet all requirements of NELAP and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

CA ELAP# 1338, NELAP# 4038, SCAQMD LAP# 18LA0518, LACSD ID# 10105

ENTHALPY
ANALYTICAL

Sample Summary

Chris Samatmanakit Weck Laboratories 14859 Clark Ave. City of Industry, CA 91745	Lab Job #: Location: Date Received:	481475 3C10137 San Gabriel Valley Council of Government 03/14/23

Sample ID	Lab ID	Collected	Matrix
3C10137-01/F_193B_R-2223_W3_01	481475-001	03/11/23 14:00	Water
3C10137-02/F_194B_R-2223_W3_01	481475-002	03/11/23 14:00	Water
3C10137-03/ARCAD_WA_CON_2223_W3_01	481475-003	03/11/23 14:00	Water

WELL
WECK LABORATORIES, INC

481475

0.7 16.5

Subcontract Order

Subcontracted Laboratory:

Enthalpy Analytical
931 W. Barkley Ave
Orange, CA 92868
Phone: (714) 771-6900
Fax: (714) 538-1209

Turn Around Time:	Normal unless noted in comments
Client Manager:	Chris Samatmanakit
Project Name:	San Gabriel Valley Council of Governmer
Sampler Employed by:	
Drinking Water:	Yes / No
Need Transfer File (xls):	Yes / No
Tracking Number:	

Project Number: 3C10137

Analysis	Expires	Comments
Sample Name: 3C10137-01/F_193B_R-2223_W3_01		
Sampled: 03/11/2023 02:00	**Matrix:** Water	**Sampled By:** Luis De La Torre
Chlorophyll-a - SM 10200H	03/13/2023 02:00	1035mL filtered on 3/12/23 at 11:50am by HEQ.
Sample Name: 3C10137-02/F_194B_R-2223_W3_01		
Sampled: 03/11/2023 02:20	**Matrix:** Water	**Sampled By:** Luis De La Torre
Chlorophyll-a - SM 10200H	03/13/2023 02:20	1030mL filtered on 3/12/23 at 12:19am by HEQ.
Sample Name: 3C10137-03/ARCAD_WA_CON_2223_W3_01		
Sampled: 03/11/2023 02:00	**Matrix:** Water	**Sampled By:** Luis De La Torre
Chlorophyll-a - SM 10200H	03/13/2023 02:00	1040mL filtered on 3/12/23 at 13:04 by HEQ.

Remarks / Special Comments:

Sample Condition

Temperature: ____________

Preserved: Yes / No

Evidence Seal Intact: Yes / No

Container Attacked: Yes / No

Preserved at Lab: Yes / No

[signature]	3/14/23 1115	[signature]	3/14/23 1315
Relinqished By	Date / Time	Received By	Date / Time
Relinqished By	Date / Time	Received By	Date / Time

ENTHALPY ANALYTICAL

SAMPLE ACCEPTANCE CHECKLIST

Section 1

Client: Weck Laboratories   Project: San Gabriel Valley

Date Received: 3/14/23   Sampler's Name Present: ☐ Yes ☒ No

Section 2

Sample(s) received in a cooler? ☒ Yes, How many? 1 ☐ No (skip section 2)   Sample Temp (°C) (No Cooler): ______

Sample Temp (°C), One from each cooler: #1: 6.5 #2: ______ #3: ______ #4: ______

(Acceptance range is < 6°C but not frozen (for Microbiology samples, acceptance range is < 10°C but not frozen). It is acceptable for samples collected the same day as sample receipt to have a higher temperature as long as there is evidence that cooling has begun.)

Shipping Information: ______

Section 3

Was the cooler packed with: ☒ Ice ☐ Ice Packs ☐ Bubble Wrap ☐ Styrofoam ☐ Paper ☐ None ☐ Other ______

Cooler Temp (°C): #1: 0.7 #2: ______ #3: ______ #4: ______

Section 4	YES	NO	N/A
Was a COC received?	X		
Are sample IDs present?	X		
Are sampling dates & times present?	X		
Is a relinquished signature present?	X		
Are the tests required clearly indicated on the COC?	X		
Are custody seals present?		X	
If custody seals are present, were they intact?			X
Are all samples sealed in plastic bags? (Recommended for Microbiology samples)			X
Did all samples arrive intact? If no, indicate in Section 4 below.	X		
Did all bottle labels agree with COC? (ID, dates and times)	X		
Were the samples collected in the correct containers for the required tests?	X		
Are the containers labeled with the correct preservatives?			X
Is there headspace in the VOA vials greater than 5-6 mm in diameter?			X
Was a sufficient amount of sample submitted for the requested tests?	X		

Section 5 Explanations/Comments

Section 6

For discrepancies, how was the Project Manager notified? ☐ Verbal PM Initials: ______ Date/Time ______

☐ Email (email sent to/on): ______ / ______

Project Manager's response:

Completed By: [signature]   Date: 3/14/23

Analysis Results for 481475

Chris Samatmanakit	Lab Job #: 481475
Weck Laboratories	Location: 3C10137 San Gabriel Valley Council of Government
14859 Clark Ave.	
City of Industry, CA 91745	Date Received: 03/14/23

Sample ID: 3C10137-01/F_193B_R-2223_W3_01 | **Lab ID: 481475-001** | **Matrix: Water** | **Collected: 03/11/23 14:00**

Received filtered & frozen. Volume: 1035mL

481475-001 Analyte	Result	Qual	Units	RL	DF	Batch	Prepared	Analyzed	Chemist
Method: SM 10200-H									
Chlorophyll a	**3.0**		mg/M3	1.0	1	310182	03/12/23 11:50	03/21/23 17:27	ATP

Sample ID: 3C10137-02/F_194B_R-2223_W3_01 | **Lab ID: 481475-002** | **Matrix: Water** | **Collected: 03/11/23 14:00**

Received filtered & frozen. Volume: 1030mL

481475-002 Analyte	Result	Qual	Units	RL	DF	Batch	Prepared	Analyzed	Chemist
Method: SM 10200-H									
Chlorophyll a	ND		mg/M3	1.0	1	310182	03/12/23 12:19	03/21/23 17:27	ATP

Sample ID: 3C10137-03/ARCAD_WA_CON_2223_W3_01 | **Lab ID: 481475-003** | **Matrix: Water** | **Collected: 03/11/23 14:00**

Received filtered & frozen. Volume: 1040mL

481475-003 Analyte	Result	Qual	Units	RL	DF	Batch	Prepared	Analyzed	Chemist
Method: SM 10200-H									
Chlorophyll a	ND		mg/M3	1.0	1	310182	02/12/23 13:04	03/21/23 17:27	ATP

ND Not Detected

Results for any subcontracted analyses are not included in this section.

Bioassessment Data

WECK LABORATORIES, INC.

Certificate of Analysis

FINAL REPORT

Work Orders:	3F29116	**Report Date:**	8/05/2023
		Received Date:	06/29/2023
Project:	5025-22-0004	**Turnaround Time:**	Normal
		Phones:	(858) 514-6465
		Fax:	(858) 278-5300
Attn:	John Rudolph	**P.O. #:**	C015102726
Client:	WSP USA E&I Inc. - San Diego 9177 Sky Park Court, Ste A San Diego, CA 92123	**Billing Code:**	

DoD-ELAP ANAB #ADE-2882 • DoD-ISO ANAB # • ELAP-CA #1132 • EPA-UCMR #CA00211 • ISO17025 ANAB #L2457.01 • LACSD #10143

This is a complete final report. The information in this report applies to the samples analyzed in accordance with the chain-of-custody document. Weck Laboratories certifies that the test results meet all requirements of TNI unless noted by qualifiers or written in the Case Narrative. This analytical report must be reproduced in its entirety.

Dear John Rudolph,

Enclosed are the results of analyses for samples received 6/29/23 with the Chain-of-Custody document. The samples were received in good condition, at 12.1 °C and on ice. All analyses met the method criteria except as noted in the case narrative or in the report with data qualifiers.

Reviewed by:

Kim G. Tu
Project Manager

14859 Clark Avenue,City of Industry CA, 91745 | Phone: (626) 336-2139 | Fax: (626) 336-2634
www.wecklabs.com

WECK LABORATORIES, INC.

Certificate of Analysis

FINAL REPORT

WSP USA E&I Inc. - San Diego
9177 Sky Park Court, Ste A
San Diego, CA 92123

Project Number: 5025-22-0004

Project Manager: John Rudolph

Reported: 08/05/2023 10:36

Sample Summary

Sample Name	Sampled By	Lab ID	Matrix	Sampled	Qualifiers
405BH2A	John Rudolph	3F29116-01	Water	06/29/23 12:30	
SMC00464	John Rudolph	3F29116-02	Water	06/29/23 08:30	

Certificate of Analysis

FINAL REPORT

WSP USA E&I Inc. - San Diego
9177 Sky Park Court, Ste A
San Diego, CA 92123

Project Number: 5025-22-0004

Project Manager: John Rudolph

Reported: 08/05/2023 10:36

Sample Results

Sample: 405BH2A Sampled: 06/29/23 12:30 by John Rudolph

3F29116-01 (Water)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods							
Method: Calculation			**Instr:** [CALC]				
Batch ID: [CALC] **Preparation:** [CALC]			**Prepared:** 07/20/23 09:40				**Analyst:** YMT
Nitrogen, Total	**0.42**	0.036	0.10	mg/l	1	07/26/23	
Method: EPA 350.1			**Instr:** AA06				
Batch ID: W3G1149 **Preparation:** _NONE (WETCHEM)			**Prepared:** 07/17/23 09:44				**Analyst:** YMT
Ammonia as N	**0.069**	0.017	0.10	mg/l	1	07/21/23	J
Method: EPA 351.2			**Instr:** AA06				
Batch ID: W3G1531 **Preparation:** _NONE (WETCHEM)			**Prepared:** 07/20/23 09:40				**Analyst:** YMT
TKN	**0.15**	0.065	0.10	mg/l	1	07/26/23	
Method: EPA 353.2			**Instr:** AA01				
Batch ID: W3F2624 **Preparation:** _NONE (WETCHEM)			**Prepared:** 06/30/23 15:04				**Analyst:** YMT
Nitrate as N	**0.27**	0.040	0.20	mg/l	1	06/30/23 17:31	
Nitrite as N	ND	42	100	ug/l	1	06/30/23 17:31	
NO2+NO3 as N	**270**	36	200	ug/l	1	06/30/23	
Method: SM 2540C			**Instr:** OVEN17				
Batch ID: W3G0117 **Preparation:** _NONE (WETCHEM)			**Prepared:** 07/05/23 10:10				**Analyst:** bel
Total Dissolved Solids	**190**	4.0	10	mg/l	1	07/05/23	
Method: SM 2540D			**Instr:** OVEN15				
Batch ID: W3G0033 **Preparation:** _NONE (WETCHEM)			**Prepared:** 07/03/23 08:45				**Analyst:** mes
Total Suspended Solids	**6**		5	mg/l	1	07/03/23	
Metals by EPA 200 Series Methods							
Method: Calculation			**Instr:** [CALC]				
Batch ID: [CALC] **Preparation:** [CALC]			**Prepared:** 07/12/23 19:57				**Analyst:** kvm
Hardness as CaCO3, Total	**136**	0.344	3.31	mg/l	1	07/26/23	
Method: EPA 200.7			**Instr:** ICP03				
Batch ID: W3G0933 **Preparation:** EPA 200.2			**Prepared:** 07/12/23 19:57				**Analyst:** kvm
Calcium, Dissolved	**38.3**	0.160	0.500	mg/l	1	07/26/23	
Calcium, Total	**37.9**	0.0736	0.500	mg/l	1	07/26/23	
Magnesium, Total	**10.0**	0.0390	0.500	mg/l	1	07/26/23	
Phosphorus, Dissolved	**0.034**	0.018	0.050	mg/l	1	07/26/23	J
Phosphorus, Total	**0.051**	0.018	0.050	mg/l	1	07/26/23	
Method: EPA 200.8			**Instr:** ICPMS06				
Batch ID: W3G0934 **Preparation:** EPA 200.2			**Prepared:** 07/12/23 20:06				**Analyst:** tyc
Aluminum, Dissolved	**12**	4.4	20	ug/l	1	07/14/23	J
Aluminum, Total	**250**	4.4	20	ug/l	1	07/14/23	
Copper, Dissolved	**0.61**	0.23	0.50	ug/l	1	07/14/23	
Copper, Total	**1.0**	0.23	0.50	ug/l	1	07/14/23	
Iron, Dissolved	**20**	3.9	20	ug/l	1	07/14/23	

14859 Clark Avenue,City of Industry CA, 91745 | Phone: (626) 336-2139 | Fax: (626) 336-2634
www.wecklabs.com

WSP USA E&I Inc. - San Diego 9177 Sky Park Court, Ste A San Diego, CA 92123	**Project Number:** 5025-22-0004 **Project Manager:** John Rudolph	**Reported:** 08/05/2023 10:36

Sample Results

(Continued)

Sample: 405BH2A — Sampled: 06/29/23 12:30 by John Rudolph

3F29116-01 (Water) — (Continued)

Metals by EPA 200 Series Methods (Continued)

Method: EPA 200.8 — **Instr:** ICPMS06

Batch ID: W3G0934 — **Preparation:** EPA 200.2 — **Prepared:** 07/12/23 20:06 — **Analyst:** tyc

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Iron, Total	**370**	3.9	20	ug/l	1	07/14/23	
Lead, Dissolved	ND	0.083	0.20	ug/l	1	07/14/23	
Lead, Total	**0.34**	0.083	0.20	ug/l	1	07/14/23	
Manganese, Dissolved	**62**	0.11	1.0	ug/l	1	07/14/23	
Manganese, Total	**85**	0.23	1.0	ug/l	1	07/14/23	
Nickel, Dissolved	ND	0.16	2.0	ug/l	1	07/14/23	
Nickel, Total	ND	0.40	2.0	ug/l	1	07/14/23	
Selenium, Dissolved	**0.083**	0.067	0.40	ug/l	1	07/14/23	J
Selenium, Total	**0.086**	0.067	0.40	ug/l	1	07/14/23	J
Zinc, Dissolved	ND	1.7	10	ug/l	1	07/14/23	
Zinc, Total	ND	1.7	10	ug/l	1	07/14/23	

Semivolatile Organics - Low Level by GC/MS SIM Mode

Method: EPA 625.1 — **Instr:** GCMS06

Batch ID: W3G0255 — **Preparation:** EPA 625/L-L SF — **Prepared:** 07/06/23 09:33 — **Analyst:** rmr

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
1-Methylnaphthalene	ND	0.024	0.10	ug/l	1	07/14/23	
2-Methylnaphthalene	ND	0.026	0.10	ug/l	1	07/14/23	
Acenaphthene	ND	0.028	0.10	ug/l	1	07/14/23	BS-04
Acenaphthylene	ND	0.033	0.10	ug/l	1	07/14/23	BS-04
Anthracene	ND	0.025	0.10	ug/l	1	07/14/23	
Benzo (a) anthracene	ND	0.051	0.10	ug/l	1	07/14/23	
Benzo (a) pyrene	ND	0.051	0.10	ug/l	1	07/14/23	
Benzo (b) fluoranthene	ND	0.074	0.10	ug/l	1	07/14/23	
Benzo (g,h,i) perylene	ND	0.050	0.10	ug/l	1	07/14/23	
Benzo (k) fluoranthene	ND	0.059	0.10	ug/l	1	07/14/23	
Chrysene	ND	0.074	0.10	ug/l	1	07/14/23	
Dibenzo (a,h) anthracene	ND	0.081	0.10	ug/l	1	07/14/23	
Fluoranthene	ND	0.039	0.10	ug/l	1	07/14/23	
Fluorene	ND	0.029	0.10	ug/l	1	07/14/23	Q-ME
Indeno (1,2,3-cd) pyrene	ND	0.065	0.10	ug/l	1	07/14/23	
Naphthalene	ND	0.026	0.10	ug/l	1	07/14/23	
Phenanthrene	ND	0.029	0.10	ug/l	1	07/14/23	
Pyrene	ND	0.040	0.10	ug/l	1	07/14/23	
Surrogate(s)							
2-Fluorobiphenyl	*67%*	*Conc: 3.27*	*22-120*			*07/14/23*	
Nitrobenzene-d5	*62%*	*Conc: 3.06*	*47-120*			*07/14/23*	
Terphenyl-d14	*80%*	*Conc: 3.94*	*44-129*			*07/14/23*	

14859 Clark Avenue,City of Industry CA, 91745 | Phone: (626) 336-2139 | Fax: (626) 336-2634
www.wecklabs.com

WSP USA E&I Inc. - San Diego
9177 Sky Park Court, Ste A
San Diego, CA 92123

Project Number: 5025-22-0004

Project Manager: John Rudolph

Reported: 08/05/2023 10:36

Sample Results

(Continued)

Sample: 405BH2A — 3F29116-01 (Water) — Sampled: 06/29/23 12:30 by John Rudolph (Continued)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Semivolatile Organics - Low Level by GC/MS SIM Mode (Continued)							
Method: EPA 625.1 — **Instr:** GCMS06							
Batch ID: W3G0255 — **Preparation:** EPA 625/L-L SF — **Prepared:** 07/06/23 09:33 — **Analyst:** rmr							

Sample Results

(Continued)

Sample: SMC00464 — 3F29116-02 (Water) — Sampled: 06/29/23 8:30 by John Rudolph

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods							
Method: Calculation — **Instr:** [CALC]							
Batch ID: [CALC] — **Preparation:** [CALC] — **Prepared:** 07/20/23 09:40 — **Analyst:** YMT							
Nitrogen, Total	**0.38**	0.036	0.10	mg/l	1	07/26/23	
Method: EPA 350.1 — **Instr:** AA06							
Batch ID: W3G1149 — **Preparation:** _NONE (WETCHEM) — **Prepared:** 07/17/23 09:44 — **Analyst:** YMT							
Ammonia as N	**0.032**	0.017	0.10	mg/l	1	07/21/23	J
Method: EPA 351.2 — **Instr:** AA06							
Batch ID: W3G1531 — **Preparation:** _NONE (WETCHEM) — **Prepared:** 07/20/23 09:40 — **Analyst:** YMT							
TKN	**0.13**	0.065	0.10	mg/l	1	07/26/23	
Method: EPA 353.2 — **Instr:** AA01							
Batch ID: W3F2624 — **Preparation:** _NONE (WETCHEM) — **Prepared:** 06/30/23 15:04 — **Analyst:** YMT							
Nitrate as N	**0.26**	0.040	0.20	mg/l	1	06/30/23 17:33	
Nitrite as N	ND	42	100	ug/l	1	06/30/23 17:33	
NO2+NO3 as N	**260**	36	200	ug/l	1	06/30/23	
Method: SM 2540C — **Instr:** OVEN17							
Batch ID: W3F2548 — **Preparation:** _NONE (WETCHEM) — **Prepared:** 06/29/23 18:05 — **Analyst:** bel							
Total Dissolved Solids	**200**	4.0	10	mg/l	1	06/30/23	
Method: SM 2540D — **Instr:** OVEN15							
Batch ID: W3G0033 — **Preparation:** _NONE (WETCHEM) — **Prepared:** 07/03/23 08:45 — **Analyst:** mes							
Total Suspended Solids	**5**		5	mg/l	1	07/03/23	
Metals by EPA 200 Series Methods							
Method: Calculation — **Instr:** [CALC]							
Batch ID: [CALC] — **Preparation:** [CALC] — **Prepared:** 07/12/23 19:57 — **Analyst:** kvm							
Hardness as CaCO3, Total	**149**	0.344	3.31	mg/l	1	07/26/23	
Method: EPA 200.7 — **Instr:** ICP03							
Batch ID: W3G0933 — **Preparation:** EPA 200.2 — **Prepared:** 07/12/23 19:57 — **Analyst:** kvm							
Calcium, Dissolved	**42.0**	0.160	0.500	mg/l	1	07/26/23	
Calcium, Total	**42.6**	0.0736	0.500	mg/l	1	07/26/23	
Magnesium, Total	**10.2**	0.0390	0.500	mg/l	1	07/26/23	
Phosphorus, Dissolved	**0.025**	0.018	0.050	mg/l	1	07/26/23	J
Phosphorus, Total	**0.038**	0.018	0.050	mg/l	1	07/26/23	J

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Project Number: 5025-22-0004

Project Manager: John Rudolph

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Sample Results

(Continued)

Sample: SMC00464 — Sampled: 06/29/23 8:30 by John Rudolph

3F29116-02 (Water) (Continued)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Metals by EPA 200 Series Methods (Continued)							
Method: EPA 200.7 — **Instr:** ICP03							
Batch ID: W3G0933 — **Preparation:** EPA 200.2 — **Prepared:** 07/12/23 19:57 — **Analyst:** kvm							
Method: EPA 200.8 — **Instr:** ICPMS06							
Batch ID: W3G0934 — **Preparation:** EPA 200.2 — **Prepared:** 07/12/23 20:06 — **Analyst:** tyc							
Aluminum, Dissolved	**10**	4.4	20	ug/l	1	07/14/23	J
Aluminum, Total	**270**	4.4	20	ug/l	1	07/14/23	
Copper, Dissolved	**0.40**	0.23	0.50	ug/l	1	07/14/23	J
Copper, Total	**0.94**	0.23	0.50	ug/l	1	07/14/23	
Iron, Dissolved	**16**	3.9	20	ug/l	1	07/14/23	J
Iron, Total	**370**	3.9	20	ug/l	1	07/14/23	
Lead, Dissolved	ND	0.083	0.20	ug/l	1	07/14/23	
Lead, Total	**0.36**	0.083	0.20	ug/l	1	07/14/23	
Manganese, Dissolved	**48**	0.11	1.0	ug/l	1	07/14/23	
Manganese, Total	**69**	0.23	1.0	ug/l	1	07/14/23	
Nickel, Dissolved	ND	0.16	2.0	ug/l	1	07/14/23	
Nickel, Total	ND	0.40	2.0	ug/l	1	07/14/23	
Selenium, Dissolved	**0.079**	0.067	0.40	ug/l	1	07/14/23	J
Selenium, Total	**0.092**	0.067	0.40	ug/l	1	07/14/23	J
Zinc, Dissolved	ND	1.7	10	ug/l	1	07/14/23	
Zinc, Total	ND	1.7	10	ug/l	1	07/14/23	
Semivolatile Organics - Low Level by GC/MS SIM Mode							
Method: EPA 625.1 — **Instr:** GCMS06							
Batch ID: W3G0255 — **Preparation:** EPA 625/L-L SF — **Prepared:** 07/06/23 09:33 — **Analyst:** rmr							
1-Methylnaphthalene	ND	0.024	0.10	ug/l	1	07/14/23	
2-Methylnaphthalene	ND	0.026	0.10	ug/l	1	07/14/23	
Acenaphthene	ND	0.028	0.10	ug/l	1	07/14/23	BS-04
Acenaphthylene	ND	0.033	0.10	ug/l	1	07/14/23	BS-04
Anthracene	ND	0.025	0.10	ug/l	1	07/14/23	
Benzo (a) anthracene	ND	0.051	0.10	ug/l	1	07/14/23	
Benzo (a) pyrene	ND	0.051	0.10	ug/l	1	07/14/23	
Benzo (b) fluoranthene	ND	0.074	0.10	ug/l	1	07/14/23	
Benzo (g,h,i) perylene	ND	0.050	0.10	ug/l	1	07/14/23	
Benzo (k) fluoranthene	ND	0.059	0.10	ug/l	1	07/14/23	
Chrysene	ND	0.074	0.10	ug/l	1	07/14/23	
Dibenzo (a,h) anthracene	ND	0.081	0.10	ug/l	1	07/14/23	
Fluoranthene	ND	0.039	0.10	ug/l	1	07/14/23	
Fluorene	ND	0.029	0.10	ug/l	1	07/14/23	Q-ME
Indeno (1,2,3-cd) pyrene	ND	0.065	0.10	ug/l	1	07/14/23	

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Project Manager: John Rudolph

Reported: 08/05/2023 10:36

Sample Results

(Continued)

Sample: SMC00464 Sampled: 06/29/23 8:30 by John Rudolph

3F29116-02 (Water) (Continued)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Semivolatile Organics - Low Level by GC/MS SIM Mode (Continued)							
Method: EPA 625.1			**Instr:** GCMS06				
Batch ID: W3G0255 **Preparation:** EPA 625/L-L SF			**Prepared:** 07/06/23 09:33				**Analyst:** rmr
Naphthalene	ND	0.026	0.10	ug/l	1	07/14/23	
Phenanthrene	ND	0.029	0.10	ug/l	1	07/14/23	
Pyrene	ND	0.040	0.10	ug/l	1	07/14/23	
Surrogate(s)							
2-Fluorobiphenyl	*64%*	*Conc: 3.04*	*22-120*			*07/14/23*	
Nitrobenzene-d5	*62%*	*Conc: 2.93*	*47-120*			*07/14/23*	
Terphenyl-d14	*81%*	*Conc: 3.85*	*44-129*			*07/14/23*	

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Certificate of Analysis

FINAL REPORT

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Project Number: 5025-22-0004

Project Manager: John Rudolph

Reported: 08/05/2023 10:36

Sample Results Enthalpy Orange

Sample: 405BH2A
3F29116-01 (Water)

Sampled: 06/29/23 12:30 by John Rudolph

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
SM 10200-H							
Method: Chlorophyll **Batch ID:** 318393 **Prepared:** 07/05/23 09:00 **Analyst:** ATP							
Chlorophyll a	ND		1.0	mg/M3	1	07/18/23	H, ND

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Reported: 08/05/2023 10:36

Sample Results Enthalpy Orange (Continued)

Sample: SMC00464
3F29116-02 (Water)

Sampled: 06/29/23 8:30 by John Rudolph

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
SM 10200-H							
Method: Chlorophyll **Batch ID:** 318393 **Prepared:** 07/05/23 09:00 **Analyst:** ATP							
Chlorophyll a	ND		1.0	mg/M3	1	07/18/23	H, ND

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Quality Control Results

Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W3F2548 - SM 2540C											
Blank (W3F2548-BLK1)					**Prepared: 06/29/23 Analyzed: 06/30/23**						
Total Dissolved Solids	ND	4.0	10	mg/l							
LCS (W3F2548-BS1)					**Prepared: 06/29/23 Analyzed: 06/30/23**						
Total Dissolved Solids	812	4.0	10	mg/l	824		99	97-103			
Duplicate (W3F2548-DUP1)	**Source: 3F28128-11**				**Prepared: 06/29/23 Analyzed: 06/30/23**						
Total Dissolved Solids	7000	4.0	10	mg/l		6970			0.5	10	
Duplicate (W3F2548-DUP2)	**Source: 3F29117-04**				**Prepared: 06/29/23 Analyzed: 06/30/23**						
Total Dissolved Solids	6410	4.0	10	mg/l		6340			1	10	
Batch: W3F2624 - EPA 353.2											
Blank (W3F2624-BLK1)					**Prepared & Analyzed: 06/30/23**						
Nitrate as N	ND	0.040	0.15	mg/l							
Nitrite as N	ND	42	100	ug/l							
NO2+NO3 as N	ND	36	200	ug/l							
LCS (W3F2624-BS1)					**Prepared & Analyzed: 06/30/23**						
Nitrate as N	1.05	0.040	0.15	mg/l	1.00		105	90-110			
Nitrite as N	1010	42	100	ug/l	1000		101	90-110			
NO2+NO3 as N	1050	36	200	ug/l	1000		105	90-110			
Matrix Spike (W3F2624-MS1)	**Source: 3F29099-01**				**Prepared & Analyzed: 06/30/23**						
Nitrate as N	9.30	0.040	0.15	mg/l	2.00	7.31	100	90-110			
Nitrite as N	1010	42	100	ug/l	1000	ND	101	90-110			
NO2+NO3 as N	9300	36	200	ug/l	2000	7310	100	90-110			
Matrix Spike (W3F2624-MS2)	**Source: 3F29118-03**				**Prepared & Analyzed: 06/30/23**						
Nitrate as N	2.10	0.040	0.15	mg/l	2.00	ND	105	90-110			
Nitrite as N	1010	42	100	ug/l	1000	ND	101	90-110			
NO2+NO3 as N	2100	36	200	ug/l	2000	ND	105	90-110			
Matrix Spike Dup (W3F2624-MSD1)	**Source: 3F29099-01**				**Prepared & Analyzed: 06/30/23**						
Nitrate as N	9.30	0.040	0.15	mg/l	2.00	7.31	100	90-110	0	20	
Nitrite as N	1010	42	100	ug/l	1000	ND	101	90-110	0	20	
NO2+NO3 as N	9300	36	200	ug/l	2000	7310	100	90-110	0	20	
Matrix Spike Dup (W3F2624-MSD2)	**Source: 3F29118-03**				**Prepared & Analyzed: 06/30/23**						
Nitrate as N	2.07	0.040	0.15	mg/l	2.00	ND	104	90-110	1	20	
Nitrite as N	1010	42	100	ug/l	1000	ND	101	90-110	0	20	
NO2+NO3 as N	2070	36	200	ug/l	2000	ND	104	90-110	1	20	
Batch: W3G0033 - SM 2540D											
Blank (W3G0033-BLK1)					**Prepared & Analyzed: 07/03/23**						
Total Suspended Solids	ND		5	mg/l							
LCS (W3G0033-BS1)					**Prepared & Analyzed: 07/03/23**						
Total Suspended Solids	67.7		5	mg/l	62.2		109	90-110			
Duplicate (W3G0033-DUP1)	**Source: 3F29004-05**				**Prepared & Analyzed: 07/03/23**						

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Quality Control Results

(Continued)

Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W3G0033 - SM 2540D (Continued)											
Duplicate (W3G0033-DUP1)	**Source: 3F29004-05**				**Prepared & Analyzed: 07/03/23**						
Total Suspended Solids	90.0		5	mg/l		86.7			4	10	
Duplicate (W3G0033-DUP2)	**Source: 3F30122-01**				**Prepared & Analyzed: 07/03/23**						
Total Suspended Solids	216		5	mg/l		210			3	10	
Batch: W3G0117 - SM 2540C											
Blank (W3G0117-BLK1)					**Prepared & Analyzed: 07/05/23**						
Total Dissolved Solids	ND	4.0	10	mg/l							
LCS (W3G0117-BS1)					**Prepared & Analyzed: 07/05/23**						
Total Dissolved Solids	813	4.0	10	mg/l	824		99	97-103			
Duplicate (W3G0117-DUP1)	**Source: 3F30124-04**				**Prepared & Analyzed: 07/05/23**						
Total Dissolved Solids	2040	4.0	10	mg/l		2070			1	10	
Duplicate (W3G0117-DUP2)	**Source: 3F29117-12**				**Prepared & Analyzed: 07/05/23**						
Total Dissolved Solids	3090	4.0	10	mg/l		3050			1	10	
Batch: W3G1149 - EPA 350.1											
Blank (W3G1149-BLK1)					**Prepared: 07/17/23 Analyzed: 07/21/23**						
Ammonia as N	ND	0.017	0.10	mg/l							
Blank (W3G1149-BLK2)					**Prepared: 07/17/23 Analyzed: 07/21/23**						
Ammonia as N	ND	0.017	0.10	mg/l							
LCS (W3G1149-BS1)					**Prepared: 07/17/23 Analyzed: 07/21/23**						
Ammonia as N	0.242	0.017	0.10	mg/l	0.250		97	90-110			
LCS (W3G1149-BS2)					**Prepared: 07/17/23 Analyzed: 07/21/23**						
Ammonia as N	0.254	0.017	0.10	mg/l	0.250		102	90-110			
Matrix Spike (W3G1149-MS1)	**Source: 3F29094-03**				**Prepared: 07/17/23 Analyzed: 07/21/23**						
Ammonia as N	0.354	0.017	0.10	mg/l	0.250	0.106	99	90-110			
Matrix Spike (W3G1149-MS2)	**Source: 3F30076-01**				**Prepared: 07/17/23 Analyzed: 07/21/23**						
Ammonia as N	0.253	0.017	0.10	mg/l	0.250	ND	101	90-110			
Matrix Spike Dup (W3G1149-MSD1)	**Source: 3F29094-03**				**Prepared: 07/17/23 Analyzed: 07/21/23**						
Ammonia as N	0.356	0.017	0.10	mg/l	0.250	0.106	100	90-110	0.5	15	
Matrix Spike Dup (W3G1149-MSD2)	**Source: 3F30076-01**				**Prepared: 07/17/23 Analyzed: 07/21/23**						
Ammonia as N	0.254	0.017	0.10	mg/l	0.250	ND	102	90-110	0.4	15	
Batch: W3G1531 - EPA 351.2											
Blank (W3G1531-BLK1)					**Prepared: 07/20/23 Analyzed: 07/26/23**						
TKN	ND	0.065	0.10	mg/l							
Blank (W3G1531-BLK2)					**Prepared: 07/20/23 Analyzed: 07/26/23**						
TKN	ND	0.065	0.10	mg/l							
LCS (W3G1531-BS1)					**Prepared: 07/20/23 Analyzed: 07/26/23**						
TKN	0.960	0.065	0.10	mg/l	1.00		96	90-110			
LCS (W3G1531-BS2)					**Prepared: 07/20/23 Analyzed: 07/26/23**						

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Quality Control Results

(Continued)

Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W3G1531 - EPA 351.2 (Continued)											
LCS (W3G1531-BS2)					**Prepared: 07/20/23**	**Analyzed: 07/26/23**					
TKN	0.960	0.065	0.10	mg/l	1.00		96	90-110			
Duplicate (W3G1531-DUP1)	**Source: 3F29020-01**				**Prepared: 07/20/23**	**Analyzed: 07/26/23**					
TKN	0.448	0.065	0.10	mg/l		0.441			2	10	
Matrix Spike (W3G1531-MS1)	**Source: 3F29004-05**				**Prepared: 07/20/23**	**Analyzed: 07/26/23**					
TKN	4.47	0.065	0.10	mg/l	1.00	3.31	116	90-110			MS-02
Matrix Spike (W3G1531-MS2)	**Source: 3F29118-03**				**Prepared: 07/20/23**	**Analyzed: 07/26/23**					
TKN	0.959	0.065	0.10	mg/l	1.00	ND	96	90-110			
Matrix Spike Dup (W3G1531-MSD1)	**Source: 3F29004-05**				**Prepared: 07/20/23**	**Analyzed: 07/26/23**					
TKN	4.67	0.065	0.10	mg/l	1.00	3.31	137	90-110	4	10	MS-02
Matrix Spike Dup (W3G1531-MSD2)	**Source: 3F29118-03**				**Prepared: 07/20/23**	**Analyzed: 07/26/23**					
TKN	0.921	0.065	0.10	mg/l	1.00	ND	92	90-110	4	10	

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Quality Control Results

(Continued)

Metals by EPA 200 Series Methods

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W3G0933 - EPA 200.7											
Blank (W3G0933-BLK1)				**Prepared: 07/12/23 Analyzed: 07/26/23**							
Calcium, Dissolved	ND	0.160	0.500	mg/l							
Calcium, Total	ND	0.0736	0.500	mg/l							
Magnesium, Total	ND	0.0390	0.500	mg/l							
Phosphorus, Dissolved	ND	0.018	0.050	mg/l							
Phosphorus, Total	ND	0.018	0.050	mg/l							
LCS (W3G0933-BS1)				**Prepared: 07/12/23 Analyzed: 07/26/23**							
Calcium, Dissolved	48.9	0.160	0.500	mg/l	50.2		97	85-115			
Calcium, Total	48.9	0.0736	0.500	mg/l	50.2		97	85-115			
Magnesium, Total	48.0	0.0390	0.500	mg/l	50.2		96	85-115			
Phosphorus, Dissolved	2.11	0.018	0.050	mg/l	2.00		105	85-115			
Phosphorus, Total	2.11	0.018	0.050	mg/l	2.00		105	85-115			
Matrix Spike (W3G0933-MS1)	**Source: 3F19027-01**			**Prepared: 07/12/23 Analyzed: 07/26/23**							
Calcium, Dissolved	88.3	0.160	0.500	mg/l	50.2	41.4	93	70-130			
Calcium, Total	88.3	0.0736	0.500	mg/l	50.2	41.4	93	70-130			
Magnesium, Total	66.3	0.0390	0.500	mg/l	50.2	19.2	94	70-130			
Phosphorus, Dissolved	2.41	0.018	0.050	mg/l	2.00	0.336	104	70-130			
Phosphorus, Total	2.41	0.018	0.050	mg/l	2.00	0.336	104	70-130			
Matrix Spike (W3G0933-MS2)	**Source: 3F30016-01**			**Prepared: 07/12/23 Analyzed: 07/26/23**							
Calcium, Dissolved	116	0.160	0.500	mg/l	50.2	70.0	91	70-130			
Calcium, Total	116	0.0736	0.500	mg/l	50.2	70.0	91	70-130			
Magnesium, Total	60.4	0.0390	0.500	mg/l	50.2	13.8	93	70-130			
Phosphorus, Dissolved	2.08	0.018	0.050	mg/l	2.00	ND	104	70-130			
Phosphorus, Total	2.08	0.018	0.050	mg/l	2.00	ND	104	70-130			
Matrix Spike Dup (W3G0933-MSD1)	**Source: 3F19027-01**			**Prepared: 07/12/23 Analyzed: 07/26/23**							
Calcium, Dissolved	88.7	0.160	0.500	mg/l	50.2	41.4	94	70-130	0.5	30	
Calcium, Total	88.7	0.0736	0.500	mg/l	50.2	41.4	94	70-130	0.5	30	
Magnesium, Total	66.6	0.0390	0.500	mg/l	50.2	19.2	94	70-130	0.5	30	
Phosphorus, Dissolved	2.42	0.018	0.050	mg/l	2.00	0.336	104	70-130	0.04	30	
Phosphorus, Total	2.42	0.018	0.050	mg/l	2.00	0.336	104	70-130	0.04	30	
Matrix Spike Dup (W3G0933-MSD2)	**Source: 3F30016-01**			**Prepared: 07/12/23 Analyzed: 07/26/23**							
Calcium, Dissolved	118	0.160	0.500	mg/l	50.2	70.0	95	70-130	2	30	
Calcium, Total	118	0.0736	0.500	mg/l	50.2	70.0	95	70-130	2	30	
Magnesium, Total	61.4	0.0390	0.500	mg/l	50.2	13.8	95	70-130	2	30	
Phosphorus, Dissolved	2.10	0.018	0.050	mg/l	2.00	ND	105	70-130	1	30	
Phosphorus, Total	2.10	0.018	0.050	mg/l	2.00	ND	105	70-130	1	30	
Batch: W3G0934 - EPA 200.8											
Blank (W3G0934-BLK1)				**Prepared: 07/13/23 Analyzed: 07/14/23**							
Aluminum, Dissolved	ND	4.4	20	ug/l							

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Project Number: 5025-22-0004

Project Manager: John Rudolph

Reported: 08/05/2023 10:36

Quality Control Results

(Continued)

Metals by EPA 200 Series Methods (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W3G0934 - EPA 200.8 (Continued)											
Blank (W3G0934-BLK1)					**Prepared: 07/13/23 Analyzed: 07/14/23**						
Aluminum, Total	ND	4.4	20	ug/l							
Copper, Dissolved	ND	0.23	0.50	ug/l							
Copper, Total	ND	0.23	0.50	ug/l							
Iron, Dissolved	ND	3.9	20	ug/l							
Iron, Total	ND	3.9	20	ug/l							
Lead, Dissolved	ND	0.083	0.20	ug/l							
Lead, Total	ND	0.083	0.20	ug/l							
Manganese, Dissolved	ND	0.11	1.0	ug/l							
Manganese, Total	ND	0.23	1.0	ug/l							
Nickel, Dissolved	ND	0.16	2.0	ug/l							
Nickel, Total	ND	0.40	2.0	ug/l							
Selenium, Dissolved	ND	0.067	0.40	ug/l							
Selenium, Total	ND	0.067	0.40	ug/l							
Zinc, Dissolved	ND	1.7	10	ug/l							
Zinc, Total	ND	1.7	10	ug/l							
LCS (W3G0934-BS1)					**Prepared: 07/13/23 Analyzed: 07/14/23**						
Aluminum, Dissolved	55.0	4.4	20	ug/l	50.0		110	85-115			
Aluminum, Total	55.0	4.4	20	ug/l	50.0		110	85-115			
Copper, Dissolved	50.9	0.23	0.50	ug/l	50.0		102	85-115			
Copper, Total	50.9	0.23	0.50	ug/l	50.0		102	85-115			
Iron, Dissolved	1120	3.9	20	ug/l	1050		107	85-115			
Iron, Total	1120	3.9	20	ug/l	1050		107	85-115			
Lead, Dissolved	49.8	0.083	0.20	ug/l	50.0		99	85-115			
Lead, Total	49.8	0.083	0.20	ug/l	50.0		99	85-115			
Manganese, Dissolved	50.3	0.11	1.0	ug/l	50.0		100	85-115			
Manganese, Total	50.3	0.23	1.0	ug/l	50.0		100	85-115			
Nickel, Dissolved	50.4	0.16	2.0	ug/l	50.0		101	85-115			
Nickel, Total	50.4	0.40	2.0	ug/l	50.0		101	85-115			
Selenium, Dissolved	49.9	0.067	0.40	ug/l	50.0		100	85-115			
Selenium, Total	49.9	0.067	0.40	ug/l	50.0		100	85-115			
Zinc, Dissolved	50.3	1.7	10	ug/l	50.0		101	85-115			
Zinc, Total	50.3	1.7	10	ug/l	50.0		101	85-115			
Matrix Spike (W3G0934-MS1)	**Source: 3F29118-01**				**Prepared: 07/13/23 Analyzed: 07/14/23**						
Aluminum, Total	3470	4.4	20	ug/l	50.0	3170	587	70-130			MS-02
Copper, Total	53.4	0.23	0.50	ug/l	50.0	5.66	95	70-130			
Iron, Total	5020	3.9	20	ug/l	1050	3940	103	70-130			
Lead, Total	54.0	0.083	0.20	ug/l	50.0	3.60	101	70-130			
Manganese, Total	437	0.23	1.0	ug/l	50.0	385	104	70-130			
Nickel, Total	50.9	0.40	2.0	ug/l	50.0	3.17	95	70-130			

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Quality Control Results

(Continued)

Metals by EPA 200 Series Methods (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W3G0934 - EPA 200.8 (Continued)											
Matrix Spike (W3G0934-MS1)	**Source: 3F29118-01**				**Prepared: 07/13/23**	**Analyzed: 07/14/23**					
Selenium, Total	50.5	0.067	0.40	ug/l	50.0	1.92	97	70-130			
Zinc, Total	71.7	1.7	10	ug/l	50.0	23.8	96	70-130			
Matrix Spike (W3G0934-MS2)	**Source: 3G06049-01**				**Prepared: 07/13/23**	**Analyzed: 07/14/23**					
Aluminum, Total	52.7	4.4	20	ug/l	50.0	ND	105	70-130			
Copper, Total	50.8	0.23	0.50	ug/l	50.0	ND	102	70-130			
Iron, Total	1130	3.9	20	ug/l	1050	ND	108	70-130			
Lead, Total	50.1	0.083	0.20	ug/l	50.0	ND	100	70-130			
Manganese, Total	50.9	0.23	1.0	ug/l	50.0	ND	102	70-130			
Nickel, Total	51.1	0.40	2.0	ug/l	50.0	ND	102	70-130			
Selenium, Total	49.9	0.067	0.40	ug/l	50.0	ND	100	70-130			
Zinc, Total	50.4	1.7	10	ug/l	50.0	ND	101	70-130			
Matrix Spike Dup (W3G0934-MSD1)	**Source: 3F29118-01**				**Prepared: 07/13/23**	**Analyzed: 07/14/23**					
Aluminum, Total	3340	4.4	20	ug/l	50.0	3170	341	70-130	4	30	MS-02
Copper, Total	53.2	0.23	0.50	ug/l	50.0	5.66	95	70-130	0.3	30	
Iron, Total	5100	3.9	20	ug/l	1050	3940	111	70-130	2	30	
Lead, Total	53.5	0.083	0.20	ug/l	50.0	3.60	100	70-130	0.8	30	
Manganese, Total	431	0.23	1.0	ug/l	50.0	385	91	70-130	1	30	
Nickel, Total	50.3	0.40	2.0	ug/l	50.0	3.17	94	70-130	1	30	
Selenium, Total	50.4	0.067	0.40	ug/l	50.0	1.92	97	70-130	0.3	30	
Zinc, Total	72.1	1.7	10	ug/l	50.0	23.8	97	70-130	0.6	30	
Matrix Spike Dup (W3G0934-MSD2)	**Source: 3G06049-01**				**Prepared: 07/13/23**	**Analyzed: 07/14/23**					
Aluminum, Total	53.0	4.4	20	ug/l	50.0	ND	106	70-130	0.5	30	
Copper, Total	51.0	0.23	0.50	ug/l	50.0	ND	102	70-130	0.3	30	
Iron, Total	1140	3.9	20	ug/l	1050	ND	108	70-130	0.4	30	
Lead, Total	50.2	0.083	0.20	ug/l	50.0	ND	100	70-130	0.2	30	
Manganese, Total	50.9	0.23	1.0	ug/l	50.0	ND	102	70-130	0.1	30	
Nickel, Total	50.6	0.40	2.0	ug/l	50.0	ND	101	70-130	0.9	30	
Selenium, Total	49.6	0.067	0.40	ug/l	50.0	ND	99	70-130	0.7	30	
Zinc, Total	49.2	1.7	10	ug/l	50.0	ND	98	70-130	2	30	

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Project Manager: John Rudolph

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Quality Control Results

(Continued)

Semivolatile Organics - Low Level by GC/MS SIM Mode

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W3G0255 - EPA 625.1											
Blank (W3G0255-BLK1)					**Prepared: 07/06/23 Analyzed: 07/14/23**						
1-Methylnaphthalene	ND	0.024	0.10	ug/l							
2-Methylnaphthalene	ND	0.026	0.10	ug/l							
Acenaphthene	ND	0.028	0.10	ug/l							
Acenaphthylene	ND	0.033	0.10	ug/l							
Anthracene	ND	0.025	0.10	ug/l							
Benzo (a) anthracene	ND	0.051	0.10	ug/l							
Benzo (a) pyrene	ND	0.051	0.10	ug/l							
Benzo (b) fluoranthene	ND	0.074	0.10	ug/l							
Benzo (g,h,i) perylene	ND	0.050	0.10	ug/l							
Benzo (k) fluoranthene	ND	0.059	0.10	ug/l							
Chrysene	ND	0.074	0.10	ug/l							
Dibenzo (a,h) anthracene	ND	0.081	0.10	ug/l							
Fluoranthene	ND	0.039	0.10	ug/l							
Fluorene	ND	0.029	0.10	ug/l							
Indeno (1,2,3-cd) pyrene	ND	0.065	0.10	ug/l							
Naphthalene	ND	0.026	0.10	ug/l							
Phenanthrene	ND	0.029	0.10	ug/l							
Pyrene	ND	0.040	0.10	ug/l							
Surrogate(s)											
2-Fluorobiphenyl	*9.64*			*ug/l*	*20.0*		*48*	*22-120*			
Nitrobenzene-d5	*10.6*			*ug/l*	*20.0*		*53*	*47-120*			
Terphenyl-d14	*17.4*			*ug/l*	*20.0*		*87*	*44-129*			
LCS (W3G0255-BS1)					**Prepared: 07/06/23 Analyzed: 07/14/23**						
1-Methylnaphthalene	0.519	0.024	0.10	ug/l	1.00		52	0-200			
2-Methylnaphthalene	0.521	0.026	0.10	ug/l	1.00		52	0-200			
Acenaphthene	0.596	0.028	0.10	ug/l	1.00		60	60-132			
Acenaphthylene	0.590	0.033	0.10	ug/l	1.00		59	54-126			
Anthracene	0.674	0.025	0.10	ug/l	1.00		67	43-120			
Benzo (a) anthracene	0.723	0.051	0.10	ug/l	1.00		72	42-133			
Benzo (a) pyrene	0.671	0.051	0.10	ug/l	1.00		67	32-148			
Benzo (b) fluoranthene	0.736	0.074	0.10	ug/l	1.00		74	42-140			AN-IP
Benzo (g,h,i) perylene	0.574	0.050	0.10	ug/l	1.00		57	0.1-195			
Benzo (k) fluoranthene	0.745	0.059	0.10	ug/l	1.00		74	25-146			AN-IP
Chrysene	0.776	0.074	0.10	ug/l	1.00		78	44-140			
Dibenzo (a,h) anthracene	0.526	0.081	0.10	ug/l	1.00		53	0.1-200			
Fluoranthene	0.807	0.039	0.10	ug/l	1.00		81	43-121			
Fluorene	0.629	0.029	0.10	ug/l	1.00		63	70-120			Q-ME
Indeno (1,2,3-cd) pyrene	0.533	0.065	0.10	ug/l	1.00		53	0.1-151			
Naphthalene	0.528	0.026	0.10	ug/l	1.00		53	36-120			

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Quality Control Results

(Continued)

Semivolatile Organics - Low Level by GC/MS SIM Mode (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W3G0255 - EPA 625.1 (Continued)											
LCS (W3G0255-BS1)					**Prepared: 07/06/23**	**Analyzed: 07/14/23**					
Phenanthrene	0.669	0.029	0.10	ug/l	1.00		67	65-120			
Pyrene	0.794	0.040	0.10	ug/l	1.00		79	70-120			
Surrogate(s)											
2-Fluorobiphenyl	*2.88*			*ug/l*	*5.00*		*58*	*22-120*			
Nitrobenzene-d5	*2.70*			*ug/l*	*5.00*		*54*	*47-120*			
Terphenyl-d14	*3.57*			*ug/l*	*5.00*		*71*	*44-129*			
LCS Dup (W3G0255-BSD1)					**Prepared: 07/06/23**	**Analyzed: 07/14/23**					
1-Methylnaphthalene	0.424	0.024	0.10	ug/l	1.00		42	0-200	20	200	
2-Methylnaphthalene	0.424	0.026	0.10	ug/l	1.00		42	0-200	21	200	
Acenaphthene	0.541	0.028	0.10	ug/l	1.00		54	60-132	10	30	BS-04
Acenaphthylene	0.515	0.033	0.10	ug/l	1.00		52	54-126	14	30	BS-04
Anthracene	0.770	0.025	0.10	ug/l	1.00		77	43-120	13	30	
Benzo (a) anthracene	0.753	0.051	0.10	ug/l	1.00		75	42-133	4	30	
Benzo (a) pyrene	0.593	0.051	0.10	ug/l	1.00		59	32-148	12	30	
Benzo (b) fluoranthene	0.725	0.074	0.10	ug/l	1.00		73	42-140	1	30	AN-IP
Benzo (g,h,i) perylene	0.298	0.050	0.10	ug/l	1.00		30	0.1-195	63	30	Q-12
Benzo (k) fluoranthene	0.589	0.059	0.10	ug/l	1.00		59	25-146	23	30	AN-IP
Chrysene	0.716	0.074	0.10	ug/l	1.00		72	44-140	8	30	
Dibenzo (a,h) anthracene	0.258	0.081	0.10	ug/l	1.00		26	0.1-200	69	30	Q-12
Fluoranthene	0.903	0.039	0.10	ug/l	1.00		90	43-121	11	30	
Fluorene	0.624	0.029	0.10	ug/l	1.00		62	70-120	0.8	30	BS-04
Indeno (1,2,3-cd) pyrene	0.420	0.065	0.10	ug/l	1.00		42	0.1-151	24	30	
Naphthalene	0.424	0.026	0.10	ug/l	1.00		42	36-120	22	30	
Phenanthrene	0.776	0.029	0.10	ug/l	1.00		78	65-120	15	30	
Pyrene	0.902	0.040	0.10	ug/l	1.00		90	70-120	13	30	
Surrogate(s)											
2-Fluorobiphenyl	*2.47*			*ug/l*	*5.00*		*49*	*22-120*			
Nitrobenzene-d5	*2.04*			*ug/l*	*5.00*		*41*	*47-120*			*S-11*
Terphenyl-d14	*2.83*			*ug/l*	*5.00*		*57*	*44-129*			

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Project Number: 5025-22-0004

Project Manager: John Rudolph

Reported:
08/05/2023 10:36

Notes and Definitions

Item	Definition
AN-IP	Sample results for structural isomers may have contribution from their isomeric pair.
BS-04	The recovery of this analyte in LCS or LCSD was outside control limit. Sample was accepted based on the remaining LCS, LCSD or LCS-LL.
H	Holding time was exceeded
J	Estimated conc. detected <MRL and >MDL.
MS-02	The RPD and/or percent recovery for this QC spike sample cannot be accurately calculated due to the high concentration of analyte inherent in the sample.
ND	Not Detected
Q-12	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on the percent recoveries and/or other acceptable QC data.
Q-ME	Acceptable QC with marginal exceedance
S-11	Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.
%REC	Percent Recovery
Dil	Dilution
MDL	Method Detection Limit
MRL	The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. The MRL is also known as Limit of Quantitation (LOQ)
ND	NOT DETECTED at or above the Method Reporting Limit (MRL). If Method Detection Limit (MDL) is reported, then ND means not detected at or above the MDL.
RPD	Relative Percent Difference
Source	Sample that was matrix spiked or duplicated.

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance.

All results are expressed on wet weight basis unless otherwise specified.

All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS002.

7/3/2023: Per John R. ok to proceed with Chlorophyll-A testing past hold time. -kgt

3F29116

wsp

Chain of Custody

Control Number:

Date: 6/29/23 Page: 1 of 1

Project Manager: John Rudolph	phone: 858-243-8158	Bill To: John Rudolph	Report To: John Rudolph
Project Name: Fire Effects Study - Dry Weather		Company: WSP USA	Company: WSP USA
Project# 5025220004.05	Please include this	Address: 9177 Sky Park Court	Email: john.rudolph@wsp.com
PO# C015102726; GL Code 573000, Org 5025	info on invoice	San Diego, CA 92123	(electronic copies only)
Sampler's Name: John Rudolph		Lab Use	
QC Level:	TAT:	Preservatives	

Sample Station ID	Client ID	Date Collected	Time Collected	# Containers	Soil/Sediment	Seawater	Freshwater	Algae	Filter	Benthic Macroinverts	Hardness	TSS	TDS	Total Metals	Dissolved Metals	Nutrients	PAHs	Chlorophyll-a
~~405BH2B~~ 405BH2A		6/29/2023	1230	12			x				x	x	x	x	x	x	x	x
SMC00464		6/29/2023	0830	12			x				x	x	x	x	x	x	x	x

	Date	Time
Samplers Signature:	6/29/23	1606
Relinquished By:	6/29/23	1606
Received By:	6/29/23	16:06
Relinquished By:		
Received By (LAB):		

For Lab Use

Lab No.:

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If problems, Amec contacted: Y or N
Date contacted: / /
Temperature (°C): 12.1 TD281

Comments

PLEASE SEE ATTACHED LIST FOR DETAILED ANALYTE LIST

12.2 Water Quality Samples

Water quality samples will be labeled with the project name, sample ID number, site location, date and time collected, analyses to be performed, and sample preservatives (if any). Samples will then be stored and transported on wet ice (6 degrees Celsius [°C]) to the proper analytical laboratory within the appropriate time frame so analyses can be initiated the within specified holding times (Table 12-2).

Table 12-2.
Sample Handling and Holding Times

Analyte	Amount Required	Holding Time	Recommended Container	Recommended Preservation
Water Field Parameters				
pH	In Field	NA	NA	NA
Temperature				
Specific Conductivity	In Field	NA	NA	NA
Dissolved Oxygen	In Field	NA	NA	NA
Turbidity	In Field	NA	NA	NA
Water Conventional Parameters				
Hardness	100 mL	6 months	Poly	Cool to ≤ 6°C
TDS	500 mL	7 days	Poly	Cool to ≤ 6°C
TSS	500 mL	7 days	Glass, Poly	Cool to ≤ 6°C
Water Metal Parameters[1]				
Aluminum (Dissolved)	250 mL	180 days	250-mL Poly	HNO_3, Lab filtered
Aluminum (Total)	250 mL	180 days	250-mL Poly	HNO_3
Cadmium (Dissolved)	250 mL	180 days	250-mL Poly	HNO_3, Lab filtered
Cadmium (Total)	250 mL	180 days	250-mL Poly	HNO_3
Copper (Dissolved)	250 mL	180 days	250-mL Poly	HNO_3, Lab filtered
Copper (Total)	250 mL	180 days	250-mL Poly	HNO_3
Iron (Dissolved)	250 mL	180 days	250-mL Poly	HNO_3, Lab filtered
Iron (Total)	250 mL	180 days	250-mL Poly	HNO_3
Lead (Dissolved)	250 mL	180 days	250-mL Poly	HNO_3, Lab filtered
Lead (Total)	250 mL	180 days	250-mL Poly	HNO_3
Manganese (Dissolved)	250 mL	180 days	250-mL Poly	HNO_3, Lab filtered
Manganese (Total)	250 mL	180 days	250-mL Poly	HNO_3
Nickel (Dissolved)	250 mL	180 days	250-mL Poly	HNO_3, Lab filtered
Nickel (Total)	250 mL	180 days	250-mL Poly	HNO_3

Table 12-2.
Water Sample Handling and Holding Times (continued)

Analyte	Amount Required	Holding Time	Recommended Container	Recommended Preservation
Selenium (Dissolved)	250 mL	180 days	250-mL Poly	HNO_3, Lab filtered
Selenium (Total)	250 mL	180 days	250-mL Poly	HNO_3
Zinc (Dissolved)	250 mL	180 days	250-mL Poly	HNO_3, Lab filtered
Zinc (Total)	250 mL	180 days	250-mL Poly	HNO_3
Water Nutrient Parameters				
Ammonia	250 mL	48 hours; 28 days if acidified	250-mL Poly	Cool to ≤ 6°C; samples may be preserved with 2 mL of H_2SO_4 per L
Nitrate	250 mL	2 days	250-mL Poly	Cool to ≤ 6°C
Nitrite	250 mL	2 days	250-mL Poly	Cool to ≤ 6°C
TKN	250 mL	7 days; 28 days if acidified	250-mL Poly	Cool to ≤ 6°C; H_2SO_4 to pH < 2
Total Nitrogen (Calculation)	NA	NA	NA	NA
Dissolved Phosphorus	250 mL	28 days	250-mL Poly	Filter within 15 minutes of collection; Cool to ≤ 6°C; H_2SO_4 to pH < 2
Total Phosphorus	250 mL	28 days	250-mL Poly	Cool to ≤ 6°C; H_2SO_4 to pH < 2
Water Biologic Parameters				
Chlorophyll-a	1,000 mL	2 days	1-liter Amber	Cool to ≤ 6°C
Water PAHs				
Total PAHs	1,000 mL	7 days extraction/ 40 days analysis	500-mL Amber Glass	Cool to ≤ 6°C

°C = degree(s) Celsius; HNO_3 = nitric acid; H_2SO_4 = sulfuric acid; mL = milliliter(s); NA = not applicable; P = plastic; PAH = polycyclic aromatic hydrocarbon; TDS = total dissolved solids; TKN = total Kjeldahl nitrogen; TSS = total suspended solids

1. Metals samples will be acidified by the laboratory.

Sample Receipt Checklist

WECK LABORATORIES, INC.

Weck WKO:	**3F29116**	Date/Time Received:	06/29/23 @ 16:06
WKO Logged by:	Lester Abad	# of Samples:	02
Samples Checked by:	Lester Abad	Delivered by:	Client

	Task	Yes	No	N/A	Comments
COC	COC present at receipt?	☒	☐		
	COC properly completed?	☒	☐		
	COC matches sample labels?	☒	☐		
	Project Manager notified about COC discrepancy?	☐	☐	☒	
Receipt Information	Sample Temperature	12.1°C			
	Samples received on ice?	☒	☐		
	Ice Type (Blue/Wet)	WET			
	All samples intact?	☒	☐		
	Samples in proper containers?	☒	☐		
	Sufficient sample volume?	☒	☐		
	Samples intact?	☒	☐		
	Received within holding time?	☐	☐		
	Project Manager notified about receipt info?	☐	☐	☒	
Sample Preservation Verification?	Sample labels checked for correct preservation?	☒	☐	☐	
	VOC Headspace: (No) none, If Yes (see comment) 524.2, 524.3, 624.1, 8260, 1666 P/T, LUFT	☐	☐	☒	☐<6mm/Pea Size?
	pH verified upon receipt? Metals <2; H2SO4 pres tests <2; 522<4; TOC <2; 508.1, 525.2<2, 6710B<2, 608.3 5-9	☒	☐	☐	pH paper Lot#
	Free Chlorine Tested <0.1 (Organics Analyses)	☒	☐	☐	Cl Test Strip Lot#
	O&G pH <2 verified?	☐	☐	☐	pH paper Lot# pH Reading:
	pH adjusted for O&G	☐	☐	☐	Acid Lot# Amt added:
	Project Manager notified about sample preservation?	☐	☐	☒	

PM Comments

Sample Receipt Checklist Completed by:

Signature: Lester Abad

Date: 06/29/23

PHYSIS
TERRA FAUNA FLORA AQUA AURA
ENVIRONMENTAL LABORATORIES, INC.
Innovative Solutions for Nature

PROJECT SAMPLE LIST

WSP USA PHYSIS Project ID: 2307002-002

Fire Effects Study - Dry Weather Project # 5025220004.05 GL Code 573000 O Total Samples: 2

PHYSIS ID	Sample ID	Description	Date	Time	Matrix	Sample Type
108045	405BH2A		6/29/2023	12:30	Biologic	Not Specified
108046	SMC00464		6/29/2023	8:50	Biologic	Not Specified

Chain of Custody

Control Number:

Date: 6/29/23 | Page: 1 of 1

Project Manager: John Rudolph	phone: 858-243-8158	Bill To: John Rudolph	Report To: John Rudolph
Project Name: Fire Effects Study - Dry Weather		Company: WSP USA	Company: WSP USA
Project# 5025220004.05	please include this info on invoice	Address: 9177 Sky Park Court	Email: john.rudolph@wsp.com
[redacted]; GL Code 573000, Org 5025		San Diego, CA 92123	(electronic copies only)
Sampler's Name: John Rudolph		Lab Use	
QC Level:	TAT:	Preservatives	

Sample Station ID	Client ID	Date Collected	Time Collected	# Containers	Soil/Sediment	Seawater	Freshwater	Algae	Filter	Benthic Macroinverts	Chlorophyll-a	Ash-free Dry Mass
~~405BH2B~~ 405BH2A		6/29/2023	1230	2					x		x	x
SMC00464		6/29/2023	0850	2					x		x	x

Samplers Signature		Date 6/29/23	Time 1500
Relinquished By:	Nick Jumah	Date 7/6/23	Time 1600
Received By:		Date 7/7/23	Time 925
Relinquished By:		Date	Time
Received By (LAB):		Date	Time

For Lab Use

Lab No.:

Does COC match samples: Y or N
Broken container: Y or N

Received within holding time: Y or N
COC seal intact: Y or N

Any other problems: Y or N
If problems, Amec contacted: Y or N

Date contacted: ____/____/____
Temperature (°C): ______

Comments

Submitted on 47mm glass-fiber filters

filter volume : 25mL

PHYSIS

TERRA FAUNA FLORA AQUA AURA
ENVIRONMENTAL LABORATORIES, INC.
Innovative Solutions for Nature

Sample Receipt Summary

PHYSIS ENVIRONMENTAL LABORATORIES, INC. *Innovative Solutions for Nature*

Project Iteration ID: 2307002-002
Client Name: WSP USA
Project Name: Fire Effects Study - Dry Weather Project # 5025220004.05 GL Code 573000 Org 5025
COC Page Number: 2 of 2
Bottle Label Color: NA

Receiving Info

1. Initials Received By: RGH
2. Date Received: 7/7/23
3. Time Received: 925
4. Client Name: WSP
5. Courier Information: (Please circle)
   - Client
   - UPS
   - Area Fast
   - DRS
   - FedEx
   - GSO/GLS
   - Ontrac
   - PAMS
   - PHYSIS Driver:
     i. Start Time:______
     ii. End Time:______
     iii. Total Mileage:______
     iv. Number of Pickups:______
6. Container Information: (Please put the # of containers or circle none)
   - 1 Cooler
   - __ Styrofoam Cooler
   - __ Boxes
   - None
   - __ Carboy(s)
   - __ Carboy Trash Can(s)
   - __ Carboy Cap(s)
   - Other ______
7. What type of ice was used: (Please circle any that apply)
   - Wet Ice
   - Blue Ice
   - Dry Ice
   - Water
   - None
8. Randomly Selected Samples Temperature (°C): 12.6 Used I/R Thermometer # ____

Inspection Info

1. Initials Inspected By: RGH

Sample Integrity Upon Receipt:

1. COC(s) included and completely filled out.................. Yes / No
2. All sample containers arrived intact.................. Yes / No
3. All samples listed on COC(s) are present.................. Yes / No
4. Information on containers consistent with information on COC(s).............. Yes / No
5. Correct containers and volume for all analyses indicated.................. Yes / No
6. All samples received within method holding time.................. Yes / No
7. Correct preservation used for all analyses indicated.................. Yes / No
8. Name of sampler included on COC(s).................. Yes / No

Notes:

See temp.
Composite volume & Area info missing.

wsp

Chain of Custody

Control Number:

Date: 6/29/23 Page: 1 of 1

Project Manager: John Rudolph	phone: 858-243-8158	Bill To: John Rudolph	Report To: John Rudolph
Project Name: Fire Effects Study - Dry Weather		Company: WSP USA	Company: WSP USA
Project# 5025220004.05	please include this info on invoice	Address: 9177 Sky Park Court	Email: john.rudolph@wsp.com
[redacted]; GL Code 573000, Org 5025		San Diego, CA 92123	(electronic copies only)
Sampler's Name: John Rudolph		Lab Use	
QC Level:	TAT:	Preservatives	

Sample Station ID	Client ID	Date Collected	Time Collected	# Containers	Soil/Sediment	Seawater	Freshwater	Algae	Filter	Benthic Macroinverts	Chlorophyll-a	Ash-free Dry Mass
~~405BH2B~~ 405BH2A		6/29/2023	1230	2					x		x	x
SMC00464		6/29/2023	0850	2					x		x	x

Sample Data — Matrix — Analyses

	Date	Time
Samplers Signature	6/29/23	1500
Relinquished By: Nick Jenush	7/6/23	1600
Received By:	7/7/23	925
Relinquished By:		
Received By (LAB):		

For Lab Use

Lab No.:

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If problems, Amec contacted: Y or N
Date contacted: ____/____/____
Temperature (°C): ______

Comments

Submitted on 47mm glass-fiber filters

	filter volume	Algae Comp Vol	Area Sampled
SMC00464	25 mL	260 mL	138.6
405BH2A	25 mL	245 mL	138.6

PHYSIS
ENVIRONMENTAL LABORATORIES, INC.
Innovative Solutions for Nature

Sample Receipt Summary

Project Iteration ID:	2307002-002
Client Name:	WSP USA
Project Name:	Fire Effects Study - Dry Weather Project # 5025220004.05 GL Code 573000 Org 5025
COC Page Number:	2 of 2
Bottle Label Color:	NA

Receiving Info

1. Initials Received By: RGH
2. Date Received: 7/7/23
3. Time Received: 925
4. Client Name: WSP
5. Courier Information: (Please circle)
   - Client
   - UPS
   - Area Fast
   - DRS
   - FedEx
   - GSO/GLS
   - Ontrac
   - PAMS
   - PHYSIS Driver:
     - i. Start Time:
     - ii. End Time:
     - iii. Total Mileage:
     - iv. Number of Pickups:
6. Container Information: (Please put the # of containers or circle none)
   - 1 Cooler
   - __ Styrofoam Cooler
   - __ Boxes
   - None
   - __ Carboy(s)
   - __ Carboy Trash Can(s)
   - __ Carboy Cap(s)
   - Other
7. What type of ice was used: (Please circle any that apply)
   - Wet Ice
   - Blue Ice
   - Dry Ice
   - Water
   - None
8. Randomly Selected Samples Temperature (°C): 12.6 Used I/R Thermometer # ____

Inspection Info

1. Initials Inspected By: RGH

Sample Integrity Upon Receipt:

1. COC(s) included and completely filled out.................... Yes / No
2. All sample containers arrived intact.................... Yes / No
3. All samples listed on COC(s) are present.................... Yes / No
4. Information on containers consistent with information on COC(s).............. Yes / No
5. Correct containers and volume for all analyses indicated.................... Yes / No
6. All samples received within method holding time.................... Yes / No
7. Correct preservation used for all analyses indicated.................... Yes / No
8. Name of sampler included on COC(s).................... Yes / No

Notes:

See temp.
Composite volume & Area info missing.

Rich Hanken

From:	Jernack, Nicholas <nicholas.jernack@wsp.com> on behalf of Jernack, Nicholas
Sent:	Monday, July 24, 2023 1:17 PM
To:	Rich Hanken
Cc:	Misty Mercier; Rudolph, John
Subject:	Fire Effects Study - Dry Weather 2307002-002 COC & SRS
Attachments:	WSP Fire Effects Study - Dry Weather Project # 5025220004.05 GL Code 573000 Org # 5025 2307002-002 COC SRS (002).pdf

Hi Rich,

Ive attached the information for the two missing samples below and in the amended COC attached above.

For SMC00464:

- Composition Volume: 260 mL
- Area Sampled: 138.6
- Filtered Volume: 25mL

For 405BH2A:

- Composition Volume: 245 mL
- Area Sampled: 138.6
- Filtered Volume: 25mL

Please let me know if you need any additional information

Nicholas Jernack
Associate Consultant, Biologist

M : (732) 966-5162
nicholas.jernack@wsp.com

WSP Global Inc.
9177 Sky Park Court,
San Diego, CA 92123 USA

wsp.com

-LAEmHhHzdJzBITWla4Hgs7pbKl

Appendix B. Data Quality Assurance/Quality Control

Data Quality Assurance/Quality Control

Data quality objectives (DQOs) are quantitative and qualitative statements that specify the tolerable levels of potential errors in the data and ensure that the data generated meet the standards for published data in the peer-reviewed literature. DQOs specify the quantity and quality required to support the Study objectives. DQOs are derived from the quality assurance (QA) process that (1) clarify the Study technical and quality objectives, (2) define the appropriate type of data, and (3) specify the tolerable levels of potential decision errors used to establish the quality and quantity of data needed to support decisions.

Table B-1 and Table B-2 specify the DQOs for specific field and laboratory measurements for the Study.

These analytes and indicators were chosen because of their relevance to post-fire water quality and their inclusion in the Los Angeles River Metals and Nutrient TMDLs. The analytes include common priority pollutants in post-fire runoff and those listed for the downstream waterbodies on the Clean Water Act Section 303(d) list of water quality impaired segments.

Table B-1. Data Quality Objectives for Field Measurements

Group	Parameter	Accuracy	Precision	Completeness
Field Testing	pH	+0.2 unit	No SWAMP requirement; will use ±0.1 unit	90%
	Specific Conductance	+ 0.5% of reading + 0.001 mS/cm	0.001 to 0.1 mS/cm (range-dependent)	90%
	DO	±0.2	0.01 mg/L	90%
	Temperature	±0.5 °C	0.1 °C	90%
	Turbidity	10%	0.1 NTU	90%

°C = degree(s) Celsius; DO = dissolved oxygen; mg/L = milligram(s) per liter; mS/cm = milliSiemen(s) per centimeter; NTU = nephelometric turbidity unit(s); SWAMP = Surface Water Ambient Monitoring Program

Precision describes how well-repeated measurements agree. The evaluation of precision described here relates to repeated measurements/samples collected in the field (field duplicates), repeated measurements on the same sample in the laboratory (laboratory duplicates [LDs]), and repeated measurements on matrix spikes (MSs) and laboratory control samples (LCSs). Relative percent differences (RPDs) were calculated to determine the precision between duplicate samples, as follows:

$$RPD = \frac{abs[x_1 - x_2]}{0.5 * (x_1 + x_2)}$$

Accuracy is defined as the difference between the measured value of an indicator and its true or expected value, which is an estimate of systematic error or net bias. It describes how close the measurement is to its true value. The accuracy of chemical measurements applies to blank spikes

(BSs), LCSs, and MSs and is quantified as percent recovery. The laboratories will use performance-based instrument calibration and tuning to compare statistically derived limits for the instrumentation and methods with programmatic target recovery limits.

Table B-2. Data Quality Objectives for Laboratory Measurements

Group	Parameter	Accuracy	Precision	Completeness
Laboratory Analyses – Water	Hardness	85% to 115% recovery	RPD < 30% (not applicable if native concentration of either sample is less than the reporting limit)	90%
	Total Organic Carbon	85% to 115% recovery	RPD < 20% (not applicable if native concentration of either sample is less than the reporting limit)	90%
	Dissolved Organic Carbon	90% to 110% recovery	RPD < 20% (not applicable if native concentration of either sample is less than the reporting limit)	90%
	Total Suspended Solids	Not applicable for solids in water	RPD < 25% (not applicable if native concentration of either sample is less than the reporting limit)	90%
	Total Dissolved Solids	Not applicable for solids in water	RPD < 25% (not applicable if native concentration of either sample is less than the reporting limit)	90%
	Total and Dissolved Metals	75% to 125% recovery	RPD < 25% (not applicable if native concentration of either sample is less than the reporting limit)	90%
	Nutrients	80% to 120% recovery	RPD < 25% (not applicable if native concentration of either sample is less than the reporting limit)	90%
	Chlorophyll-a	No SWAMP requirement – suggest ±30% of SRM	No SWAMP requirement – suggest duplicate ± 25% Relative Percent Different (RPD)	90%
	PAH	50% to 150% recovery	RPD < 25% (not applicable if native concentration of either sample is less than the reporting limit)	90%

PAH = polycyclic aromatic hydrocarbon; RPD = relative percent difference; SRM = standard reference material; SWAMP = Surface Water Ambient Monitoring Program

Dry Weather Water Quality Assurance/Quality Control Summary

Table B-3 summarizes the QA/quality control (QC) review for the Study's dry weather results. In particular:

- 18 percent of the field duplicate results exceeded the target RPD of 25 percent. Because microbiological constituents have an exponential growth curve, their results are log-transformed prior to calculating the RPD value.
- 3 percent of the field blank results were detected above the reporting limit (RL).
- 17 percent of field sample results were qualified with a J flag, indicating an estimated concentration between the method detection limit (MDL) and RL.
- 2 percent of the method blank sample results were detected and reported above the RL.
- 0 percent of the laboratory duplicates (excluding matrix spike duplicates and lab control spike duplicates) had an RPD that exceeded SWAMP RPD DQOs.
- 2 percent of the matrix spike duplicates (MSDs) and laboratory control sample duplicates (LCSDs) had an RPD that exceeded SWAMP RPD DQOs.
- 0 percent of the MS, MSs, and LCS results had a percent recovery that exceeded SWAMP percent recovery DQOs.

Table B-3. Dry Weather Quality Assurance/Quality Control Summary

QA/QC Summary	Field Data Exceedances of DQOs		Analytical Data	Laboratory QA Data Exceedances of DQOs			
	Field Duplicate RPD[1]	Field Blank Detections >RL	Estimations (J Flags)	Method Blank Detection >RL	LD RPD	MSD, LCSD RPD	MS, MSD, LCS % Recovery
Total QA/QC Issues	11	2	66	2	0	7	0
Total Number of Results	62	67	387	126	13	431	166
Percentage of Data with QA/QC Issues	18%	3%	17%	2%	0%	2%	0%

1. DQO for field duplicates is RPD = 0–25.

DQO = data quality objective; LCS = laboratory control sample; LCSD = laboratory control sample duplicate; LD = laboratory duplicate; MS = matrix spike; MSD = matrix spike duplicate; QA = quality assurance; QC = quality control; RL = reporting limit; RPD = relative percent difference

Dry Weather Laboratory Analysis Holding Times

A total of 99 percent of dry weather samples collected were analyzed within their holding times. Chlorophyll-a analysis from the June 27, 2023, dry weather event was performed outside of the holding time because of improper handling by the subcontracted laboratory. The primary laboratory filtered and froze samples to extend the holding time to 28 days. However, the subcontracted laboratory did not conduct the analysis. Applicable analytical holding times per method and corrective actions have been discussed with the laboratories to ensure that these holding time exceedances are prevented in future monitoring. Furthermore, the primary laboratory is also seeking alternative laboratories to support sample analyses and avoid mishandling of samples.

Weather Water Quality Assurance/Quality Control Summary

Table B-4 summarizes the QA/QC review for the Study's wet weather results. In particular:

- 0 percent of the field duplicate results exceeded the target RPD of 25 percent. Because microbiological constituents have an exponential growth curve, their results are log-transformed prior to calculating the RPD value.
- 0 percent of the field blank results were detected above the RL.
- 15 percent of field sample results were qualified with a J flag, indicating an estimated concentration between the MDL and RL.
- 2 percent of the method blank sample results were detected and reported above the RL.
- 0 percent of the laboratory duplicates (excluding MSDs and LCSDs) had an RPD that exceeded SWAMP RPD DQOs.
- 3 percent of the MSDs and LCSDs had an RPD that exceeded SWAMP RPD DQOs.
- 0.4 percent of the MS, MSDs, and LCS results had a percent recovery that exceeded SWAMP percent recovery DQOs.

Table B-4. Wet Weather Quality Assurance/Quality Control Summary

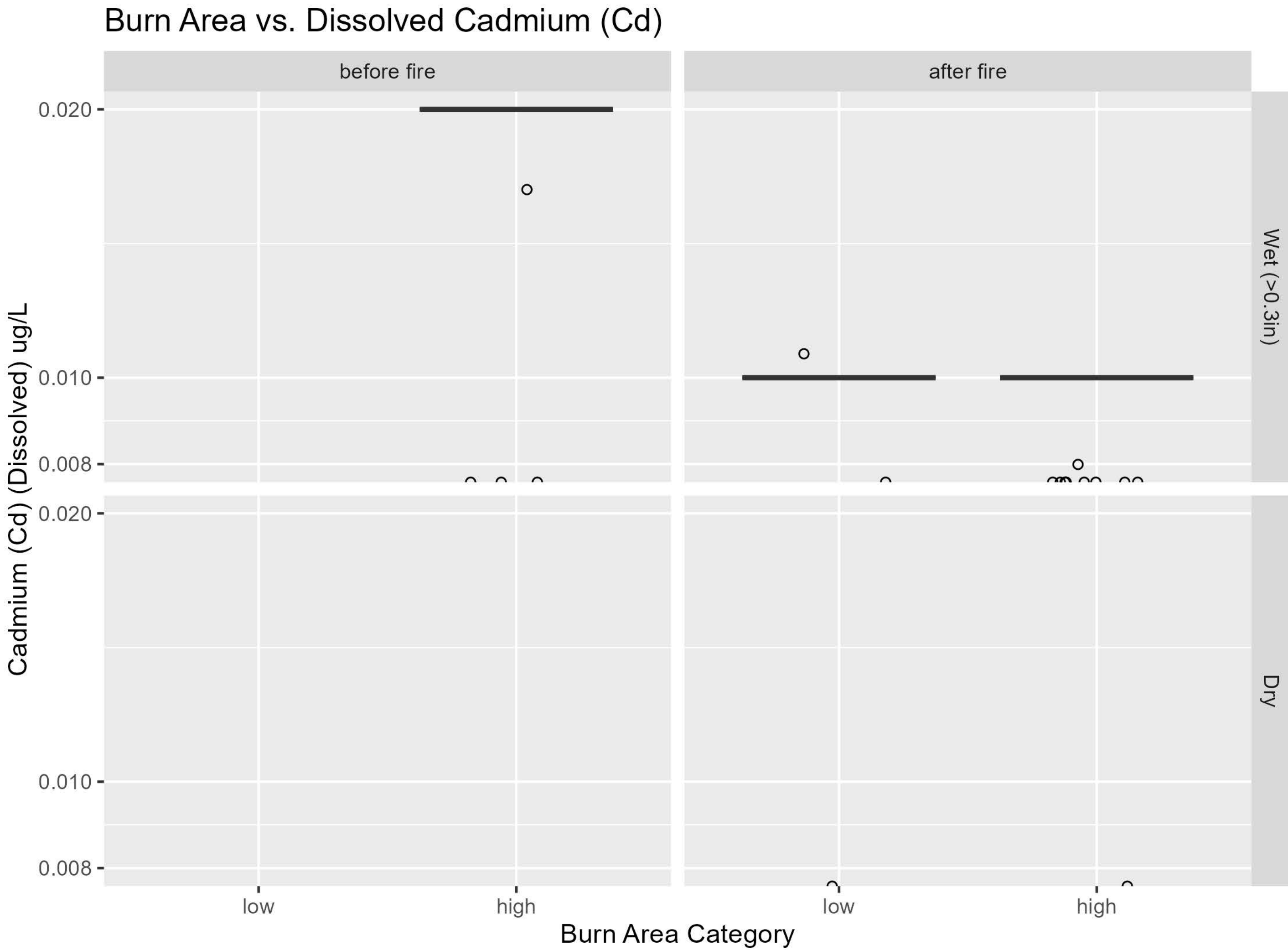
QA/QC Summary	Field Data Exceedances of DQOs		Analytical Data	Laboratory QA Data Exceedances of DQOs			
	Field Duplicate RPD[1]	Field Blank Detections >RL	Estimations (J Flags)	Method Blank Detection >RL	LD RPD	MSD, LCSD RPD	MS, MSD, LCS % Recovery
Total QA/QC Issues	0	0	88	4	0	21	1
Total Number of Results	10	5	576	190	15	611	230
Percentage of Data with QA/QC Issues	0%	0%	15%	2%	0%	3%	0.4%

1. DQO for field duplicates is RPD = 0–25.

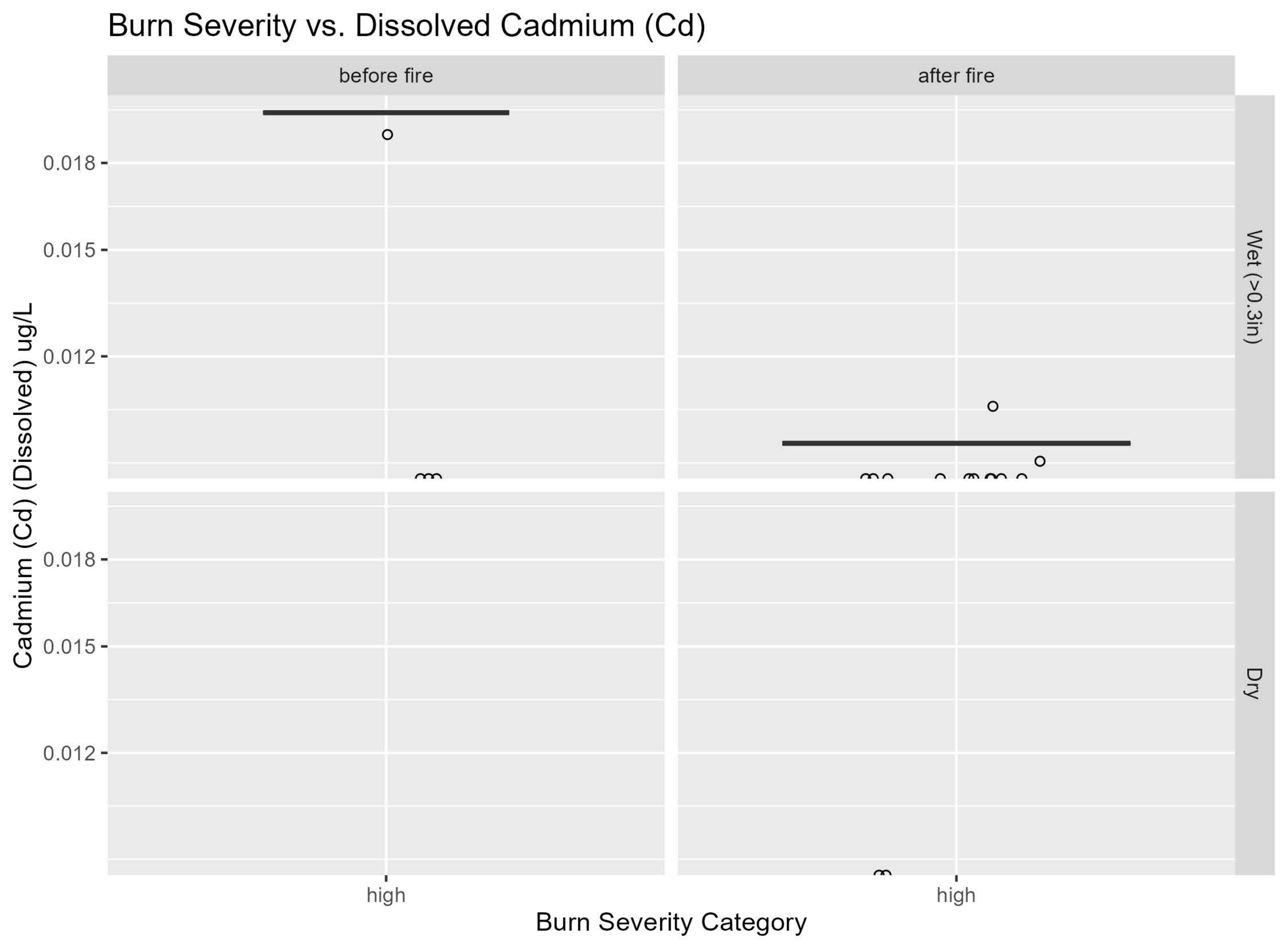
DQO = data quality objective; LCS = laboratory control sample; LCSD = laboratory control sample duplicate; LD = laboratory duplicate; MS = matrix spike; MSD = matrix spike duplicate; QA = quality assurance; QC = quality control; RL = reporting limit; RPD = relative percent difference.

Wet Weather Laboratory Analysis Holding Times

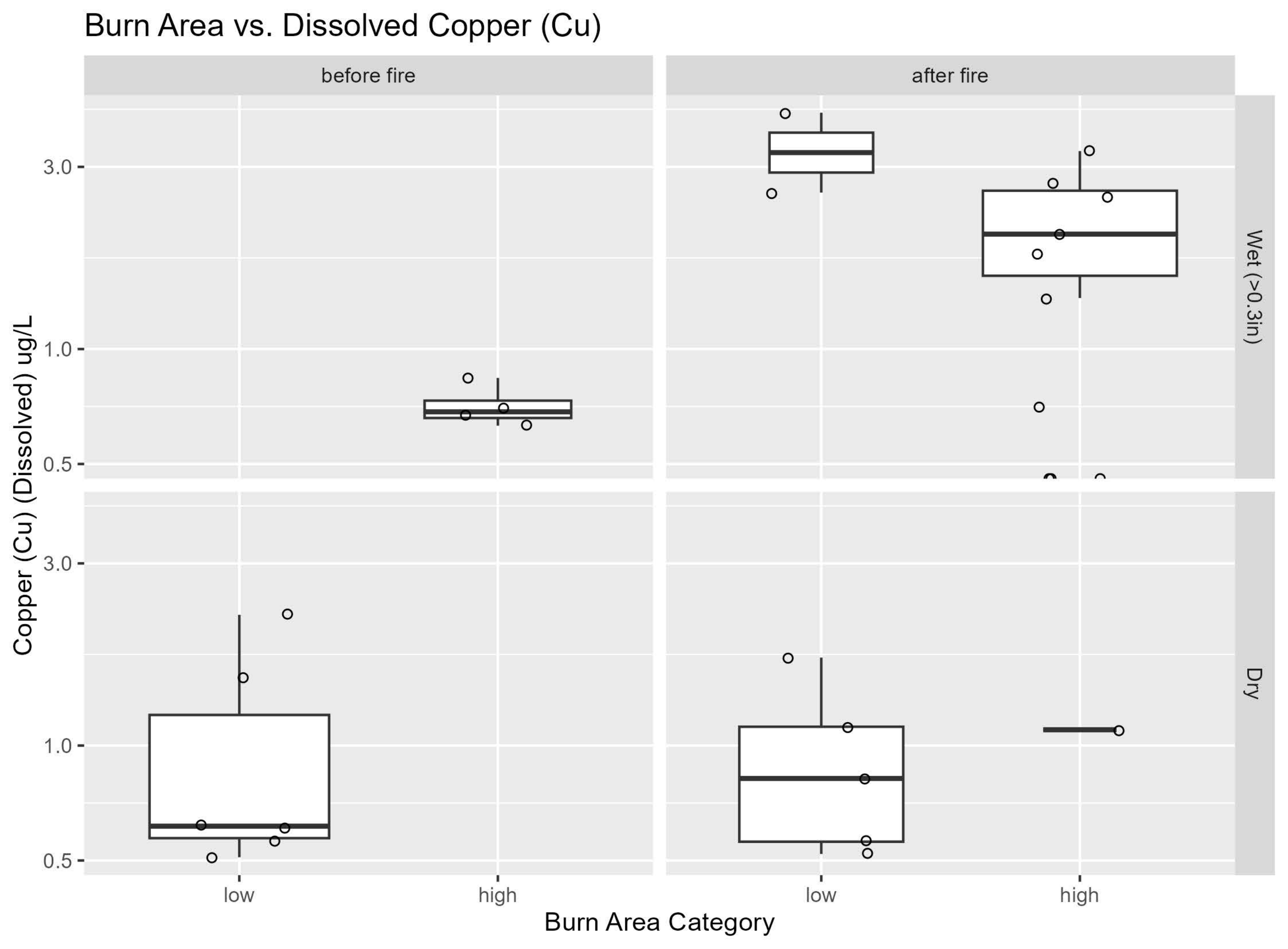
A total of 98 percent of wet weather samples met analytical holding times. Holding times were exceeded for the nitrate, nitrite, and nitrate + nitrite samples collected during the March 11, 2023, wet weather event. Applicable analytical holding times per method and corrective actions have been discussed with the laboratories to ensure that these holding time exceedances are prevented in future monitoring. Furthermore, the primary laboratory is also seeking alternative laboratories to support sample analyses and avoid mishandling of samples.



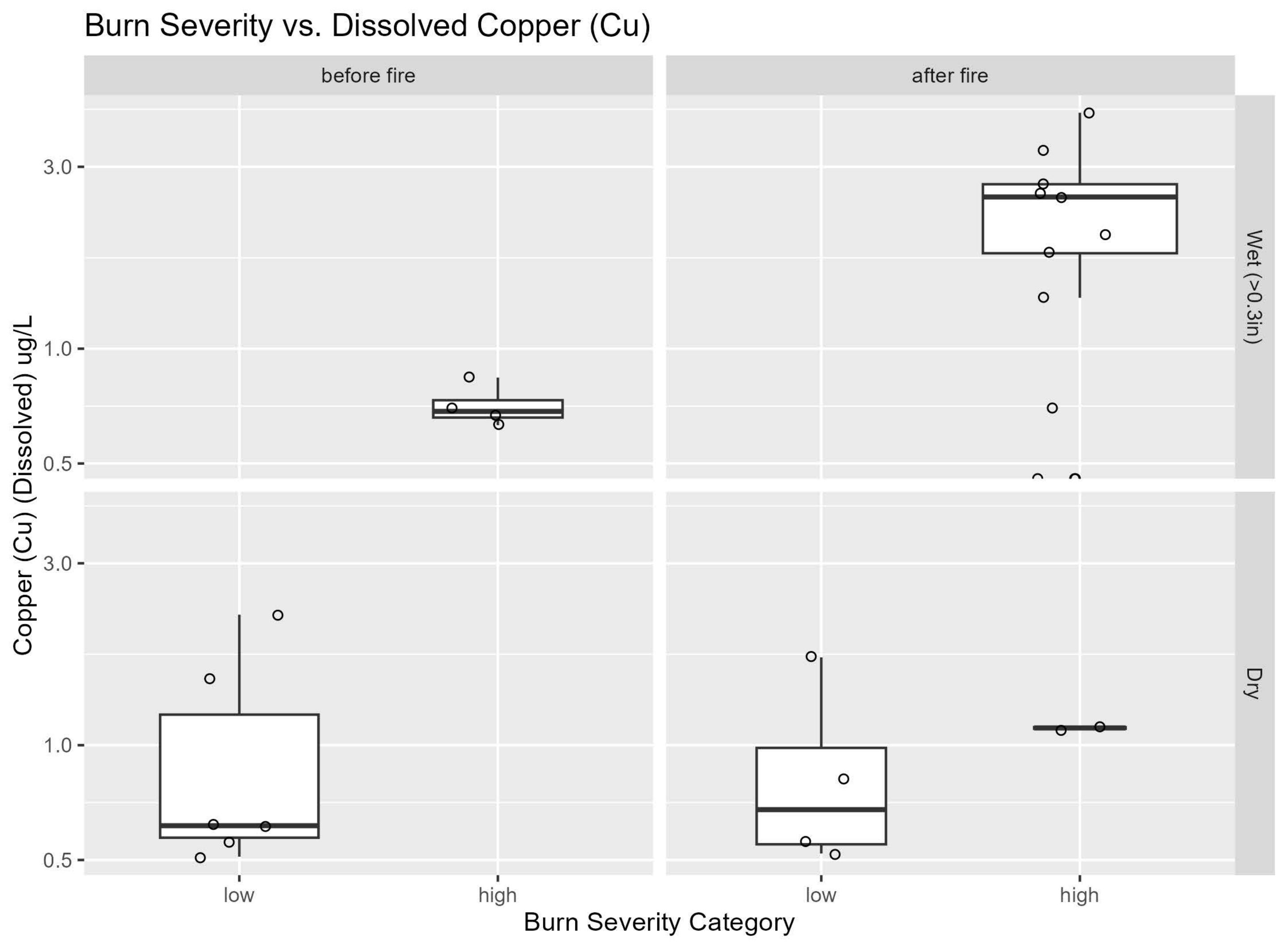
Burn Area vs. Dissolved Cadmium (Cd)
before fire
after fire
Wet (>0.3in)
Dry
Cadmium (Cd) (Dissolved) ug/L
0.020
0.010
0.008
0.020
0.010
0.008
low
high
low
high
Burn Area Category



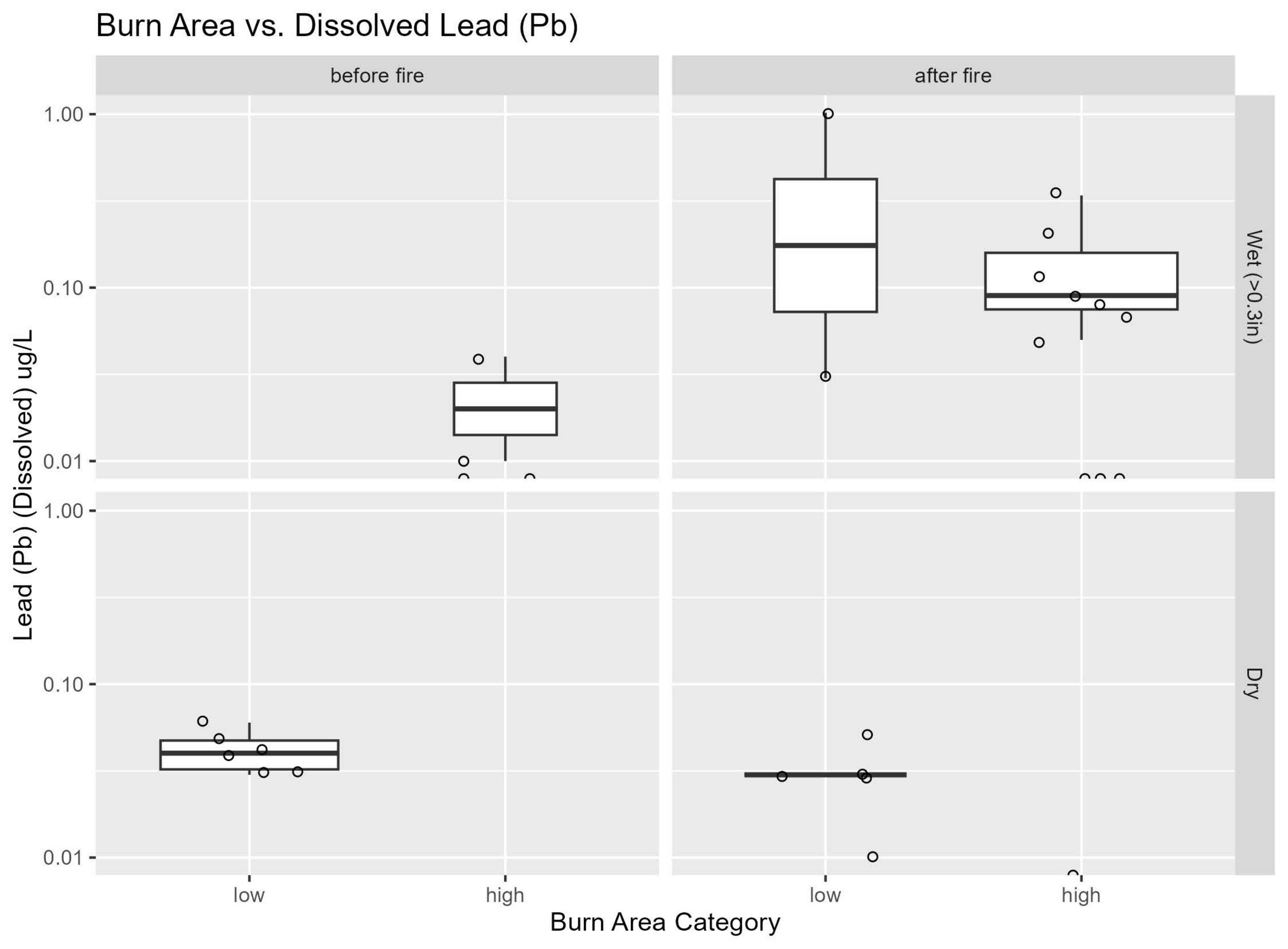
Burn Severity vs. Dissolved Cadmium (Cd)
before fire
after fire
Wet (>0.3in)
Dry
0.018
0.015
0.012
0.018
0.015
0.012
Cadmium (Cd) (Dissolved) ug/L
high
high
Burn Severity Category



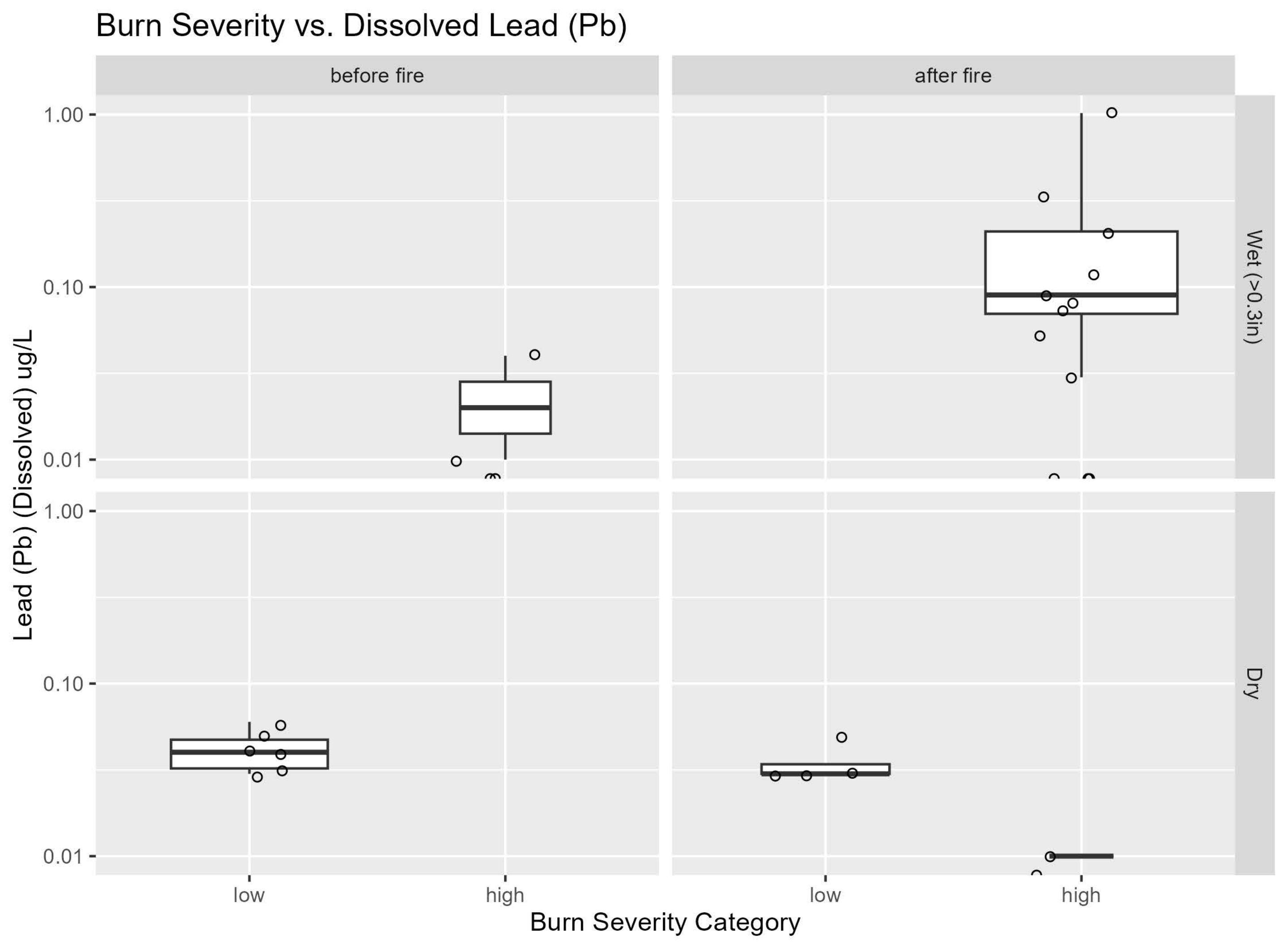
Burn Area vs. Dissolved Copper (Cu)
before fire
after fire
Wet (>0.3in)
Dry
3.0
1.0
0.5
3.0
1.0
0.5
Copper (Cu) (Dissolved) ug/L
low
high
low
high
Burn Area Category



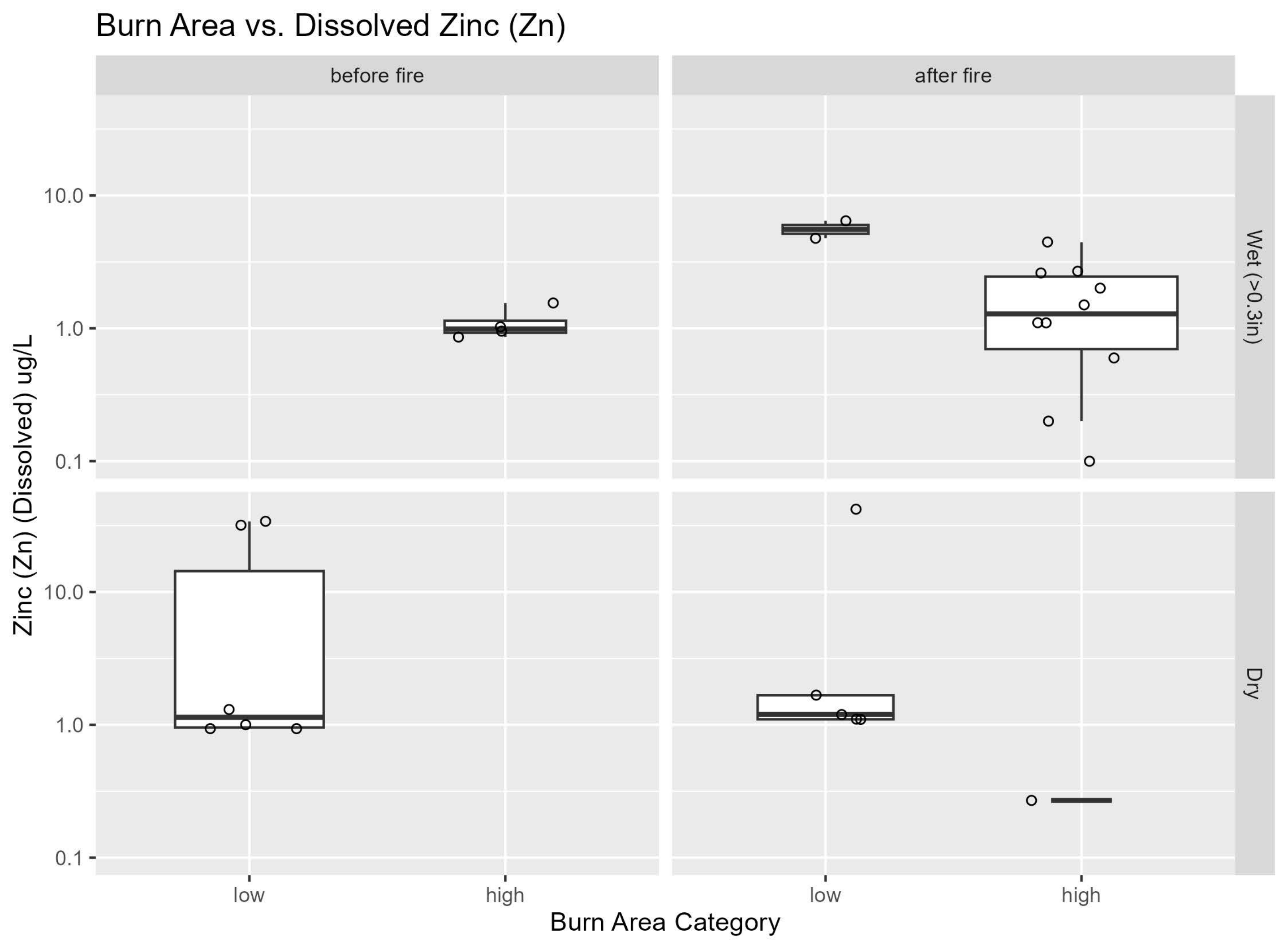
Burn Severity vs. Dissolved Copper (Cu)
before fire
after fire
Wet (>0.3in)
Dry
3.0
1.0
0.5
Copper (Cu) (Dissolved) ug/L
low
high
Burn Severity Category



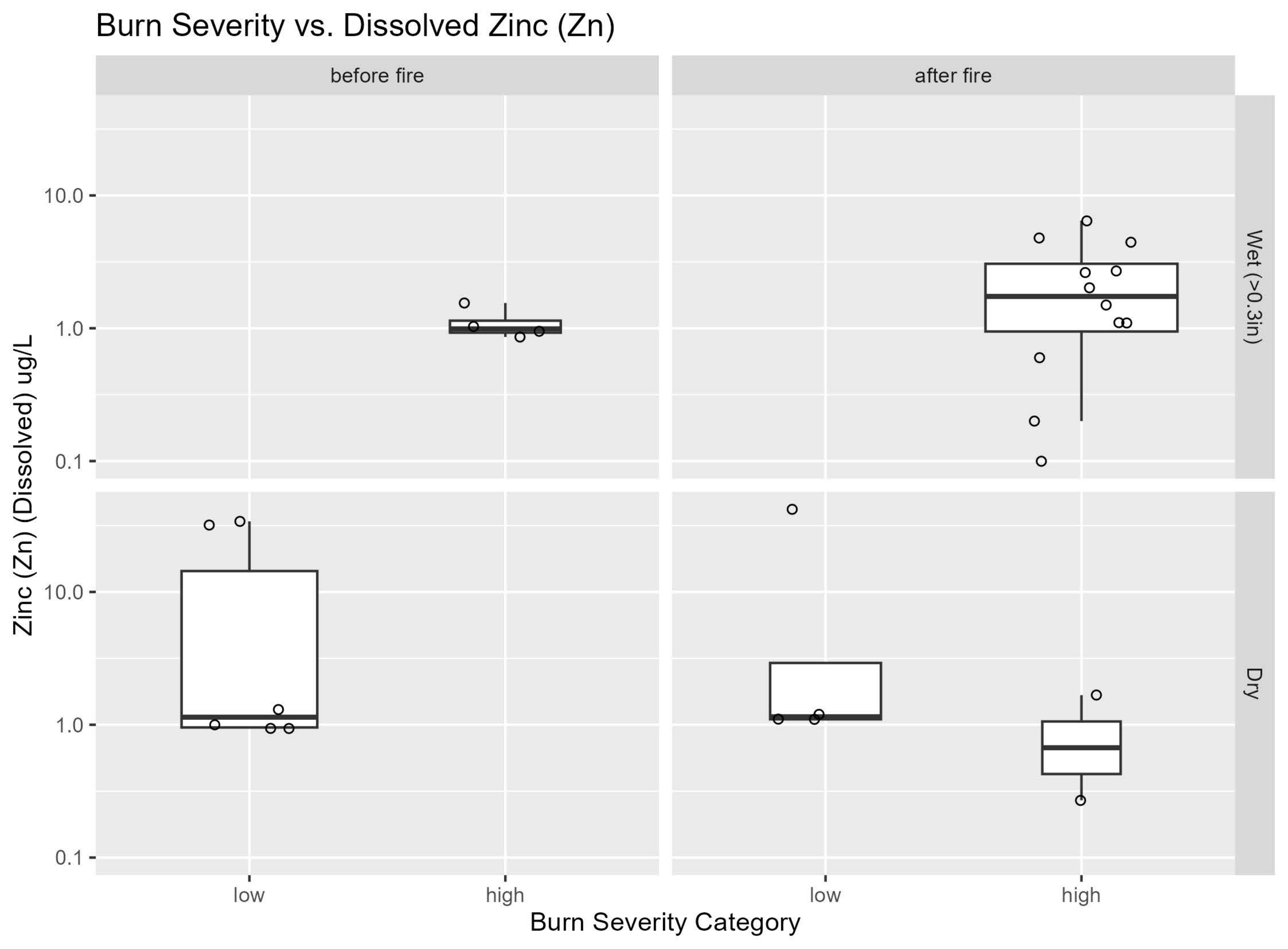
Burn Area vs. Dissolved Lead (Pb)
before fire
after fire
Wet (>0.3in)
Dry
1.00
0.10
0.01
Lead (Pb) (Dissolved) ug/L
low
high
Burn Area Category

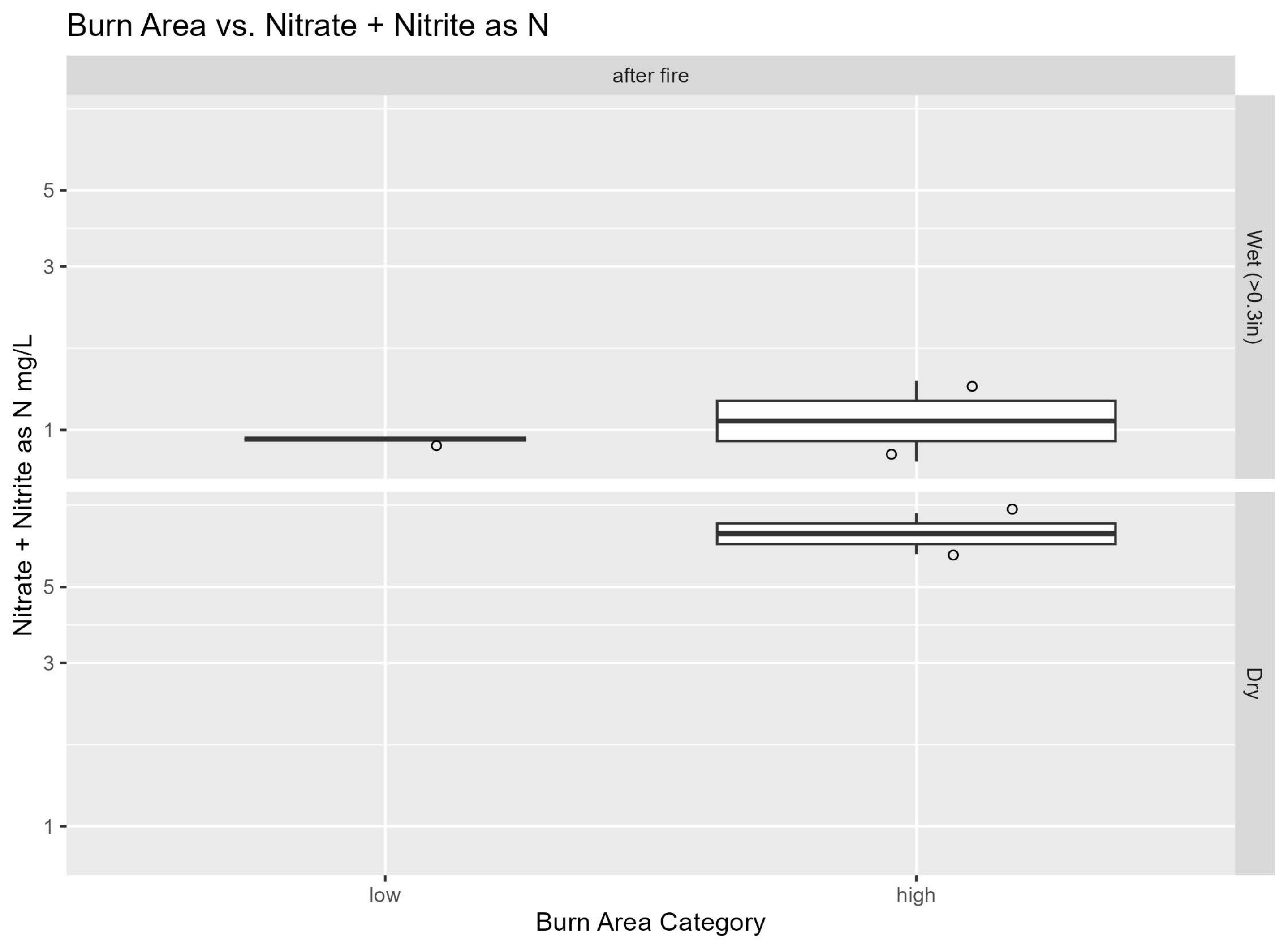


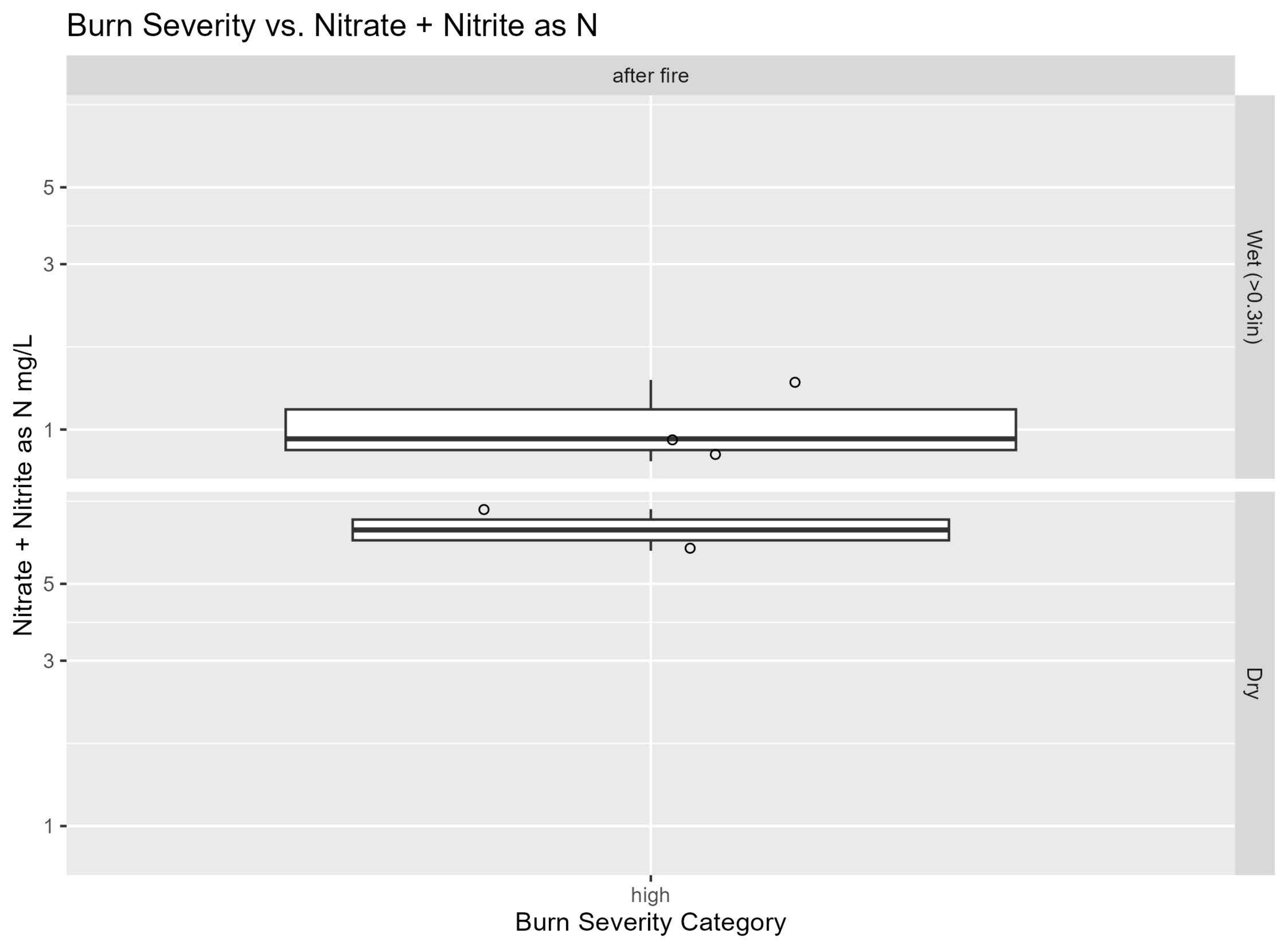
Burn Severity vs. Dissolved Lead (Pb)
before fire
after fire
1.00
0.10
0.01
Wet (>0.3in)
Dry
Lead (Pb) (Dissolved) ug/L
low
high
Burn Severity Category



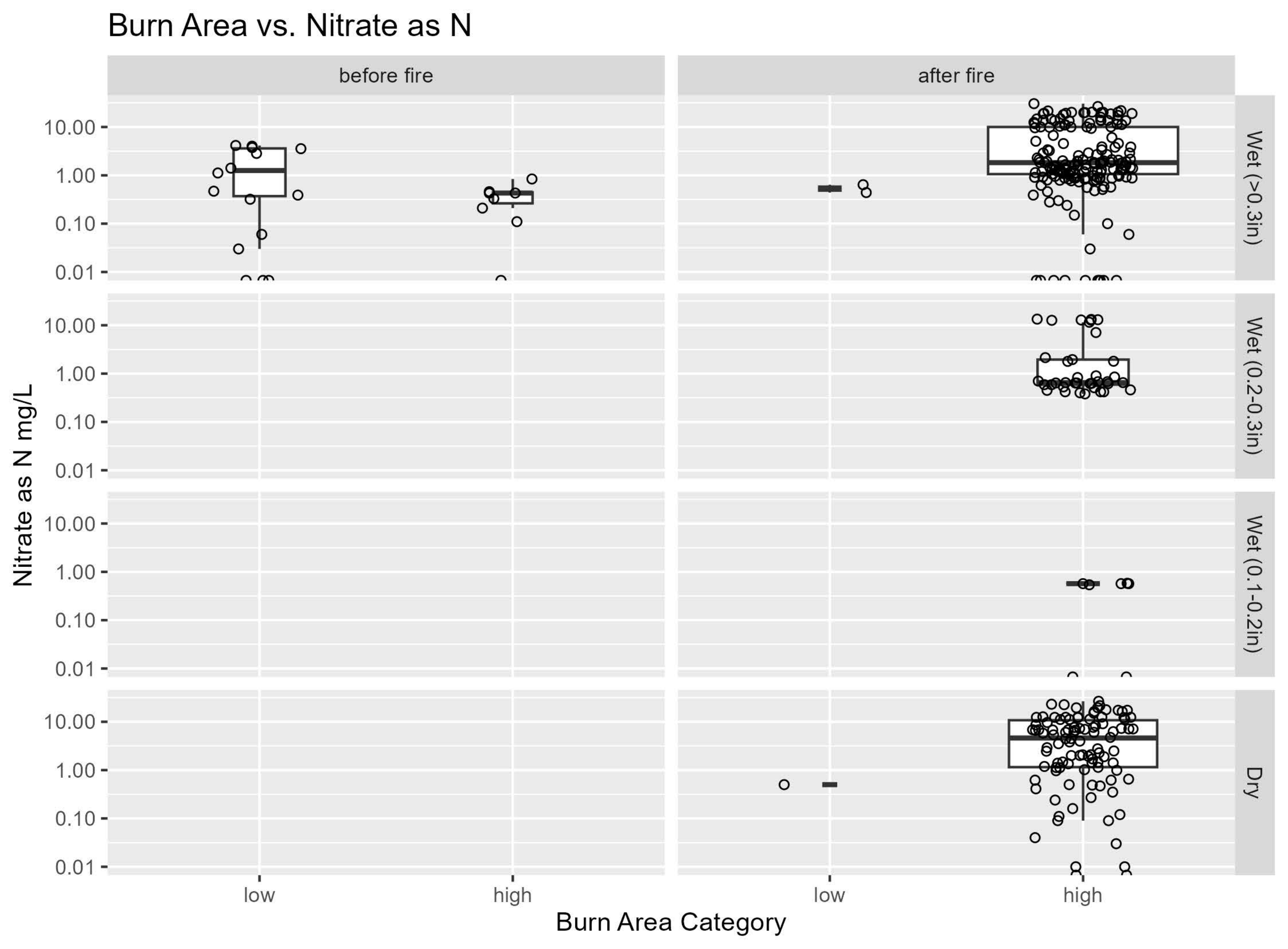
Burn Area vs. Dissolved Zinc (Zn)
before fire
after fire
Wet (>0.3in)
Dry
Zinc (Zn) (Dissolved) ug/L
10.0
1.0
0.1
10.0
1.0
0.1
low
high
low
high
Burn Area Category


Burn Severity vs. Dissolved Zinc (Zn)
before fire
after fire
Wet (>0.3in)
Dry
10.0
1.0
0.1
10.0
1.0
0.1
Zinc (Zn) (Dissolved) ug/L
low
high
low
high
Burn Severity Category

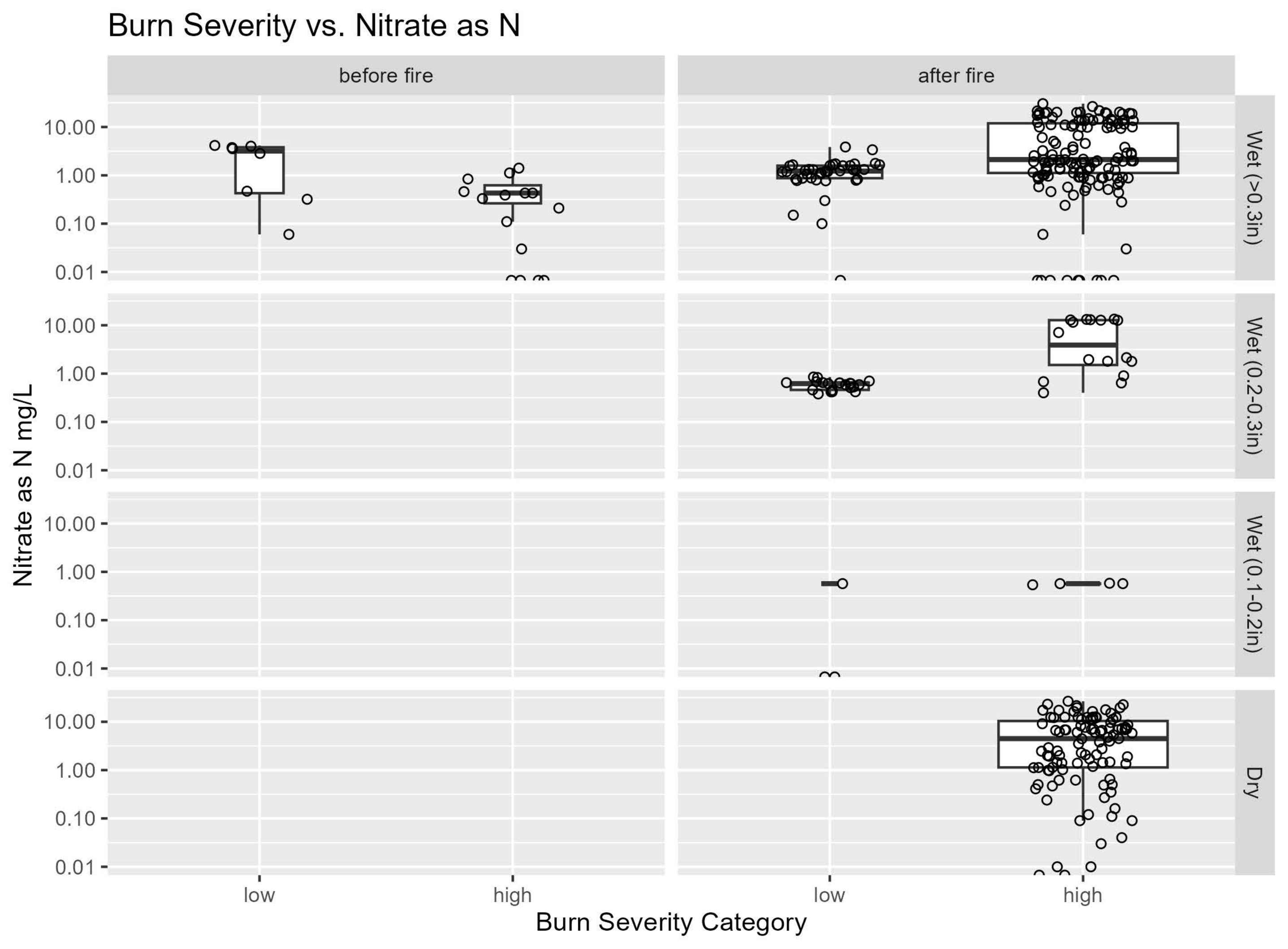

Burn Area vs. Nitrate + Nitrite as N
after fire
Wet (>0.3in)
Dry
Nitrate + Nitrite as N mg/L
5
3
1
5
3
1
low
high
Burn Area Category

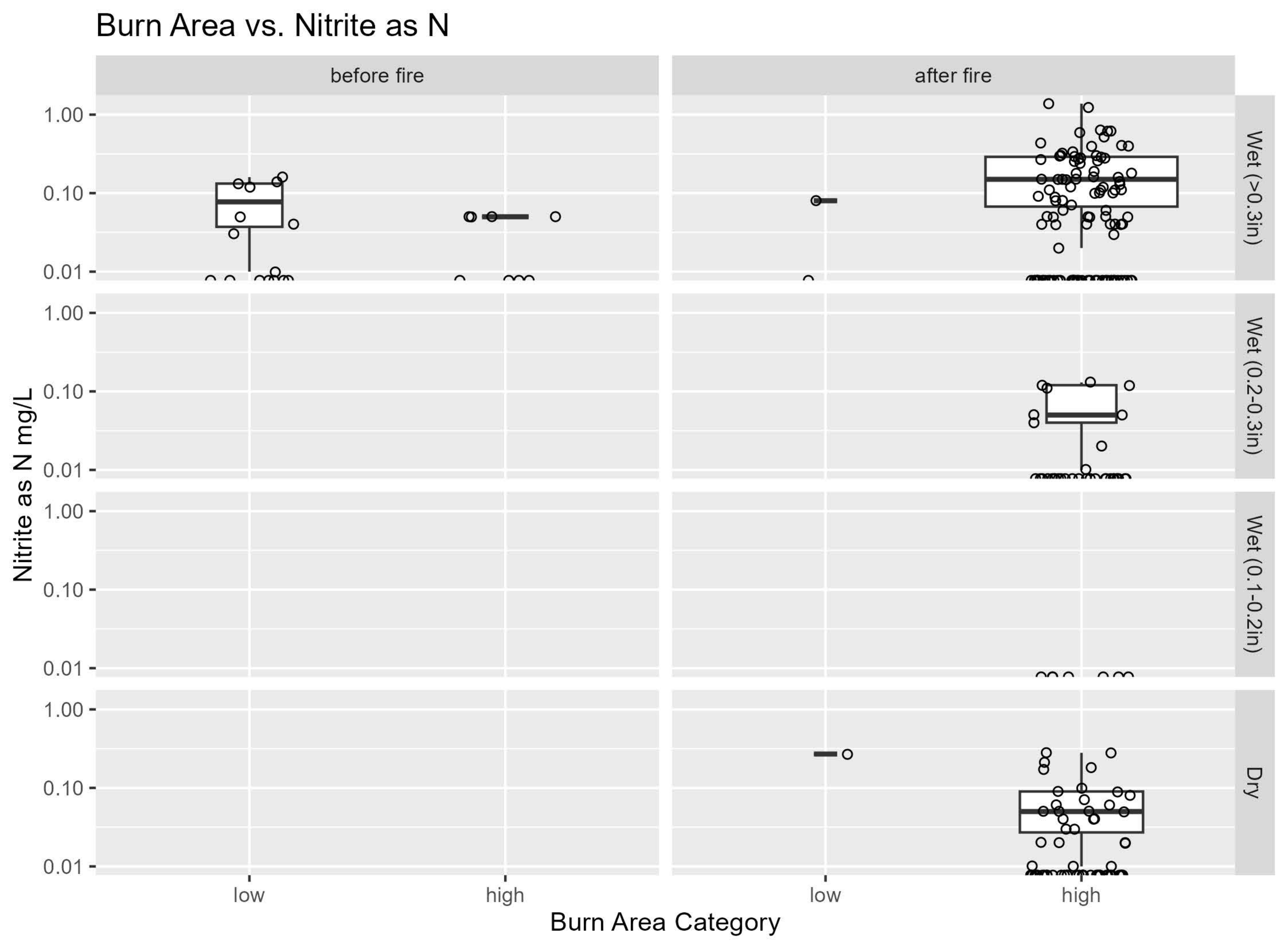


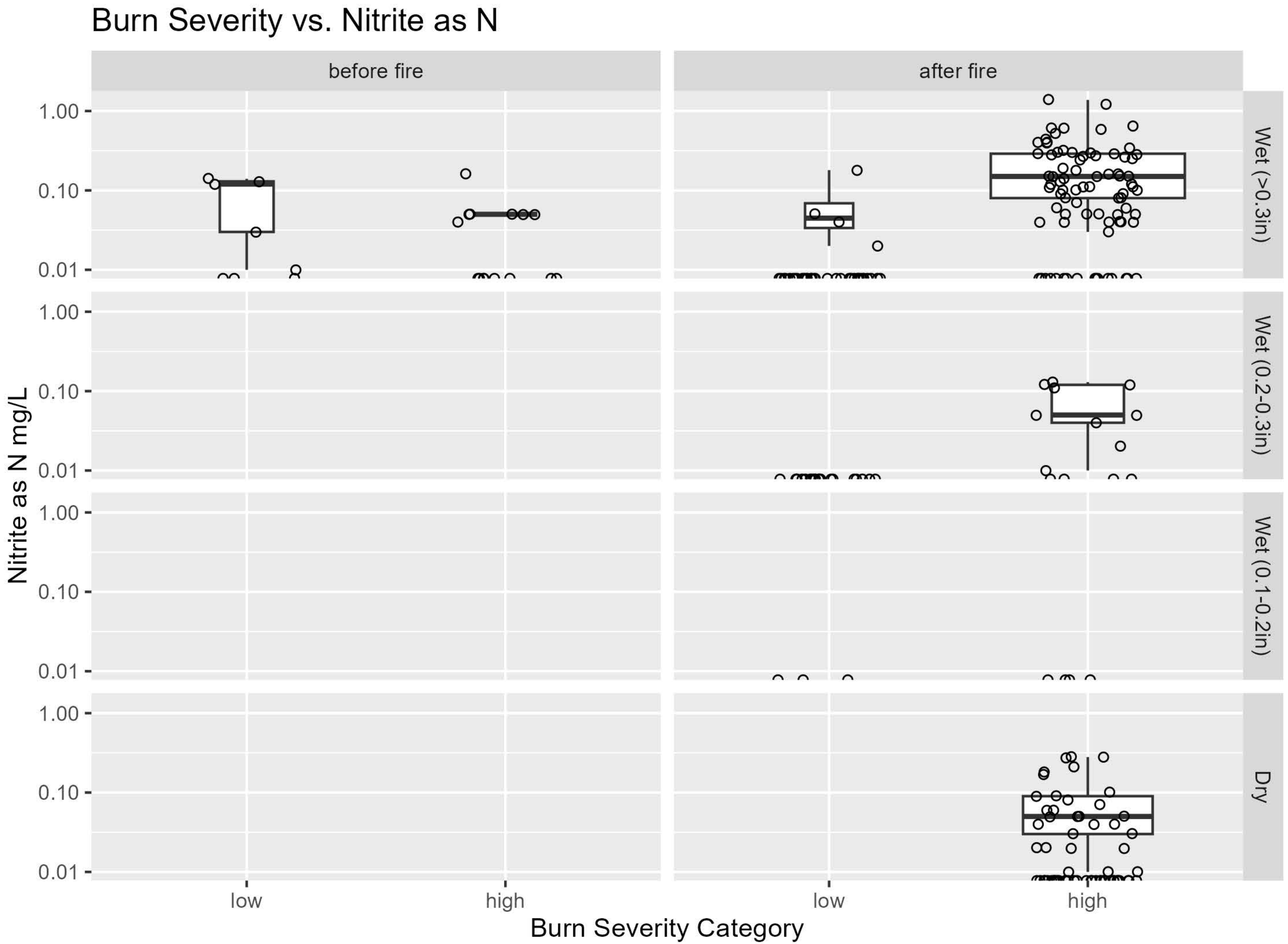
Burn Severity vs. Nitrate + Nitrite as N
after fire
Wet (>0.3in)
Dry
Nitrate + Nitrite as N mg/L
5
3
1
5
3
1
high
Burn Severity Category



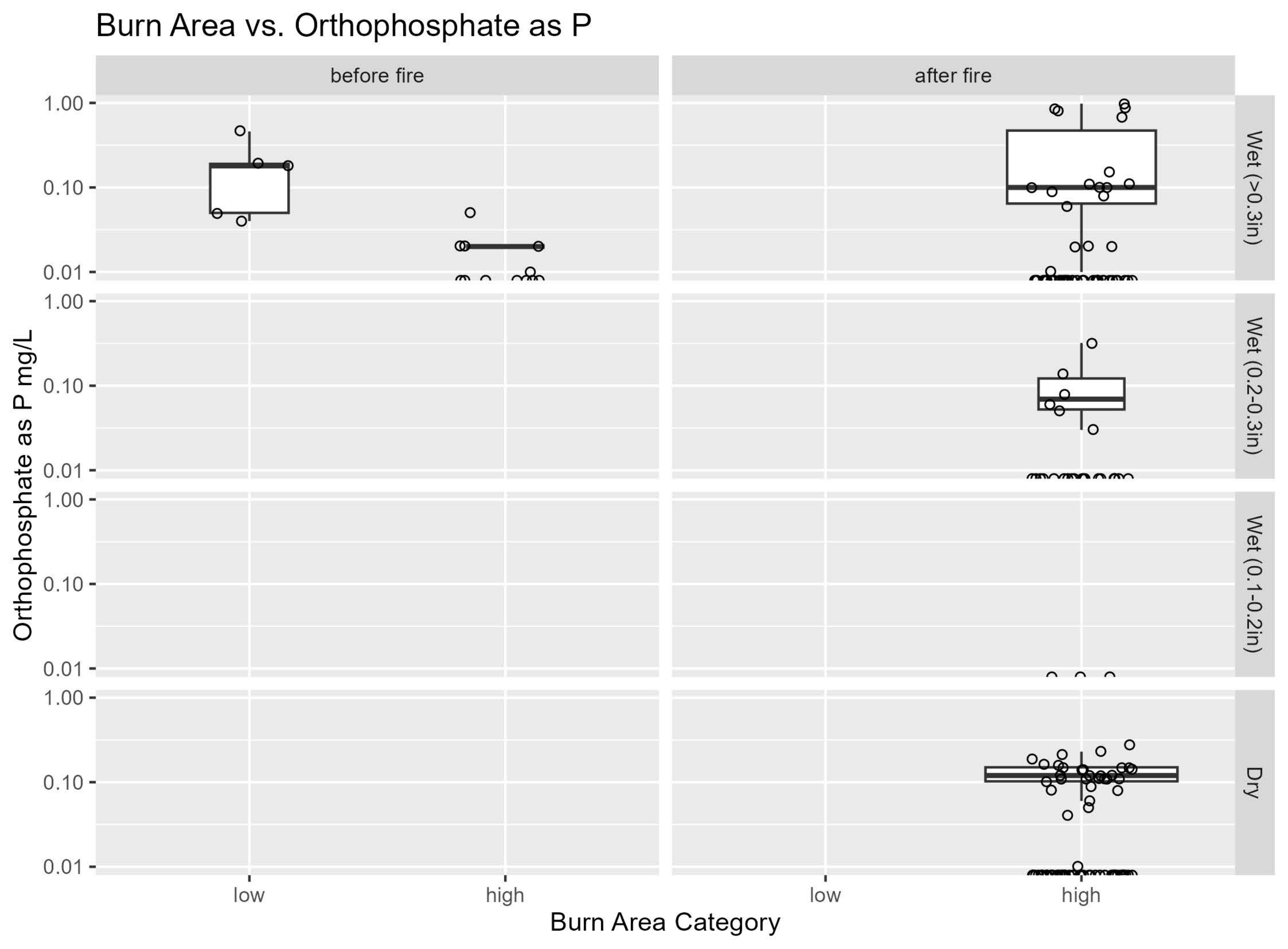
Burn Area vs. Nitrate as N
before fire
after fire
Wet (>0.3in)
Wet (0.2-0.3in)
Wet (0.1-0.2in)
Dry
10.00
1.00
0.10
0.01
Nitrate as N mg/L
low
high
Burn Area Category


Burn Severity vs. Nitrate as N
before fire
after fire
Wet (>0.3in)
Wet (0.2-0.3in)
Wet (0.1-0.2in)
Dry
10.00
1.00
0.10
0.01
Nitrate as N mg/L
low
high
low
high
Burn Severity Category

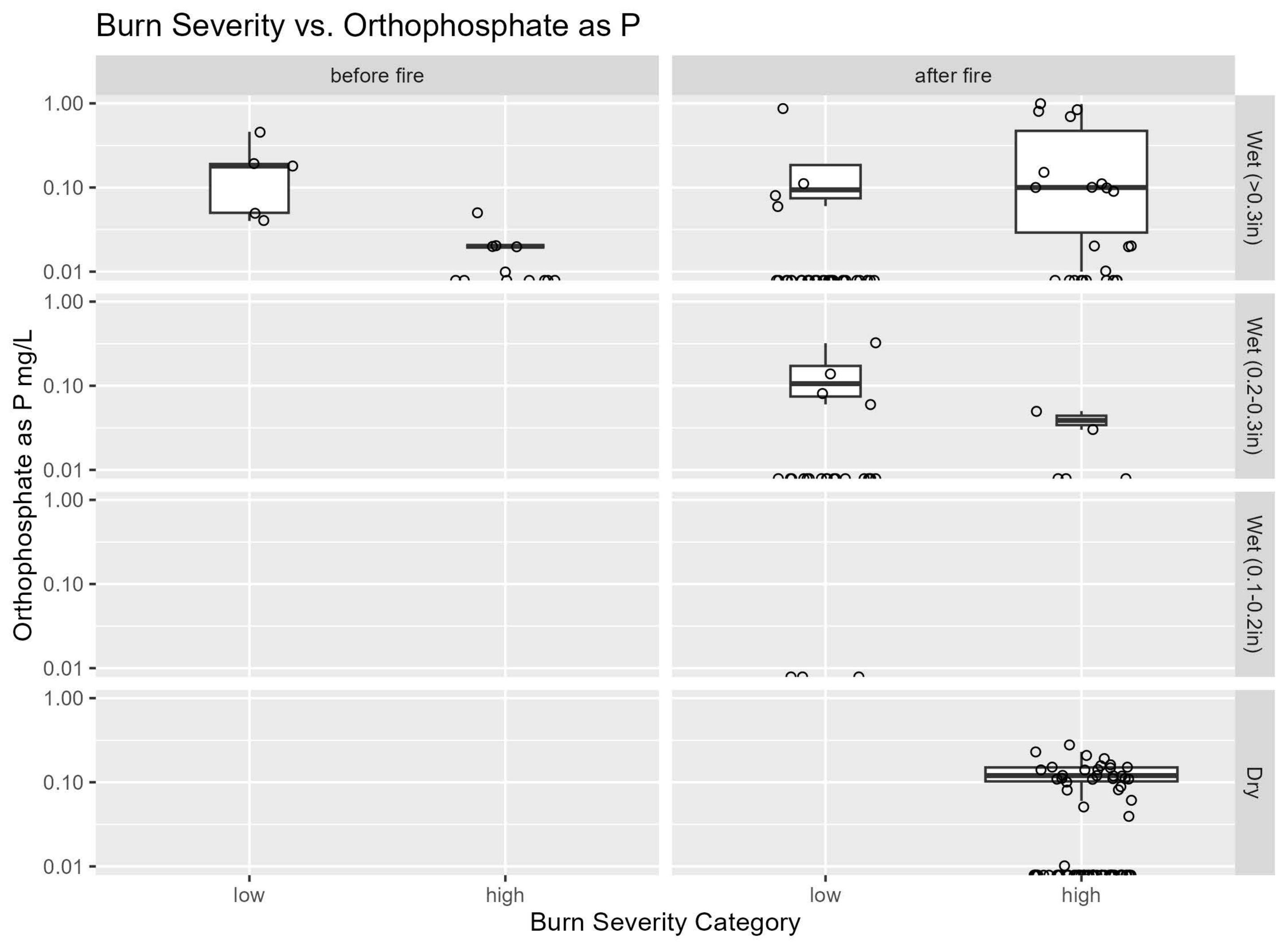

Burn Area vs. Nitrite as N
before fire
after fire
Wet (>0.3in)
Wet (0.2-0.3in)
Wet (0.1-0.2in)
Dry
1.00
0.10
0.01
Nitrite as N mg/L
low
high
Burn Area Category



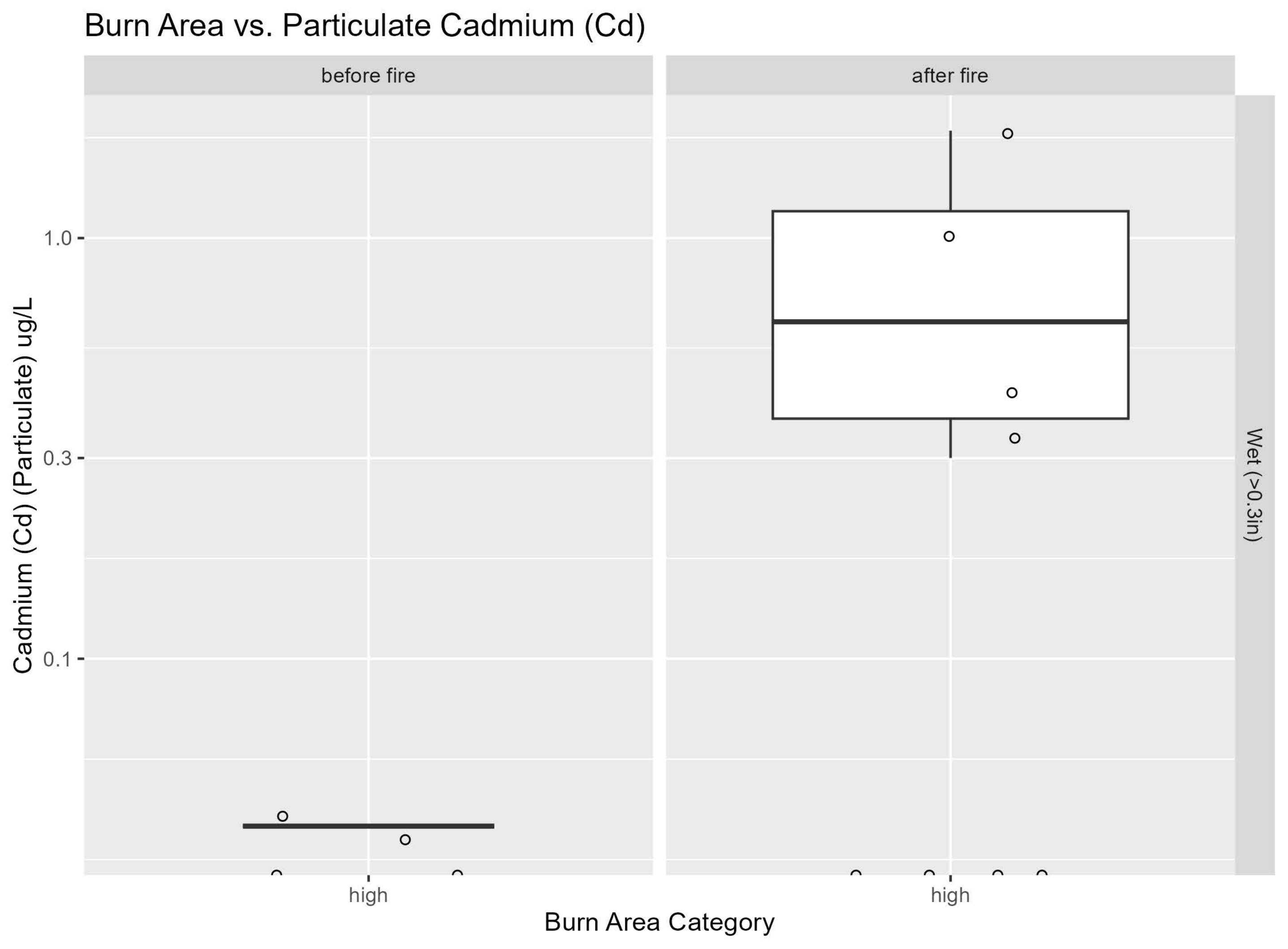
Burn Severity vs. Nitrite as N
before fire
after fire
Wet (>0.3in)
Wet (0.2-0.3in)
Wet (0.1-0.2in)
Dry
1.00
0.10
0.01
Nitrite as N mg/L
low
high
Burn Severity Category



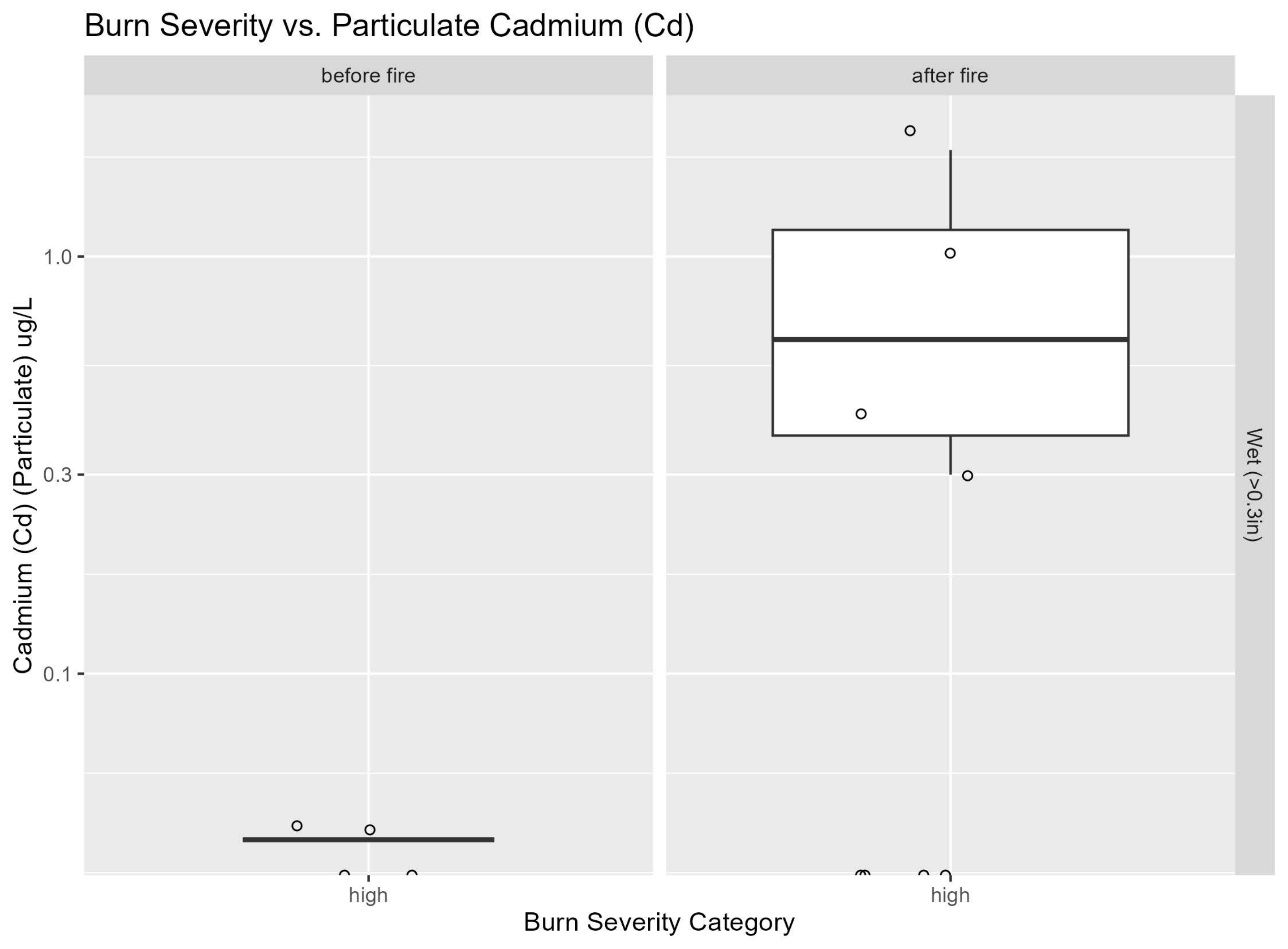
Burn Area vs. Orthophosphate as P
before fire
after fire
Wet (>0.3in)
Wet (0.2-0.3in)
Wet (0.1-0.2in)
Dry
1.00
0.10
0.01
Orthophosphate as P mg/L
low
high
Burn Area Category



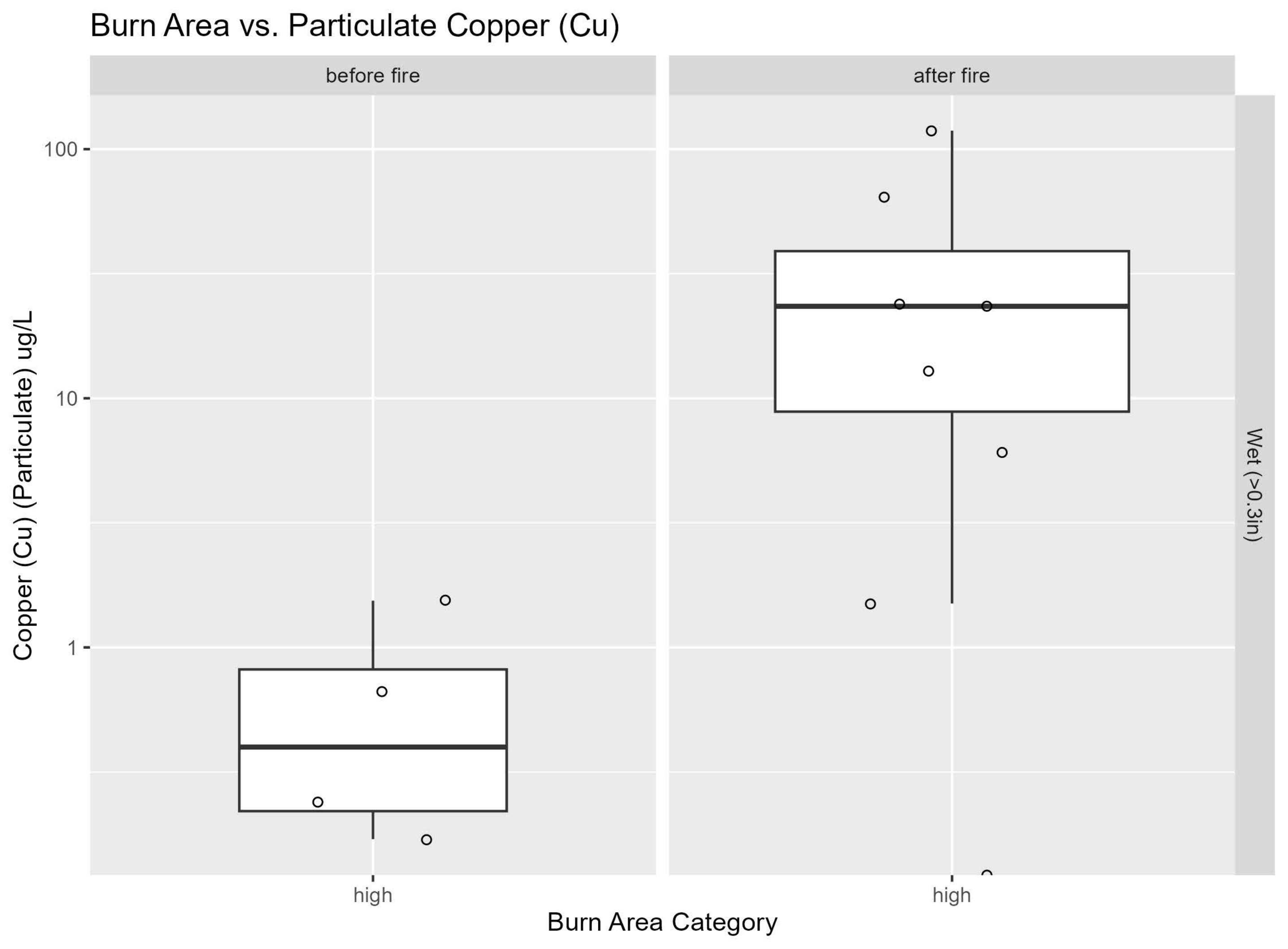
Burn Severity vs. Orthophosphate as P
before fire
after fire
Wet (>0.3in)
Wet (0.2-0.3in)
Wet (0.1-0.2in)
Dry
1.00
0.10
0.01
Orthophosphate as P mg/L
low
high
Burn Severity Category



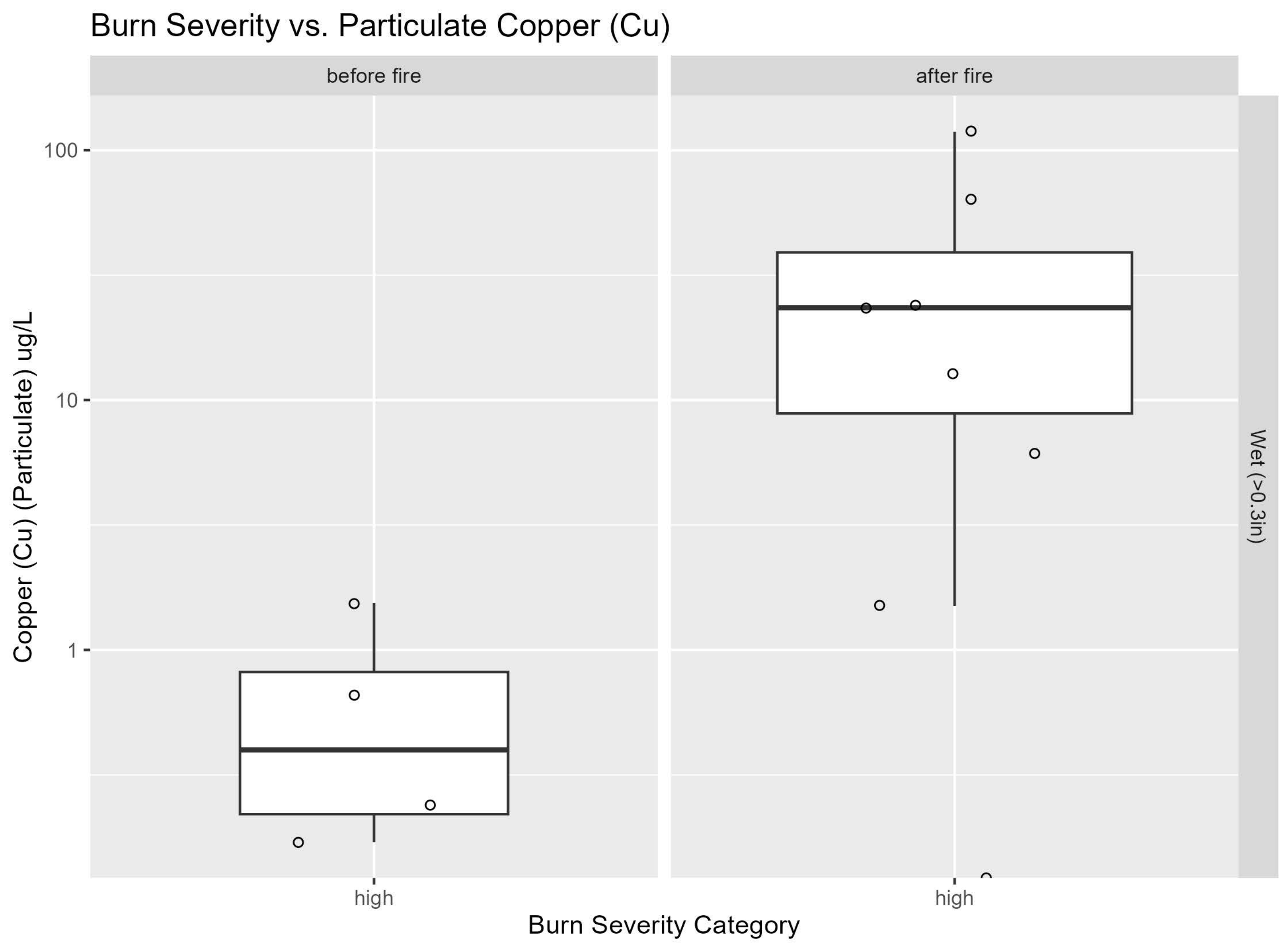
Burn Area vs. Particulate Cadmium (Cd)
before fire
after fire
Wet (>0.3in)
Cadmium (Cd) (Particulate) ug/L
1.0
0.3
0.1
high
high
Burn Area Category

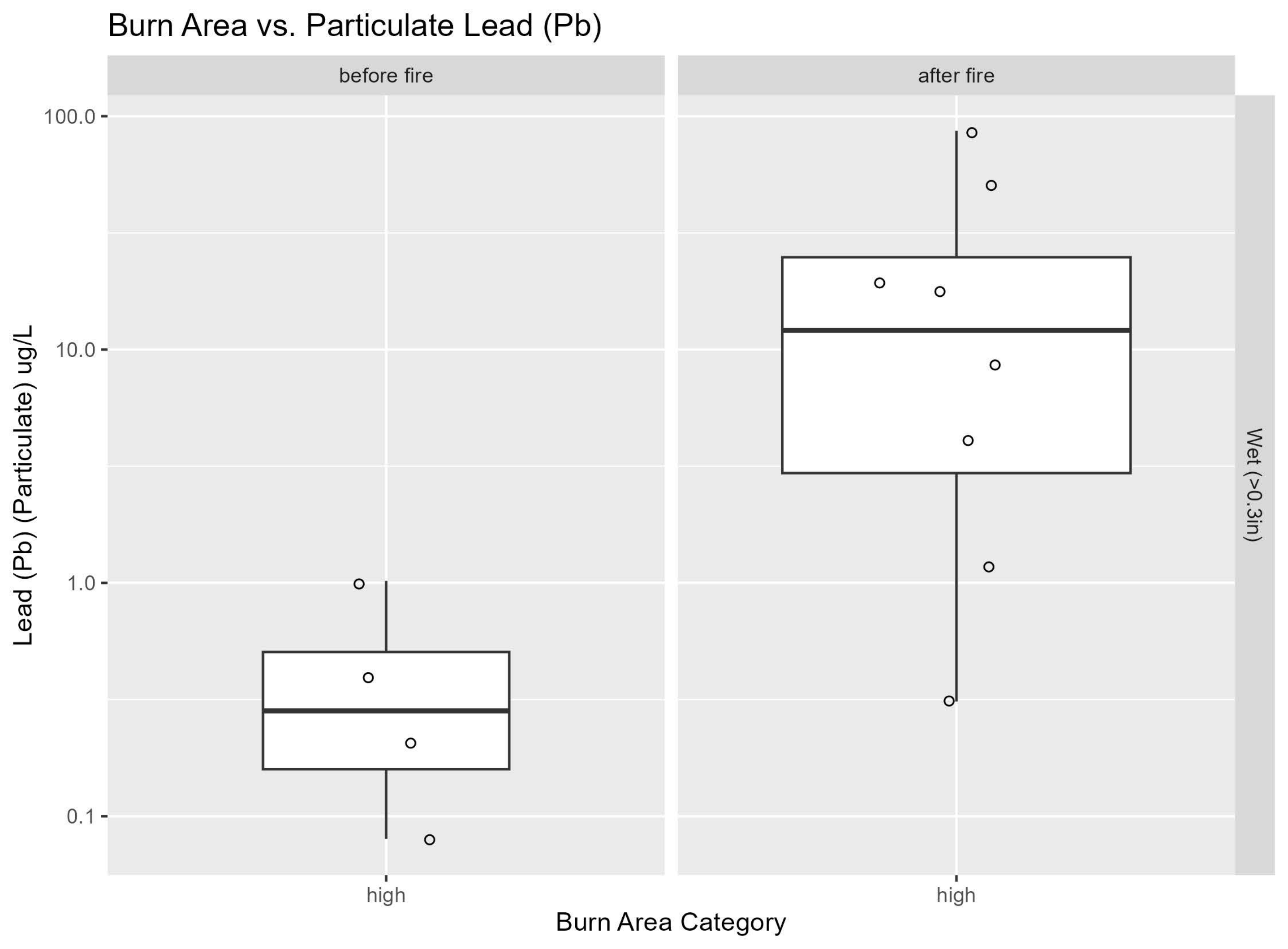


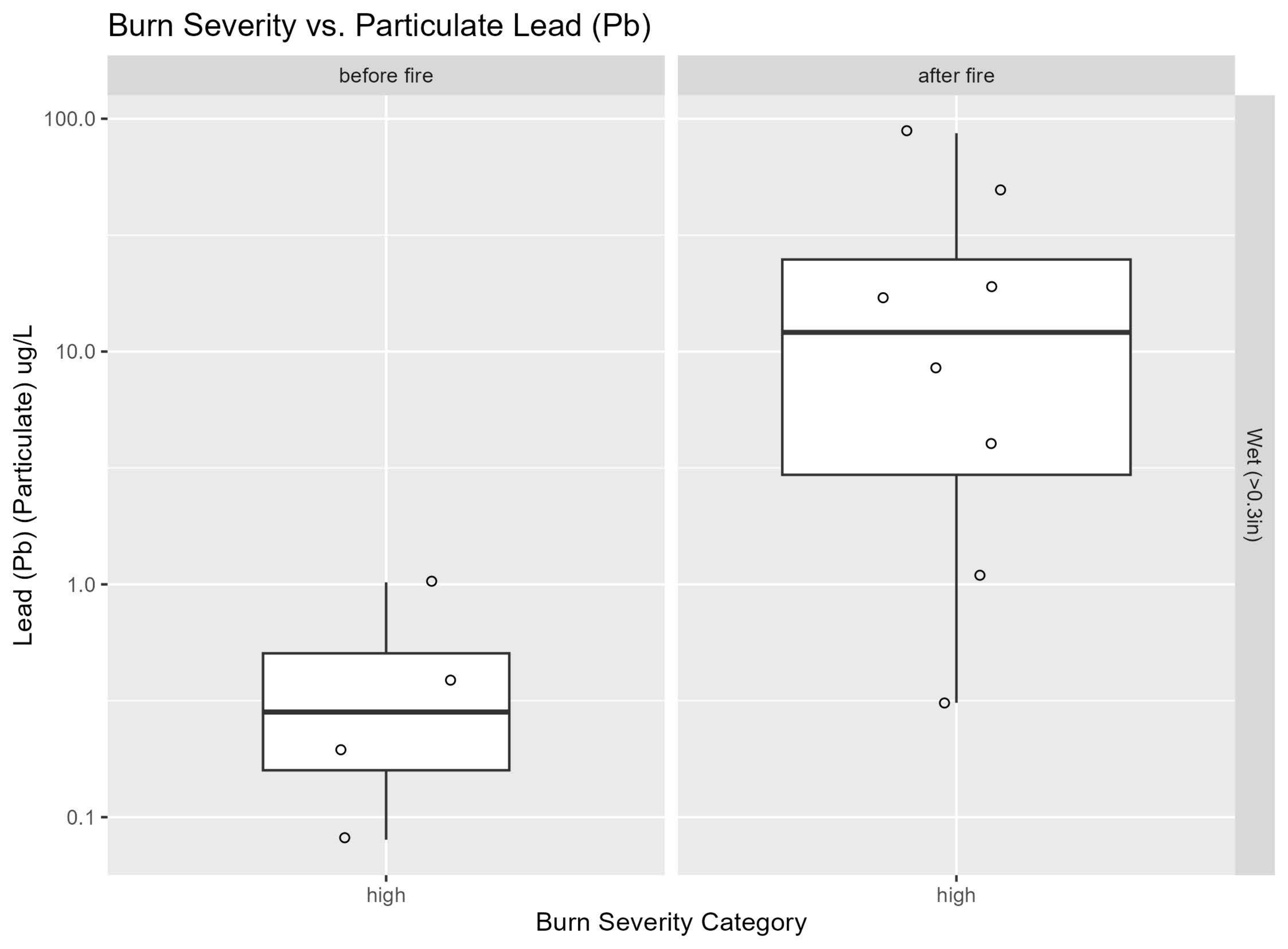
Burn Severity vs. Particulate Cadmium (Cd)
before fire
after fire
Wet (>0.3in)
Cadmium (Cd) (Particulate) ug/L
1.0
0.3
0.1
high
high
Burn Severity Category



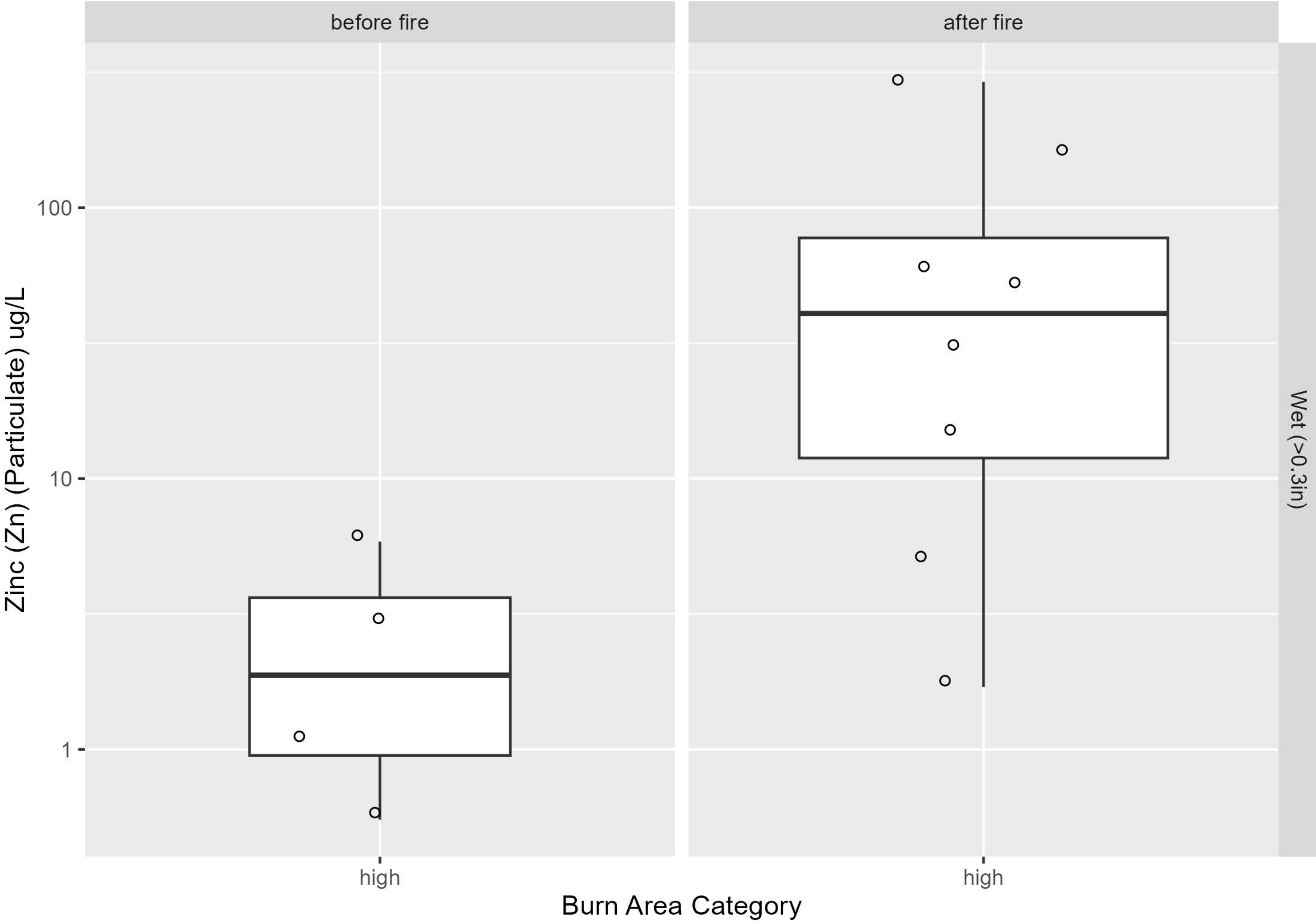
Burn Area vs. Particulate Copper (Cu)
before fire
after fire
100
10
1
Copper (Cu) (Particulate) ug/L
Wet (>0.3in)
high
high
Burn Area Category

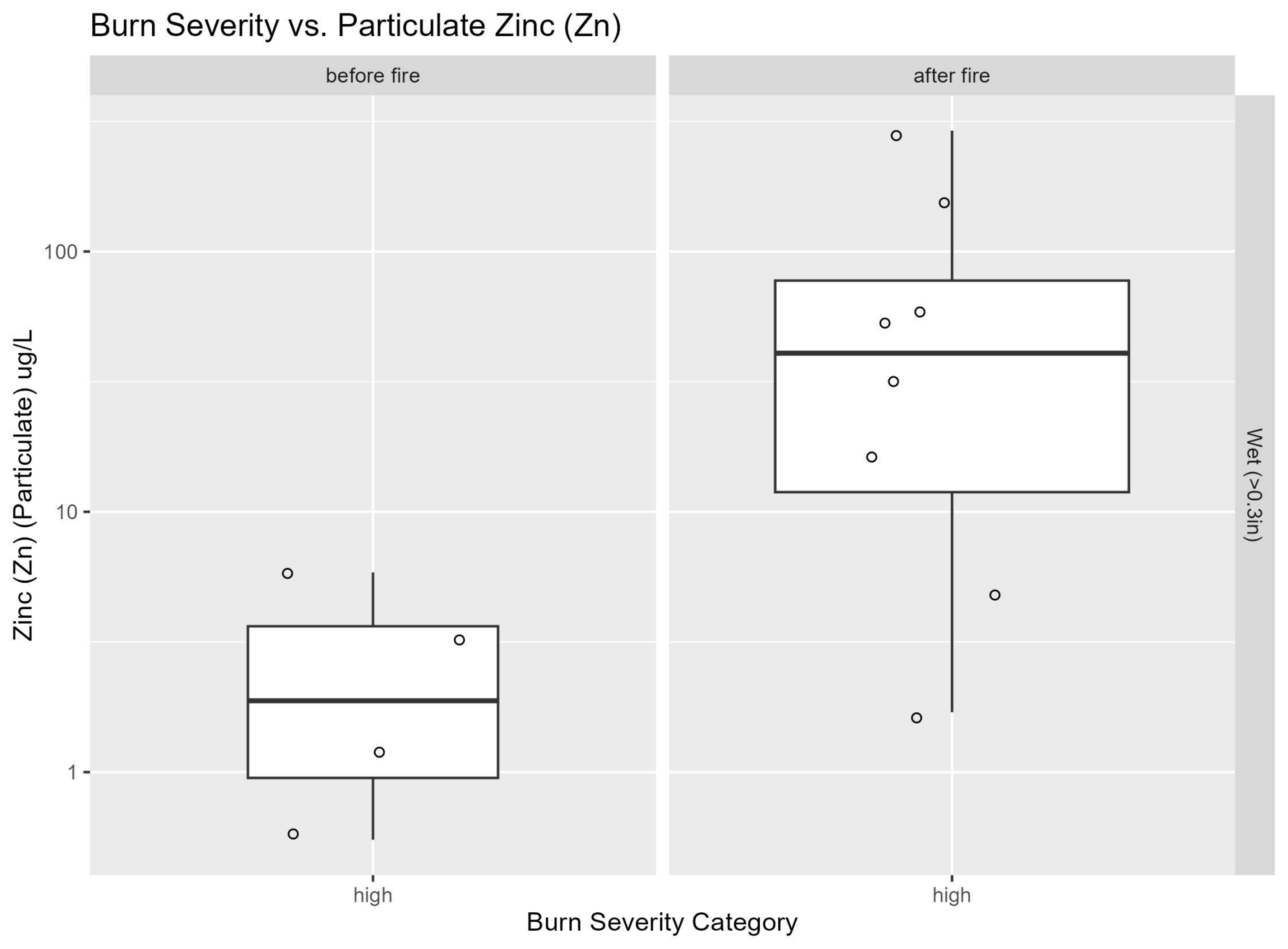

Burn Severity vs. Particulate Copper (Cu)
before fire
after fire
100
10
1
Copper (Cu) (Particulate) ug/L
Wet (>0.3in)
high
high
Burn Severity Category

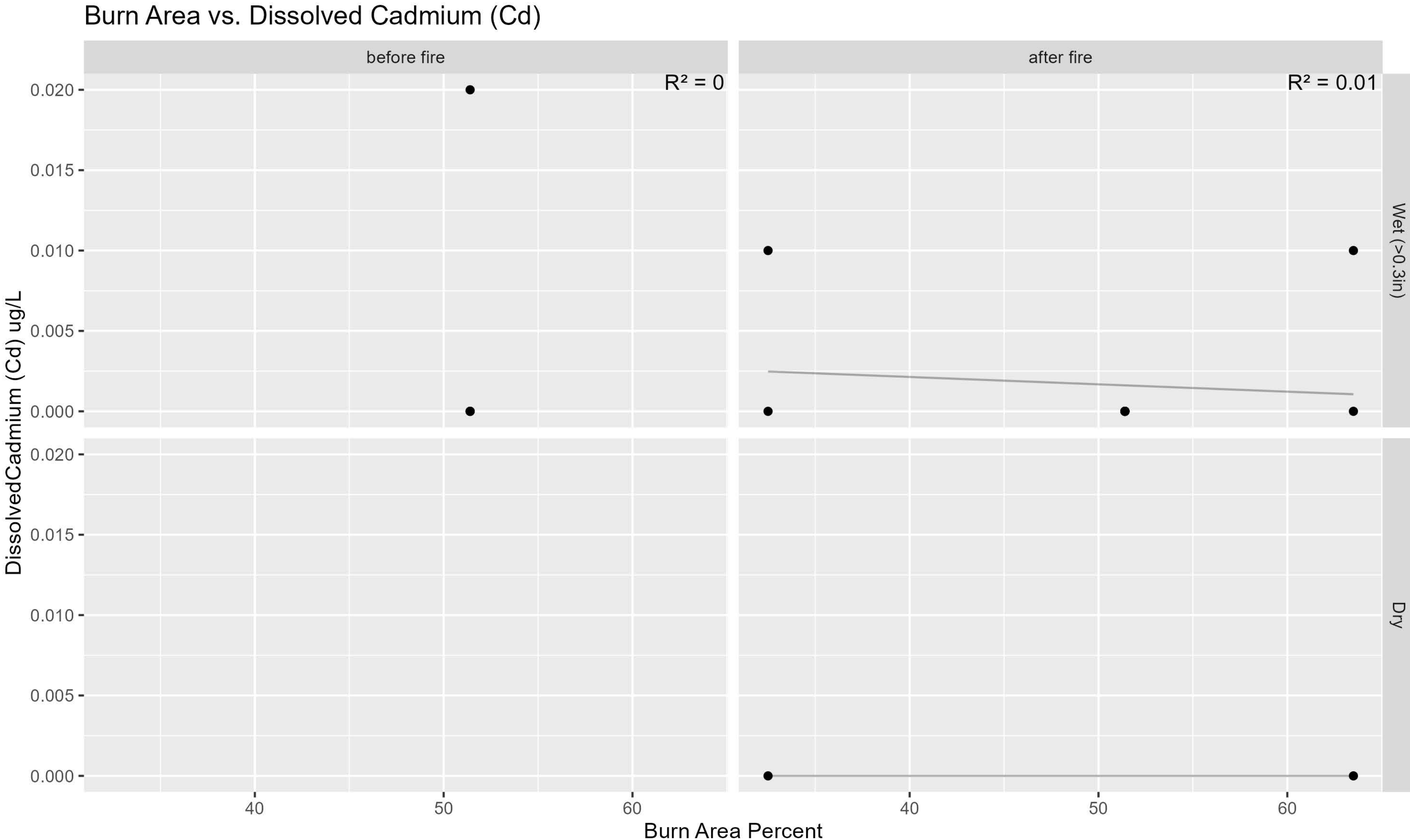

Burn Area vs. Particulate Lead (Pb)
before fire
after fire
100.0
10.0
1.0
0.1
Lead (Pb) (Particulate) ug/L
Wet (>0.3in)
high
high
Burn Area Category


Burn Severity vs. Particulate Lead (Pb)
before fire
after fire
Wet (>0.3in)
Lead (Pb) (Particulate) ug/L
100.0
10.0
1.0
0.1
high
high
Burn Severity Category

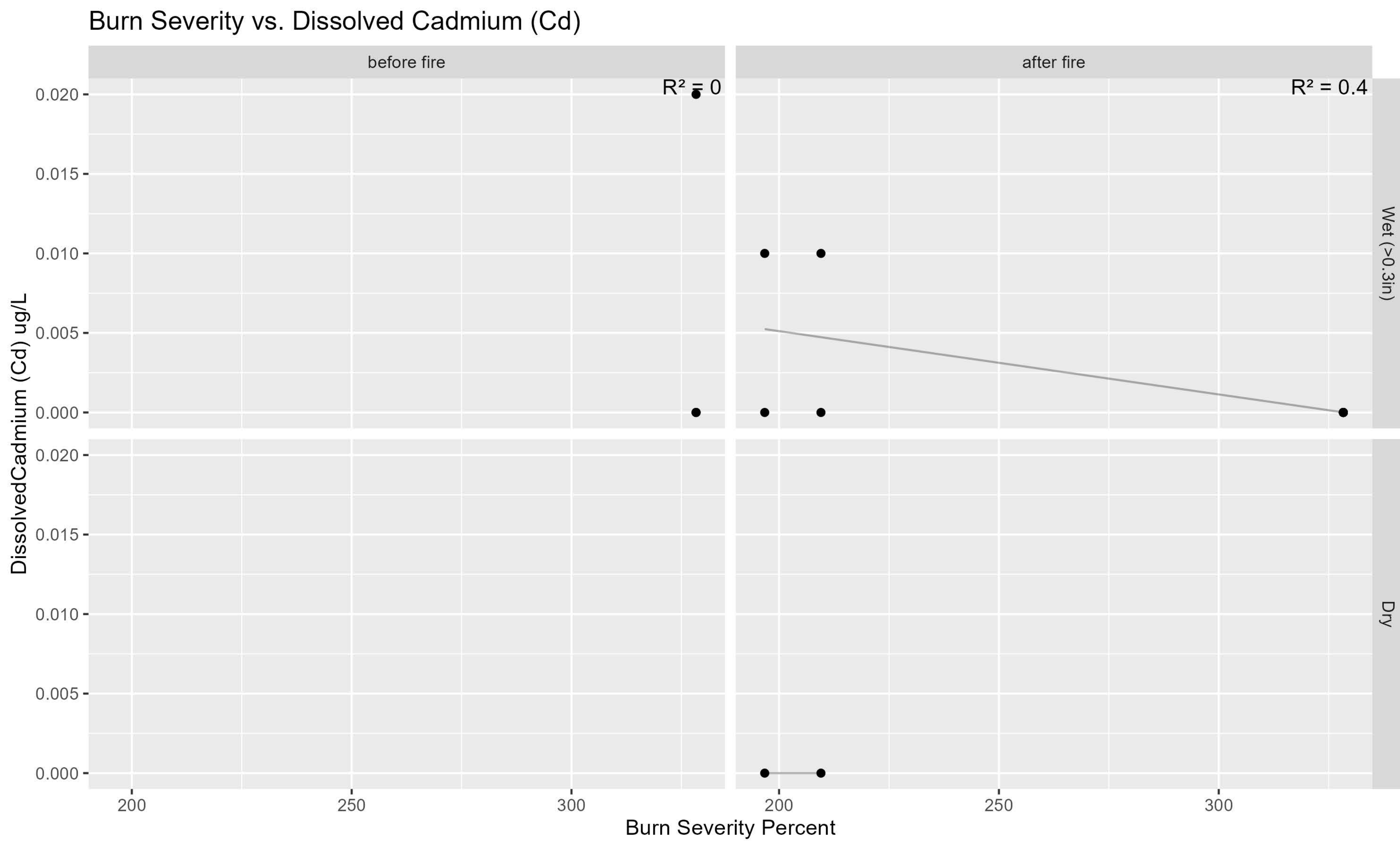
Burn Area vs. Particulate Zinc (Zn)



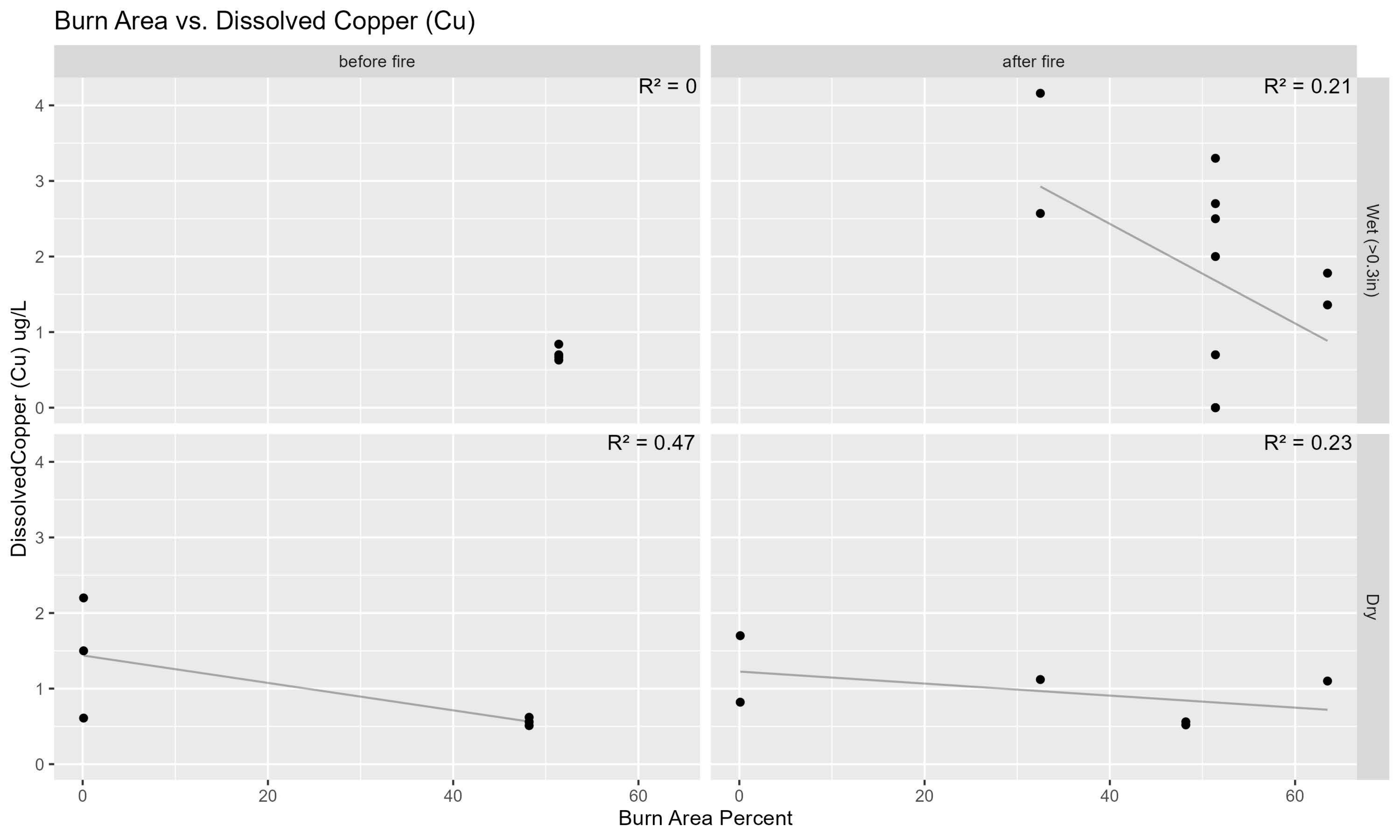

Burn Severity vs. Particulate Zinc (Zn)
before fire
after fire
Wet (>0.3in)
Zinc (Zn) (Particulate) ug/L
100
10
1
high
high
Burn Severity Category



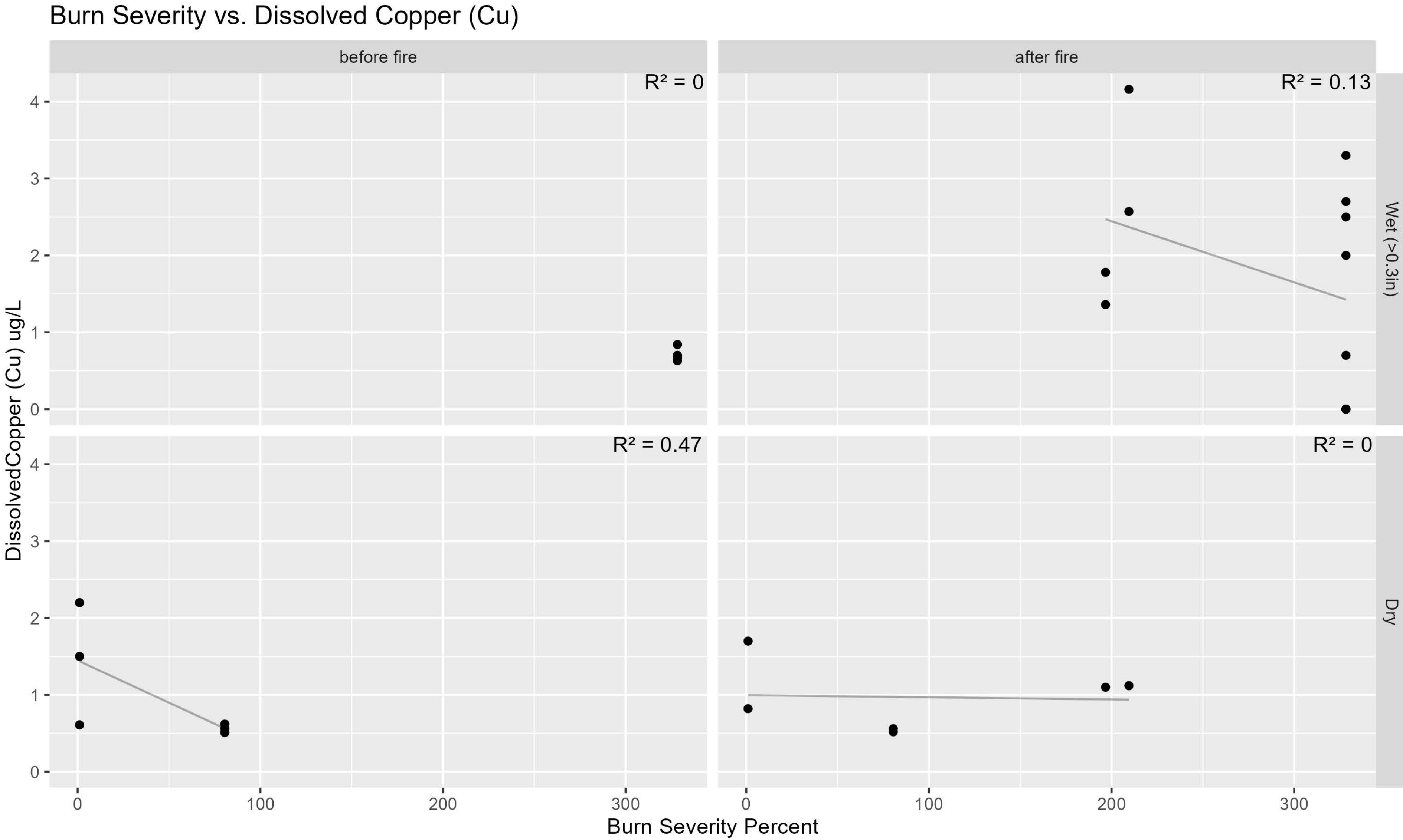
Burn Area vs. Dissolved Cadmium (Cd)
before fire
after fire
R² = 0
R² = 0.01
Wet (>0.3in)
Dry
DissolvedCadmium (Cd) ug/L
0.020
0.015
0.010
0.005
0.000
40
50
60
Burn Area Percent



Burn Severity vs. Dissolved Cadmium (Cd)
before fire
after fire
R² = 0
R² = 0.4
Wet (>0.3in)
Dry
DissolvedCadmium (Cd) ug/L
0.020
0.015
0.010
0.005
0.000
200
250
300
Burn Severity Percent

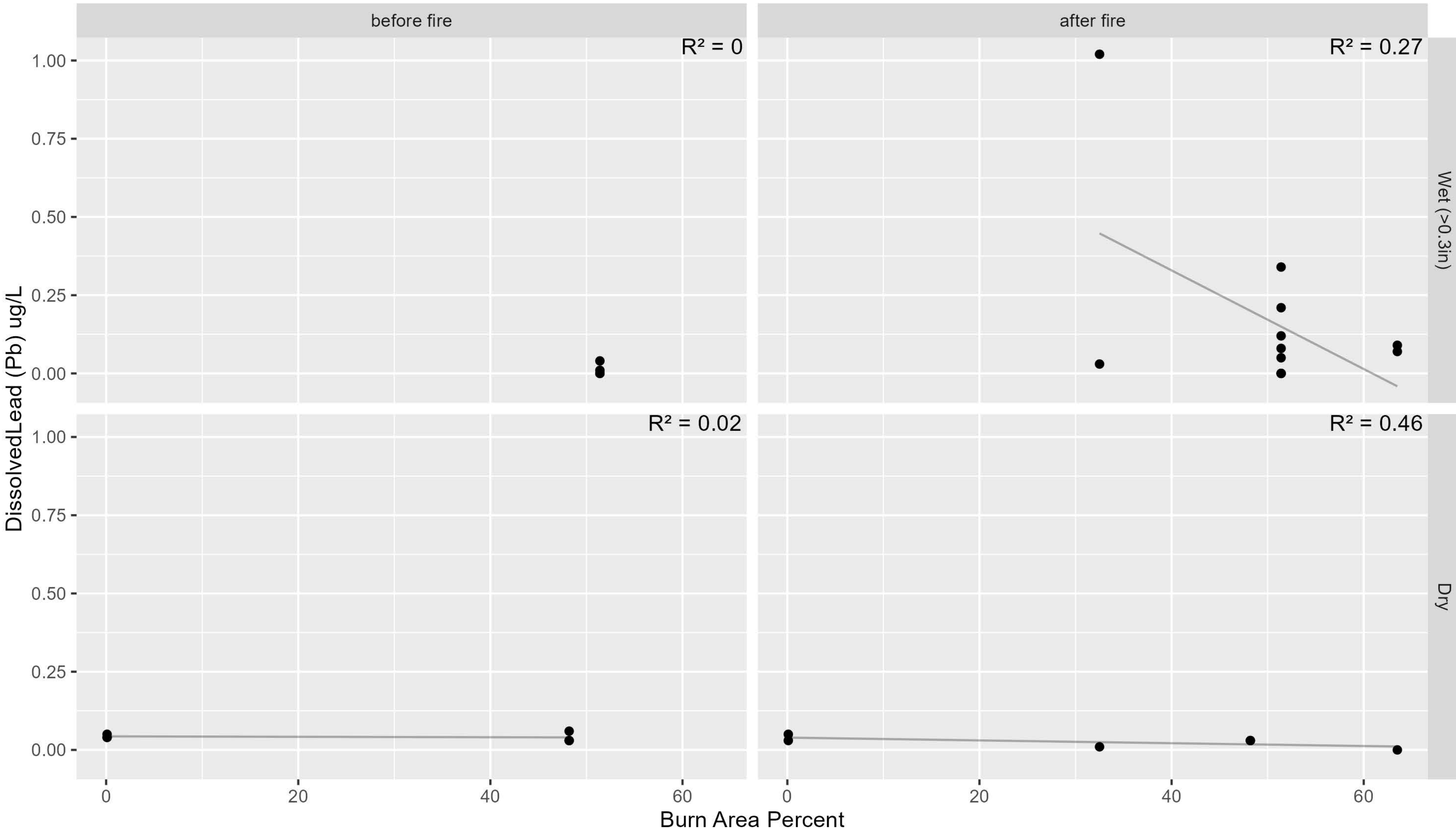


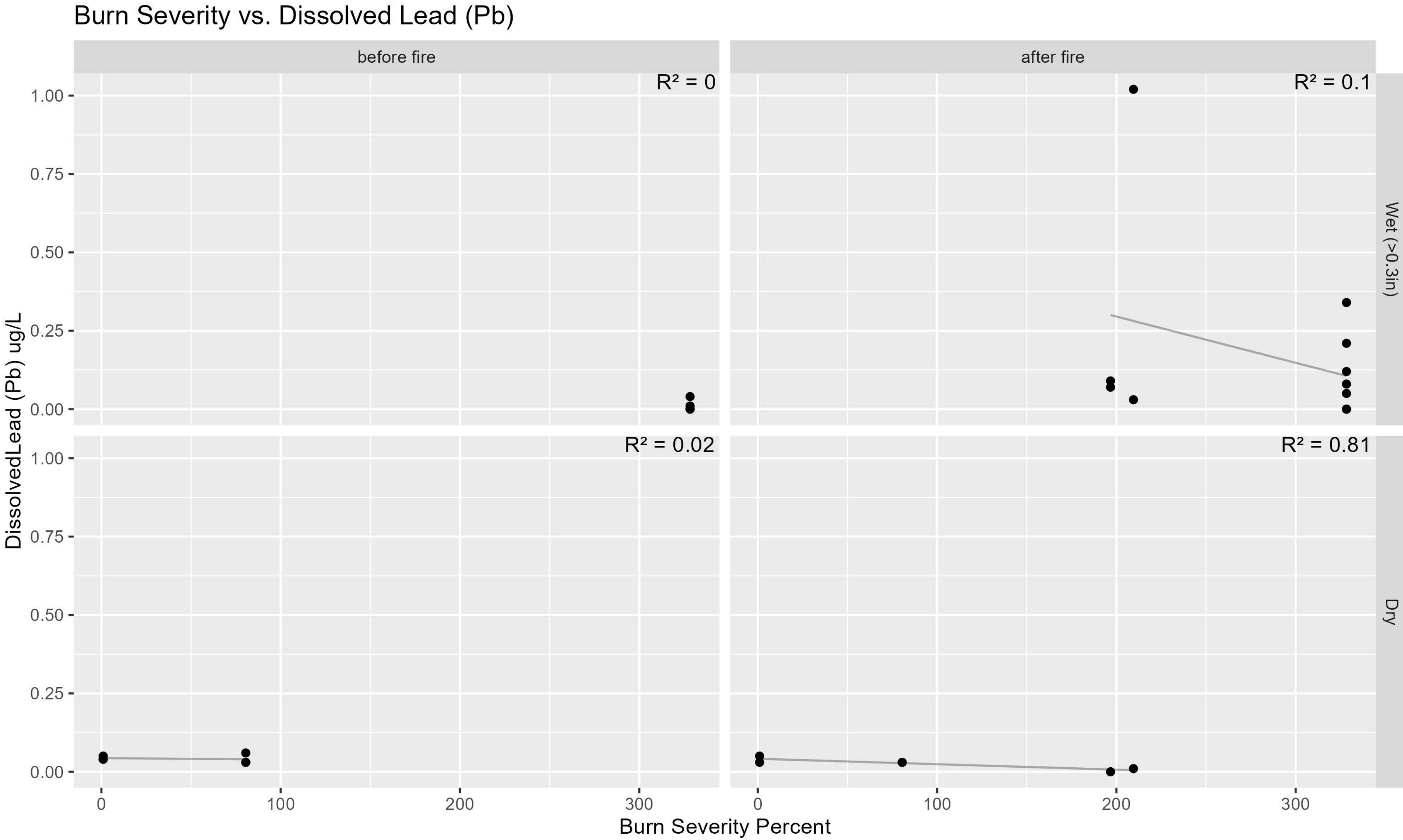
Burn Area vs. Dissolved Copper (Cu)
before fire
after fire
R² = 0
R² = 0.21
R² = 0.47
R² = 0.23
Wet (>0.3in)
Dry
DissolvedCopper (Cu) ug/L
Burn Area Percent
0
1
2
3
4
0
20
40
60



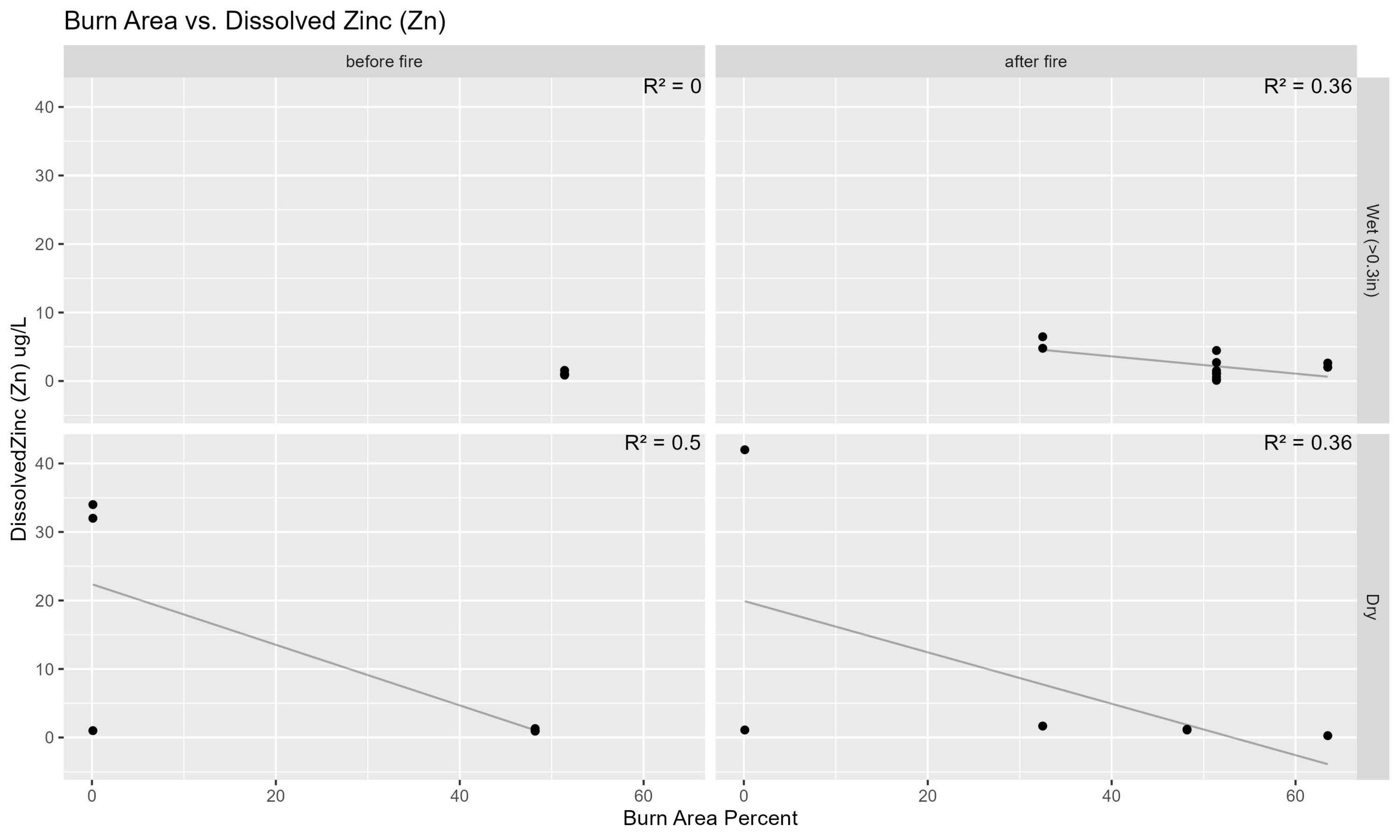
Burn Severity vs. Dissolved Copper (Cu)
before fire
after fire
R² = 0
R² = 0.13
R² = 0.47
R² = 0
Wet (>0.3in)
Dry
DissolvedCopper (Cu) ug/L
Burn Severity Percent
0
1
2
3
4
0
100
200
300

Burn Area vs. Dissolved Lead (Pb)

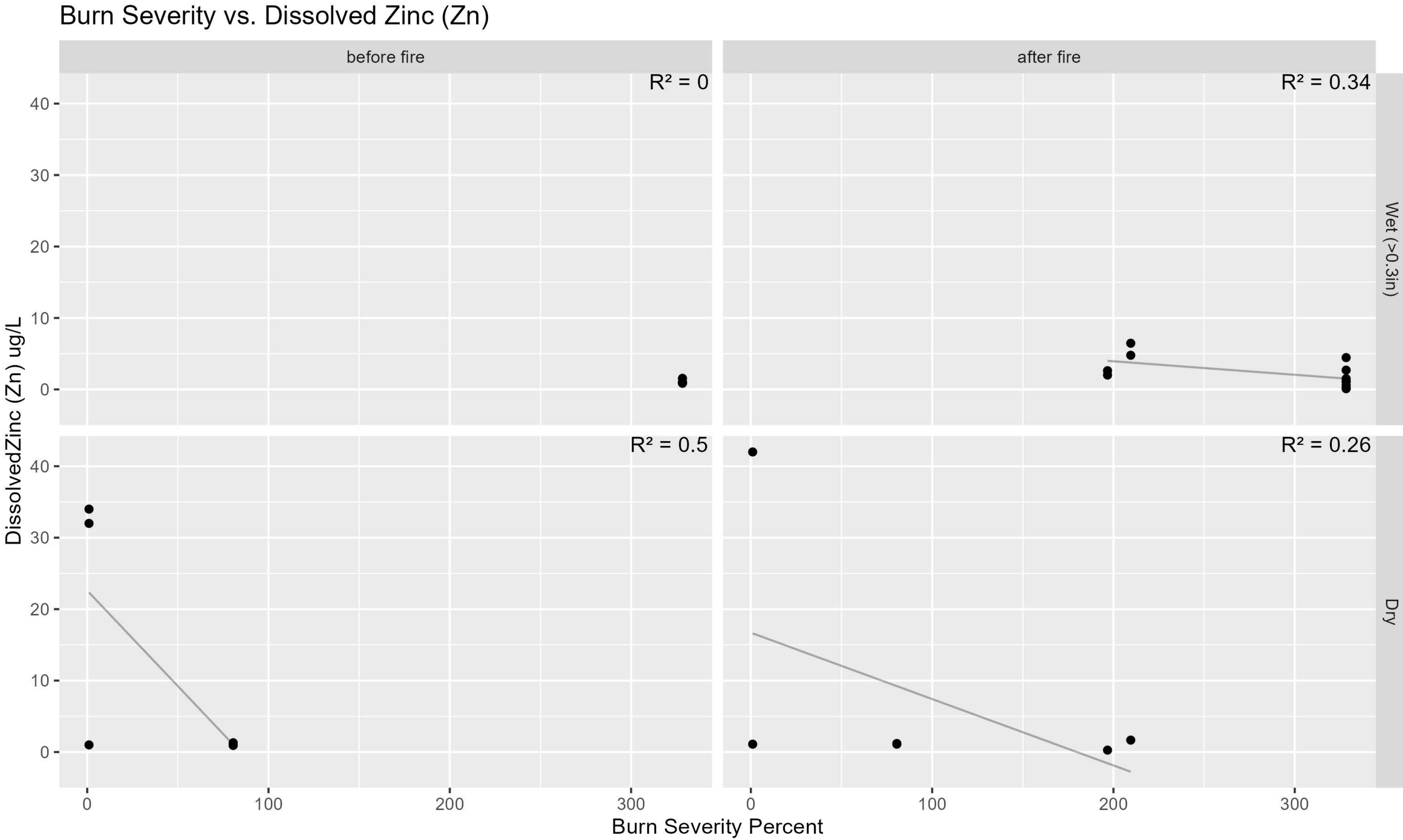




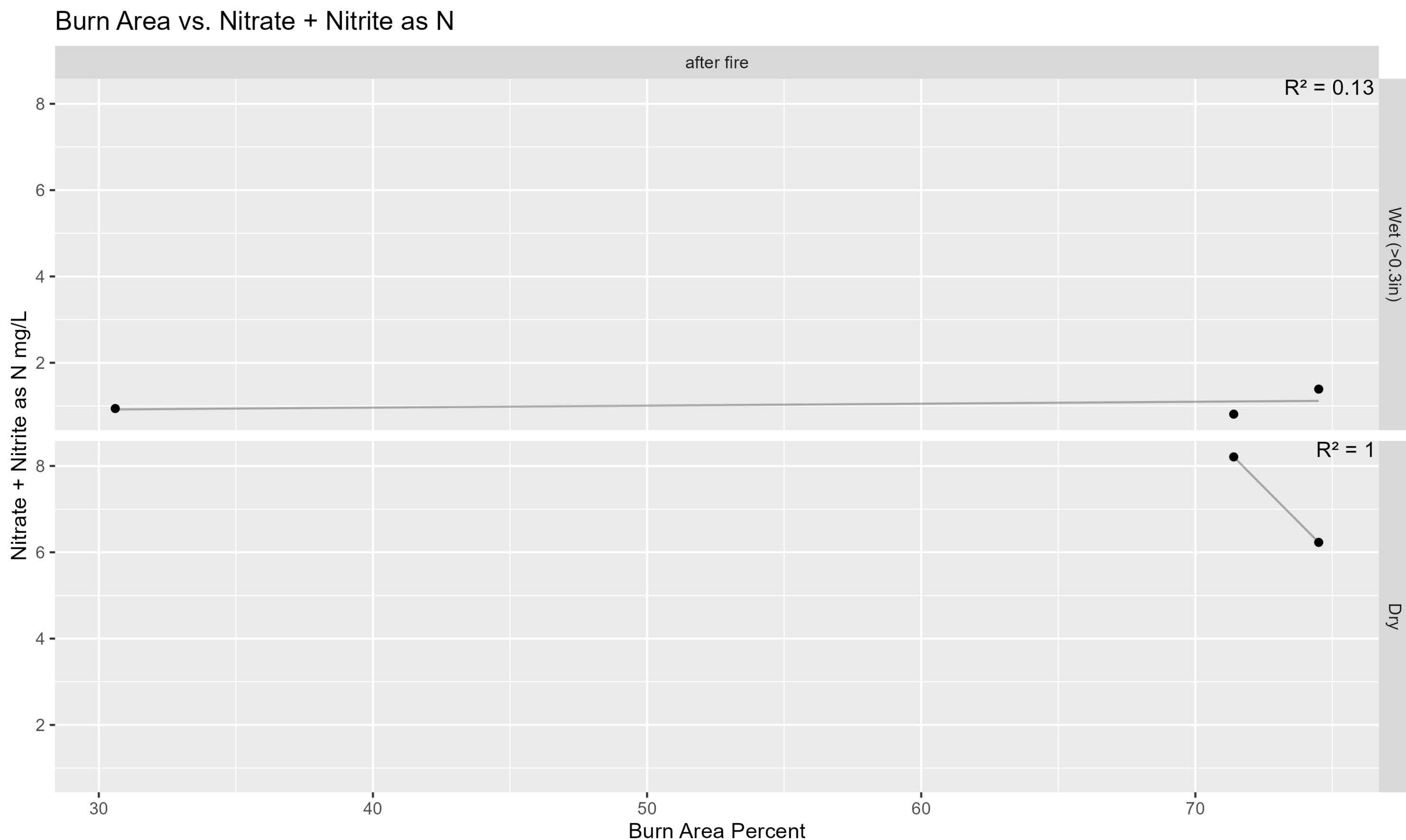
Burn Severity vs. Dissolved Lead (Pb)
before fire
after fire
R² = 0
R² = 0.1
R² = 0.02
R² = 0.81
Wet (>0.3in)
Dry
1.00
0.75
0.50
0.25
0.00
0
100
200
300
DissolvedLead (Pb) ug/L
Burn Severity Percent



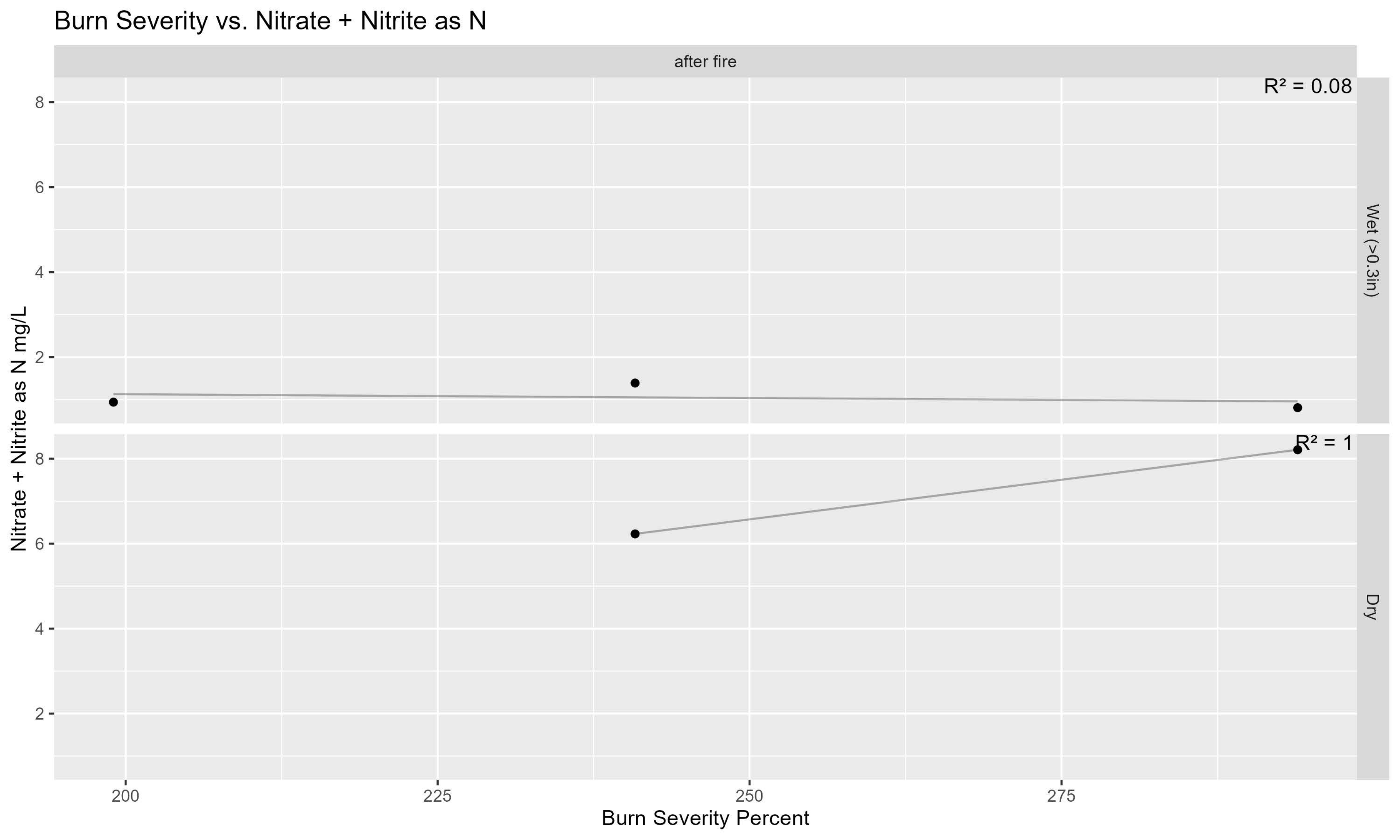
Burn Area vs. Dissolved Zinc (Zn)
before fire
after fire
Wet (>0.3in)
Dry
R² = 0
R² = 0.36
R² = 0.5
R² = 0.36
DissolvedZinc (Zn) ug/L
Burn Area Percent
0
10
20
30
40
0
20
40
60



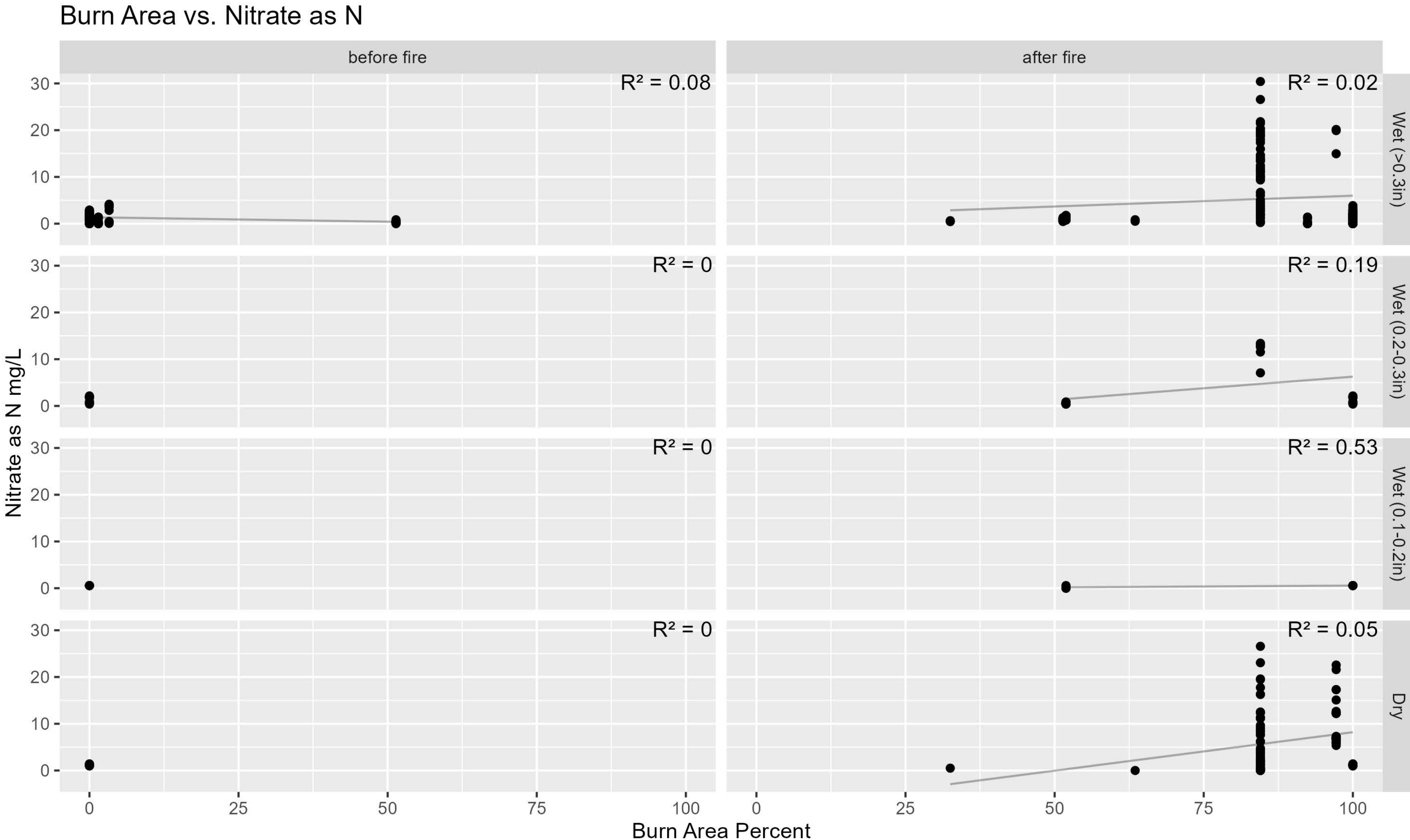
Burn Severity vs. Dissolved Zinc (Zn)
before fire
after fire
R² = 0
R² = 0.34
R² = 0.5
R² = 0.26
Wet (>0.3in)
Dry
DissolvedZinc (Zn) ug/L
Burn Severity Percent
0
10
20
30
40
0
100
200
300



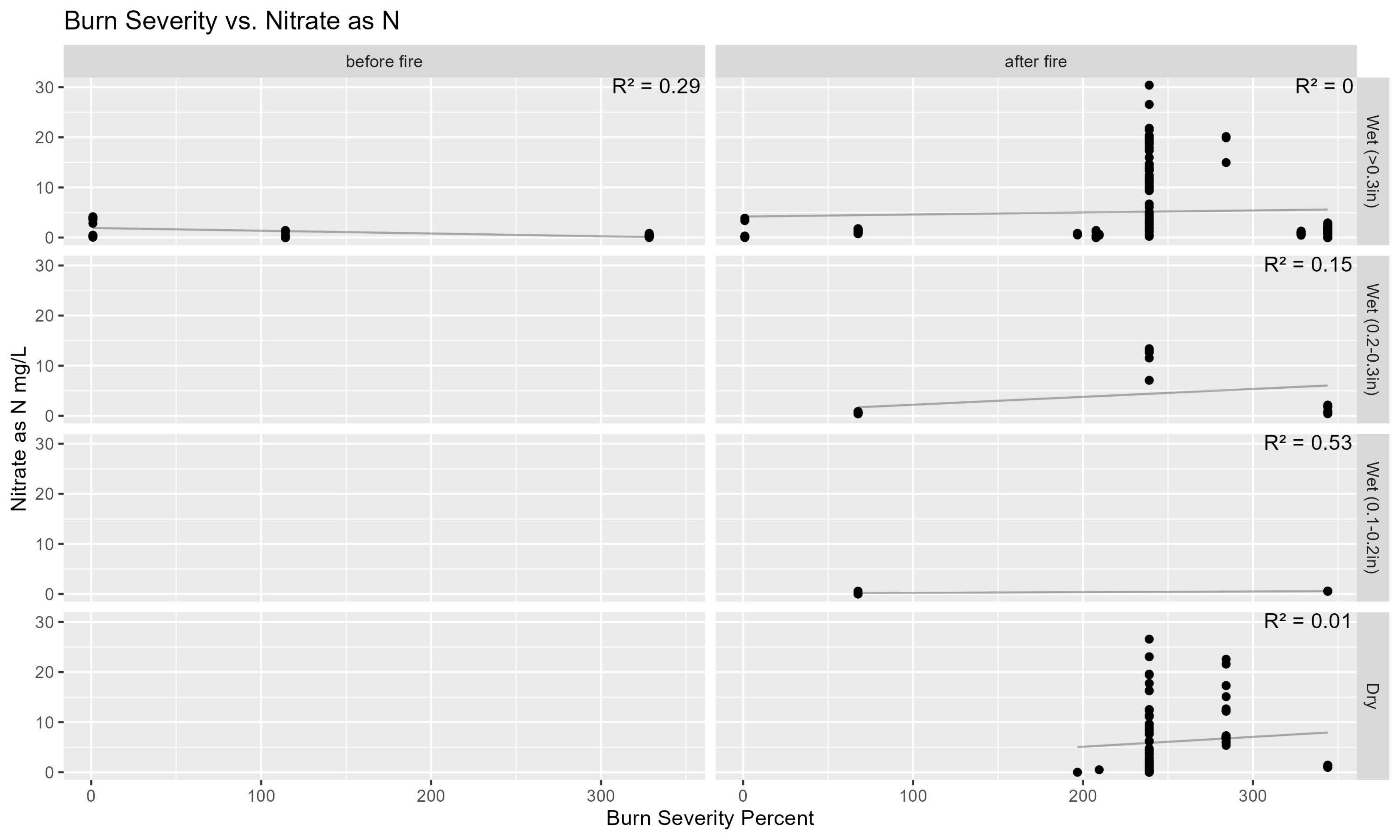
Burn Area vs. Nitrate + Nitrite as N
after fire
R² = 0.13
Wet (>0.3in)
R² = 1
Dry
Nitrate + Nitrite as N mg/L
Burn Area Percent
8
6
4
2
30
40
50
60
70



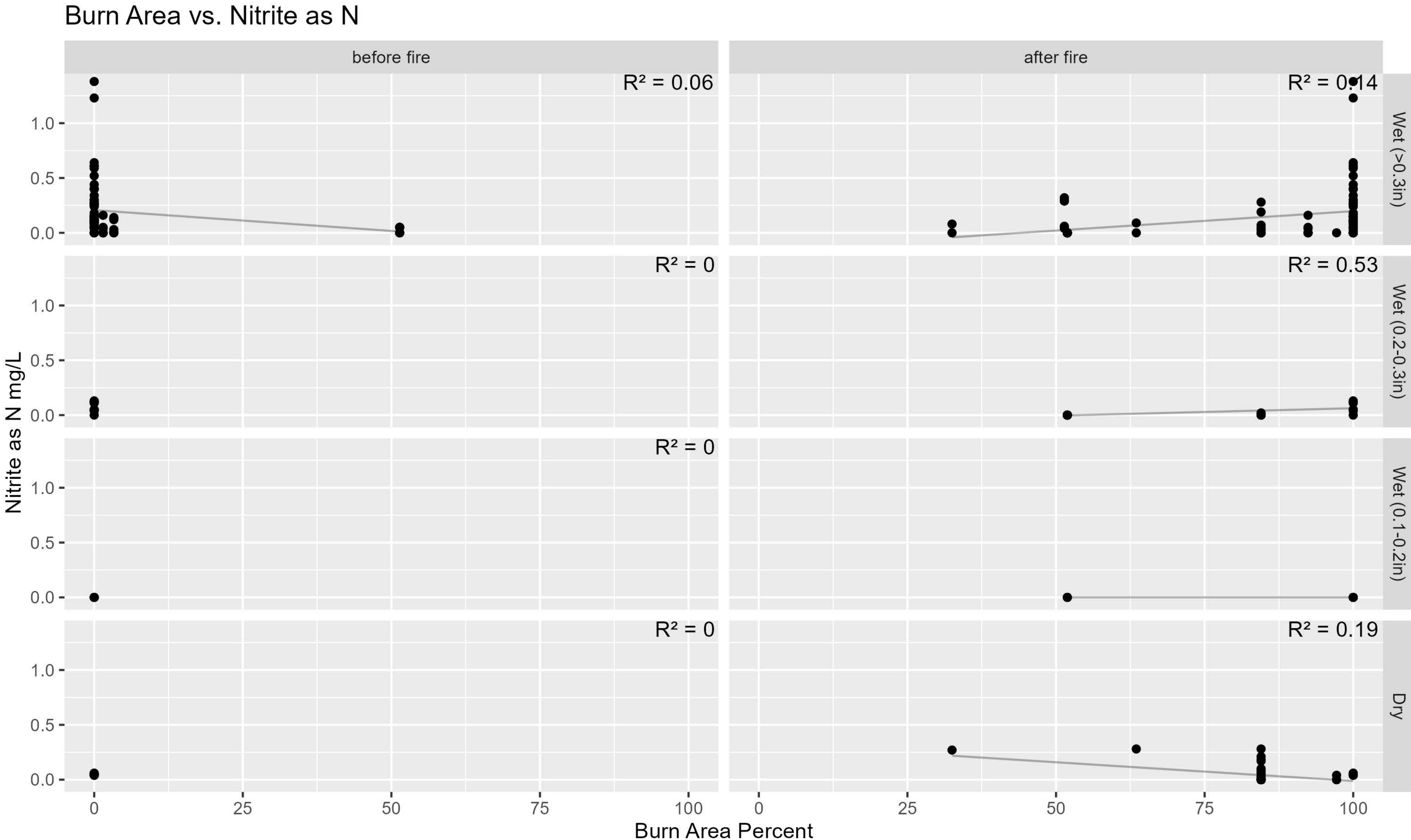
Burn Severity vs. Nitrate + Nitrite as N
after fire
R² = 0.08
Wet (>0.3in)
R² = 1
Dry
Nitrate + Nitrite as N mg/L
8
6
4
2
200
225
250
275
Burn Severity Percent



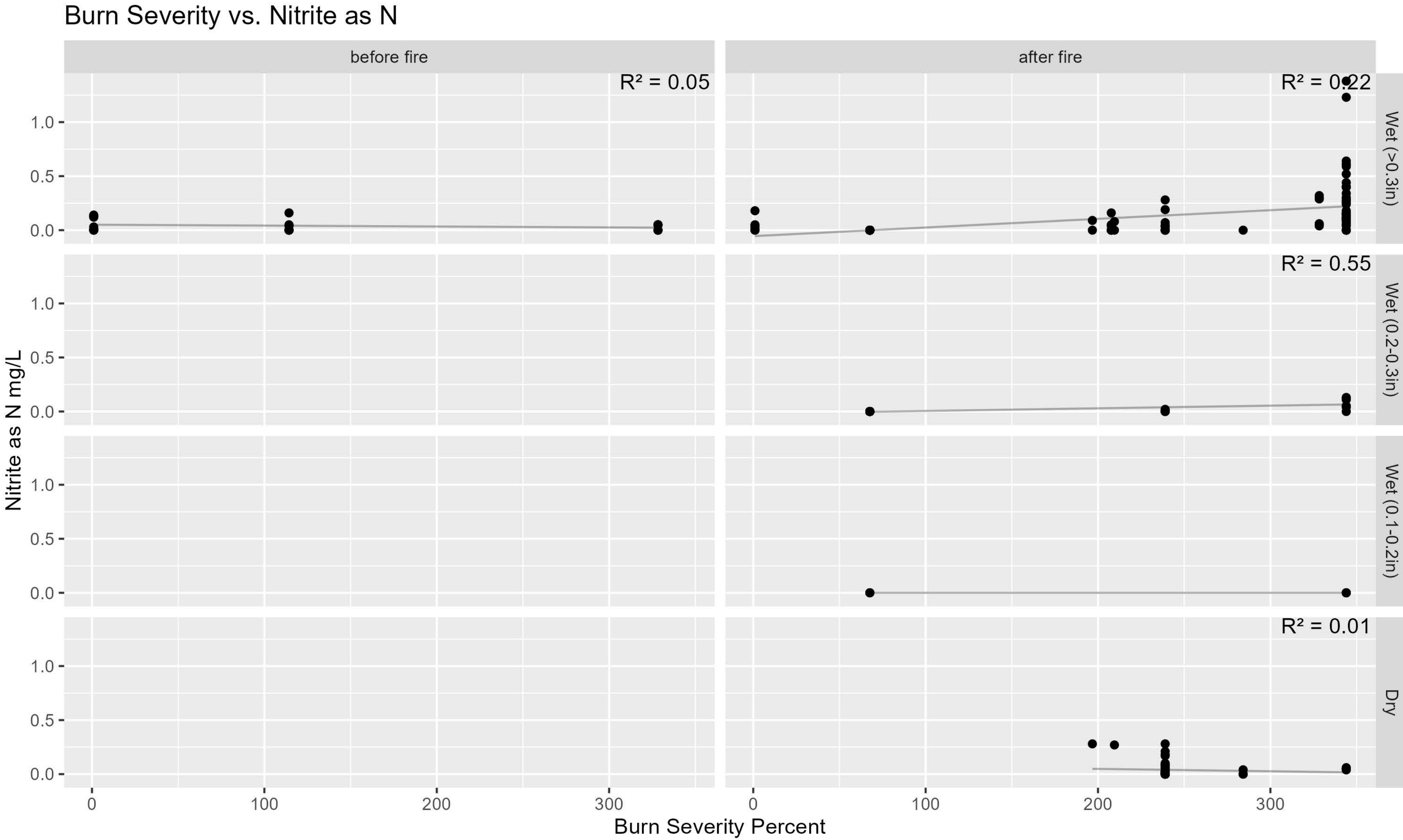
Burn Area vs. Nitrate as N
before fire
after fire
R² = 0.08
R² = 0.02
R² = 0
R² = 0.19
R² = 0
R² = 0.53
R² = 0
R² = 0.05
Wet (>0.3in)
Wet (0.2-0.3in)
Wet (0.1-0.2in)
Dry
Nitrate as N mg/L
Burn Area Percent
0
10
20
30
0
25
50
75
100



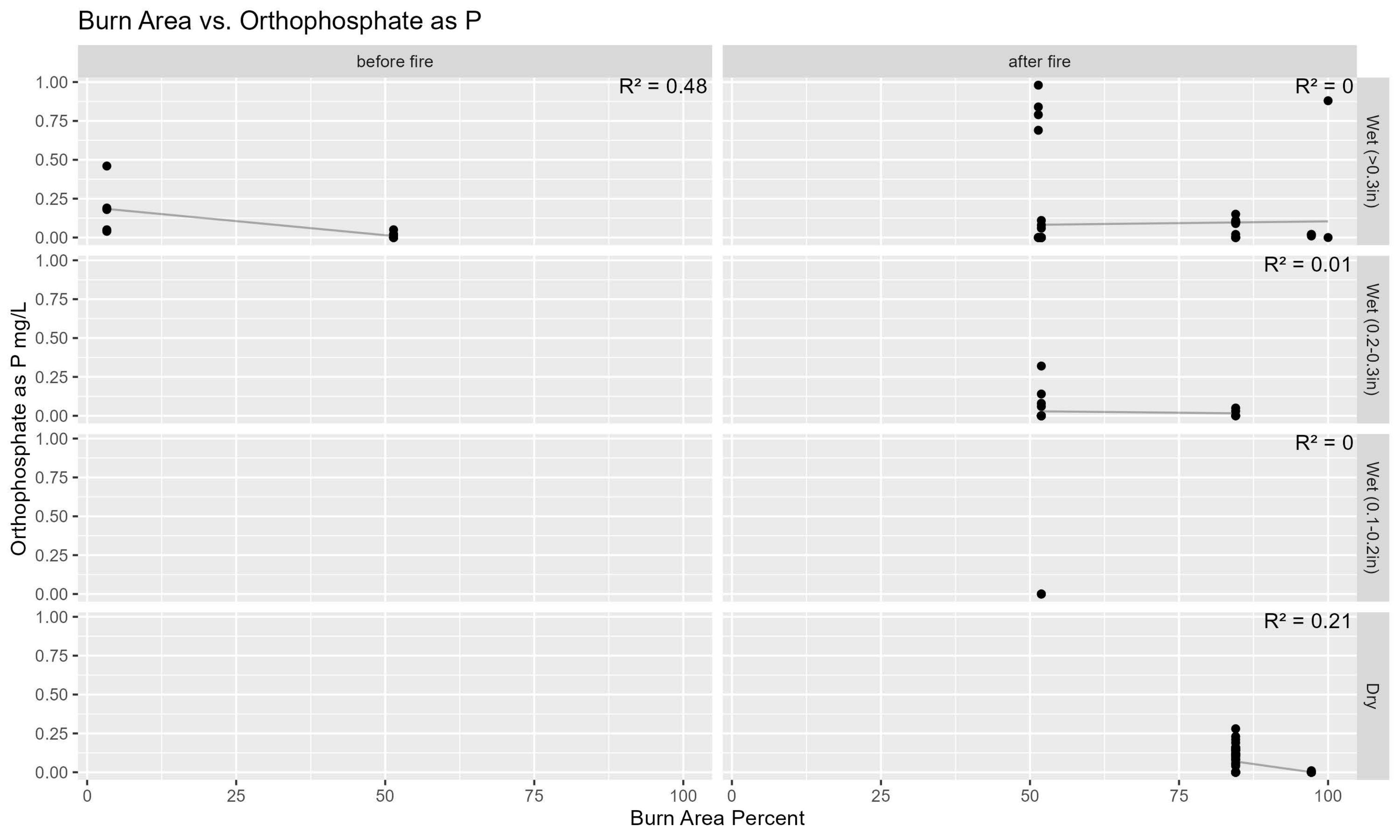
Burn Severity vs. Nitrate as N
before fire
after fire
R² = 0.29
R² = 0
R² = 0.15
R² = 0.53
R² = 0.01
Wet (>0.3in)
Wet (0.2-0.3in)
Wet (0.1-0.2in)
Dry
Nitrate as N mg/L
Burn Severity Percent
0
10
20
30
0
100
200
300

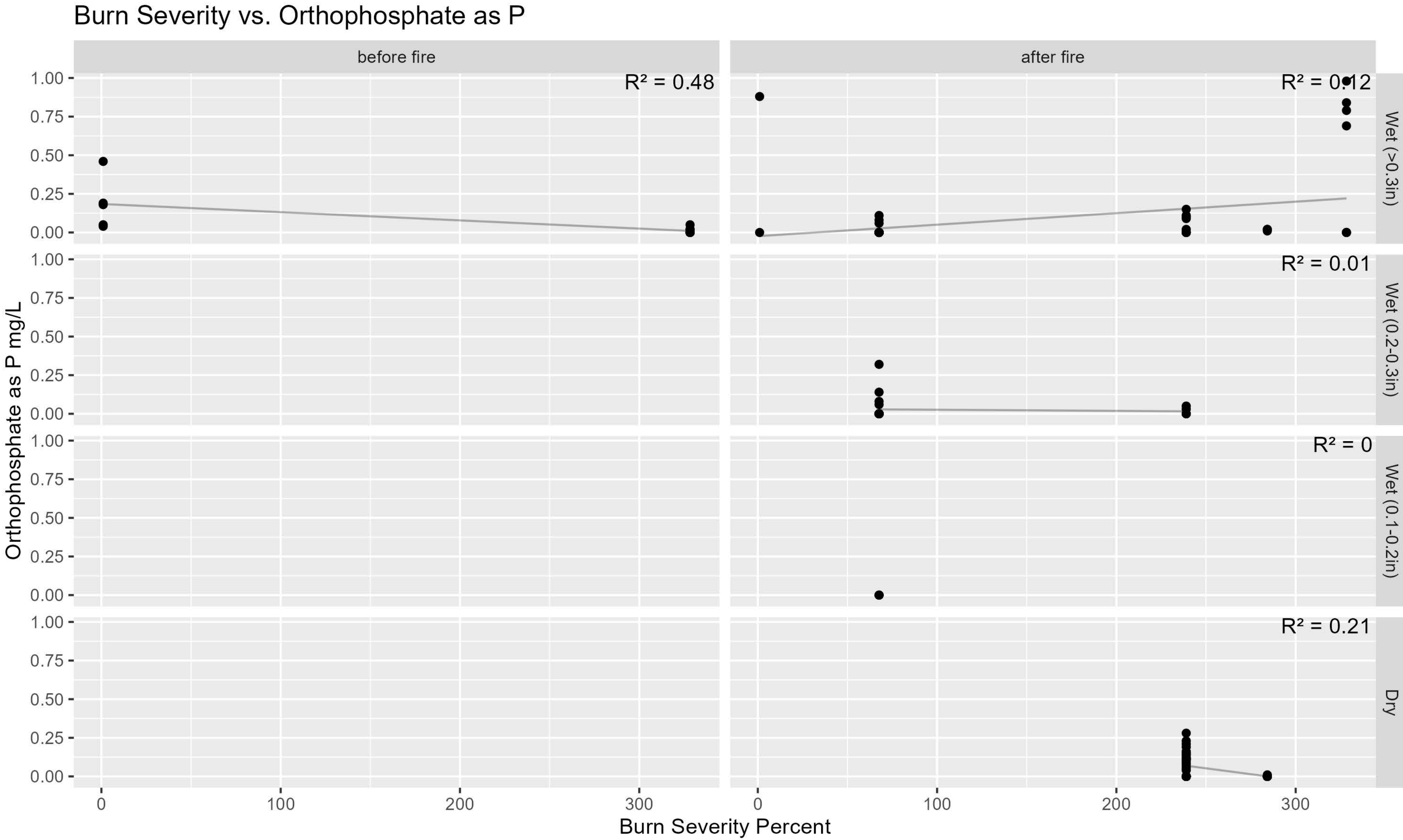


Burn Area vs. Nitrite as N
before fire
after fire
Wet (>0.3in)
Wet (0.2-0.3in)
Wet (0.1-0.2in)
Dry
R² = 0.06
R² = 0.14
R² = 0
R² = 0.53
R² = 0
R² = 0
R² = 0.19
Nitrite as N mg/L
Burn Area Percent
0.0
0.5
1.0
0
25
50
75
100

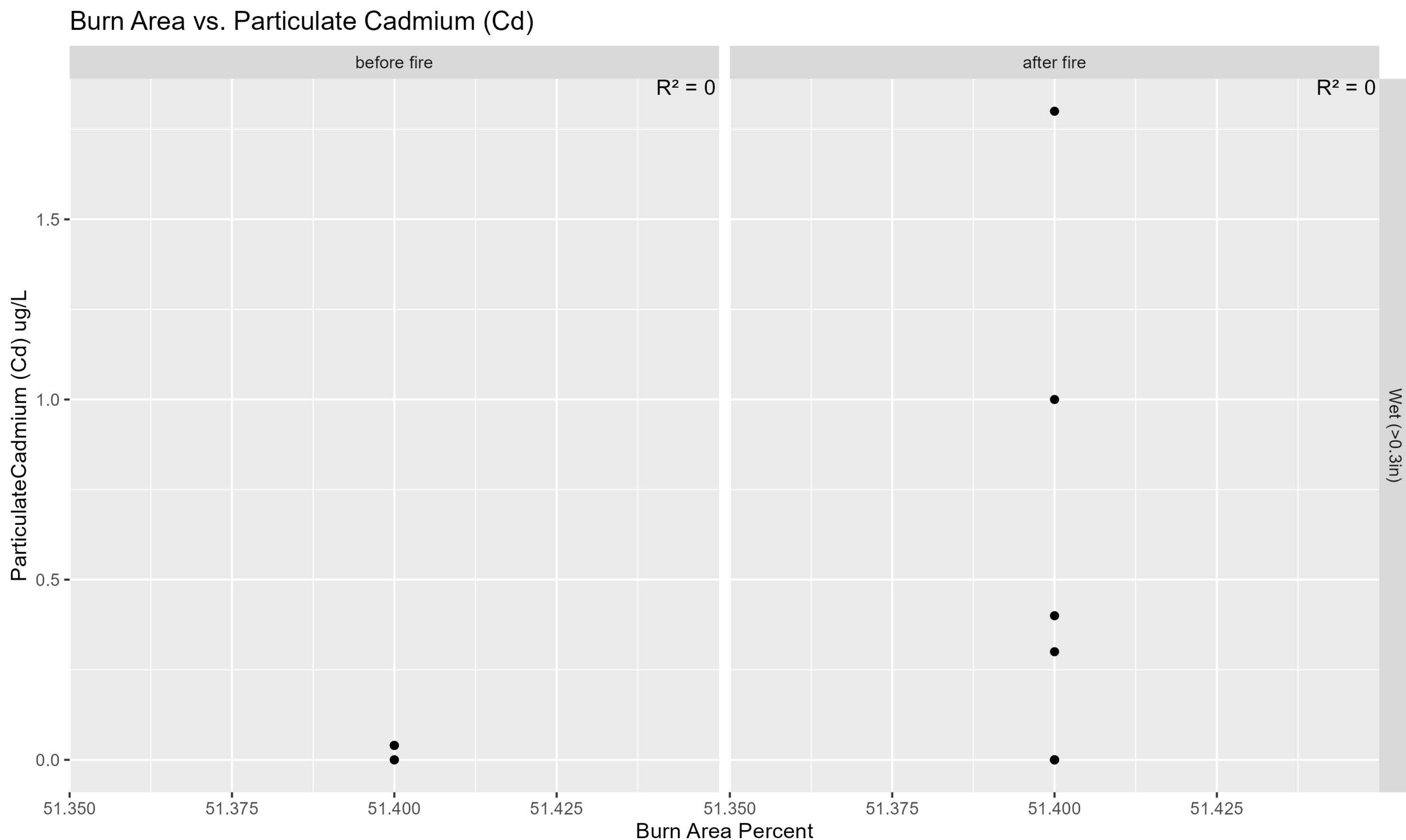


Burn Severity vs. Nitrite as N
before fire
after fire
R² = 0.05
R² = 0.22
R² = 0.55
R² = 0.01
Wet (>0.3in)
Wet (0.2-0.3in)
Wet (0.1-0.2in)
Dry
Nitrite as N mg/L
Burn Severity Percent
0.0
0.5
1.0
0
100
200
300

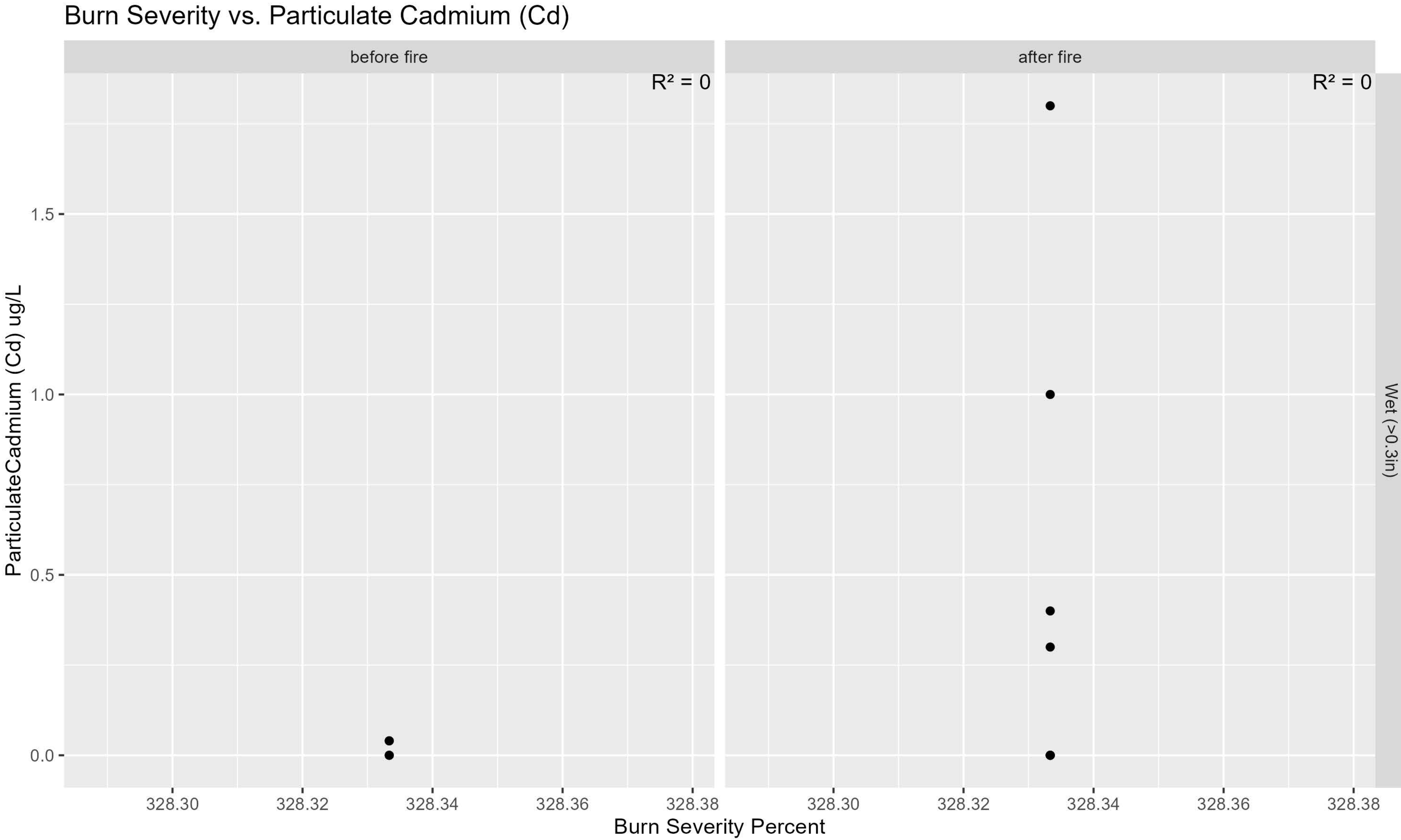

Burn Area vs. Orthophosphate as P
before fire
after fire
R² = 0.48
R² = 0
R² = 0.01
R² = 0
R² = 0.21
Wet (>0.3in)
Wet (0.2-0.3in)
Wet (0.1-0.2in)
Dry
Orthophosphate as P mg/L
Burn Area Percent
1.00
0.75
0.50
0.25
0.00
0
25
50
75
100



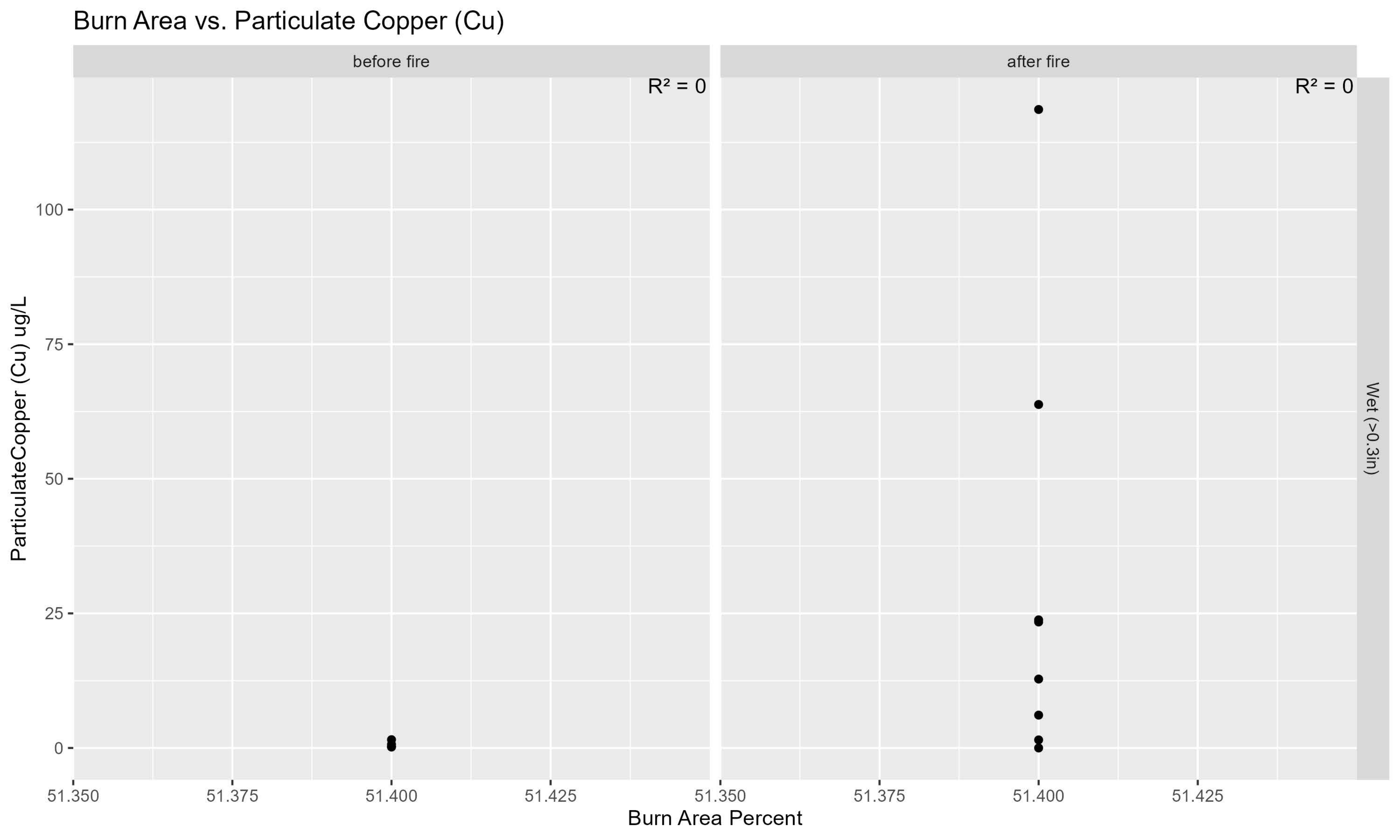
Burn Severity vs. Orthophosphate as P
before fire
after fire
R² = 0.48
R² = 0.12
R² = 0.01
R² = 0
R² = 0.21
Wet (>0.3in)
Wet (0.2-0.3in)
Wet (0.1-0.2in)
Dry
Orthophosphate as P mg/L
Burn Severity Percent
1.00
0.75
0.50
0.25
0.00
0
100
200
300

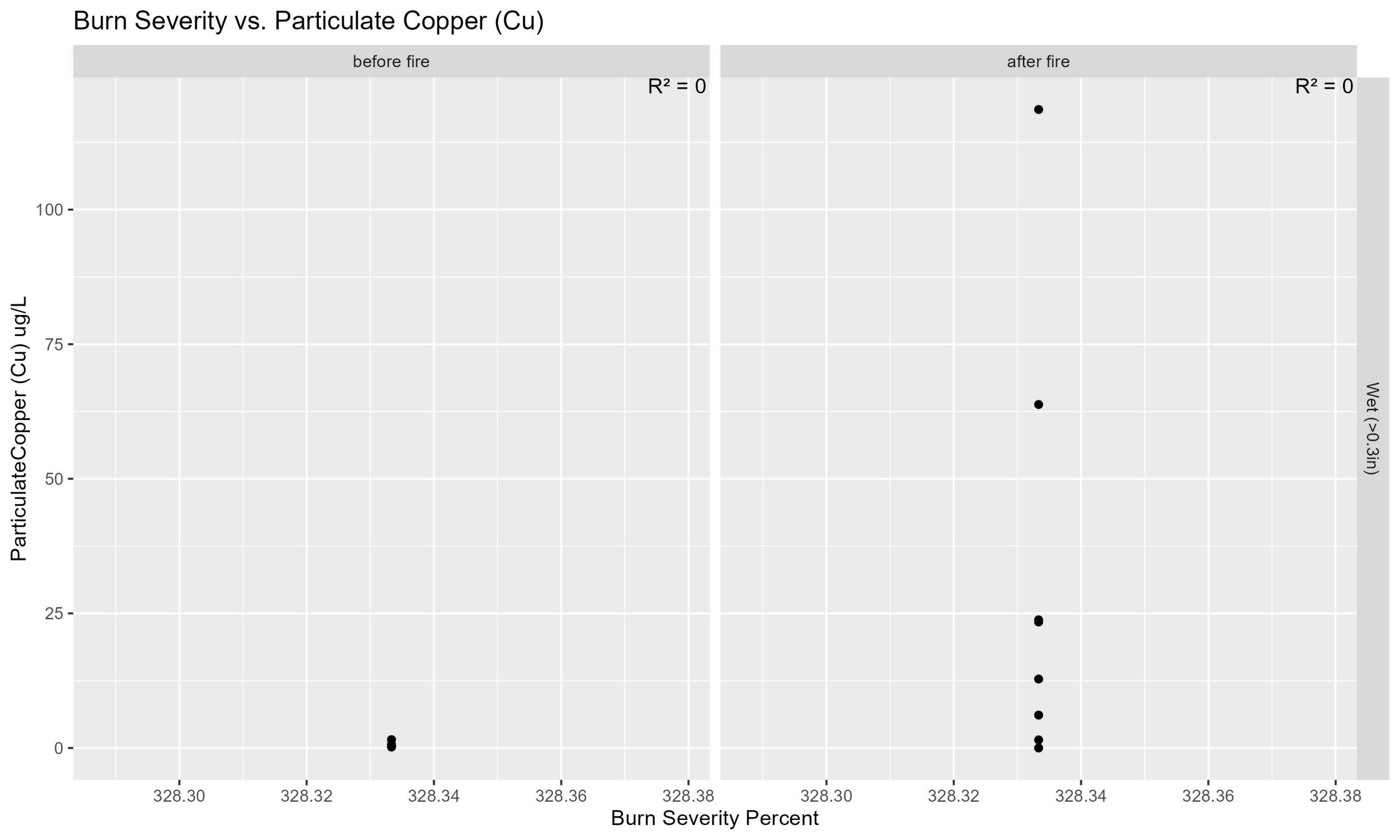


Burn Area vs. Particulate Cadmium (Cd)
before fire
after fire
R² = 0
R² = 0
ParticulateCadmium (Cd) ug/L
1.5
1.0
0.5
0.0
51.350
51.375
51.400
51.425
Burn Area Percent
Wet (>0.3in)

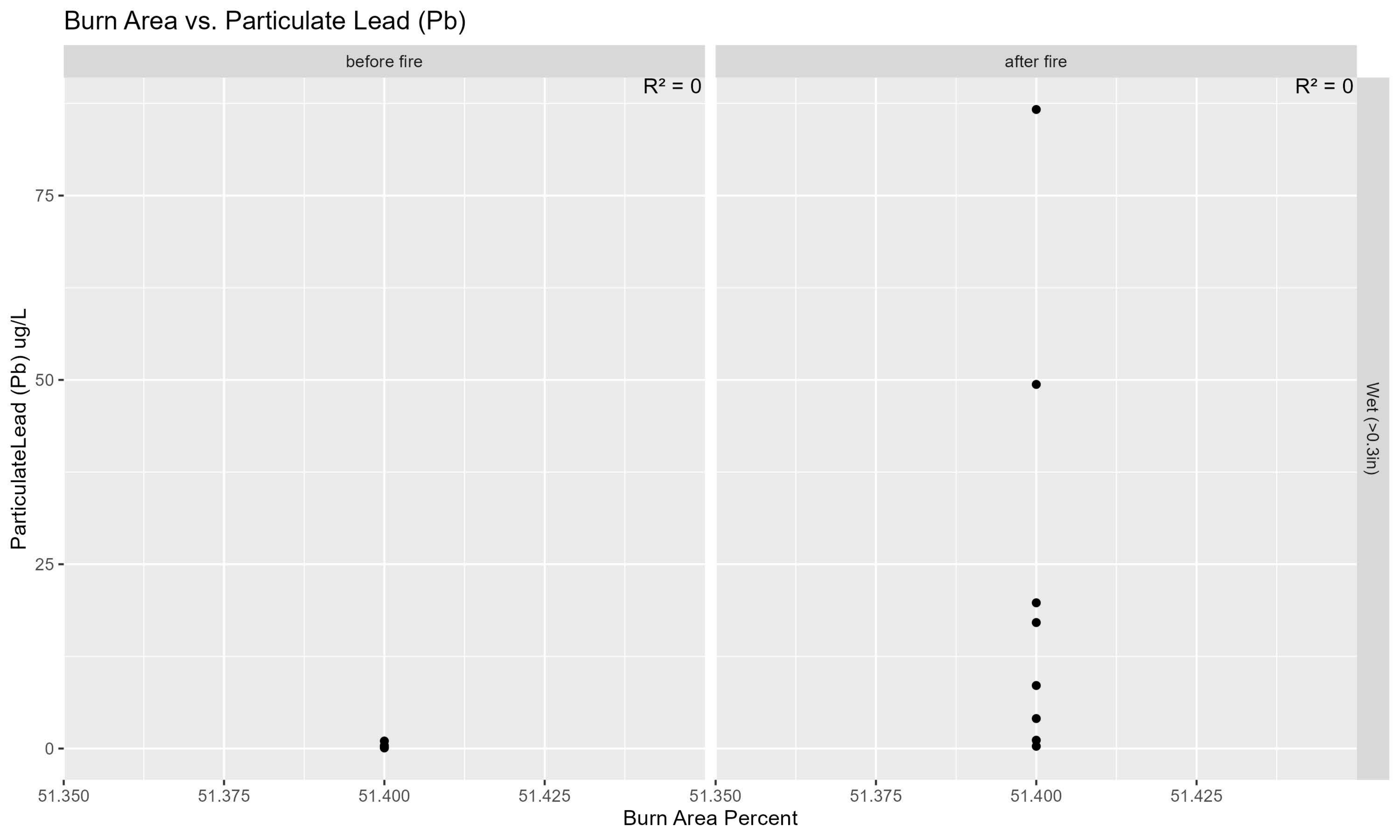


Burn Severity vs. Particulate Cadmium (Cd)
before fire
after fire
R² = 0
R² = 0
Wet (>0.3in)
ParticulateCadmium (Cd) ug/L
0.0
0.5
1.0
1.5
328.30
328.32
328.34
328.36
328.38
Burn Severity Percent

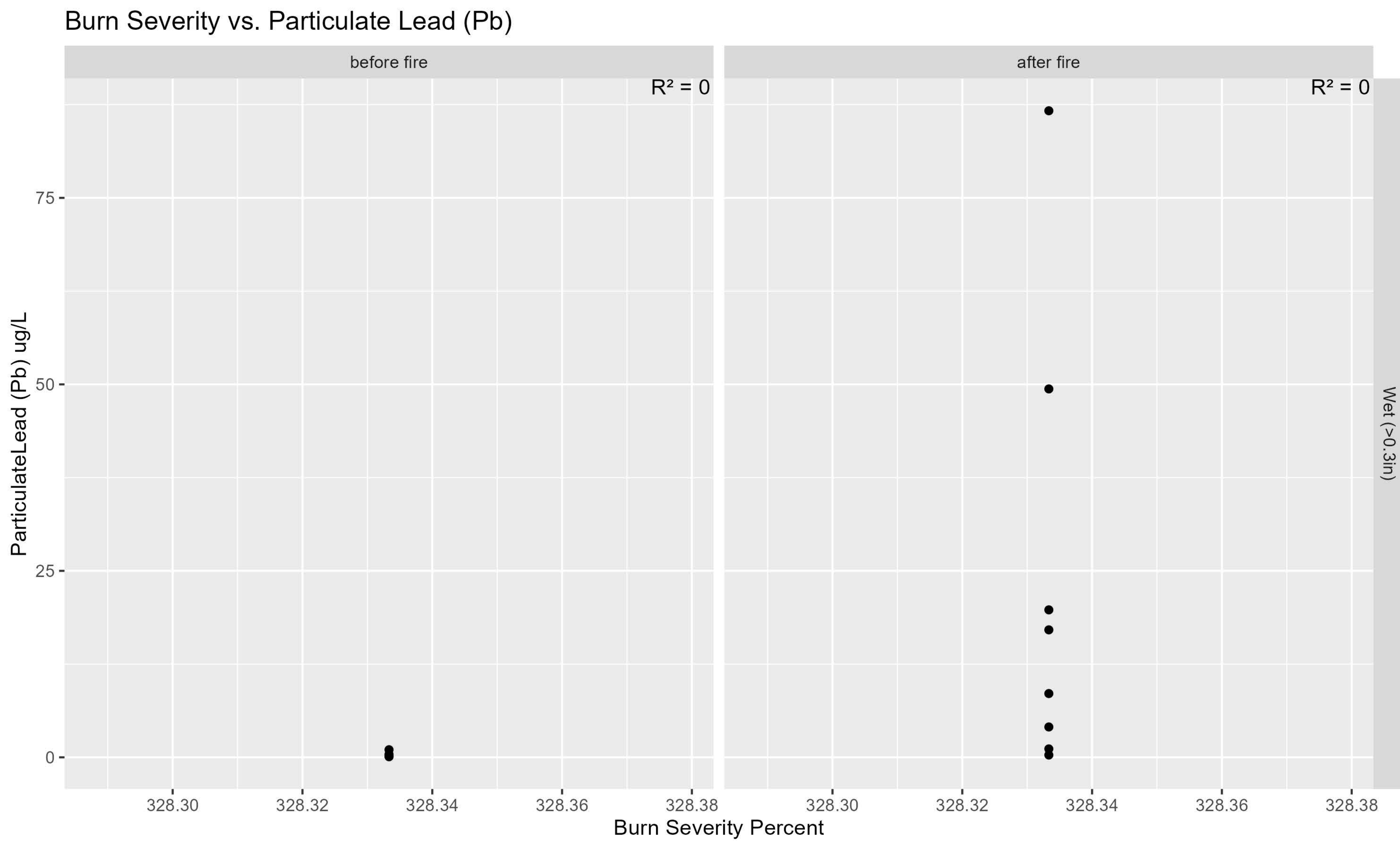

Burn Area vs. Particulate Copper (Cu)
before fire
after fire
R² = 0
R² = 0
ParticulateCopper (Cu) ug/L
100
75
50
25
0
51.350
51.375
51.400
51.425
51.350
51.375
51.400
51.425
Burn Area Percent
Wet (>0.3in)



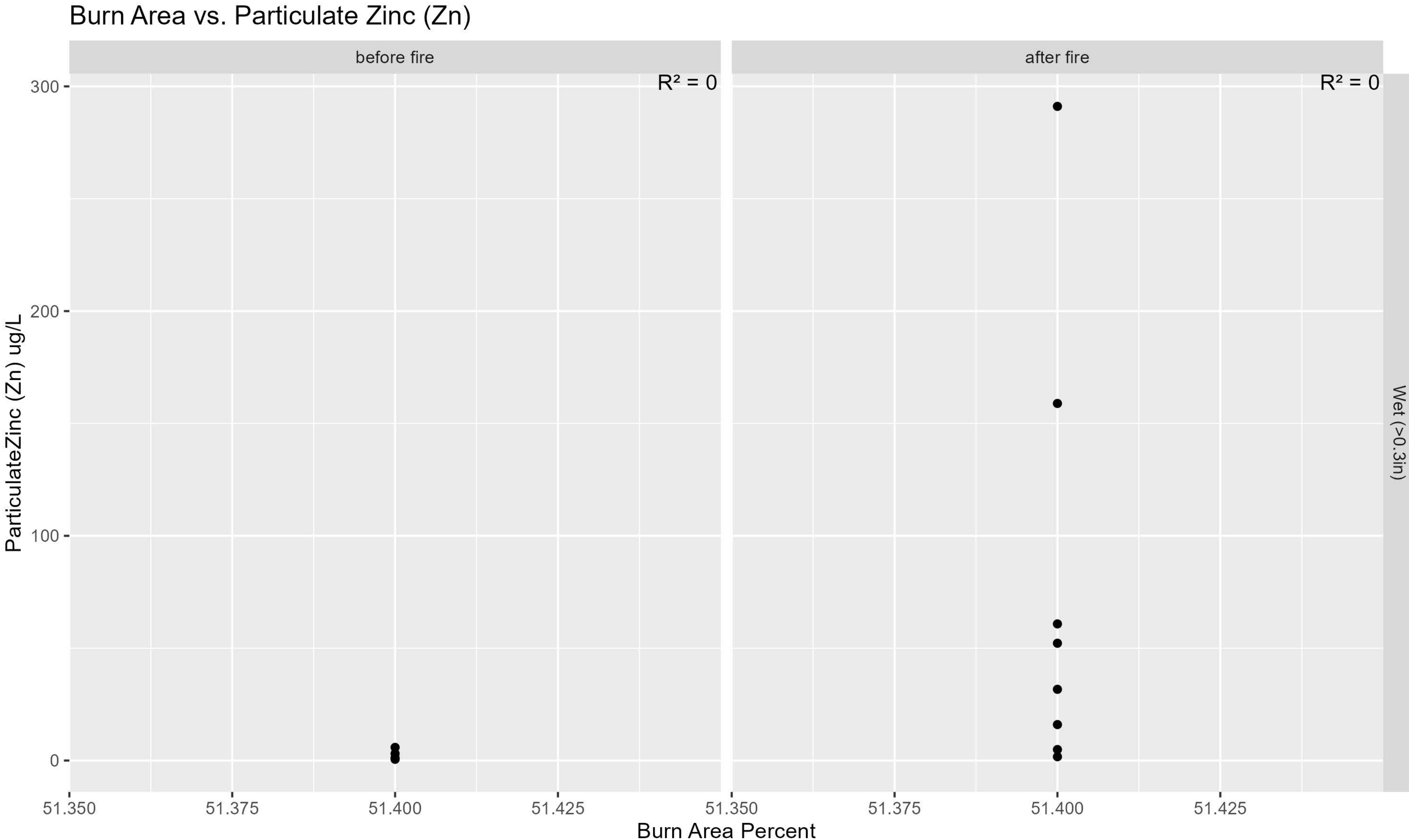
Burn Severity vs. Particulate Copper (Cu)
before fire
after fire
R² = 0
R² = 0
Wet (>0.3in)
ParticulateCopper (Cu) ug/L
100
75
50
25
0
328.30
328.32
328.34
328.36
328.38
Burn Severity Percent



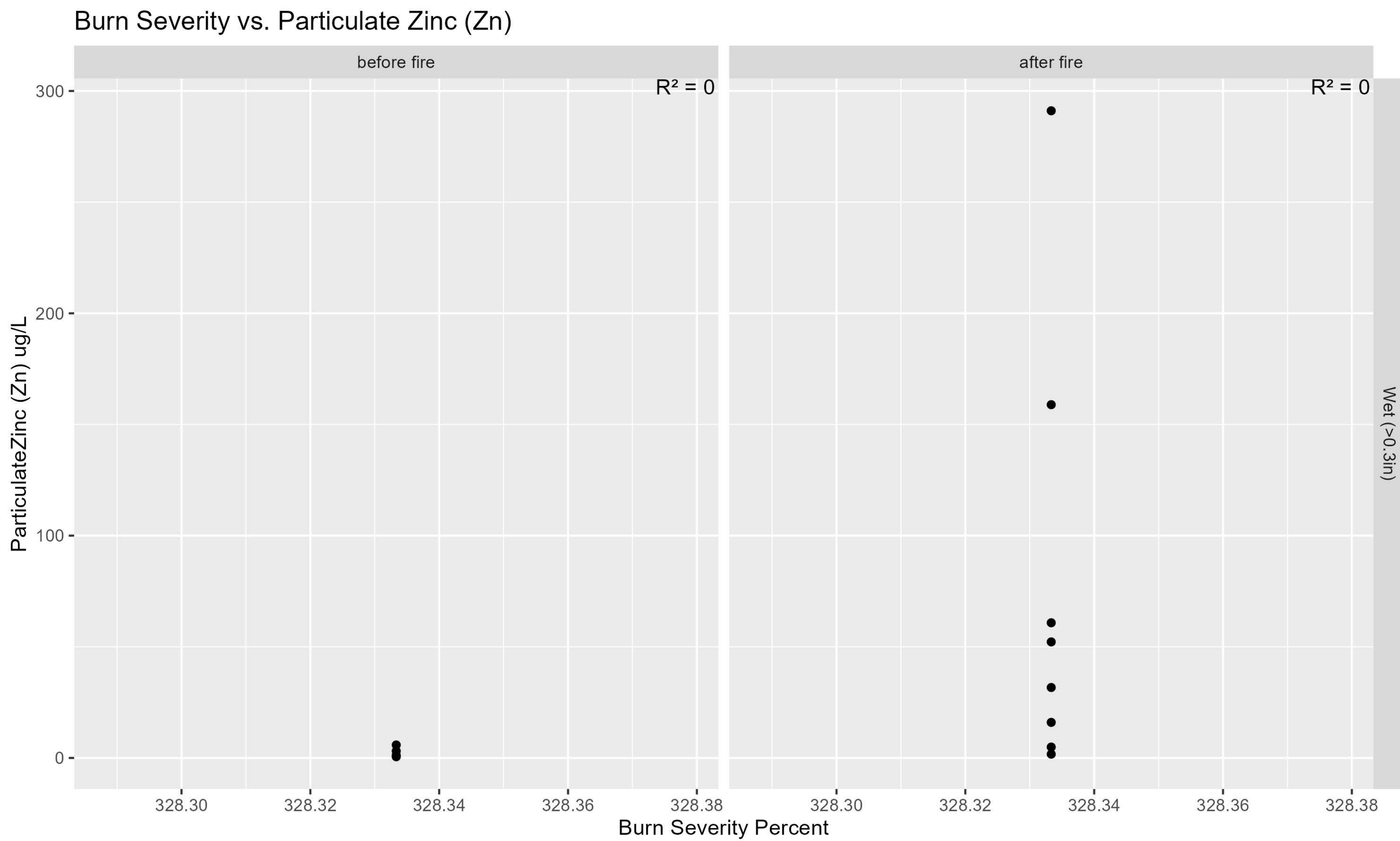
Burn Area vs. Particulate Lead (Pb)
before fire
after fire
R² = 0
R² = 0
ParticulateLead (Pb) ug/L
75
50
25
0
51.350
51.375
51.400
51.425
51.350
51.375
51.400
51.425
Burn Area Percent
Wet (>0.3in)



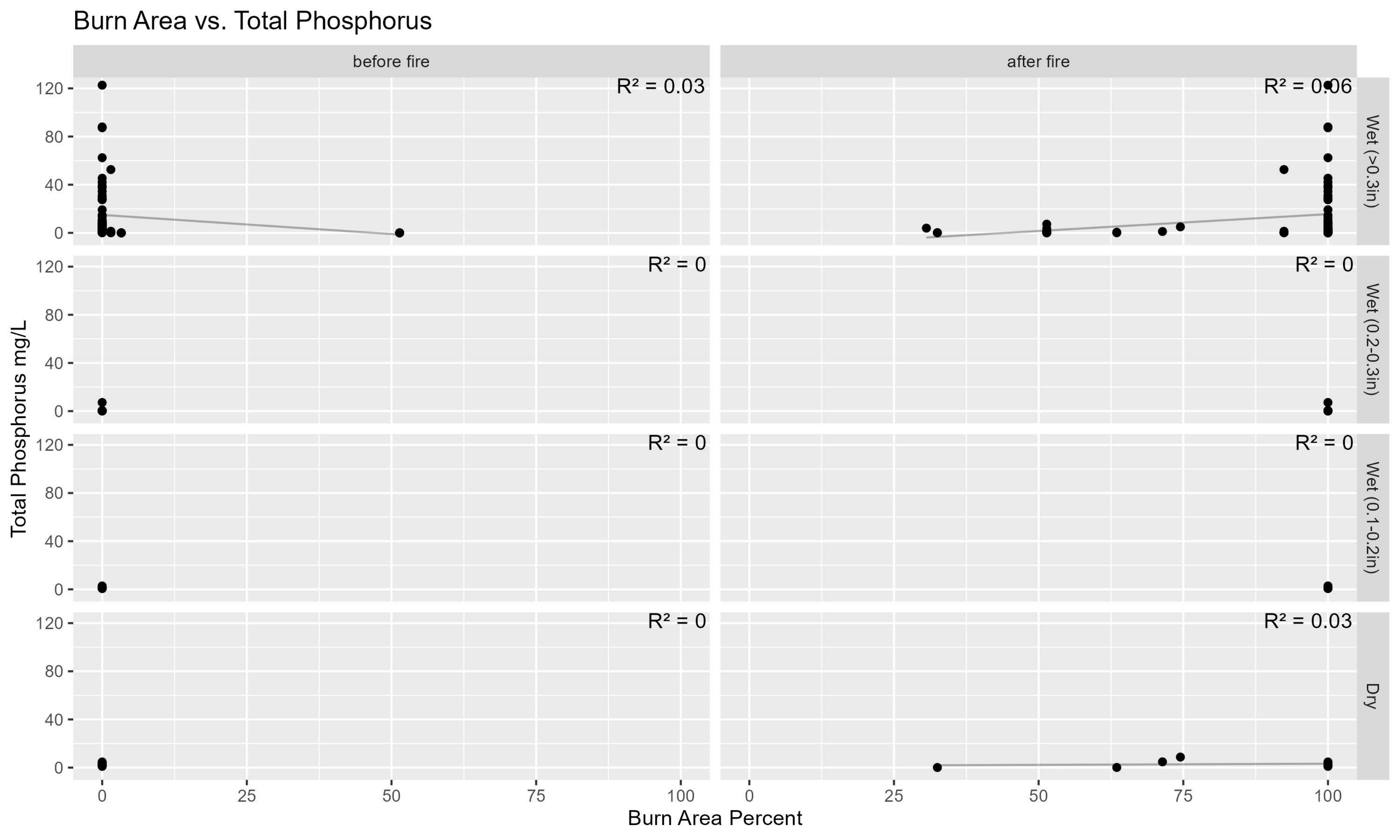
Burn Severity vs. Particulate Lead (Pb)
before fire
after fire
R² = 0
R² = 0
Wet (>0.3in)
ParticulateLead (Pb) ug/L
0
25
50
75
328.30
328.32
328.34
328.36
328.38
Burn Severity Percent

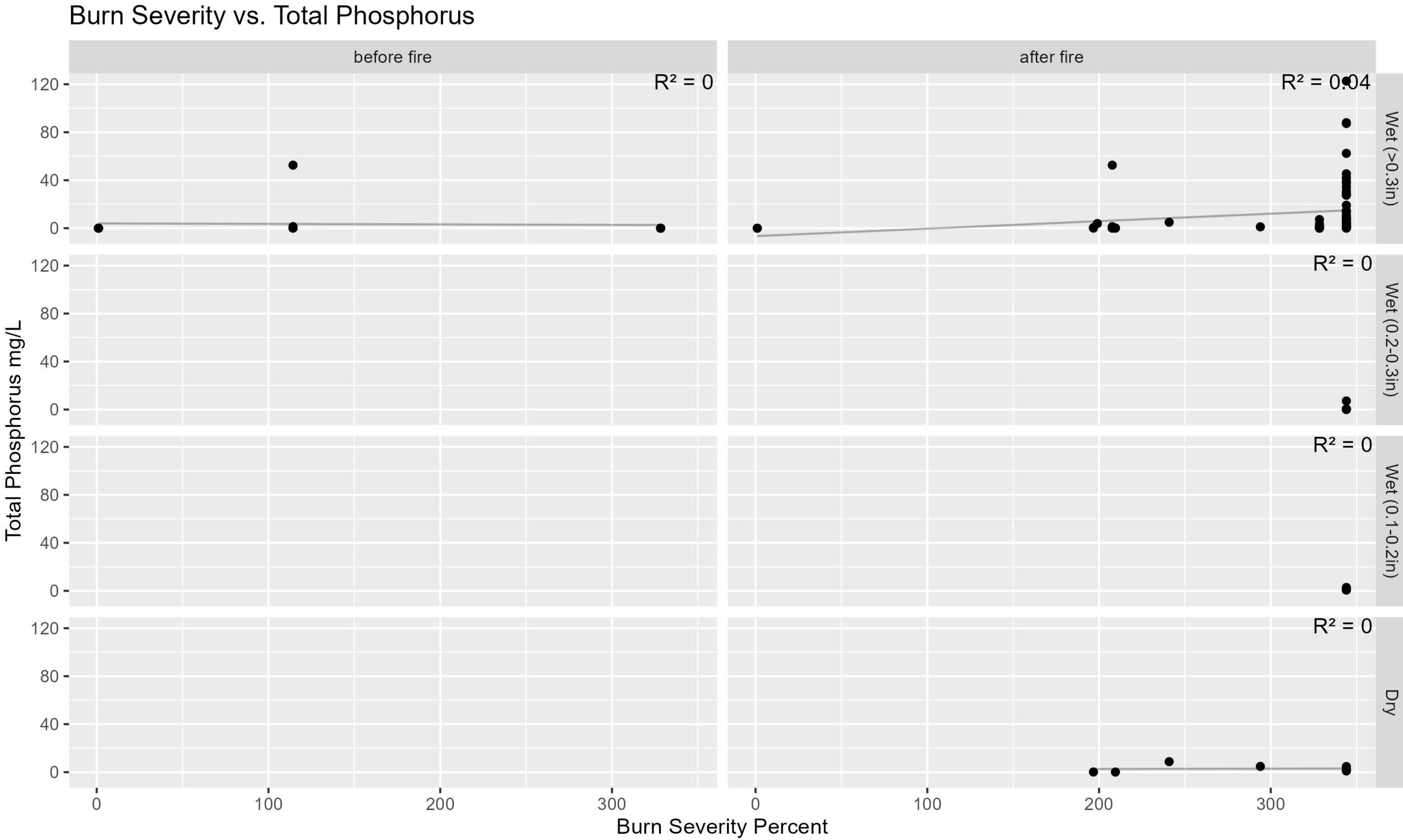


Burn Area vs. Particulate Zinc (Zn)
before fire
after fire
R² = 0
R² = 0
Wet (>0.3in)
ParticulateZinc (Zn) ug/L
300
200
100
0
51.350
51.375
51.400
51.425
51.350
51.375
51.400
51.425
Burn Area Percent

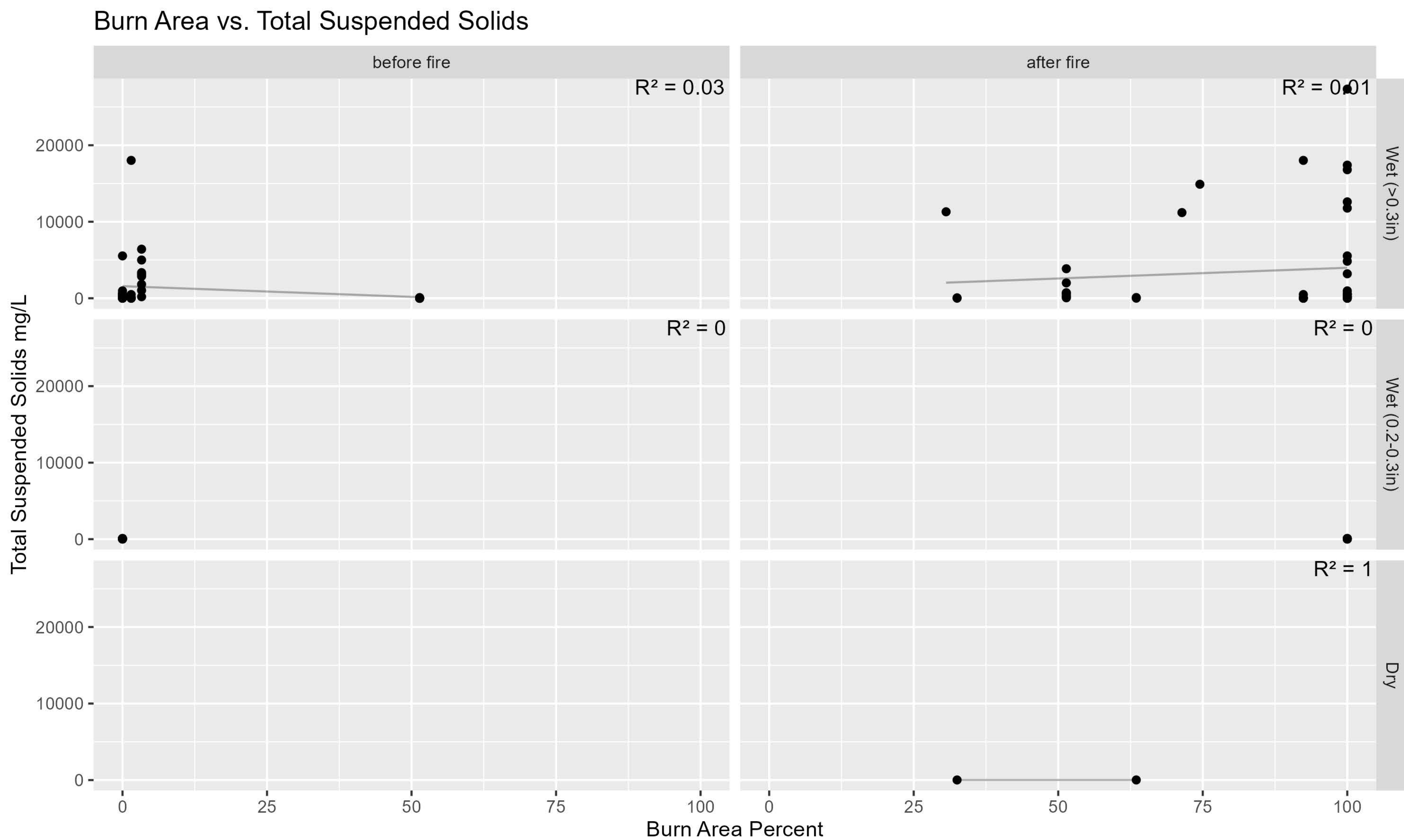


Burn Severity vs. Particulate Zinc (Zn)
before fire
after fire
R² = 0
R² = 0
Wet (>0.3in)
ParticulateZinc (Zn) ug/L
300
200
100
0
328.30
328.32
328.34
328.36
328.38
Burn Severity Percent

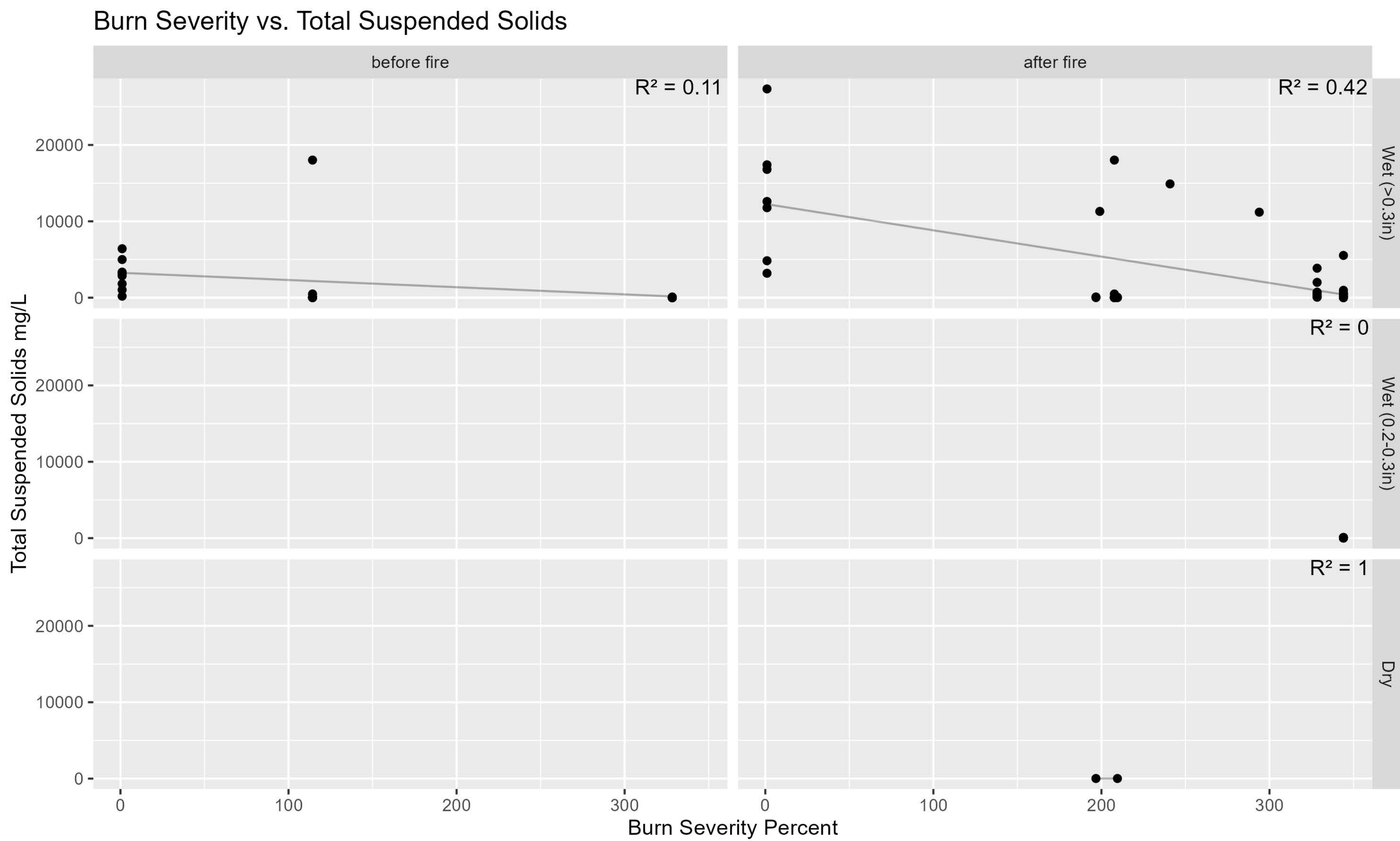

Burn Area vs. Total Phosphorus
before fire
after fire
Wet (>0.3in)
Wet (0.2-0.3in)
Wet (0.1-0.2in)
Dry
R² = 0.03
R² = 0.06
R² = 0
R² = 0
R² = 0
R² = 0
R² = 0
R² = 0.03
Total Phosphorus mg/L
Burn Area Percent
0
40
80
120
0
25
50
75
100



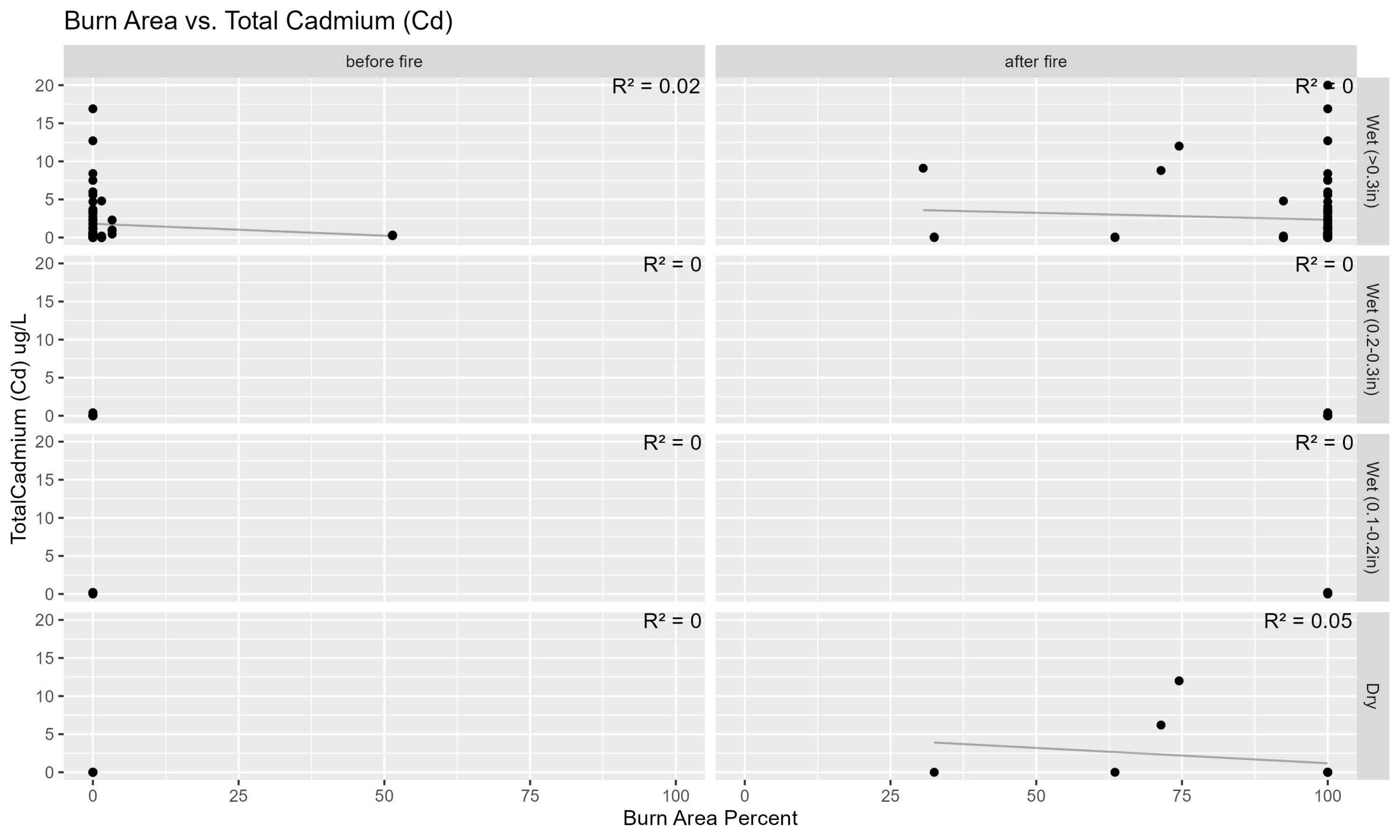
Burn Severity vs. Total Phosphorus
before fire
after fire
R² = 0
R² = 0.04
R² = 0
R² = 0
R² = 0
Wet (>0.3in)
Wet (0.2-0.3in)
Wet (0.1-0.2in)
Dry
Total Phosphorus mg/L
Burn Severity Percent
0
40
80
120
0
100
200
300



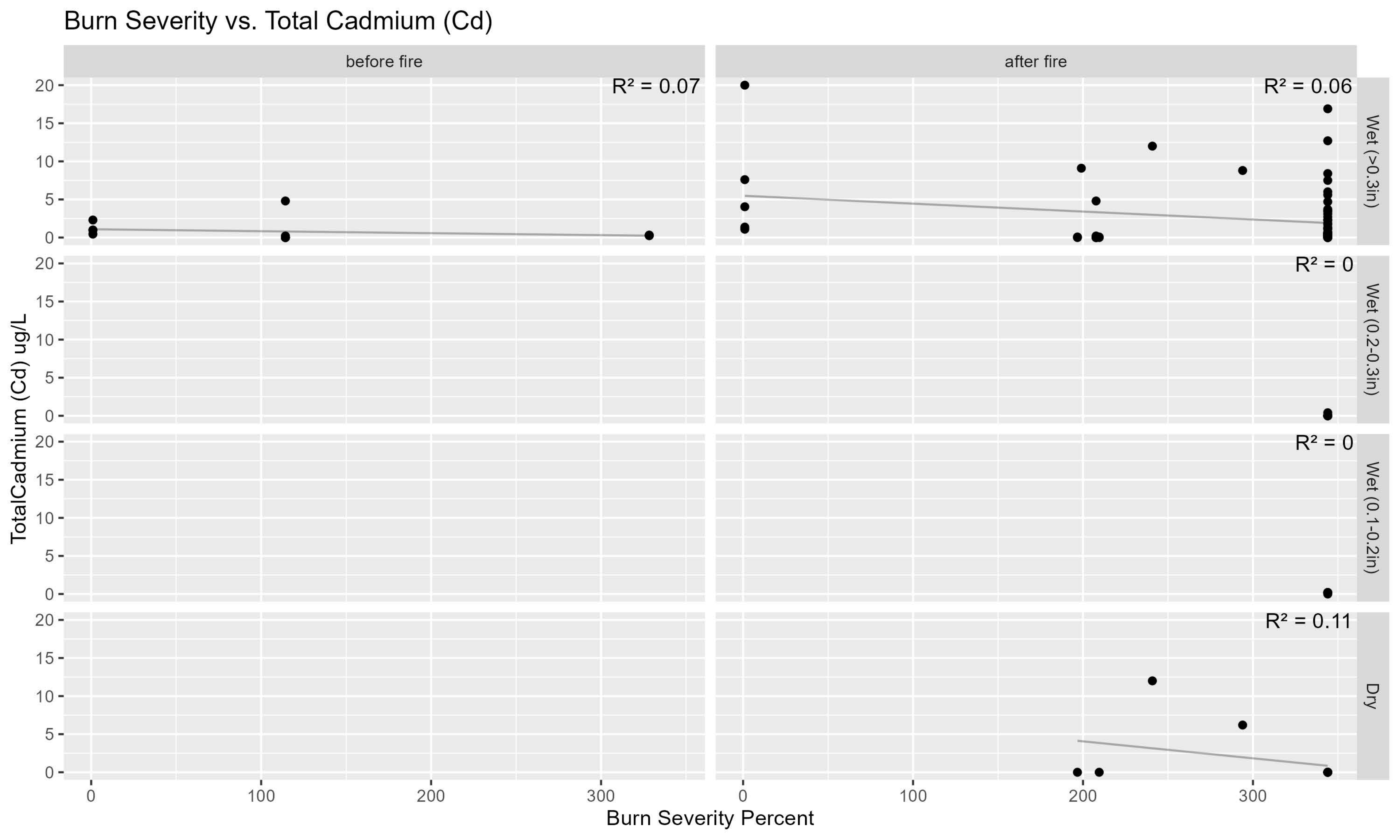
Burn Area vs. Total Suspended Solids
before fire
after fire
R² = 0.03
R² = 0.01
R² = 0
R² = 0
R² = 1
Wet (>0.3in)
Wet (0.2-0.3in)
Dry
Total Suspended Solids mg/L
20000
10000
0
0
25
50
75
100
Burn Area Percent



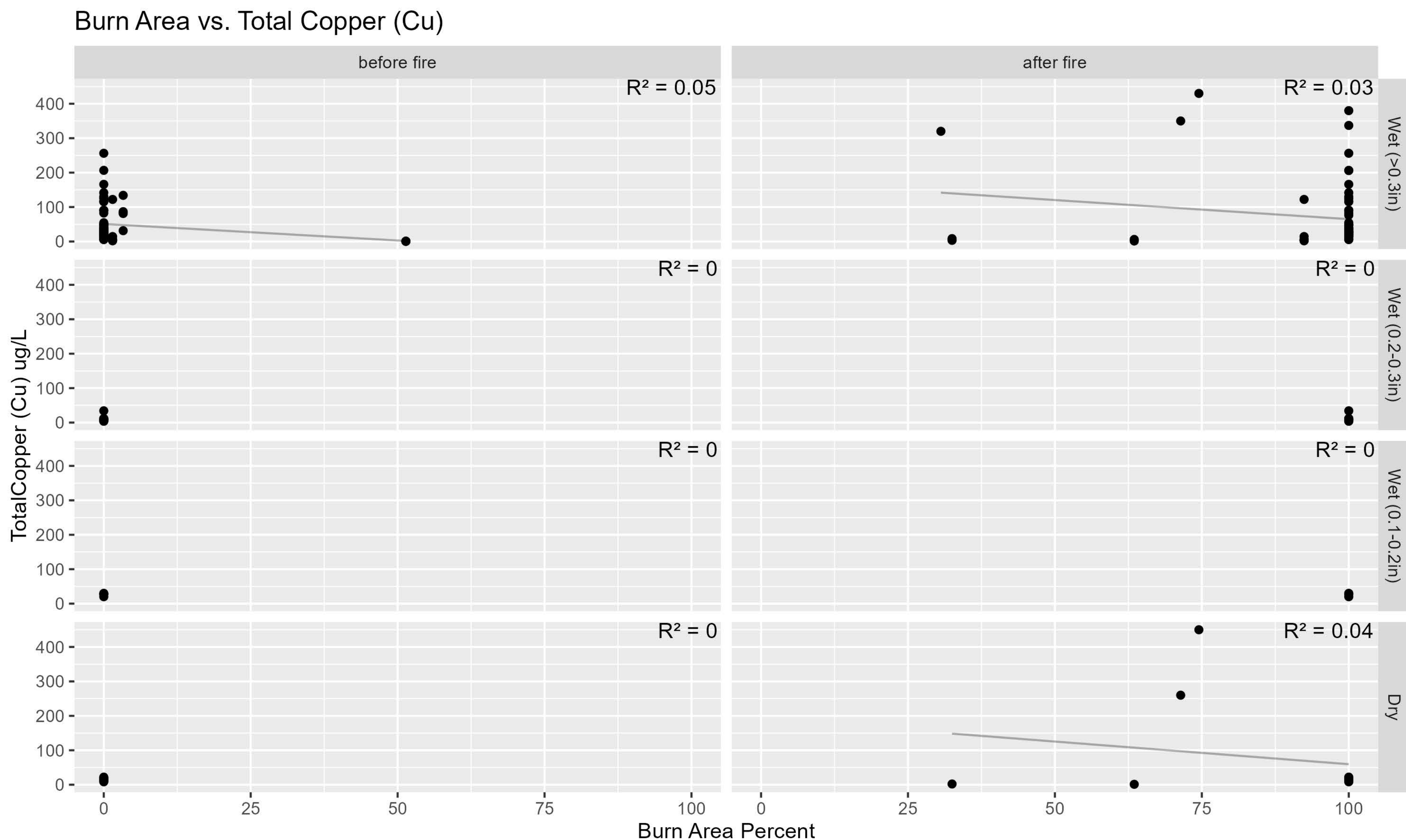
Burn Severity vs. Total Suspended Solids
before fire
after fire
R² = 0.11
R² = 0.42
R² = 0
R² = 1
Wet (>0.3in)
Wet (0.2-0.3in)
Dry
Total Suspended Solids mg/L
Burn Severity Percent
0
10000
20000
0
100
200
300



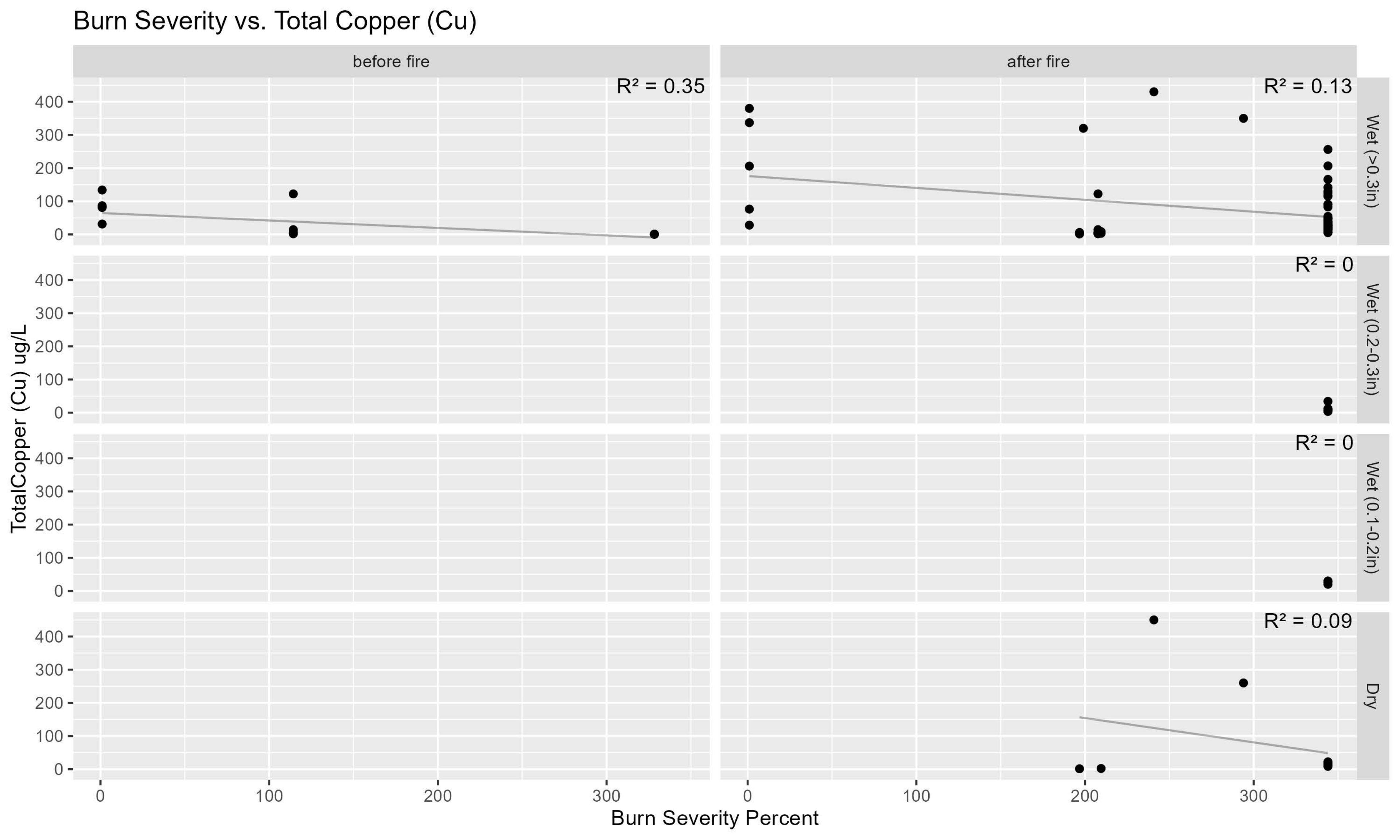
Burn Area vs. Total Cadmium (Cd)
before fire
after fire
R² = 0.02
R² = 0
R² = 0
R² = 0
R² = 0
R² = 0
R² = 0
R² = 0.05
Wet (>0.3in)
Wet (0.2-0.3in)
Wet (0.1-0.2in)
Dry
TotalCadmium (Cd) ug/L
Burn Area Percent
0
5
10
15
20
0
25
50
75
100

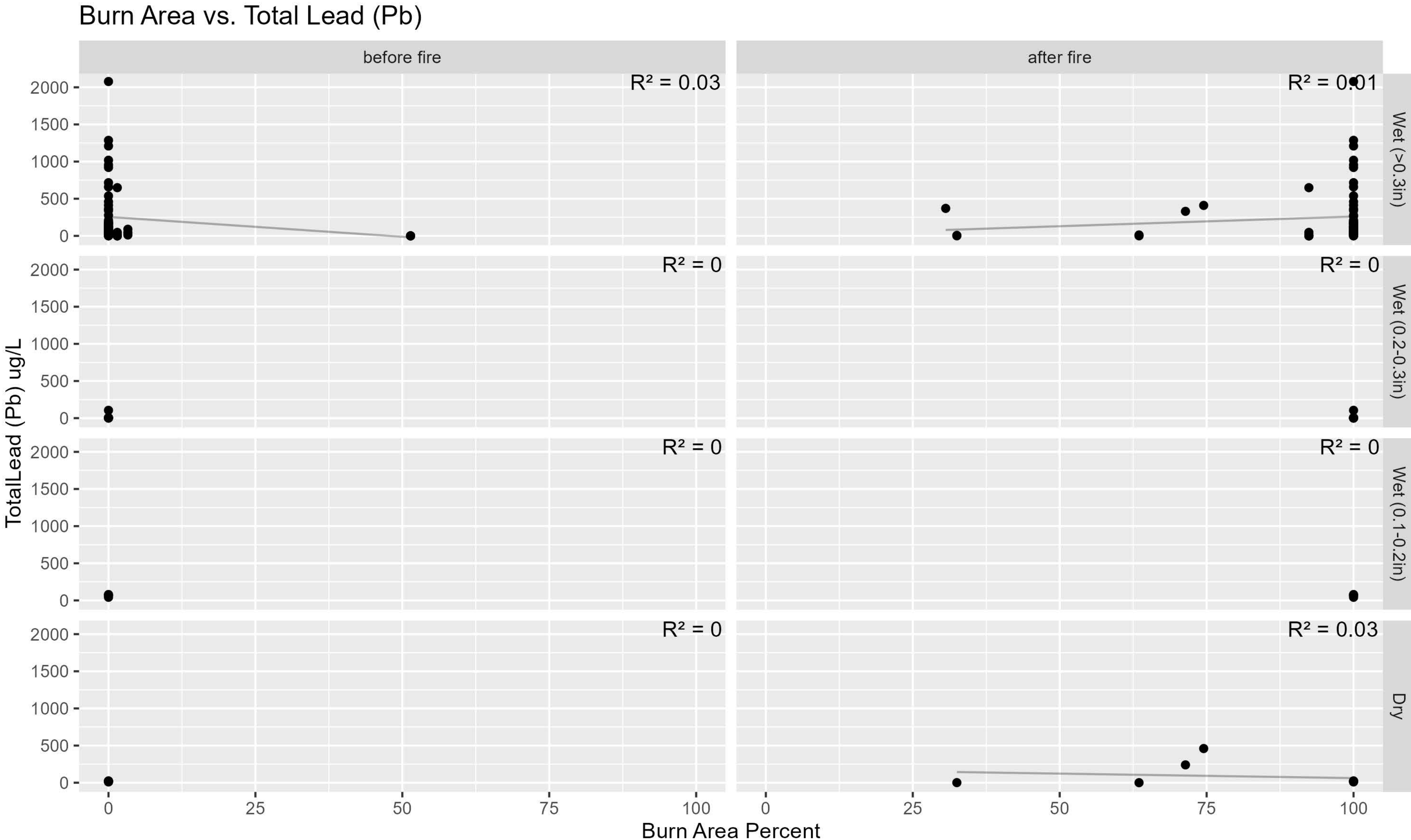


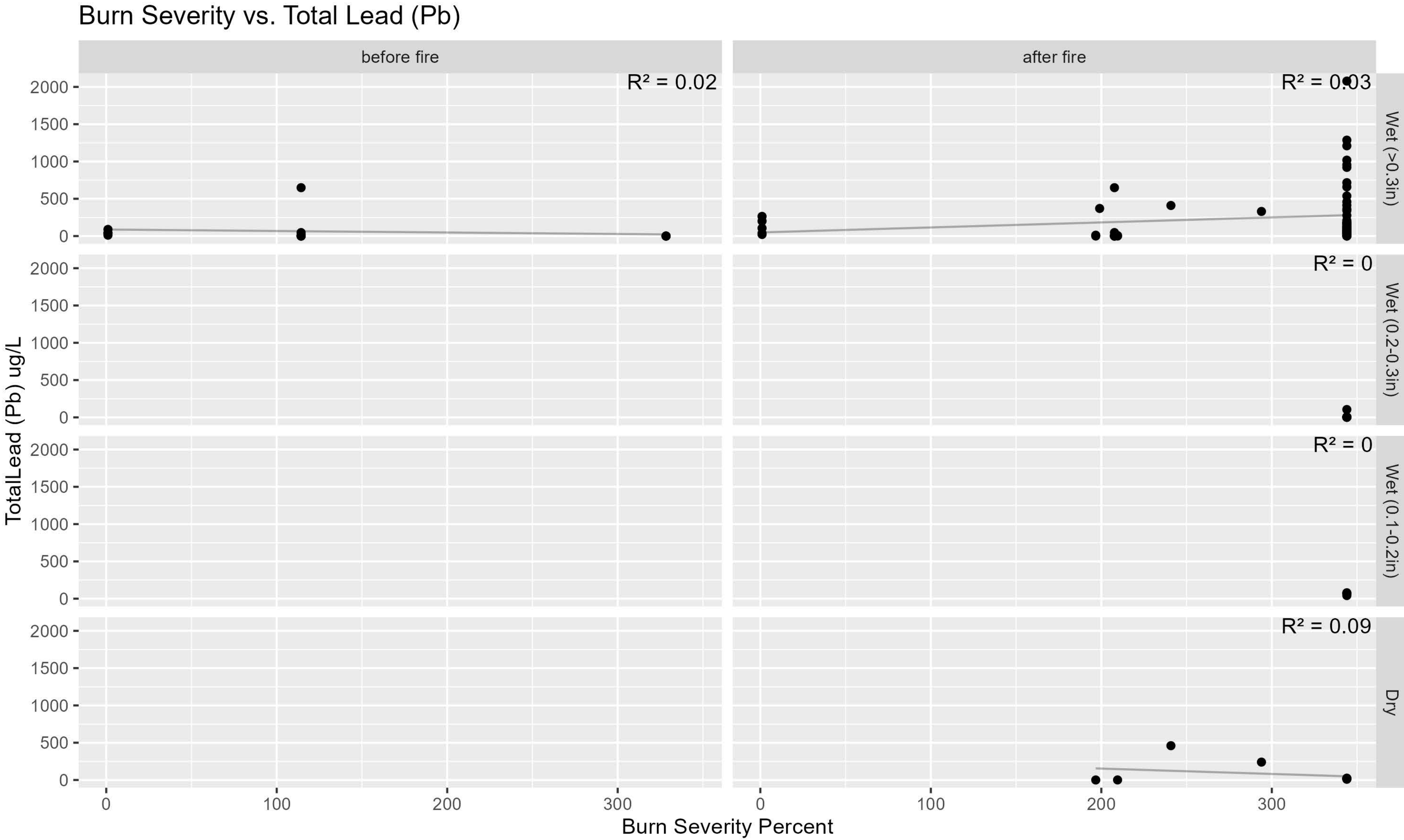
Burn Severity vs. Total Cadmium (Cd)
before fire
after fire
R² = 0.07
R² = 0.06
R² = 0
R² = 0
R² = 0.11
Wet (>0.3in)
Wet (0.2-0.3in)
Wet (0.1-0.2in)
Dry
TotalCadmium (Cd) ug/L
Burn Severity Percent
0
5
10
15
20
0
100
200
300



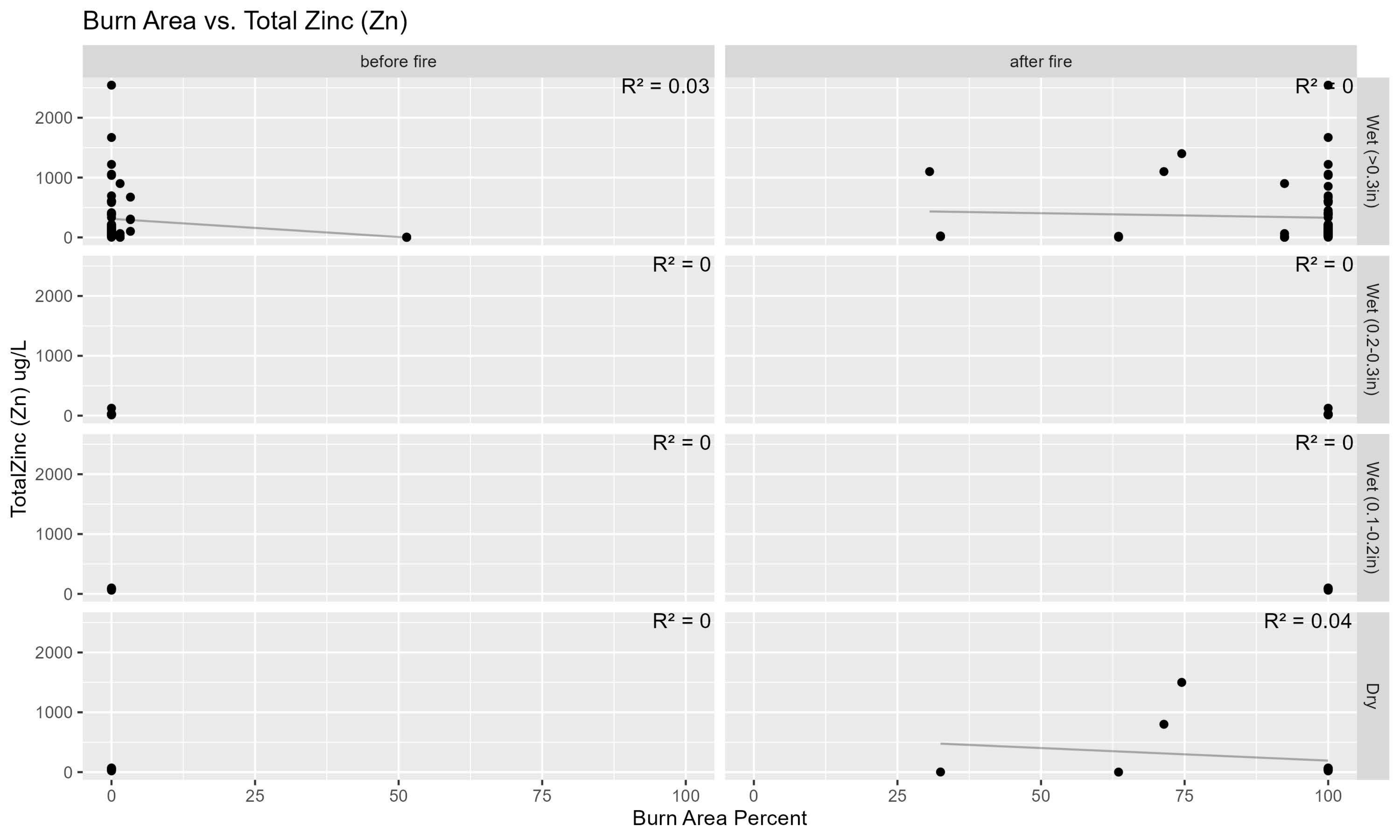
Burn Area vs. Total Copper (Cu)
before fire
after fire
R² = 0.05
R² = 0.03
R² = 0
R² = 0
R² = 0
R² = 0
R² = 0
R² = 0.04
Wet (>0.3in)
Wet (0.2-0.3in)
Wet (0.1-0.2in)
Dry
TotalCopper (Cu) ug/L
Burn Area Percent
0
100
200
300
400
0
25
50
75
100


Burn Severity vs. Total Copper (Cu)
before fire
after fire
R² = 0.35
R² = 0.13
R² = 0
R² = 0
R² = 0.09
Wet (>0.3in)
Wet (0.2-0.3in)
Wet (0.1-0.2in)
Dry
TotalCopper (Cu) ug/L
Burn Severity Percent
0
100
200
300
400

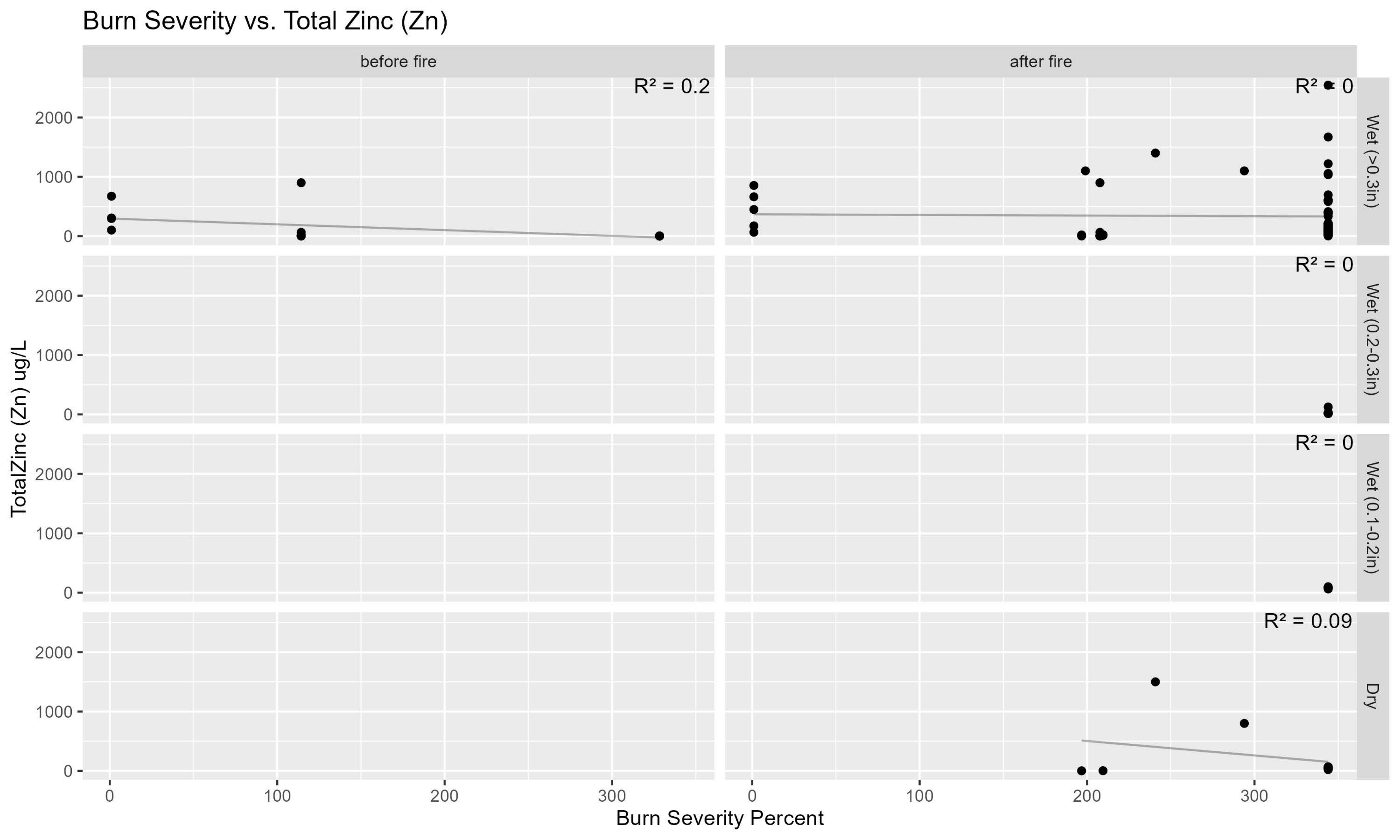

Burn Area vs. Total Lead (Pb)
before fire
after fire
R² = 0.03
R² = 0.01
R² = 0
R² = 0
R² = 0
R² = 0
R² = 0
R² = 0.03
Wet (>0.3in)
Wet (0.2-0.3in)
Wet (0.1-0.2in)
Dry
TotalLead (Pb) ug/L
Burn Area Percent
0
500
1000
1500
2000
0
25
50
75
100



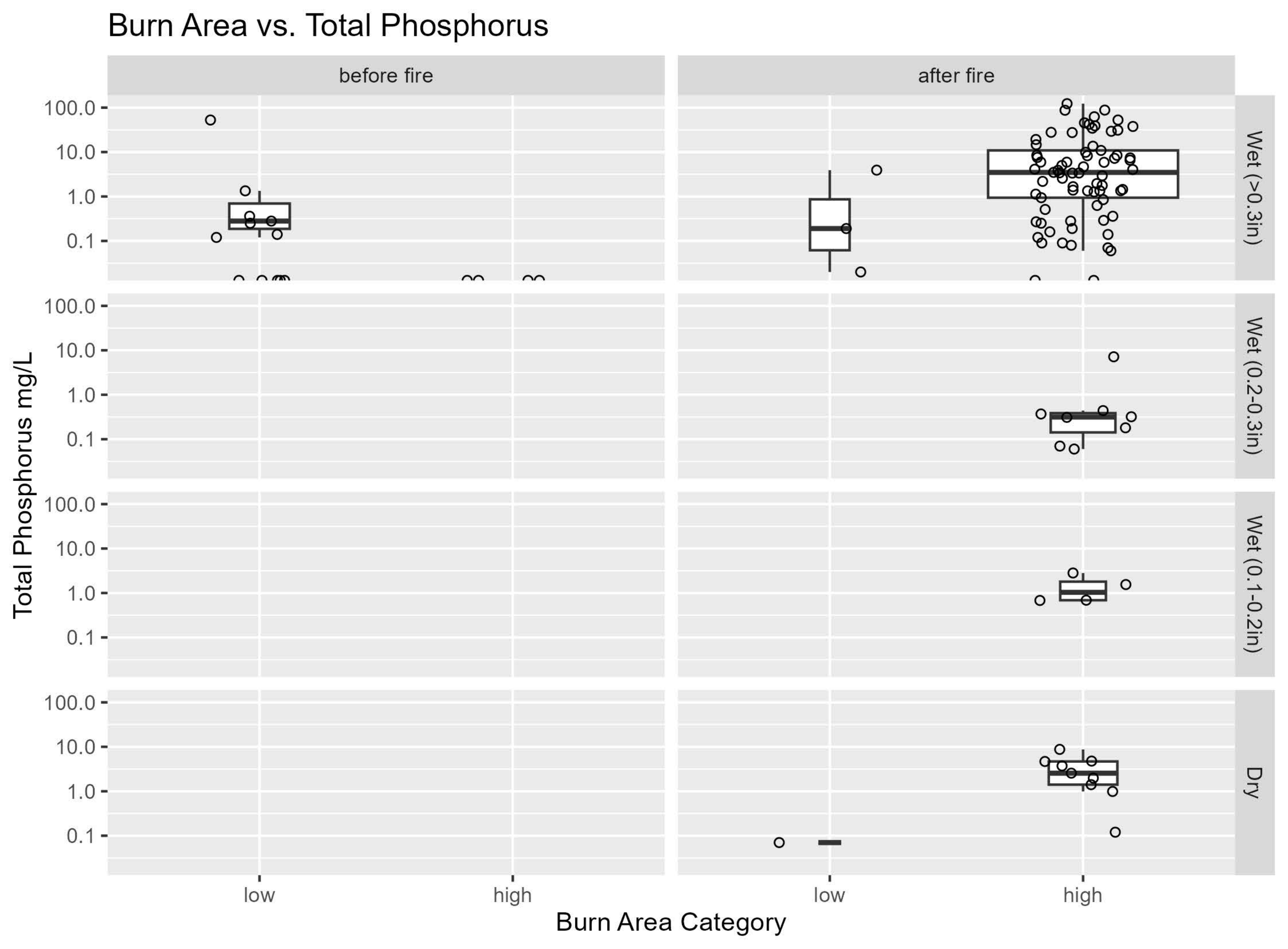
Burn Severity vs. Total Lead (Pb)
before fire
after fire
R² = 0.02
R² = 0.03
R² = 0
R² = 0
R² = 0.09
Wet (>0.3in)
Wet (0.2-0.3in)
Wet (0.1-0.2in)
Dry
TotalLead (Pb) ug/L
Burn Severity Percent
2000
1500
1000
500
0
0
100
200
300

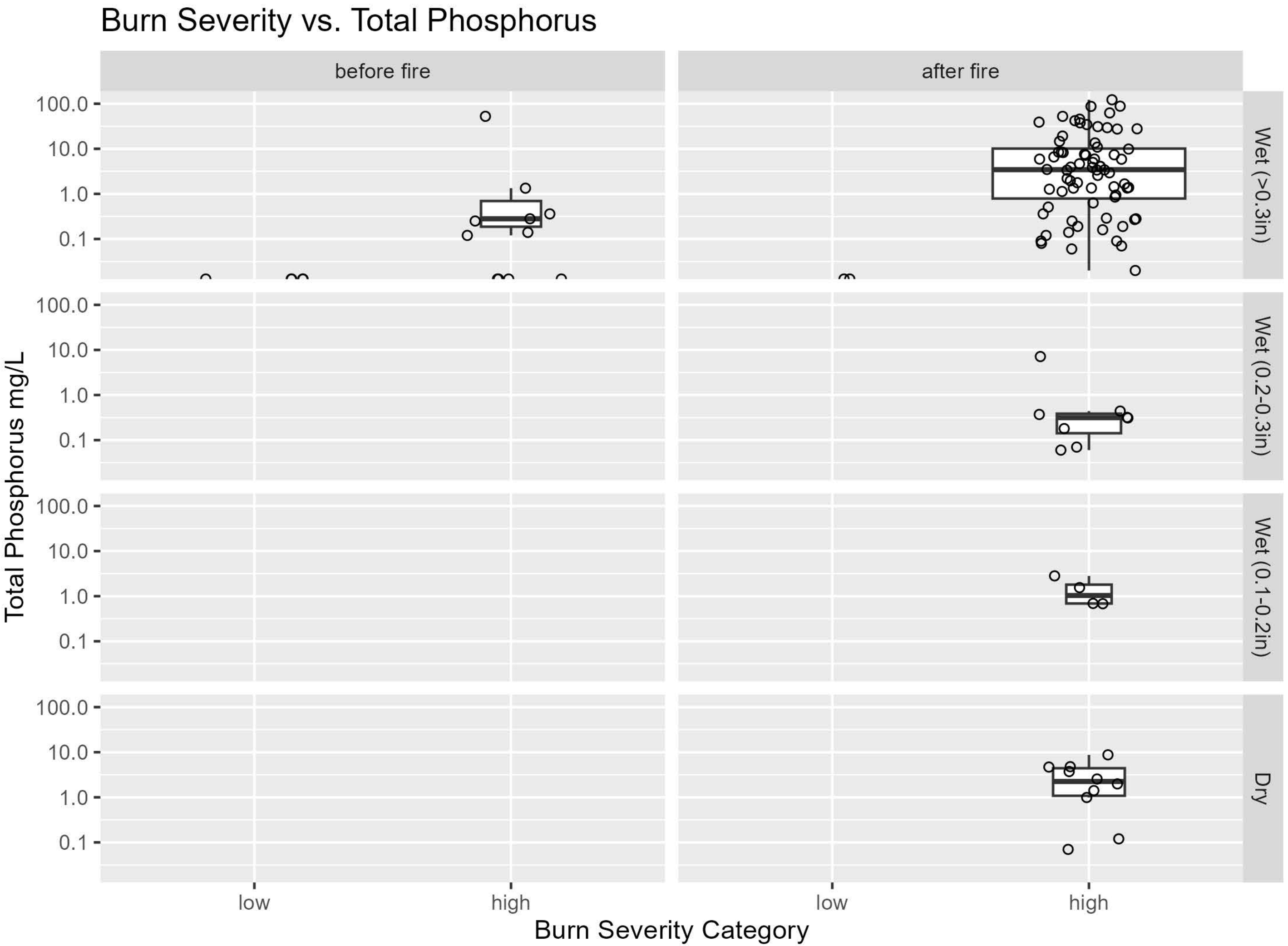


Burn Area vs. Total Zinc (Zn)
before fire
after fire
Wet (>0.3in)
Wet (0.2-0.3in)
Wet (0.1-0.2in)
Dry
R² = 0.03
R² = 0
R² = 0
R² = 0
R² = 0
R² = 0
R² = 0
R² = 0.04
TotalZinc (Zn) ug/L
Burn Area Percent

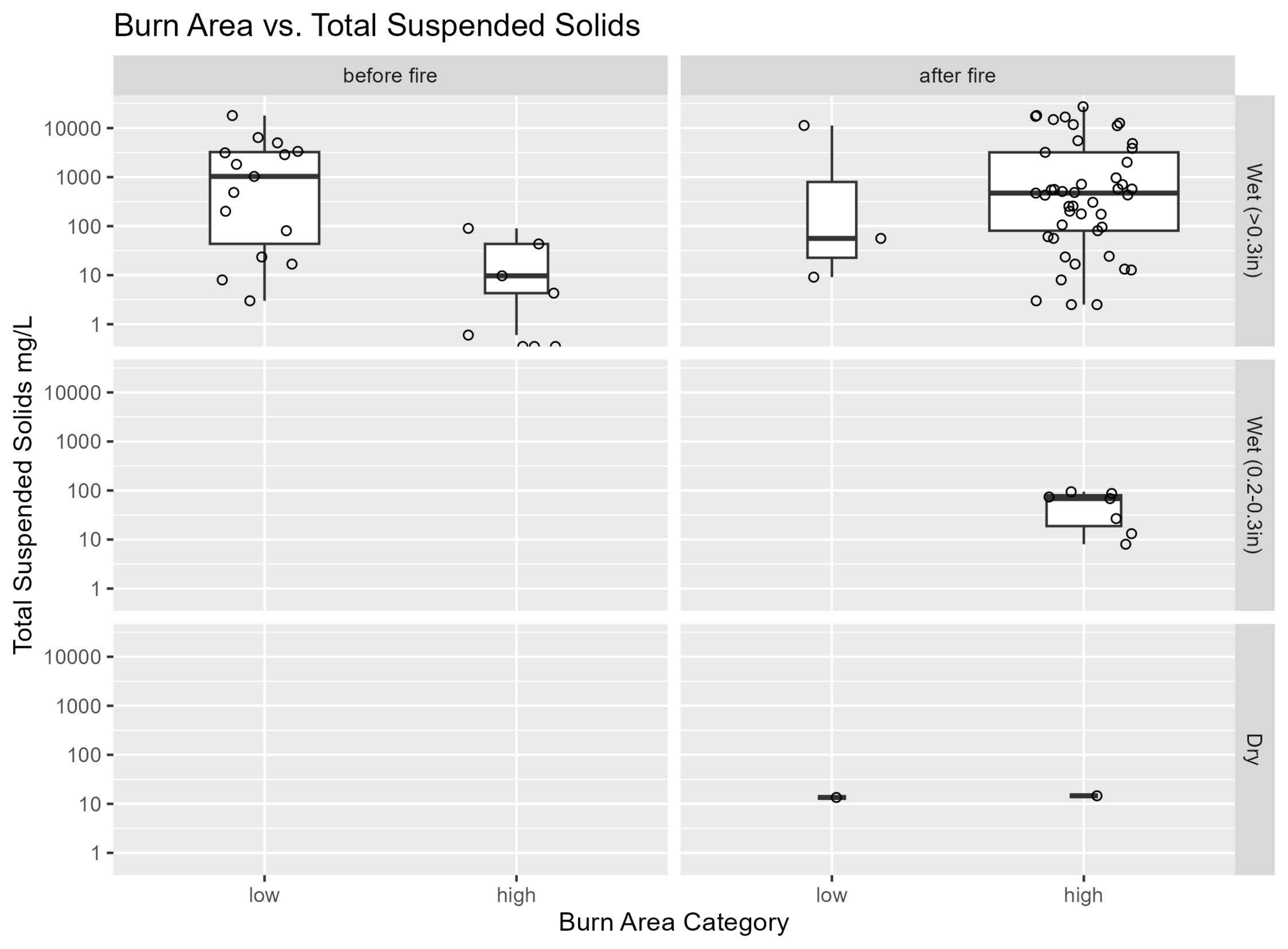


Burn Severity vs. Total Zinc (Zn)
before fire
after fire
R² = 0.2
R² = 0
R² = 0
R² = 0
R² = 0.09
Wet (>0.3in)
Wet (0.2-0.3in)
Wet (0.1-0.2in)
Dry
TotalZinc (Zn) ug/L
Burn Severity Percent
0
1000
2000
0
100
200
300

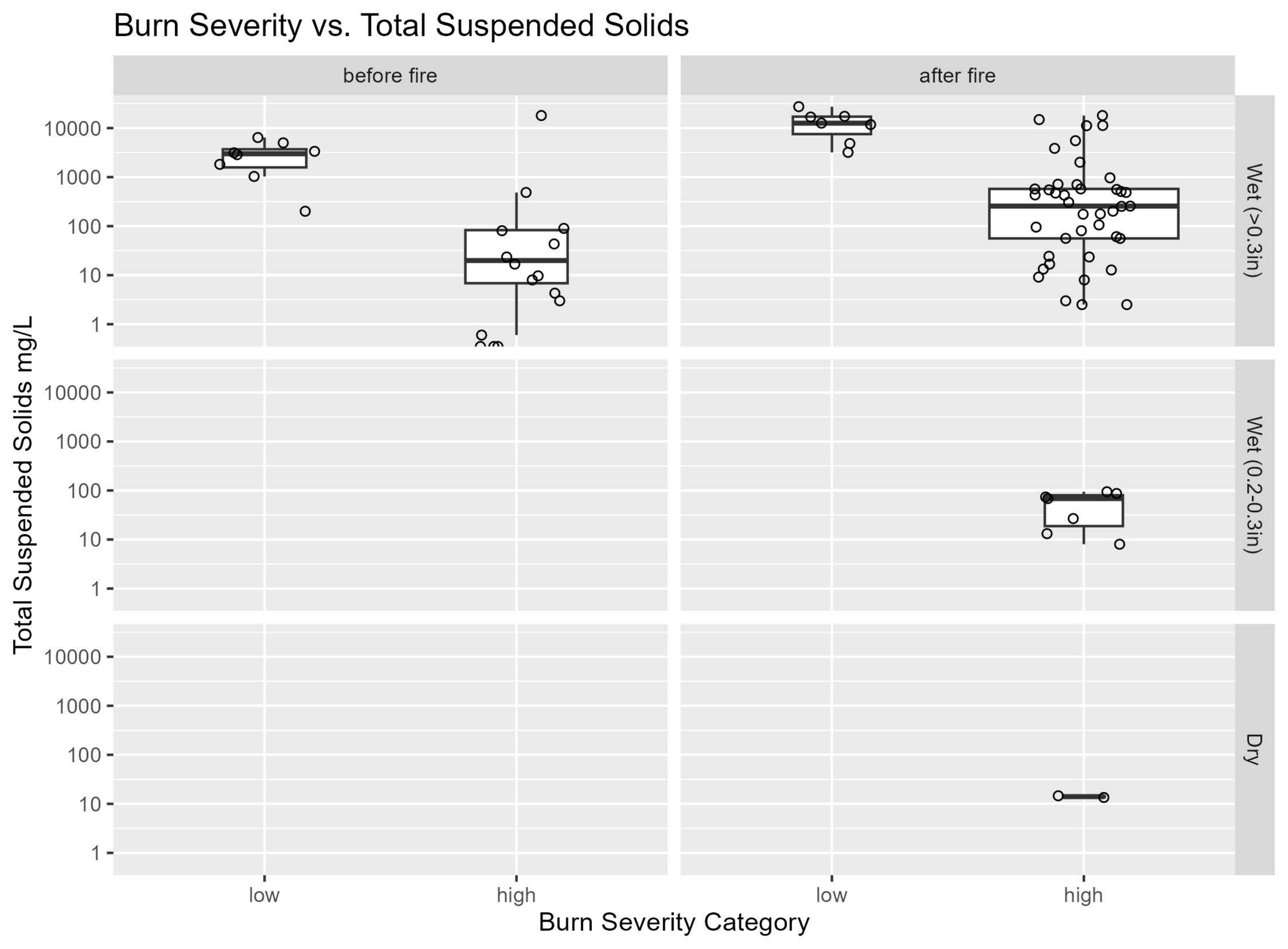

Burn Area vs. Total Phosphorus
before fire
after fire
Wet (>0.3in)
Wet (0.2-0.3in)
Wet (0.1-0.2in)
Dry
100.0
10.0
1.0
0.1
Total Phosphorus mg/L
low
high
Burn Area Category



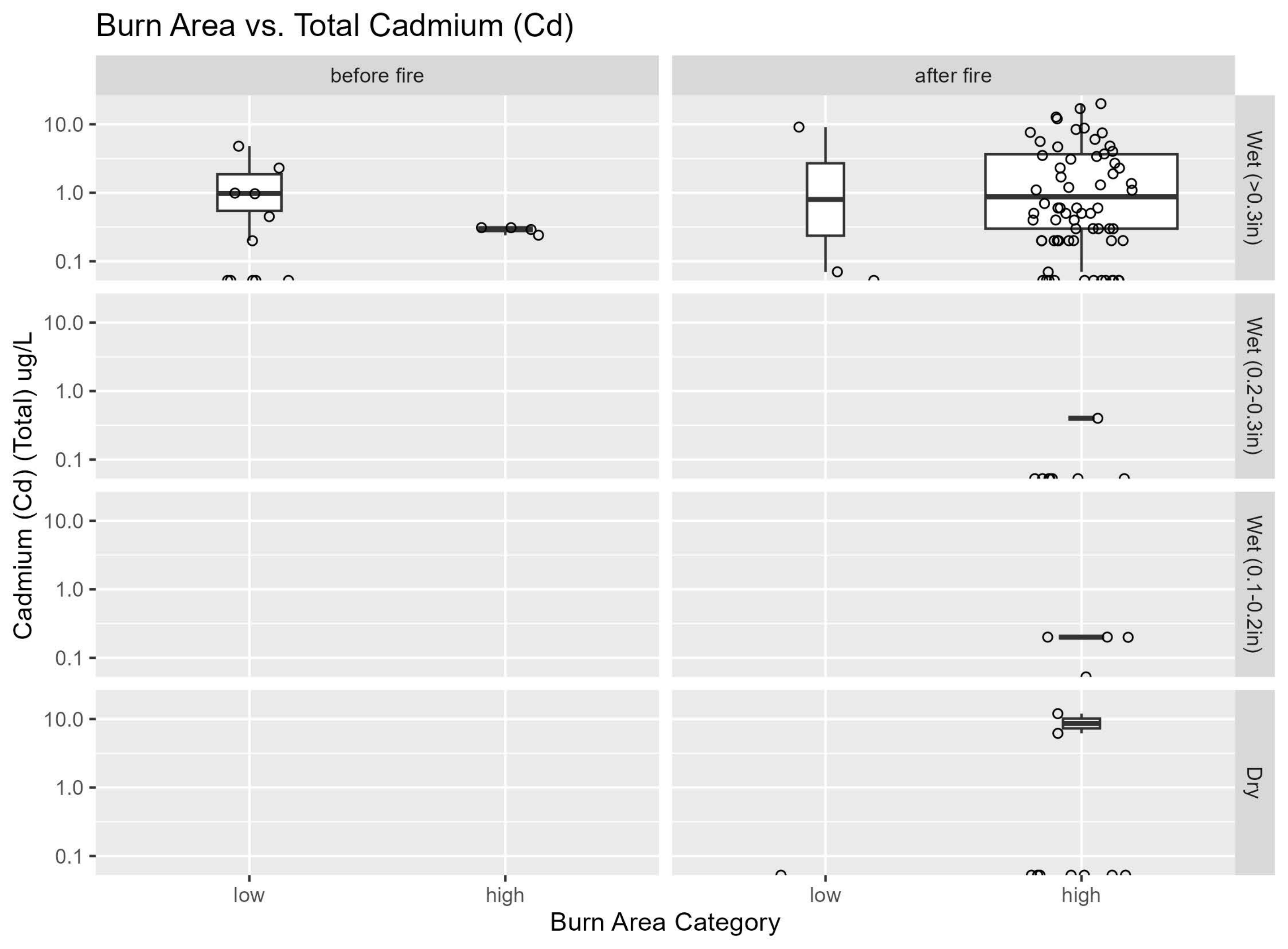
Burn Severity vs. Total Phosphorus
before fire
after fire
Wet (>0.3in)
Wet (0.2-0.3in)
Wet (0.1-0.2in)
Dry
100.0
10.0
1.0
0.1
Total Phosphorus mg/L
low
high
Burn Severity Category

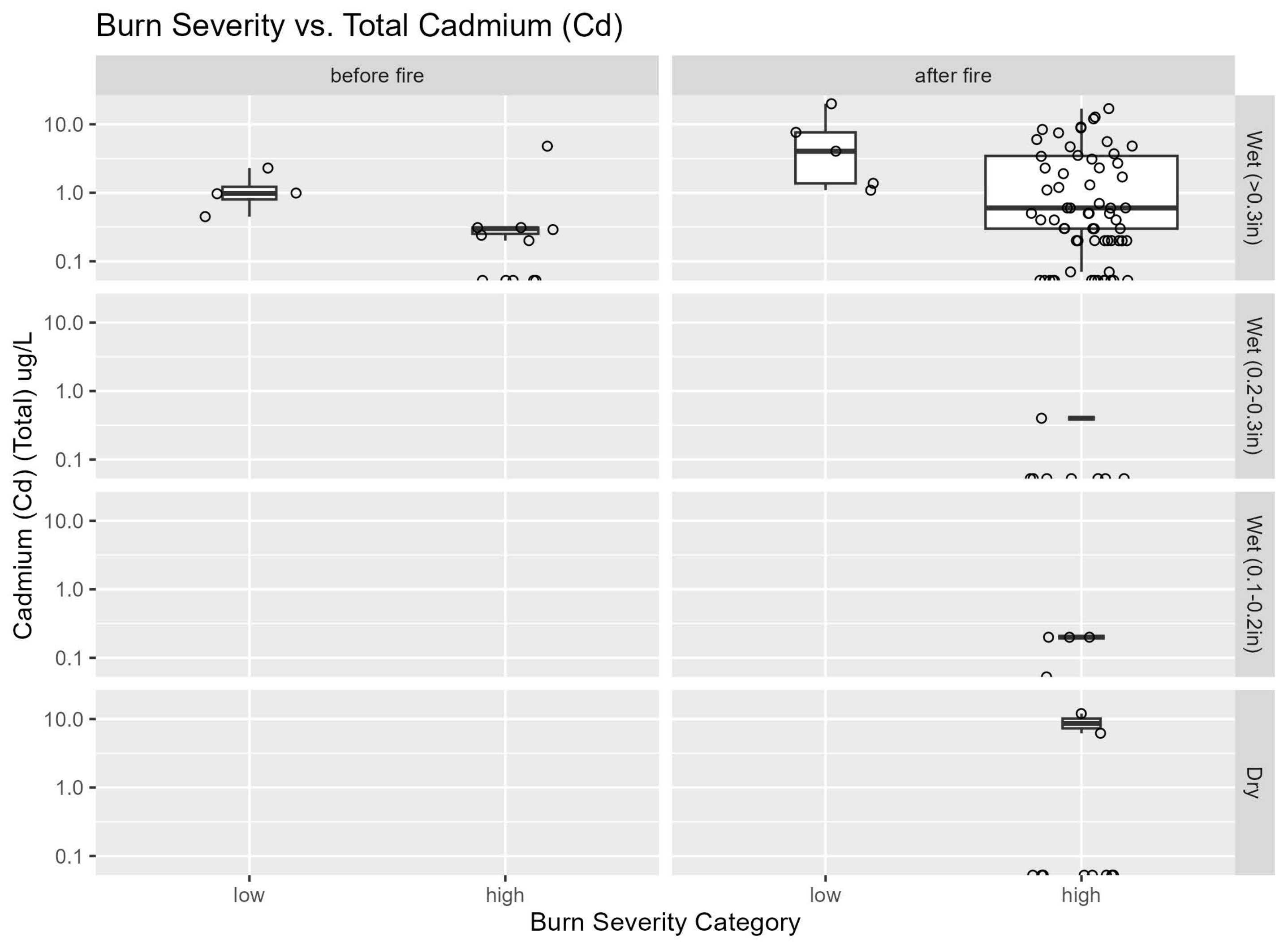


Burn Area vs. Total Suspended Solids
before fire
after fire
Wet (>0.3in)
Wet (0.2-0.3in)
Dry
10000
1000
100
10
1
Total Suspended Solids mg/L
low
high
Burn Area Category

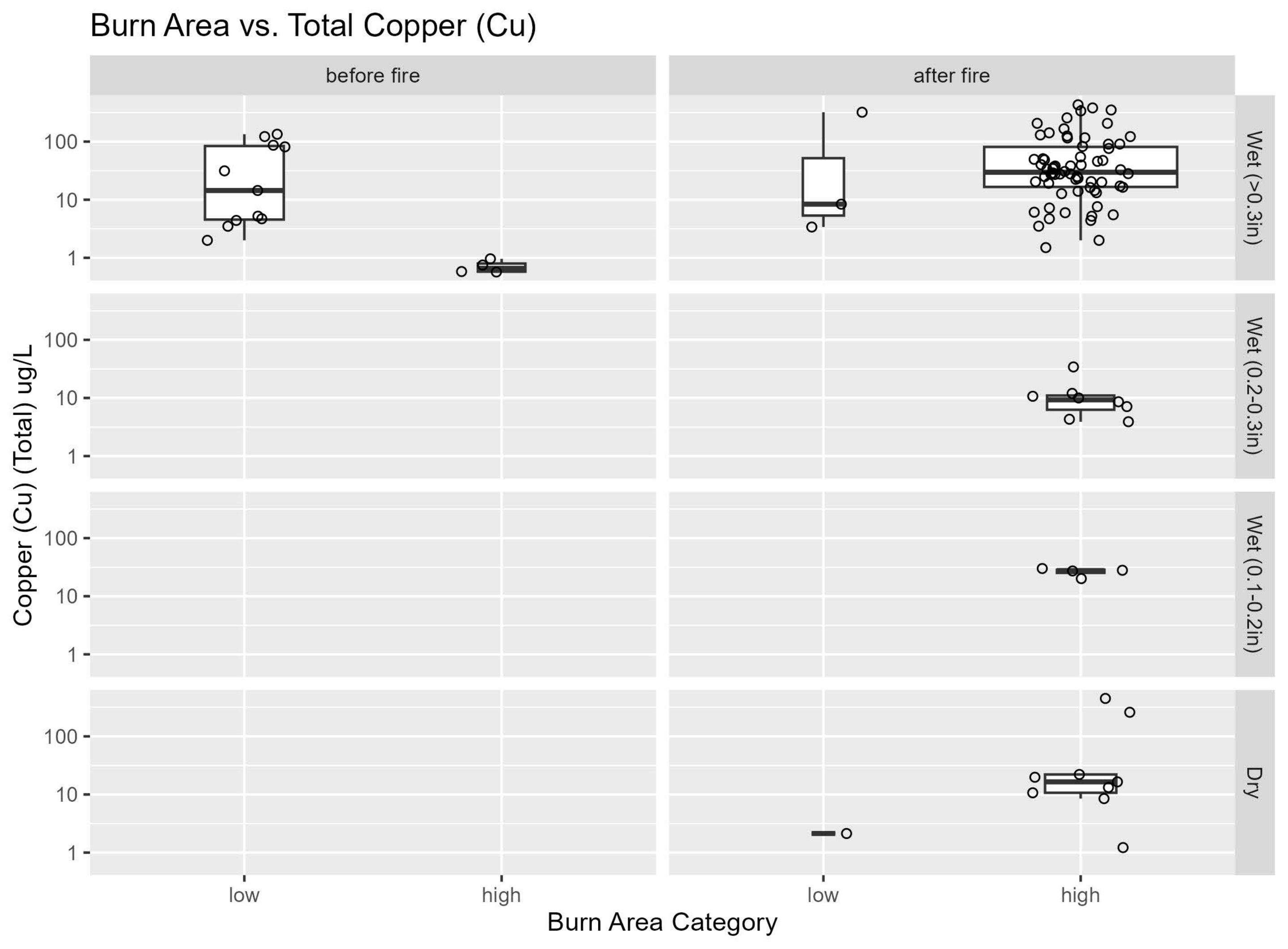


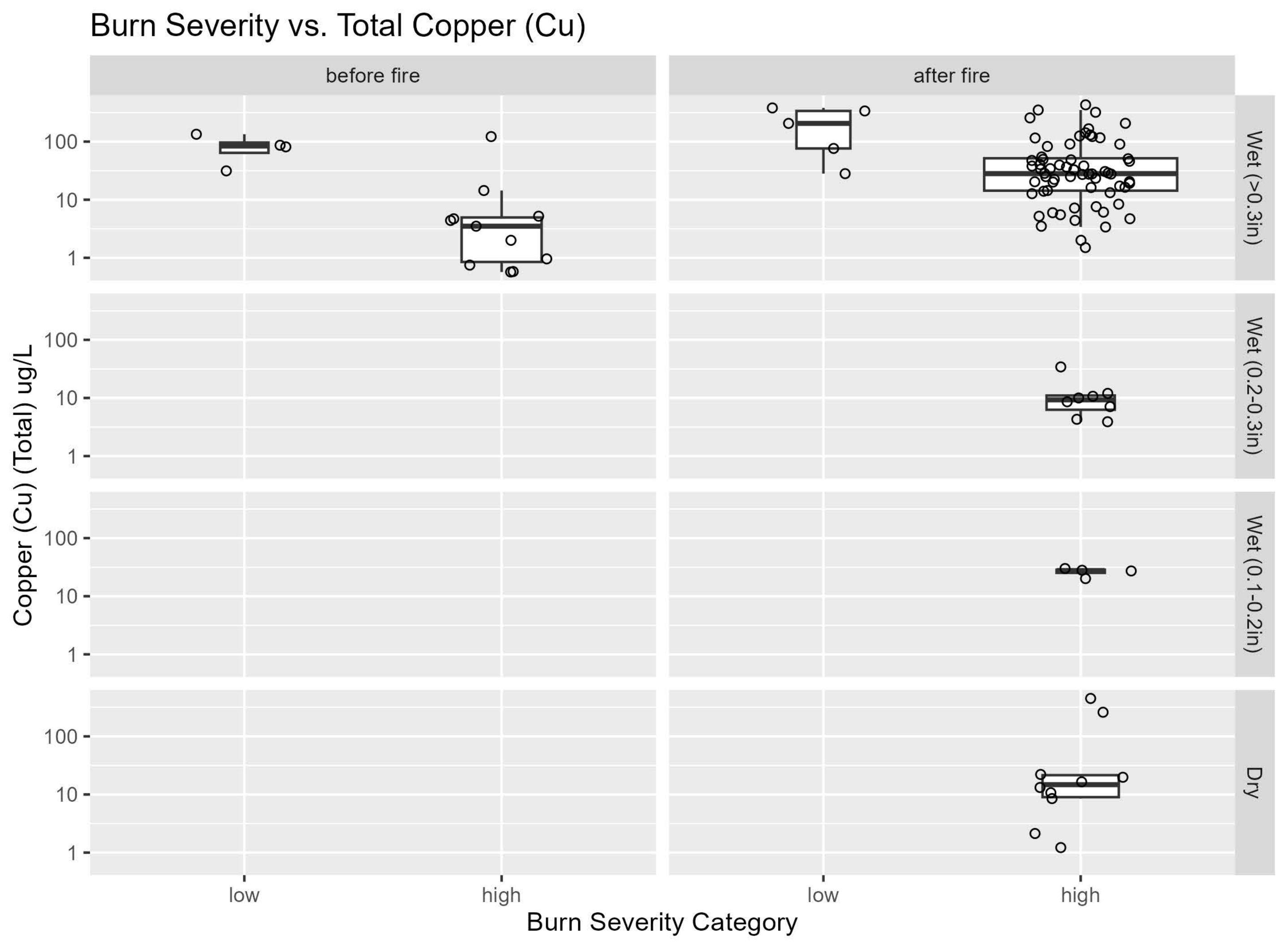
Burn Severity vs. Total Suspended Solids
before fire
after fire
Wet (>0.3in)
Wet (0.2-0.3in)
Dry
Total Suspended Solids mg/L
10000
1000
100
10
1
low
high
Burn Severity Category

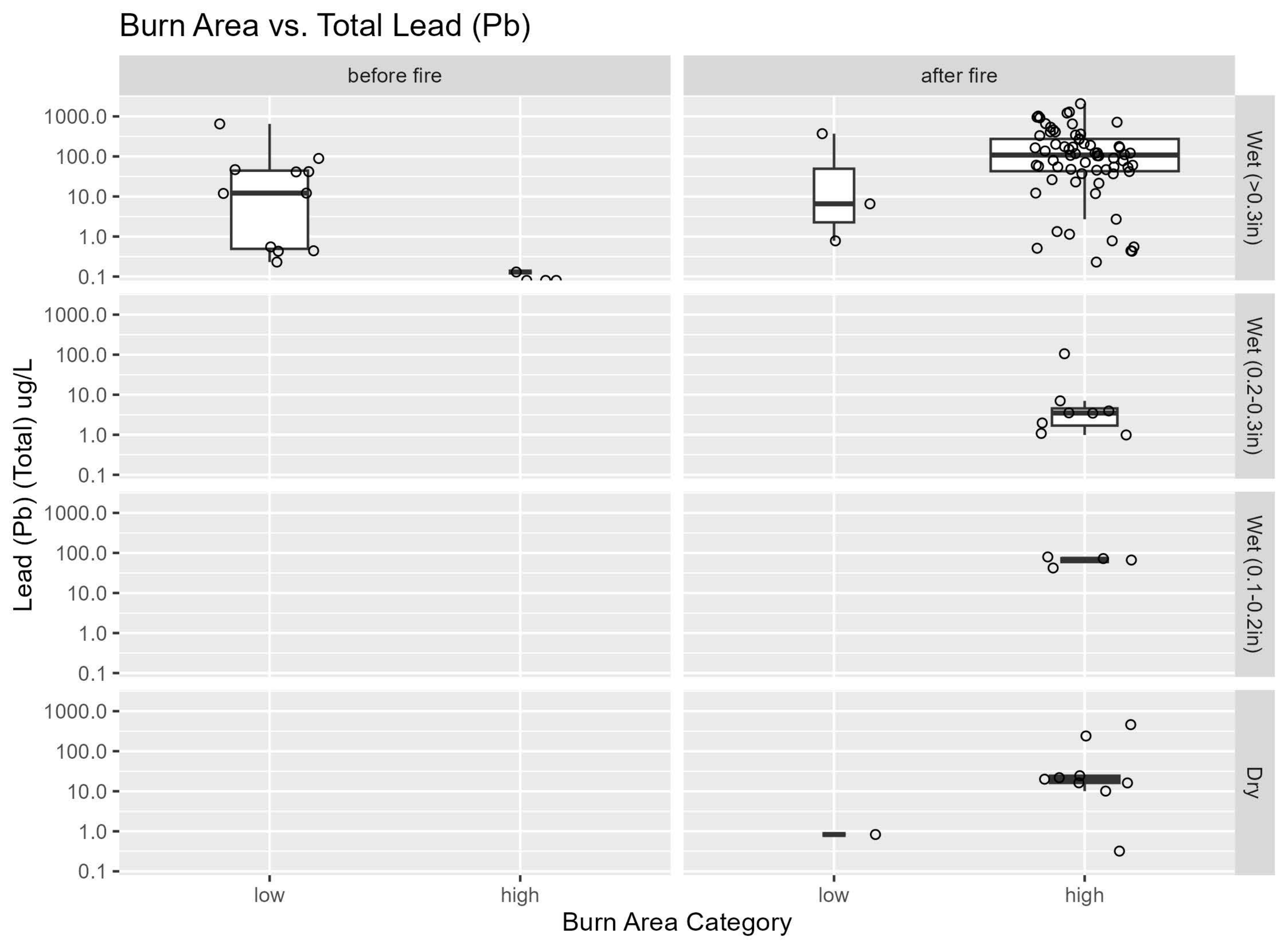

Burn Area vs. Total Cadmium (Cd)
before fire
after fire
Wet (>0.3in)
Wet (0.2-0.3in)
Wet (0.1-0.2in)
Dry
10.0
1.0
0.1
Cadmium (Cd) (Total) ug/L
low
high
Burn Area Category



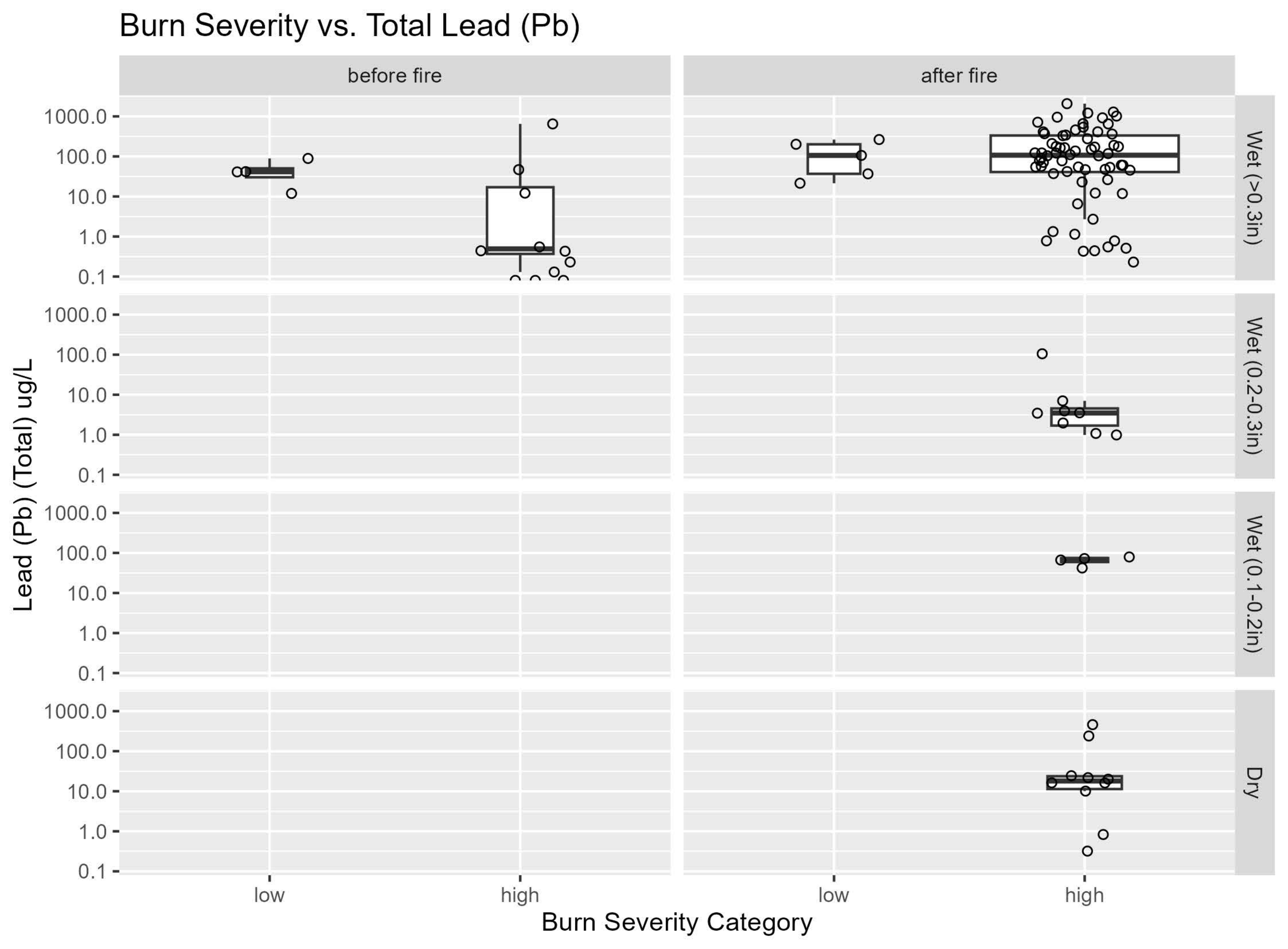
Burn Severity vs. Total Cadmium (Cd)
before fire
after fire
Wet (>0.3in)
Wet (0.2-0.3in)
Wet (0.1-0.2in)
Dry
10.0
1.0
0.1
Cadmium (Cd) (Total) ug/L
low
high
Burn Severity Category

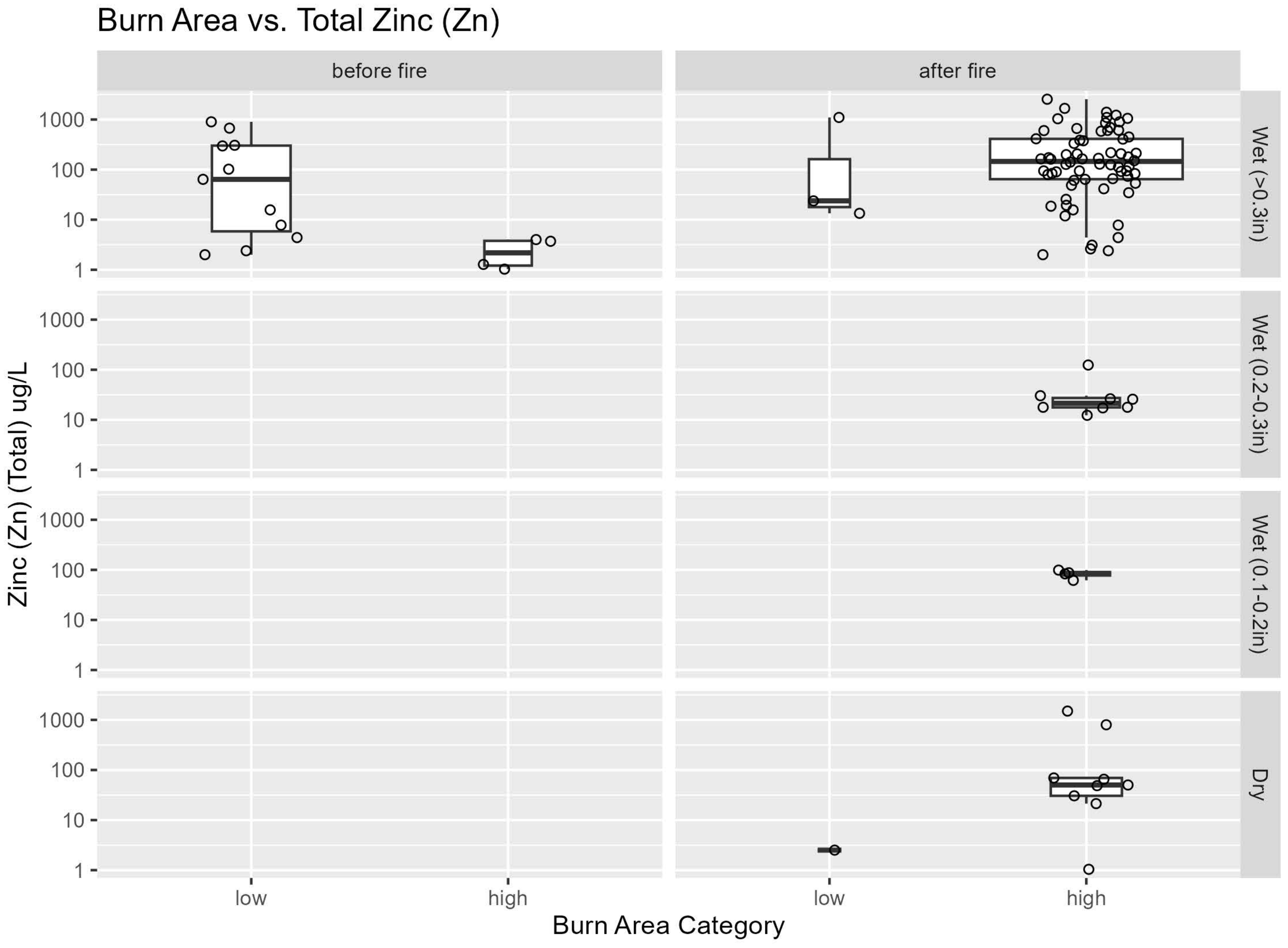

Burn Area vs. Total Copper (Cu)
before fire
after fire
Wet (>0.3in)
Wet (0.2-0.3in)
Wet (0.1-0.2in)
Dry
Copper (Cu) (Total) ug/L
100
10
1
low
high
Burn Area Category

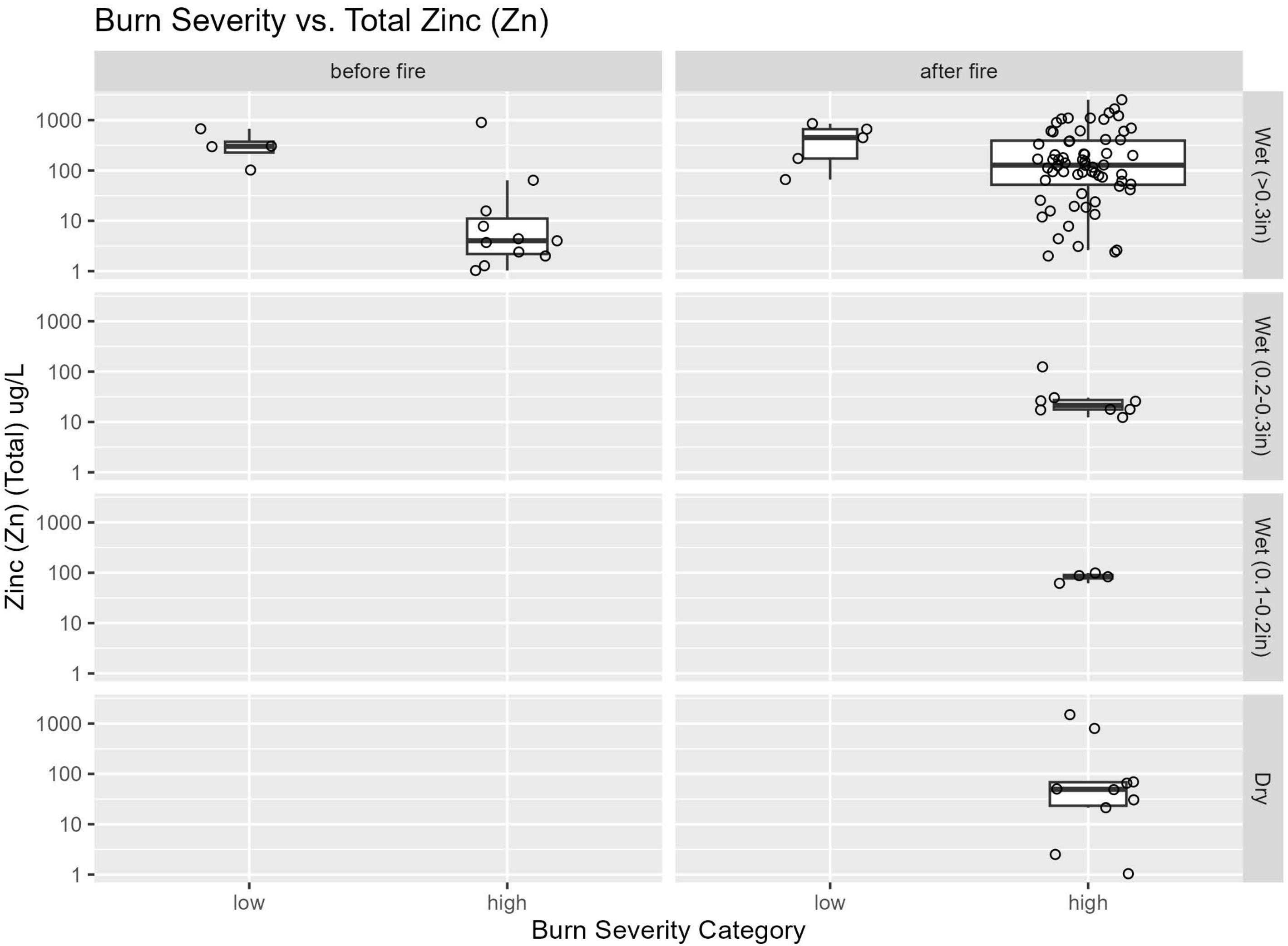

Burn Severity vs. Total Copper (Cu)
before fire
after fire
Wet (>0.3in)
Wet (0.2-0.3in)
Wet (0.1-0.2in)
Dry
100
10
1
Copper (Cu) (Total) ug/L
low
high
Burn Severity Category



Burn Area vs. Total Lead (Pb)
before fire
after fire
Wet (>0.3in)
Wet (0.2-0.3in)
Wet (0.1-0.2in)
Dry
1000.0
100.0
10.0
1.0
0.1
Lead (Pb) (Total) ug/L
low
high
Burn Area Category


Burn Severity vs. Total Lead (Pb)
before fire
after fire
Wet (>0.3in)
Wet (0.2-0.3in)
Wet (0.1-0.2in)
Dry
1000.0
100.0
10.0
1.0
0.1
Lead (Pb) (Total) ug/L
low
high
Burn Severity Category


Burn Area vs. Total Zinc (Zn)
before fire
after fire
Wet (>0.3in)
Wet (0.2-0.3in)
Wet (0.1-0.2in)
Dry
1000
100
10
1
Zinc (Zn) (Total) ug/L
low
high
Burn Area Category

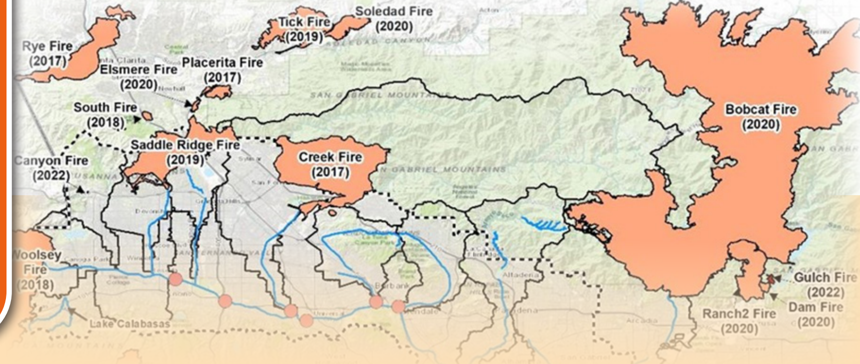


Burn Severity vs. Total Zinc (Zn)
before fire
after fire
Wet (>0.3in)
Wet (0.2-0.3in)
Wet (0.1-0.2in)
Dry
1000
100
10
1
Zinc (Zn) (Total) ug/L
low
high
Burn Severity Category

SGVCOG

ULAR Watershed Management Group

Fire Effects Study



Project Background

The Upper Los Angeles River Watershed Management Group (ULAR WMG) consists of 19 agencies that are responsible for upholding water quality standards for a vast area of 479 square miles, including compliance with Total Maximum Daily Loads (TMDLs) for nutrients and metals. In response to an increase in the frequency and intensity of wildfires in southern California and evidence correlating elevated pollutant loading in surface water with wildfires, the ULAR WMG designed the Fire Effects Study (Study) to examine wildfire impacts on water quality within its own watershed.

Fire Effects Study project manager presenting to breakout session attendees.

Monitoring and Modeling Progress

The Study team collects dry weather and wet weather water quality samples and conducts bioassessment monitoring to characterize the impacts of wildfires. Data collected will be input into models that predict wildfire and climate change impacts on water quality. Best management practice (BMP) models will also be used to better inform decisions for selecting BMPs and evaluating BMP performance, considering landscapes affected by wildfires and climate change.

Regional Collaboration

The Study team continues to involve numerous stakeholders conducting similar work with wildfires, such as the California State University Council on Ocean Affairs, Science, and Technology (COAST), Geosyntec, and Southern California Coastal Water Research Project (SCCWRP).

Objectives

- Address gaps in water quality data
- Model future effects due to increased frequency and severity of wildfires and climate change scenarios
- Characterize fate and transport of pollutants from wildfires
- Leverage regional funding
- Coordinate with stakeholders and regulatory agencies

Regulatory Engagement

The Study team has met routinely with the Los Angeles Regional Water Quality Control Board (LARWQCB) to provide updates on the progress of research and solicit the input of the LARWQCB regarding the potential regulatory actions that may be informed by the outcomes of the study.

Los Angeles County's Safe, Clean Water Program

SAFE CLEAN WATER

In 2018, Los Angeles County voters approved Measure W, also known as the Safe, Clean Water Program (SCWP), to improve water quality, increase local water supply, and enhance communities. The Study is funded by the SCWP and is designed to satisfy the following SCWP goals: improve water quality and contribute to the attainment of water quality requirements, leverage other funding to maximize SCWP goals, encourage innovation and adoption of new technology and practices, and invest in independent scientific research.

Council for Watershed Health

craftwater engineering, inc.

wsp