



Santa Clara Valley  
Urban Runoff  
Pollution Prevention Program

# Watershed Monitoring and Assessment Program



## Integrated Monitoring Report Part D: Pollutants of Concern Monitoring Report *Water Years 2020 - 2025*

Submitted in compliance with provisions C.8.h.iii, C.8.h.iv, and C.8.h.v of NPDES Permit No. CAS612008, Order No. R2-2022-0018

**March 31, 2026**



This report is submitted by the agencies participating in the



City of Campbell  
City of Cupertino  
City of Los Altos  
Town of Los Altos Hills  
Town of Los Gatos

City of Milpitas  
City of Monte Sereno  
City of Mountain View  
City of Palo Alto  
City of San José

City of Santa Clara  
City of Saratoga  
City of Sunnyvale  
County of Santa Clara  
Valley Water

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<b>Appendix B</b>	PCB and Mercury Concentrations by Sample Date for All Monitoring Conducted by SCVURPPP and Third Parties in the Santa Clara Basin WY 2020 – 2025
<b>Appendix C</b>	Letter Describing Approach to Emerging Contaminant Monitoring
<b>Appendix D</b>	Fate and Transport Study of Mercury/PCBs: Urban Runoff Impact on San Francisco Bay Margins

## LIST OF ACRONYMS

BAMSC	Bay Area Municipal Stormwater Collaborative
BASMAA	Bay Area Stormwater Management Agencies Association
BMP	Best Management Practice
CEC	Constituent of Emerging Concern
CEDEN	California Environmental Data Exchange Network
CW4CB	Clean Watersheds for a Clean Bay
DQO	Data Quality Objectives
EDD	Electronic Data Deliverable
ECWG	Emerging Contaminants Workgroup
FIB	Fecal Indicator Bacteria
Hg	Mercury
HgT	Total Mercury
IMR	Integrated Monitoring Report
LID	Low Impact Development
MQO	Measurement Quality Objective
MRP	Municipal Regional Permit
MS4	Municipal Separate Storm Sewer System
ND	Non-detect
NPDES	National Pollutant Discharge Elimination System
O&M	Operations and Maintenance
MQ	Management Question
PAHs	polycyclic aromatic hydrocarbons
PCBs	Polychlorinated Biphenyls
PFAS	Perfluoroalkyl and Polyfluoroalkyl Substances
POC	Pollutant of Concern
QAPP	Quality Assurance Project Plan
QA/QC	Quality Assurance/Quality Control
RMC	Regional Monitoring Coalition
RMP	Regional Monitoring Program for Water Quality in San Francisco Bay
ROW	Right-of-Way
RWL	Receiving Water Limitations
SAP	Sampling and Analysis Plan
SCVURPPP	Santa Clara Valley Urban Runoff Pollution Prevention Program
SFEI	San Francisco Estuary Institute
SFBRWQCB	San Francisco Bay Regional Water Quality Control Board
SPLWG	Sources, Pathways, and Loadings Workgroup
SPoT	Statewide Stream Pollutant Trend Monitoring
SSC	Suspended Sediment Concentration
SWAMP	Surface Water Ambient Monitoring Program
TOC	Total Organic Carbon
TRC	Technical Review Committee
UCMR	Urban Creeks Monitoring Report
USEPA	United States Environmental Protection Agency
WDM	Watershed Dynamic Model
WQO	Water Quality Objective
WY	Water Year

# 1. INTRODUCTION

This *Integrated Monitoring Report (IMR) Part D: Pollutants of Concern Monitoring Report, Water Years 2020 - 2025* (IMR Part D) was prepared by the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP or Program), on behalf of its 15 member agencies (13 cities/towns, the County of Santa Clara, and Valley Water). Along with other San Francisco Bay Area public agencies, SCVURPPP member agencies share a common National Pollutant Discharge Elimination System (NPDES) permit to discharge municipal stormwater to receiving water bodies, referred to as the Municipal Regional Permit (MRP).

The MRP was first adopted by the San Francisco Bay Regional Water Quality Control Board (SFBRWQCB or Regional Water Board) on October 14, 2009, as Order R2-2009-0074 (referred to as MRP 1.0, SFBRWQCB 2009). On November 19, 2015, the Regional Water Board updated and reissued the MRP as Order R2-2015-0049 (referred to as MRP 2.0, SFBRWQCB 2015). The current, and third, version of the MRP (i.e., MRP 3.0, SFBRWQCB 2022) was issued by the Regional Water Board as Order R2-2022-0018 and became effective July 1, 2022. This report fulfills the requirements of provisions C.8.h.iii, C.8.h.iv, and C.8.h.v of MRP 3.0 for the following:

- Pollutants of Concern (POC) monitoring accomplishments during the third water year (WY) of the Permit term (WY 2025);
- A comprehensive analysis of all POC data collected pursuant to Provision C.8. since the previous IMR (SCVURPPP 2020);
- Methods, data, calculations, load estimates, and source estimates for each POC parameter, as applicable;
- A budget summary for each monitoring requirement (for each year of the Permit term) (Submitted as Part E of the WY 2020 - 2025 IMR);
- The allocation of sampling effort for POC monitoring planned for the forthcoming year (i.e., Water Year 2026<sup>1</sup>);
- Recommendations for changes to any of the elements of Provision C.8 in future Permit terms; and
- An updated Receiving Water Limitations Assessment Report with proposed monitoring to be conducted during the next permit term (See **Appendix A**).

In compliance with provision C.8.h.iv.(1), this report includes monitoring locations, number and types of samples collected, purpose of sampling (i.e., management questions [MQs] addressed), and analytes measured. This report builds on the interpretation and reporting on POC monitoring data that was provided in the March 2020 IMR (SCVURPPP 2020) and the Water Years 2020 through 2024 UCMRs (SCVURPPP 2021, 2022, 2023, 2024a, 2025a).

This IMR Part D complies with MRP provision C.8.h.v for reporting of all POC monitoring data collected since the previous IMR was submitted in March 2020 (SCVURPPP 2020). Data were collected pursuant to provision C.8.f of the MRP. Data presented in this report were produced under the direction of SCVURPPP, the Regional Monitoring Program (RMP), and Statewide

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<sup>1</sup> Most hydrologic monitoring occurs for a period defined as a water year, which begins on October 1 and ends on September 30 of the named year. For example, water year 2025 (WY 2025) began on October 1, 2024, and concluded on September 30, 2025.

Stream Pollutant Trend Monitoring (SPoT) Program. Monitoring data collected specifically by SCVURPPP and presented in this report were submitted electronically to the Regional Water Board by SCVURPPP in a California Environmental Data Exchange Network (CEDEN) comparable format. Data collected in receiving waters (i.e., creeks) by SCVURPPP were submitted for upload to CEDEN.

## 1.1. Report Organization

This report is organized into the following sections:

- **Section 1.0** provides the relevant background information and regulatory requirements for POC monitoring pursuant to the MRP;
- **Section 2.0** presents the results of POC monitoring conducted by the Program in WY 2025. This section also summarizes POC monitoring conducted by third parties in the Santa Clara Valley during WY 2025<sup>2</sup>;
- **Section 3.0** consists of a comprehensive analysis of all POC data collected pursuant to Provision C.8. since the previous IMR (SCVURPPP 2020), including other pertinent studies;
- **Section 4.0** presents recommendations for changes to any of the elements of Provision C.8 in future Permit terms; and
- **Section 5.0** provides all the references cited within the report.

## 1.2. POC Monitoring Requirements for MRP 3.0

MRP 3.0 provision C.8.f requires water quality monitoring for POCs, including polychlorinated biphenyls (PCBs), mercury, copper, and emerging contaminants. Permittees may comply with the monitoring requirements of provision C.8 through a regional collaborative effort, their Stormwater Program, third-party monitoring, or a combination of these mechanisms. POC monitoring must address the six priority management information needs (i.e., MQs) identified in provision C.8.f:

1. **Source Identification** – identifying or confirming which sources or watershed source areas provide the greatest opportunities for reductions of POCs in urban stormwater runoff.
2. **Contributions to Bay Impairment** – identifying which watershed source areas contribute most to the impairment of San Francisco Bay beneficial uses (due to source intensity and sensitivity of discharge location).
3. **Management Action Effectiveness** – evaluating the effectiveness or impacts of existing management actions, including compliance with Total Maximum Daily Loads (TMDLs) and other POC requirements and providing support for planning future management actions.
4. **Loads and Status** – providing information on POC loads, concentrations or presence in local tributaries or urban stormwater discharges.

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<sup>2</sup> Water Year 2024 data that were not yet available from the analytical laboratories prior to publication of the WY 2024 UCMR can be viewed in the complete POC data record included in **Appendix B**.

5. **Trends** – evaluating trends in POC loading to the Bay and POC concentrations in urban stormwater discharges or local tributaries over time.
6. **Compliance with Receiving Water Limitations** - providing information to assess whether receiving water limitations (RWLs) are achieved.

POC monitoring is conducted on a water year basis (i.e., October 1 through September 30). Provision C.8.f specifies yearly (i.e., WY) and total (i.e., permit term) minimum numbers of samples for each POC. For example, in the Santa Clara Valley, MRP 3.0 requires that a minimum total of 75 PCBs samples be collected and analyzed during the permit term, and at least eight PCBs samples be collected each year. The MRP also specifies the minimum number of samples for each POC that must address each MQ. For example, by the end of the permit term, MQs 1 through 3 must be addressed with at least eight PCBs samples each, and MQs 4 and 5 must be addressed with at least 16 PCBs samples each. It is possible that a single sample can address more than one MQ; however, no more than 25 percent of samples collected for POC monitoring may be used to satisfy requirements for multiple Management Questions.

Table 1.1 below summarizes the MRP 3.0 POC monitoring requirements for Santa Clara Valley Co-permittees (SFBRWQCB 2022).

**Table 1.1. MRP 3.0 provision C.8.f pollutants of concern monitoring requirements for SCVURPPP Co-permittees.**

Pollutant of Concern	Total Samples <sup>b</sup>	Yearly Minimum	Minimum # of Samples that Must be Collected for Each Management Question by the End of the Permit Term <sup>a</sup>					
			1. Source Identification	2. Contributions to Bay Impairment	3. Management Action Effectiveness	4. Loads and Status	5. Trends	6. Receiving Water Limitations
PCBs	75	8	8	8	8	16	16	--
Total Mercury	60	8	8	8	8	8	8	--
Copper	5	--	--	--	--	5	--	-- <sup>f</sup>
Emerging Contaminants <sup>c</sup>	25	--	--	--	--	25	--	--
Ancillary Parameters <sup>d</sup>	--	--	--	--	--	--	--	--
RWLs Assessment (Cu, Zn, FIB, others <sup>e</sup> )	5 (4 wet season; 1 dry season)	--	--	--	--	--	--	5

Source: SFBRWQCB 2022

Notes:

Cu = copper, FIB = fecal indicator bacteria, PCBs = polychlorinated biphenyls, RWLs = receiving water limitations, Zn = zinc

<sup>a</sup> Individual samples can address more than one Management Question simultaneously, up to 25% of total number of samples.

<sup>b</sup> The MRP minimum number of samples must be met by the end of the five-year permit term (i.e., 2027).

<sup>c</sup> The emerging contaminants level of effort described in the MRP can be satisfied through augmentation of the San Francisco Bay Regional Monitoring Program Emerging Contaminants Monitoring Strategy in the amount of \$100,000 per year for all Permittees combined.

<sup>d</sup> Total Organic Carbon (TOC) should be collected concurrently with PCBs data when normalization to TOC is deemed appropriate. Suspended sediment concentration (SSC) should be collected in water samples used to assess loads, loading trends, or Best Management Practice (BMP) effectiveness. Hardness data are used in conjunction with copper concentrations collected in fresh water.

<sup>e</sup> Additional RWL analytes are determined under provision C.8.h.iv.

<sup>f</sup> Copper is one of the required RWL analytes.

In addition to monitoring requirements outlined in C.8, Provisions C.11.g and C.12.i also require Permittees to conduct or cause to be conducted studies concerning the fate, transport, and biological uptake of mercury and PCBs discharged from urban runoff to San Francisco Bay margin areas. The studies should focus on near-shore areas contaminated with mercury and PCBs from historical activity and the expected trajectory of recovery as sources from local watersheds are reduced. Permittees are required to report on the findings, results, and implications of these studies in this IMR.

### 1.2.1. THIRD-PARTY MONITORING

The Program strives to work collaboratively with water quality monitoring partners to develop mutually beneficial monitoring approaches. Provision C.8.a.iii of the MRP allows Permittees to use data collected by third-party organizations to fulfill monitoring requirements, provided the data are demonstrated to meet the required data quality objectives. The Program uses monitoring data collected in the Santa Clara Valley through the RMP and the State of California's SPoT Program to supplement the Program's efforts towards achieving provision C.8.f monitoring requirements. Third party monitoring conducted by the RMP and SPoT monitoring program also provide context for reviewing and interpreting SCVURPPP monitoring results.

#### POC Monitoring Conducted by the RMP

The RMP typically conducts annual monitoring for POCs on a region-wide basis. The RMP Special Studies address specific scientific issues that RMP committees, workgroups, and strategy teams identify as priority for further study. These studies are developed through an open selection process at the workgroup level and selected for funding through the Technical Review Committee (TRC) and the Steering Committee. POC monitoring and associated studies conducted by the RMP in the Santa Clara Valley are planned and implemented through RMP workgroups, including: the **Sources Pathways and Loadings Workgroup (SPLWG)**, the **Emerging Contaminants Workgroup (ECWG)**, and the **PCBs Workgroup (PCBWG)**. These workgroups are comprised of RMP staff, Regional Water Board staff, Bay Area Municipal Stormwater Collaborative (BAMSC) representatives, and technical advisors.

The objective of the RMP's SPLWG is to make recommendations for collection, interpretation, and synthesis of data on sources and amounts of contaminants entering San Francisco Bay. The SPLWG has historically focused on legacy contaminants (PCBs and mercury), but has recently broadened this focus to include emerging contaminants in stormwater, and is developing an integrated monitoring and modeling approach for both legacy and emerging contaminants. The pilot and special studies associated with the RMP's SPLWG are intended to fill data gaps associated with loadings of POCs from relatively small tributaries to the San Francisco Bay. The objective of the RMP's ECWG is to develop cost-effective strategies to identify and monitor constituents of emerging concern (CECs) to support management actions to minimize impacts to San Francisco Bay. The ECWG works closely with the SPLWG on emerging contaminants in stormwater, and on special studies that specifically target CECs in Bay tributaries. The objective of the PCBWG is to provide a forum for identifying priority information needs to support PCBs management in the region, and planning and implementing studies to address those needs. The RMP's PCBWG works closely with the SPLWG on special studies that focus on the fate and transport of mercury and PCBs from Bay tributaries to Bay margin areas.

SCVURPPP is an active participant in the RMP's SPLWG, ECWG, and PCBWG and works with other Bay Area municipal stormwater programs to identify opportunities to direct RMP funds and monitoring activities towards addressing both short- and long-term MRP MQs.

The MRP allows for Permittees to satisfy the emerging contaminant monitoring requirements identified in Provision C.8.g through augmentation of the San Francisco Bay RMP Emerging Contaminants Monitoring Strategy in the amount of \$100,000 per year for all Permittees combined. SCVURPPP and its Regional Monitoring Coalition (RMC) partners have elected to exercise this option and have been working with the RMP to identify analytes and monitoring strategies to implement. A letter describing this commitment and the approach to developing and implementing a regional emerging contaminant stormwater monitoring strategy through the RMP is included in **Appendix C**. SCVURPPP also continues to participate in the RMP's ECWG.

The MRP allows for Permittees to satisfy the requirements for fate and transport studies of mercury and PCBs identified in Provisions C.11.g and C.12.i through studies planned and implemented by third parties. The RMP's PCBWG studies on priority margin units (PMUs) fulfill this requirement. A summary report on the status and findings of the RMP's PMU studies and associated special projects and associated implications is included in **Appendix D**.

#### **POC Monitoring Conducted by the State Water Board's SPoT Monitoring Program**

The SPoT Monitoring Program conducts annual dry season monitoring (subject to funding constraints) of sediments collected from a statewide network of large rivers. The goal of the SPoT program is to monitor trends in sediment toxicity and sediment contaminant concentrations in selected large rivers throughout California and relate contaminant concentrations and toxicity to watershed land uses. Results from these large catchment stations provide context for the monitoring conducted by the Program.

Sites are targeted in bottom-of-the-watershed locations with slow water flow and appropriate micromorphology to allow deposition and accumulation of sediments, including stations near the mouth of Coyote Creek (station 205COY060) and the Guadalupe River (station 205GUA020). In most years, sediments are analyzed for PCBs, mercury, metals (including copper), toxicity, pesticides, and organic pollutants (Phillips et al. 2014).

## 2. WATER YEAR 2025 POC MONITORING RESULTS IN THE SANTA CLARA VALLEY

This section presents a summary of the POC monitoring, associated activities, and monitoring accomplishment in the Santa Clara Valley by the Program and third parties in WY 2025. POC monitoring in WY 2025 was conducted in compliance with MRP 3.0 Provisions C.8.f, C.11/12.b, and C.11/12.c. In accordance with Provision C.8.h.iv, WY 2025 POC monitoring locations, number and types of samples collected, purpose of sampling (i.e., MQs addressed), and analytes measured are described in this section. Specific monitoring stations and coordinates are listed in Table 2.1. Station locations are shown in Figure 2.1.

**Table 2.1. SCVURPPP and third-party POC monitoring stations, WY 2025.**

Organization	Permittee	Sample ID	Sample Date	Sample Location Type	Public ROW / On-site <sup>a</sup>	Latitude	Longitude
<b>Sediment</b>							
SCVURPPP	San Jose	SJ060225-01	06/02/2025	Other	On-site	37.311157	-121.870851
SCVURPPP	San Jose	SJ060225-03	06/02/2025	Street/curb	On-site	37.311684	-121.86961
SCVURPPP	San Jose	SJ060225-04	06/02/2025	Drop Inlet/Catch Basin	On-site	37.310964	-121.868869
SCVURPPP	San Jose	SJ060225-05	06/02/2025	Other	On-site	37.30988	-121.870398
SCVURPPP	San Jose	SJ060225-06	06/02/2025	Manhole Vault	On-site	37.319148	-121.870656
SCVURPPP	San Jose	SJ060225-07	06/02/2025	Street/curb	On-site	37.319487	-121.87199
SCVURPPP	San Jose	SJ060225-08	06/02/2025	Other	On-site	37.347322	-121.923667
SCVURPPP	San Jose	SJ060225-09	06/02/2025	Other	On-site	37.346452	-121.922223
SCVURPPP	San Jose	SJ060325-10	06/03/2025	Other	On-site	37.382881	-121.92176
SCVURPPP	San Jose	SJ060325-11	06/03/2025	Other	On-site	37.38411	-121.916545
SCVURPPP	San Jose	SJ060325-13	06/03/2025	Street/curb	On-site	37.390475	-121.918631
SCVURPPP	San Jose	SJ060325-14	06/03/2025	Street/curb	On-site	37.391535	-121.917518
SCVURPPP	San Jose	SJ060325-15	06/03/2025	Other	On-site	37.368272	-121.882189
SCVURPPP	San Jose	SJ060325-16	06/03/2025	Other	On-site	37.369439	-121.884855
SCVURPPP	San Jose	SJ060425-18	06/04/2025	Street/curb	On-site	37.366704	-121.882516
SCVURPPP	San Jose	SJ060425-19	06/04/2025	Drop Inlet/Catch Basin	On-site	37.36751	-121.884205
SCVURPPP	San Jose	SJ060425-20	06/04/2025	Street/curb	On-site	37.366531	-121.883346
SCVURPPP	San Jose	SJ060425-21	06/04/2025	Other	On-site	37.366642	-121.885129
SCVURPPP	San Jose	SJ060425-22	06/04/2025	Drop Inlet/Catch Basin	On-site	37.311157	-121.869984
SCVURPPP	San Jose	SJ060625-23	06/06/2025	Drop Inlet/Catch Basin	Public ROW	37.237622	-121.787496
SCVURPPP	San Jose	SJ060625-24	06/06/2025	Street/curb	Public ROW	37.239608	-121.776409
SCVURPPP	San Jose	SJ060625-25	06/06/2025	Street/curb	Public ROW	37.240321	-121.777583
SCVURPPP	San Jose	SJ060625-26	06/06/2025	Street/curb	Public ROW	37.252093	-121.796873
SCVURPPP	San Jose	SJ060625-27	06/06/2025	Street/curb	Public ROW	37.233939	-121.766123
SCVURPPP	San Jose	SJ060625-28	06/06/2025	Drop Inlet/Catch Basin	Public ROW	37.329631	-121.858007
SCVURPPP	San Jose	SJ060625-30	06/06/2025	Drop Inlet/Catch Basin	Public ROW	37.328208	-121.861662

*SCVURPPP IMR Part D: Pollutants of Concern Monitoring Report (WYs 2020 - 2025)*

<b>Organization</b>	<b>Permittee</b>	<b>Sample ID</b>	<b>Sample Date</b>	<b>Sample Location Type</b>	<b>Public ROW / On-site<sup>a</sup></b>	<b>Latitude</b>	<b>Longitude</b>
SCVURPPP	San Jose	SJ060925-31	06/09/2025	Drop Inlet/Catch Basin	Public ROW	37.335068	-121.856252
SCVURPPP	San Jose	SJ060925-33	06/09/2025	Drop Inlet/Catch Basin	Public ROW	37.334817	-121.851878
SCVURPPP	San Jose	SJ060925-34	06/09/2025	Drop Inlet/Catch Basin	Public ROW	37.334571	-121.851761
SCVURPPP	San Jose	SJ060925-35	06/09/2025	Street/curb	Public ROW	37.3256	-121.878477
SCVURPPP	San Jose	SJ060925-36	06/09/2025	Drop Inlet/Catch Basin	Public ROW	37.32508	-121.879321
SCVURPPP	San Jose	SJ060925-37	06/09/2025	Street/curb	Public ROW	37.324159	-121.877096
SCVURPPP	San Jose	SJ060925-38	06/09/2025	Drop Inlet/Catch Basin	Public ROW	37.32463	-121.876389
SCVURPPP	San Jose	SJ060925-39	06/09/2025	Street/curb	Public ROW	37.321279	-121.874819
SCVURPPP	San Jose	SJ060925-40	06/09/2025	Street/curb	Public ROW	37.317776	-121.871517
SCVURPPP	San Jose	SJ061025-42	06/10/2025	Street/curb	Public ROW	37.329157	-121.900112
SCVURPPP	San Jose	SJ061025-43	06/10/2025	Drop Inlet/Catch Basin	Public ROW	37.329111	-121.901597
SCVURPPP	San Jose	SJ061025-44	06/10/2025	Drop Inlet/Catch Basin	Public ROW	37.328128	-121.901047
SCVURPPP	San Jose	SJ061025-45	06/10/2025	Drop Inlet/Catch Basin	Public ROW	37.326541	-121.901178
SCVURPPP	San Jose	SJ061025-46	06/10/2025	Street/curb	Public ROW	37.351165	-121.908305
SCVURPPP	San Jose	SJ061025-47	06/10/2025	Drop Inlet/Catch Basin	Public ROW	37.354704	-121.905598
SCVURPPP	San Jose	SJ061025-48	06/10/2025	Drop Inlet/Catch Basin	Public ROW	37.362844	-121.885327
SCVURPPP	San Jose	SJ061025-50	06/10/2025	Drop Inlet/Catch Basin	Public ROW	37.363758	-121.885534
SCVURPPP	San Jose	SJ061025-51	06/10/2025	Drop Inlet/Catch Basin	Public ROW	37.369597	-121.892504
SCVURPPP	San Jose	SJ061025-52	06/10/2025	Drop Inlet/Catch Basin	Public ROW	37.38887	-121.908269
SCVURPPP	San Jose	SJ061025-53	06/10/2025	Drop Inlet/Catch Basin	Public ROW	37.390724	-121.906794
SCVURPPP	San Jose	SJ061125-54	06/11/2025	Manhole Vault	Public ROW	37.394523	-121.90909
SCVURPPP	San Jose	SJ061125-55	06/11/2025	Manhole Vault	Public ROW	37.393871	-121.908446
SCVURPPP	San Jose	SJ061125-56	06/11/2025	Manhole Vault	Public ROW	37.395611	-121.910323
SCVURPPP	San Jose	SJ061125-57	06/11/2025	Street/curb	Public ROW	37.395906	-121.910633
SCVURPPP	San Jose	SJ061125-58	06/11/2025	Street/curb	Public ROW	37.396945	-121.911661
SCVURPPP	San Jose	SJ061125-59	06/11/2025	Street/curb	Public ROW	37.402865	-121.886813
SCVURPPP	San Jose	SJ061125-60	06/11/2025	Street/curb	Public ROW	37.350895	-121.92338
SCVURPPP	San Jose	SJ061225-61	06/12/2025	Street/curb	Public ROW	37.417927	-121.97485
SCVURPPP	San Jose	SJ061625-62	06/16/2025	Street/curb	Public ROW	37.341315	-121.863412
SCVURPPP	Mountain View	MV061225-01	06/12/2025	Street/curb	Public ROW	37.428738	-122.09987
SCVURPPP	Mountain View	MV061225-02	06/12/2025	Drop Inlet/Catch Basin	Public ROW	37.4084	-122.07139
SCVURPPP	Mountain View	MV061225-03	06/12/2025	Street/curb	Public ROW	37.382523	-122.06862
SCVURPPP	Mountain View	MV061224-04	06/12/2025	Street/curb	Public ROW	37.381326	-122.069934
SCVURPPP	Mountain View	MV061225-05	06/12/2025	Street/curb	Public ROW	37.381498	-122.06971

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Organization	Permittee	Sample ID	Sample Date	Sample Location Type	Public ROW / On-site <sup>a</sup>	Latitude	Longitude
SCVURPPP	Mountain View	MV061225-07	06/12/2025	Street/curb	Public ROW	37.381567	-122.071756
SCVURPPP	Mountain View	MV061625-08	06/16/2025	Other	Public ROW	37.402409	-122.096369
SCVURPPP	Mountain View	MV061625-09	06/16/2025	Other	Public ROW	37.410212	-122.111478
SCVURPPP	Mountain View	MV061625-10	06/16/2025	Other	Public ROW	37.390167	-122.065553
SCVURPPP	Mountain View	MV061625-11	06/16/2025	Other	Public ROW	37.388807	-122.061314
SCVURPPP	Santa Clara	SC061625-01	06/16/2025	Street/curb	Public ROW	37.376325	-121.988034
SCVURPPP	Santa Clara	SC061625-02	06/16/2025	Street/curb	Public ROW	37.380425	-121.979155
SCVURPPP	Santa Clara	SC061725-03	06/17/2025	Street/curb	Public ROW	37.356212	-121.946717
SCVURPPP	Santa Clara	SC061725-04	06/17/2025	Street/curb	Public ROW	37.360066	-121.949669
SCVURPPP	Santa Clara	SC061725-05	06/17/2025	Street/curb	Public ROW	37.3641	-121.949768
SCVURPPP	Santa Clara	SC061725-06	06/17/2025	Street/curb	Public ROW	37.362612	-121.952875
SCVURPPP	Santa Clara	SC061725-07	06/17/2025	Street/curb	Public ROW	37.365036	-121.955292
SCVURPPP	Santa Clara	SC061725-08	06/17/2025	Street/curb	Public ROW	37.365031	-121.954483
SCVURPPP	Santa Clara	SC061725-09	06/17/2025	Street/curb	Public ROW	37.365036	-121.955608
SCVURPPP	Santa Clara	SC061725-10	06/17/2025	Street/curb	Public ROW	37.366187	-121.954819
SCVURPPP	Santa Clara	SC061725-11	06/17/2025	Street/curb	Public ROW	37.364892	-121.952694
<b>Stormwater</b>							
SCVURPPP	Santa Clara	049STA050	03/12/2025	Drop Inlet/Catch Basin	Public ROW	37.39638	-121.96754
SCVURPPP	San Jose	TCM-6 Effluent	11/11/2024	LID <sup>b</sup> Effluent	Public ROW	37.42423	-121.96960
SCVURPPP	San Jose	TCM-6 Effluent	12/12/2024	LID Effluent	Public ROW	37.42423	-121.96960
SCVURPPP	San Jose	TCM-6 Effluent	12/14/2024	LID Effluent	Public ROW	37.42423	-121.96960
SCVURPPP	San Jose	TCM-6 Effluent	02/13/2025	LID Effluent	Public ROW	37.42423	-121.96960
SCVURPPP	San Jose	TCM-6 Effluent	03/12/2025	LID Effluent	Public ROW	37.42423	-121.96960
<b>Receiving Water</b>							
SCVURPPP	Santa Clara	205SAR005	02/05/2025	Channel	Public ROW	37.35973	-121.97336
RMP	San Jose	GuadalupeR_Hwy 101	02/13/2025	Channel	Public ROW	37.373555	-121.93270
RMP	Sunnyvale	SunnyvaleEastCh_Ahwanee	02/04/2025	Channel	Public ROW	37.394602	-122.010459

Notes

<sup>a</sup> On-site samples were collected on private properties.

<sup>b</sup> LID = Low Impact Development

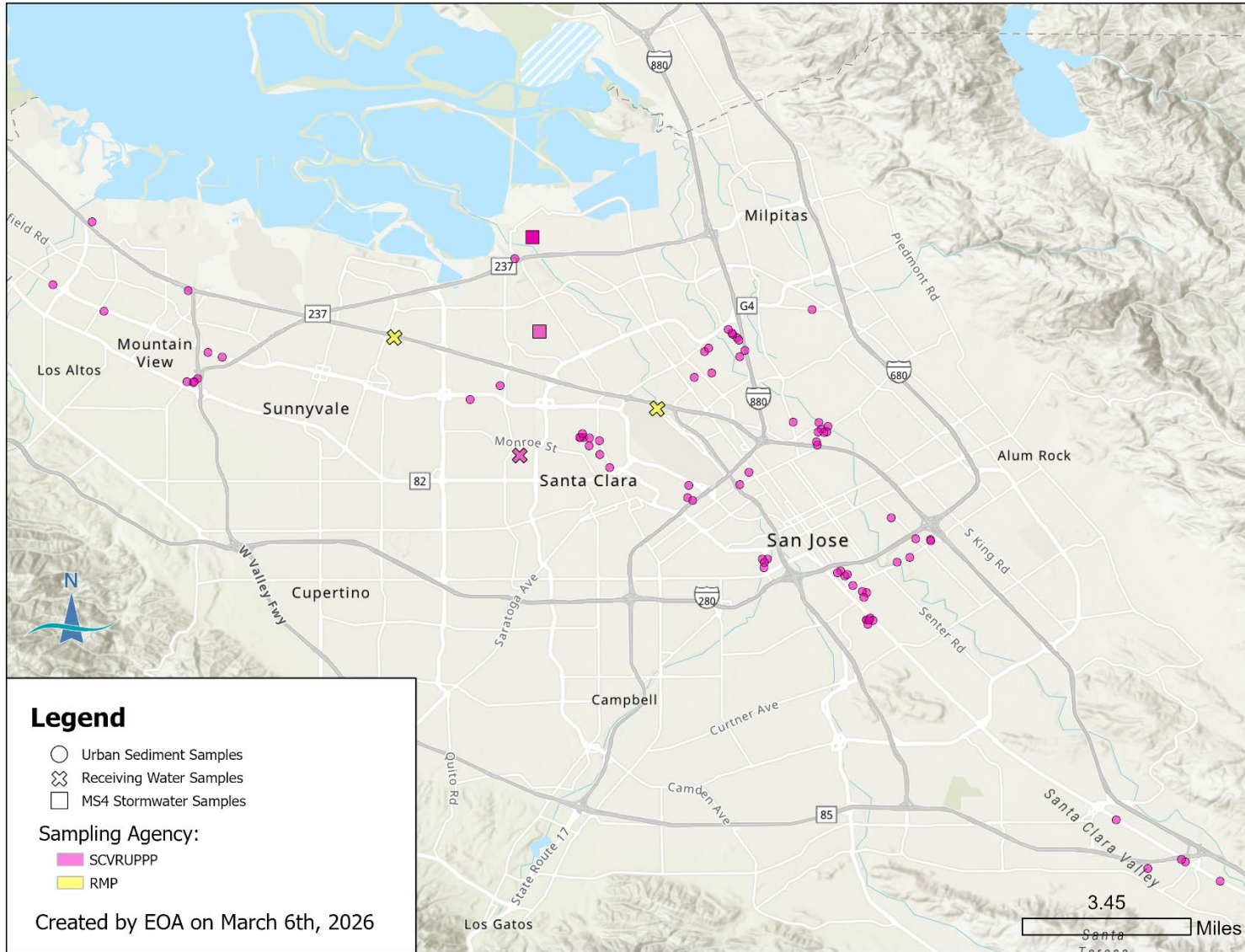


Figure 2.1. Locations of POC monitoring stations sampled in WY 2025 in the Santa Clara Valley, CA.

## 2.1. Statement of Data Quality

A comprehensive quality assurance/quality control (QA/QC) program was implemented by SCVURPPP covering all aspects of POC monitoring. Monitoring for PCBs and mercury was performed according to protocols specified or referenced in the WY 2016 POC Sampling and Analysis Plan (SAP; SCVURPPP 2015) and supplemented by protocols described in the RMC Standard Operating Procedures (BASMAA 2016). The WY 2016 POC SAP references the Clean Watersheds for a Clean Bay (CW4CB) Quality Assurance Project Plan (QAPP; BASMAA 2013) and the BASMAA RMC QAPP (BASMAA 2020) as the basis for QA/QC procedures. RWL monitoring was performed according to the RWL Assessment Report (i.e., RWL Monitoring Plan; BAMSC 2023) which also references the CW4CB QAPP and the BASMAA RMC QAPP. Low Impact Development (LID) influent and effluent sampling data were collected and evaluated as governed by the LID monitoring plan and QAPP<sup>3</sup> (SCVURPPP 2024b; BAMSC 2025a). The respective LID sampling data quality is discussed in the LID Integrated Monitoring Report, which is submitted as Part A of the WYs 2020 - 2025 IMR.

Data were assessed for representativeness, comparability, completeness, sensitivity, contamination, accuracy, and precision. These seven attributes are compared to data quality objectives (DQOs), which were established to ensure that data collected are of adequate quality and sufficient for the intended uses. DQOs address both quantitative and qualitative assessment of the acceptability of data. Representativeness and comparability are qualitative while completeness, sensitivity, contamination, accuracy, and precision are quantitative assessments. Specific DQOs are based on Measurement Quality Objectives (MQOs) for each analyte.

Overall, the results of the QA/QC review suggest that the POC monitoring data generated during WY 2025 met the MQO objectives, except for minor instances (largely attributed to sample heterogeneity inherent in sediment sampling), detailed in Table 2.2. While some data were flagged by the QA Officer based on the MQOs and DQOs identified in the QAPPs, 100% of the data was of acceptable quality to be included in this report's dataset.

**Table 2.2. Quality control issues and analysis in the WY 2025 project data set.**

QC Type / Associated Sample	QC Issue	Analysis
<b>Sediment – Mercury</b>		
Field Duplicate SJ060325-11	The RPD mercury was 30% which exceeded the project limit of 25%.	Precision outside of control limits for sediment is not uncommon in field duplicate samples due to sample heterogeneity. Data was flagged by the QA officer; no further corrective action was required.
Field Duplicate SJ060625-28	The field duplicate RPD for mercury was 44%, which was outside the precision control limits (<25%).	Precision outside of control limits for sediment is not uncommon in field duplicate samples due to sample heterogeneity. Data was flagged by the QA officer; no further corrective action was required.

<sup>3</sup> The original LID QAPP was submitted for approval October 31, 2024, and was revised and updated in June 2025.

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QC Type / Associated Sample	QC Issue	Analysis
Field Duplicate SJ061025-48	The field duplicate RPD for mercury was 76%, which was outside the precision control limits (<25%).	Precision outside of control limits for sediment is not uncommon in field duplicate samples due to sample heterogeneity. Data was flagged by the QA officer; no further corrective action was required.
Laboratory Replicate SJ061625-62	The RPD for the replicate analysis of mercury (28%) was outside of lab control limits (20%).	The variability in the results was attributed to the heterogeneous character of the sample. Standard mixing techniques were used but were not sufficient for complete homogenization of the sample. Data was flagged by the QA officer; no further corrective action was required.
<b>Sediment - PCBs Congeners</b>		
Field Duplicate SJ060225-01	The RPDs exceeded the project limit of 25% for PCB 60 (28%), PCB 149 (72%), PCB 151 (71%), PCB 153 (35%), PCB 180 (54%), and Total PCBs (47%).	Precision outside of control limits for sediment is not uncommon in field duplicate samples due to sample heterogeneity. Data for the individual congeners was flagged by the QA officer; no further corrective action was required.
Matrix Spike/Matrix Spike Duplicate SJ060225-01	The PR for the MS and/or MSD were outside of lab limits for PCB 60 (68%) and PCB 101 (117% and 127%).	The variability in the results was attributed to the heterogeneous nature of the sample. Data was flagged by the QA officer; no further corrective action was required.
Field Duplicate SJ060325-11	The RPD for PCB 170 (26%) slightly exceeded the project limit of 25%.	The control limit was only slightly exceeded for PCB 170 with the total PCB RPD within project limits at 17%. Data for PCB 170 was flagged by the QA officer; no further corrective action was required.
Field Duplicate SJ060325-16	The RPDs exceeded the project limit of 25% for PCB 138 (36%), PCB 149 (47%), and PCB 153 (34%).	Precision outside of control limits for sediment is not uncommon in field duplicate samples due to sample heterogeneity. The total PCB RPD was within project limits at 14%. Data was flagged by the QA officer; no further corrective action was required.
Matrix Spike/Matrix Spike Duplicate SJ060625-24	The PR of the MS and/or MSD was outside of lab limits for PCB 18 (95%), PCB 87 (106%), and PCB 101 (107% and 112%).	These results only slightly exceeded the laboratory limits. Additionally, all but one sample result was non-detect, indicating that any potential high bias was not seen in the sample results. Data was flagged by the QA officer; no further corrective action was required.
Field Duplicate SJ060625-28	The RPD for PCB 60 (29%) and Total PCBs (120%) exceeded the precision control limit of 25%.	Precision outside of control limits for sediment is not uncommon in field duplicate samples due to sample heterogeneity. Data for PCB 60 was flagged by the QA officer; no further corrective action was required.
Field Duplicate SJ060925-31	The RPD for PCB 156 (59%), PCB 183 (69%) and Total PCBs (54%) exceeded the precision control limit of 25%.	Precision outside of control limits for sediment is not uncommon in field duplicate samples due to sample heterogeneity. Data for the individual congeners was flagged by the QA officer; no further corrective action was required.
Field Duplicate SJ060925-40	The RPD for PCB 138 (28%), and PCB 153 (41%) exceeded the precision control limit of 25%.	Precision outside of control limits for sediment is not uncommon in field duplicate samples due to sample heterogeneity. The total PCB RPD was within project limits at 12%. Data was flagged by the QA officer; no further corrective action was required.

QC Type / Associated Sample	QC Issue	Analysis
Field Duplicate SJ060925-48	The RPD for PCB 110 (34%) and Total PCBs (57%) exceeded the precision control limit of 25%.	Precision outside of control limits for sediment is not uncommon in field duplicate samples due to sample heterogeneity. Data for PCB 110 was flagged by the QA officer; no further corrective action was required.
Matrix Spike SJ061125-54	The PR of the MS slightly exceeded the lab limits for PCB 101 (119%) and PCB 132 (122%).	These results only slightly exceeded the laboratory limits. Additionally, all but one sample result was non-detect, indicating that any potential high bias was not seen in the sample results. Data was flagged by the QA officer; no further corrective action was required.
Matrix Spike/ Matrix Spike Duplicate SJ061625-62	PRs of the MS and MSD were outside of lab control limits for PCB 101 (118% and 116%).	These results only slightly exceeded the laboratory limits. Additionally, all but one sample result was non-detect, indicating that any potential high bias was not seen in the sample results. Data was flagged by the QA officer; no further corrective action was required.
Field Duplicate MV061225-04	The RPD for PCB 60 (30%) and PCB 138 (65%) exceeded the precision control limit of 25%.	Precision outside of control limits for sediment is not uncommon in field duplicate samples due to sample heterogeneity. The total PCB RPD was within project limits at 0.4%. Data for the individual congeners was flagged by the QA officer; no further corrective action was required.
<b>RWL Monitoring – PCBs Congeners</b>		
Surrogate 205SAR005	The PR of PCB 155-13C12 (IsoDilAnalog) was 37.5% which was slightly below the lab lower control limit (40-145%).	The PR slightly exceeded the lower control limit. Data was flagged by the QA officer; no further corrective action was required.

Notes:

- CCV = continuing calibration verification
- ICV = initial calibration verification
- MS = matrix spike
- MSD = matrix spike duplicate
- PCB = polychlorinated biphenyl
- PR = percent recovery
- RPD = relative percent difference

## 2.2. SCVURPPP Water Year 2025 Results

In compliance with Provision C.8.f of MRP 3.0, the Program conducted POC monitoring in WY 2025 for PCBs and mercury. The MRP-required yearly minimum number of eight samples was met for all POCs with this requirement (i.e., PCBs and mercury).

During WY 2025, the Program collected urban sediment and stormwater samples from the municipal separate storm sewer system (MS4). The Program also collected receiving water samples and influent and treated effluent samples from a LID facility. The sections below present the data results of POC monitoring conducted by the Program and third parties in WY 2025, organized by the MQ addressed. Note, in WY 2025, there was no monitoring conducted by SPoT for mercury or PCBs in the Santa Clara Valley (i.e., at the Coyote Creek or Guadalupe River stations). While mercury hasn't been monitored by SPoT for several years due to programmatic needs and current funding, it is anticipated that the next PCB sample collection and analysis by SPoT will be in 2028 (Khan 2025).

### 2.2.1. Management Question 1: Source Identification

As in previous years, one of the primary goals of PCBs and mercury monitoring conducted by SCVURPPP in WY 2025 was to inform identification of source areas where control measures could be implemented to comply with MRP requirements for load reductions of PCBs and mercury. In WY 2025, individual and composite sediment samples (n=76) were collected from streets, gutters, storm drain inlets, other MS4 structures (i.e., MS4 sediment samples) and from on-site at private properties (i.e., on-site sediment samples) to inform MQ #1 (Source Area Identification). Sediment samples were analyzed for PCB congeners (EPA method 8082A), total mercury (EPA method 7471B), and total solids<sup>4</sup> (EPA Method 160.3 Modified) at ALS Group USA, Corp. of Kelso, Washington.

Source identification sampling locations were identified by evaluating several types of data, including municipal storm drain infrastructure data showing pipelines and access points (e.g., manholes, outfalls, pump stations), catchment areas delineated from municipal storm drain data, land uses in the contributing area, receiving water characteristics, and logistical/safety considerations (SCVURPPP 2015). In general, a sediment sample is considered highly elevated if it has a PCBs concentration equal to or greater than 1.0 mg/kg, and moderately elevated if it has a concentration from 0.2 to less than 1.0 mg/kg. Similarly for mercury, a sediment sample is considered highly elevated if it is equal to or greater than 1.0 mg/kg, and moderately elevated if it has a concentration from 0.3 to less than 1.0 mg/kg. These thresholds are used by the BAMSC agencies as approximate benchmarks for identifying areas that should be considered for future investigation and/or for management actions. For both PCBs and mercury, concentrations equal to or greater than 1 mg/kg collected on-site are considered confirmation of a high source property, while concentrations between 0.2 mg/kg (0.3 mg/kg for mercury) and less than 1 mg/kg are considered confirmation of a moderate source property.

Table 2.3 presents the PCBs and mercury concentrations measured in the MS4 and on-site sediment samples collected by SCVURPPP in WY 2025. Concentrations of total PCBs (sum of “RMP 40” congeners<sup>5</sup> calculated using ½ method detection limit (MDL) for censored, i.e., non-detect congeners) ranged from 0.003 to 4.96 mg/kg. Concentrations of total mercury ranged from 0.03 to 1.37 mg/kg. Two on-site samples (SJ060425-18 and SJ060425-19) had moderately elevated PCBs concentrations and two on-site samples (SJ060225-04 and SJ060225-05) had highly elevated PCBs concentrations. One MS4 sediment sample and three on-site sediment samples had moderately elevated total mercury concentrations (SJ060225-05, SJ060325-11, SJ060425-18, and SJ060625-25) and one on-site sediment sample had a highly elevated total mercury concentration (SJ060425-19).

Additional analysis of PCBs and mercury data within the context of other locally collected data to identify source areas and potential control measures will be presented in the Mercury and PCBs Control Measures Report V.4.0, which will be submitted with the Program’s Annual Report on September 30, 2026.

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<sup>4</sup> Samples were analyzed for total solids so that dry weight (dw) concentrations could be calculated.

<sup>5</sup> The RMP-40 PCB congeners include: PCB-8, PCB-18, PCB-28, PCB-31, PCB-33, PCB-44, PCB-49, PCB-52, PCB-56, PCB-60, PCB-66, PCB-70, PCB-74, PCB-87, PCB-95, PCB-97, PCB-99, PCB-101, PCB-105, PCB-110, PCB-118, PCB-128, PCB-132, PCB-138, PCB-141, PCB-149, PCB-151, PCB-153, PCB-156, PCB-158, PCB-170, PCB-174, PCB-177, PCB-180, PCB-183, PCB-187, PCB-194, PCB-195, PCB-201, PCB-203.

Table 2.3. PCBs and mercury concentrations measured in urban sediment during WY 2025 in the Santa Clara Valley to inform Management Question #1 (Source Identification).

Permittee	Sample ID	Sample Date	Sample Location Type	Public ROW / On-site <sup>a</sup>	Latitude	Longitude	Total PCBs <sup>b</sup>	Total Mercury
							(mg/kg-dw) <sup>c</sup>	
<b>SCVURPPP</b>								
San Jose	SJ060225-01	06/02/2025	Other	On-site	37.311157	-121.870851	0.01	0.09
San Jose	SJ060225-03	06/02/2025	Street/curb	On-site	37.311684	-121.86961	0.06	0.18
San Jose	SJ060225-04	06/02/2025	Drop Inlet/Catch Basin	On-site	37.310964	-121.868869	<b>4.96</b>	0.15
San Jose	SJ060225-05	06/02/2025	Other	On-site	37.30988	-121.870398	<b>4.19</b>	<b>0.67</b>
San Jose	SJ060225-06	06/02/2025	Manhole Vault	On-site	37.319148	-121.870656	0.02	0.12
San Jose	SJ060225-07	06/02/2025	Street/curb	On-site	37.319487	-121.87199	0.01	0.10
San Jose	SJ060225-08	06/02/2025	Other	On-site	37.347322	-121.923667	0.04	0.16
San Jose	SJ060225-09	06/02/2025	Other	On-site	37.346452	-121.922223	0.14	0.12
San Jose	SJ060325-10	06/03/2025	Other	On-site	37.382881	-121.92176	0.01	0.11
San Jose	SJ060325-11	06/03/2025	Other	On-site	37.38411	-121.916545	0.01	<b>0.37</b>
San Jose	SJ060325-13	06/03/2025	Street/curb	On-site	37.390475	-121.918631	0.004	0.05
San Jose	SJ060325-14	06/03/2025	Street/curb	On-site	37.391535	-121.917518	0.003	0.08
San Jose	SJ060325-15	06/03/2025	Other	On-site	37.368272	-121.882189	0.01	0.06
San Jose	SJ060325-16	06/03/2025	Other	On-site	37.369439	-121.884855	0.01	0.07
San Jose	SJ060425-18	06/04/2025	Street/curb	On-site	37.366704	-121.882516	<b>0.44</b>	<b>0.37</b>
San Jose	SJ060425-19	06/04/2025	Drop Inlet/Catch Basin	On-site	37.36751	-121.884205	<b>0.58</b>	<b>1.37</b>
San Jose	SJ060425-20	06/04/2025	Street/curb	On-site	37.366531	-121.883346	0.14	0.16
San Jose	SJ060425-21	06/04/2025	Other	On-site	37.366642	-121.885129	0.02	0.15
San Jose	SJ060425-22	06/04/2025	Drop Inlet/Catch Basin	On-site	37.311157	-121.869984	0.01	0.06
San Jose	SJ060625-23	06/06/2025	Drop Inlet/Catch Basin	Public ROW	37.237622	-121.787496	0.01	0.07
San Jose	SJ060625-24	06/06/2025	Street/curb	Public ROW	37.239608	-121.776409	0.01	0.09
San Jose	SJ060625-25	06/06/2025	Street/curb	Public ROW	37.240321	-121.777583	0.01	<b>0.53</b>
San Jose	SJ060625-26	06/06/2025	Street/curb	Public ROW	37.252093	-121.796873	0.02	0.09
San Jose	SJ060625-27	06/06/2025	Street/curb	Public ROW	37.233939	-121.766123	0.03	0.17
San Jose	SJ060625-28	06/06/2025	Drop Inlet/Catch Basin	Public ROW	37.329631	-121.858007	0.01	0.03
San Jose	SJ060625-30	06/06/2025	Drop Inlet/Catch Basin	Public ROW	37.328208	-121.861662	0.05	0.19
San Jose	SJ060925-31	06/09/2025	Drop Inlet/Catch Basin	Public ROW	37.335068	-121.856252	0.05	0.06
San Jose	SJ060925-33	06/09/2025	Drop Inlet/Catch Basin	Public ROW	37.334817	-121.851878	0.01	0.17

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Permittee	Sample ID	Sample Date	Sample Location Type	Public ROW / On-site <sup>a</sup>	Latitude	Longitude	Total PCBs <sup>b</sup>	Total Mercury
							(mg/kg-dw) <sup>c</sup>	
San Jose	SJ060925-34	06/09/2025	Drop Inlet/Catch Basin	Public ROW	37.334571	-121.851761	0.03	0.29
San Jose	SJ060925-35	06/09/2025	Street/curb	Public ROW	37.3256	-121.878477	0.01	0.18
San Jose	SJ060925-36	06/09/2025	Drop Inlet/Catch Basin	Public ROW	37.32508	-121.879321	0.02	0.18
San Jose	SJ060925-37	06/09/2025	Street/curb	Public ROW	37.324159	-121.877096	0.01	0.25
San Jose	SJ060925-38	06/09/2025	Drop Inlet/Catch Basin	Public ROW	37.32463	-121.876389	0.16	0.26
San Jose	SJ060925-39	06/09/2025	Street/curb	Public ROW	37.321279	-121.874819	0.01	0.11
San Jose	SJ060925-40	06/09/2025	Street/curb	Public ROW	37.317776	-121.871517	0.02	0.08
San Jose	SJ061025-42	06/10/2025	Street/curb	Public ROW	37.329157	-121.900112	0.02	0.10
San Jose	SJ061025-43	06/10/2025	Drop Inlet/Catch Basin	Public ROW	37.329111	-121.901597	0.02	0.07
San Jose	SJ061025-44	06/10/2025	Drop Inlet/Catch Basin	Public ROW	37.328128	-121.901047	0.02	0.18
San Jose	SJ061025-45	06/10/2025	Drop Inlet/Catch Basin	Public ROW	37.326541	-121.901178	0.03	0.08
San Jose	SJ061025-46	06/10/2025	Street/curb	Public ROW	37.351165	-121.908305	0.005	0.27
San Jose	SJ061025-47	06/10/2025	Drop Inlet/Catch Basin	Public ROW	37.354704	-121.905598	0.02	0.13
San Jose	SJ061025-48	06/10/2025	Drop Inlet/Catch Basin	Public ROW	37.362844	-121.885327	0.02	0.08
San Jose	SJ061025-50	06/10/2025	Drop Inlet/Catch Basin	Public ROW	37.363758	-121.885534	0.01	0.05
San Jose	SJ061025-51	06/10/2025	Drop Inlet/Catch Basin	Public ROW	37.369597	-121.892504	0.005	0.03
San Jose	SJ061025-52	06/10/2025	Drop Inlet/Catch Basin	Public ROW	37.38887	-121.908269	0.01	0.08
San Jose	SJ061025-53	06/10/2025	Drop Inlet/Catch Basin	Public ROW	37.390724	-121.906794	0.01	0.09
San Jose	SJ061125-54	06/11/2025	Manhole Vault	Public ROW	37.394523	-121.90909	0.01	0.06
San Jose	SJ061125-55	06/11/2025	Manhole Vault	Public ROW	37.393871	-121.908446	0.03	0.06
San Jose	SJ061125-56	06/11/2025	Manhole Vault	Public ROW	37.395611	-121.910323	0.01	0.07
San Jose	SJ061125-57	06/11/2025	Street/curb	Public ROW	37.395906	-121.910633	0.01	0.04
San Jose	SJ061125-58	06/11/2025	Street/curb	Public ROW	37.396945	-121.911661	0.01	0.07
San Jose	SJ061125-59	06/11/2025	Street/curb	Public ROW	37.402865	-121.886813	0.03	0.03
San Jose	SJ061125-60	06/11/2025	Street/curb	Public ROW	37.350895	-121.92338	0.03	0.06
San Jose	SJ061225-61	06/12/2025	Street/curb	Public ROW	37.417927	-121.97485	0.02	0.07
San Jose	SJ061625-62	06/16/2025	Street/curb	Public ROW	37.341315	-121.863412	0.06	0.12
Mountain View	MV061225-01	06/12/2025	Street/curb	Public ROW	37.428738	-122.09987	0.03	0.06
Mountain View	MV061225-02	06/12/2025	Drop Inlet/Catch Basin	Public ROW	37.4084	-122.07139	0.05	0.10
Mountain View	MV061225-03	06/12/2025	Street/curb	Public ROW	37.382523	-122.06862	0.004	0.04
Mountain View	MV061224-04	06/12/2025	Street/curb	Public ROW	37.381326	-122.06934	0.01	0.05

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Permittee	Sample ID	Sample Date	Sample Location Type	Public ROW / On-site <sup>a</sup>	Latitude	Longitude	Total PCBs <sup>b</sup>	Total Mercury
							(mg/kg-dw) <sup>c</sup>	
Mountain View	MV061225-05	06/12/2025	Street/curb	Public ROW	37.381498	-122.06971	0.01	0.04
Mountain View	MV061225-07	06/12/2025	Street/curb	Public ROW	37.381567	-122.071756	0.01	0.04
Mountain View	MV061625-08	06/16/2025	Other	Public ROW	37.402409	-122.096369	0.11	0.12
Mountain View	MV061625-09	06/16/2025	Other	Public ROW	37.410212	-122.111478	0.01	0.09
Mountain View	MV061625-10	06/16/2025	Other	Public ROW	37.390167	-122.065553	0.01	0.07
Mountain View	MV061625-11	06/16/2025	Other	Public ROW	37.388807	-122.061314	0.01	0.10
Santa Clara	SC061625-01	06/16/2025	Street/curb	Public ROW	37.376325	-121.988034	0.004	0.15
Santa Clara	SC061625-02	06/16/2025	Street/curb	Public ROW	37.380425	-121.979155	0.01	0.05
Santa Clara	SC061725-03	06/17/2025	Street/curb	Public ROW	37.356212	-121.946717	0.02	0.12
Santa Clara	SC061725-04	06/17/2025	Street/curb	Public ROW	37.360066	-121.949669	0.10	0.06
Santa Clara	SC061725-05	06/17/2025	Street/curb	Public ROW	37.3641	-121.949768	0.01	0.21
Santa Clara	SC061725-06	06/17/2025	Street/curb	Public ROW	37.362612	-121.952875	0.07	0.08
Santa Clara	SC061725-07	06/17/2025	Street/curb	Public ROW	37.365036	-121.955292	0.02	0.16
Santa Clara	SC061725-08	06/17/2025	Street/curb	Public ROW	37.365031	-121.954483	0.03	0.10
Santa Clara	SC061725-09	06/17/2025	Street/curb	Public ROW	37.365036	-121.955608	0.04	0.06
Santa Clara	SC061725-10	06/17/2025	Street/curb	Public ROW	37.366187	-121.954819	0.01	0.08
Santa Clara	SC061725-11	06/17/2025	Street/curb	Public ROW	37.364892	-121.952694	0.01	0.28

Notes

**Bolded Values** indicate an exceedance of 0.2 mg/kg for total PCBs or an exceedance of 0.3 mg/kg for mercury.

<sup>a</sup> On-site samples were collected on private properties.

<sup>b</sup> Total PCBs in source investigation samples are calculated as sum of RMP 40 congeners with non-detects (NDs) assigned a value of ½ the method detection limit (MDL).

<sup>c</sup> Samples were analyzed for total solids so that dry weight (dw) concentrations could be calculated.

**2.2.2. Management Question 2: Contributions to Bay Impairment**

In WY 2025, the Program did not collect any samples to address POC Monitoring MQ #2 (Contributions to Bay Impairment). The minimum number of eight samples required to address this information need was satisfied in WY 2023.

**2.2.3. Management Question 3: Management Action Effectiveness**

In WY 2025, the Program did not collect any samples to address POC Monitoring MQ #3 (Management Action Effectiveness). The minimum number of eight samples required to address this information need was satisfied in WY 2024. In compliance with the LID Monitoring Plan and Provision C.8.h.v, the entire LID dataset is presented and evaluated in the LID Integrated Monitoring Report, which is submitted as Part A of the WYs 2020 - 2025 IMR.

**2.2.4. Management Question 4: Loads and Status**

Four stormwater samples analyzed for PCBs and five stormwater samples analyzed for mercury were collected by the Program in WY 2025 to address POC Monitoring MQ #4 (Loads and Status). Analytical results are shown in Table 2.4. The samples were all collected from the treated effluent of the TCM-6 LID facility. The method in which these samples were collected (i.e., a flow-weighted composite collected according to the LID monitoring plan and QAPP (SCVURPPP 2024b, BAMSC 2025a) approximates an event mean concentration (EMC) for the sampled storm event. PCB congeners (EPA method 1668C) were analyzed at Enthalpy and total mercury (EPA method 1631E) was analyzed at Caltest. Total PCBs concentrations measured ranged from 0.17 to 0.41 ng/L. Total mercury concentrations measured ranged from 3.5 to 6.1 ng/L. These data show that PCBs concentrations are well below screening thresholds for PCBs in stormwater established by the BAMSC agencies to indicate proximity to potential source areas. These data could also be used to help support the RMP’s Watershed Dynamic Model (WDM) which is in development. Additional loading calculations are provided in Section 4.1.2 and 4.2.2.

**Table 2.4. PCBs and mercury samples collected during WY 2025 in Santa Clara Valley to inform Management Question #4 (Loads & Status).**

Permittee	Sample ID	Sample Date	Sample Location Type	Latitude	Longitude	Total PCBs <sup>a</sup>	Total Mercury
						ng/L	
<b>SCVURPPP</b>							
San Jose	TCM-6 Effluent	11/11/2024	Bioretention Effluent	37.42423	-121.96960	0.41	9.5
San Jose	TCM-6 Effluent	12/12/2024	Bioretention Effluent	37.42423	-121.96960	0.20	3.9
San Jose	TCM-6 Effluent	12/14/2024	Bioretention Effluent	37.42423	-121.96960	0.38	6.1
San Jose	TCM-6 Effluent	02/14/2025	Bioretention Effluent	37.42423	-121.96960	0.17	3.5
San Jose	TCM-6 Effluent	03/12/2025	Bioretention Effluent	37.42423	-121.96960	--	4.5

Notes:

-- Not measured

<sup>a</sup> Total PCBs in LID samples are calculated as sum of RMP 40 congeners with non-detects (NDs) assigned a value of zero.

The minimum number of five samples required to address the information need for MQ #4 (Loads and Status) pertaining to copper was met during the WY 2024 monitoring period. The samples were collected from the treated effluent of the TCM-6 LID facility in the City of San José. The collected copper data is presented and evaluated in the LID Integrated Monitoring Report, which is submitted as Part A of the WYs 2020 - 2025 IMR.

**2.2.5. Management Question 5: Trends**

Two PCBs and mercury water samples were collected by SCVURPPP to address POC Monitoring MQ #5 (Trends). The first sample was collected at station 205SAR005 on Saratoga Creek in the City of Santa Clara. Because this station has been used historically, data collected by SCVURPPP from this station could be compared with historical data (as well as any future data) to see if there are any changes to POC concentrations over time (see **Appendix A** for a regional assessment of the data collected by SCVURPPP at station 205SAR005). This sample is also being used to address MQ #6 (Receiving Water Limitations).

The second sample was collected at a catch basin (84-CB3) immediately upstream of the Rambo Storm Pump Station (049STA050) that discharges to the San Tomas Aquino Creek in the City of Santa Clara. This sample was collected as a flow-weighted composite during a storm event that occurred on March 12, 2025. This sample was taken as a follow-up to sampling conducted within this catchment during WY 2015. This location along with other catchments in which trend samples were taken, could be revisited in the future to assess changes in concentration over time and any trends associated with actions taken in old industrial areas within the respective catchment. Both samples were analyzed for PCB congeners (EPA method 1668C) at Enthalpy and for total mercury (EPA method 1631E) at Caltest. Analytical results are shown in Table 2.5. Total PCBs concentrations ranged from 0.11 to 4.78 ng/L. Total mercury concentrations were measured as 20 ng/L in both samples.

Third party samples collected by the RMP in WY 2025 also contributed to POC Monitoring MQ #5 (Trends). The RMP collected two stormwater samples that were analyzed for PCBs and mercury: one from the Guadalupe River at station GuadalupeR\_Hwy101 to extend an existing time series dataset at that station, and one from the Sunnyvale East Channel. Data collected by the RMP at these stations were not yet available at the time of this report’s development but will be included in future POC Monitoring Reports once available.

**Table 2.5. PCB and mercury sample concentrations during WY 2025 in Santa Clara Valley to address Management Question #5 (Trends).**

Permittee	Sample ID / Station ID	Sample Date	Sample Location Type	Latitude	Longitude	Total PCBs <sup>a</sup>	Total Mercury
						ng/L	ng/L
<b>SCVURPPP</b>							
Santa Clara	205SAR005	02/05/2025	Receiving Water	37.35973	-121.97336	0.11	20
Santa Clara	049STA050	03/12/2025	Drop Inlet/Catch Basin	37.39638	-121.96754	4.78	20
<b>RMP</b>							
San Jose	GuadalupeR_Hwy101 <sup>b</sup>	02/13/2025	Public ROW	37.373555	-121.93270	NA	NA
Sunnyvale	SunnyvaleEastCh_Ahwanee <sup>b</sup>	02/04/2025	Public ROW	37.394602	-122.010459	NA	NA

Notes

NA = Data not yet available at the time of this report’s development.

<sup>a</sup> Total PCBs sums are calculated using a value of ½ MDL for all non-detect (ND) congeners for SCVURPPP samples, and a value of zero for all ND congeners for RMP samples.

**2.2.6. Management Question 6: Receiving Water Limitations Monitoring**

One wet season sample was collected by SCVURPPP in WY 2025 in coordination with other members of the BAMSC RMC to address POC Monitoring MQ #6 (Receiving Water Limitations Monitoring). The RWL sample was collected from Saratoga Creek (Station 205SAR005) as described in the RWL Monitoring Plan that was included in SCVURPPP’s WY 2022 UCMR

(SCVURPPP 2023) and supplemented via the Regional Water Board Executive Officer conditional approval process.

The RWL sample was analyzed for PCB congeners (EPA method 1668C) at Enthlapy, for PAHs (EPA method 625.1) at Physis Environmental Laboratories, Inc. of Anaheim, California and for the following at Caltest:

- Total mercury (EPA 1631E);
- Dissolved copper, lead, and zinc (EPA 200.8);
- Hardness (SM 2340C);
- Suspended sediments (ASTM D3977-97);
- Nitrate (EPA 300.0);
- Total Kjeldahl nitrogen, ammonia, nitrite, and phosphorus (SM 4500); and
- *E. coli* (SM 9223B).

Total nitrogen was calculated by summing nitrite, nitrate, and total Kjeldahl nitrogen. Unionized ammonia was calculated using ammonia, pH, and temperature (Emerson, et. al. 1975). Constituent concentrations from the RWL sample during WY 2025 are listed in Table 2.6.

**Table 2.6. Analyte concentrations measured in WY 2025 at the Saratoga Creek RWL monitoring station to address Management Question #6 (Receiving Water Limitations), Santa Clara Valley, CA.**

Analyte	Units	SCVURPPP (205SAR005)
		02/05/2025
E. coli	MPN/100mL	579
Copper, Dissolved	ug/L	1.4
Lead, Dissolved	ug/L	0.08 J
Zinc, Dissolved	ug/L	0.9 J
Hardness	mg/L	112
Total Mercury	ng/L	20
Total Kjeldahl Nitrogen (TKN)	mg/L	1.4
Nitrate (as N)	mg/L	0.51
Nitrite (as N)	mg/L	0.003 J
Total Nitrogen (TKN+NO <sub>3</sub> +NO <sub>2</sub> ) <sup>a</sup>	mg/L	1.9
Unionized Ammonia (as N) Emerson <sup>b</sup>	mg/L	0.004
Ammonia (as N)	mg/L	0.2
Field pH	units	8.1
Field Specific Conductance	uS/cm	278
Field Temperature	°C	8.5
Total Phosphorus	mg/L	0.22
Total PCBs (RMP 40) (ND=0) <sup>c,d</sup>	ng/L	0.11
PAHs (total) (ND=0) <sup>c</sup>	ug/L	0.056

Notes:

J-flagged values are estimates when the analytical result is above the method detection limit (MDL), but below the reporting limit (RL).

Shaded rows indicate the value is calculated.

<sup>a</sup> Total Nitrogen is the sum of TKN, nitrate, and nitrite.

<sup>b</sup> Unionized Ammonia calculated using the Emerson (1975) equation which uses pH and temperature.

<sup>c</sup> Total PCBs (RMP 40) and PAHs calculated using some values that were below the detection limit (i.e., ND) and which were replaced with zero. Individual PCB congener and PAH data are available in CEDEN.

In compliance with the RWL Monitoring Plan (BAMSC 2023) and Provision C.8.h.iv, the entire RWL dataset is evaluated in the Regional RWL Assessment Report that is included as **Appendix A**.

### 2.3. Emerging Contaminants Monitoring

SCVURPPP Co-permittees are satisfying their MRP 3.0 monitoring requirements for emerging contaminants via additional financial contributions to the RMP. Stormwater monitoring for emerging contaminants is conducted through the RMP's ECWG. The ECWG coordinates with the SPLWG to sample creeks for CECs as part of the "CEC Stormwater Loads Modeling Exploration" project and to support development of the "Stormwater CECs Strategy." The RMP monitoring projects and special studies of emerging contaminants that have been ongoing across the region in WY 2025 are summarized in section 4.3.

### 2.4. WY 2025 Conclusions and Recommendations for WY 2026

In WY 2025, SCVURPPP and third parties collected and analyzed POC samples in the Santa Clara Valley in compliance with provision C.8.f of the MRP. The MRP yearly minimum requirements were met for all relevant monitoring parameters. In addition, SCVURPPP continued to work with the RMP's SPLWG and ECWG to supplement WY 2025 monitoring accomplishments.

**Conclusions** from WY 2025 POC monitoring included the following:

- SCVURPPP collected and analyzed a total of 83 sediment, stormwater runoff, and/or receiving water samples:<sup>6</sup>
  - Seventy-six urban sediment samples collected from the MS4 or on private properties were analyzed for PCBs and mercury to inform identification of source areas where control measures could be implemented, i.e., MQ #1 (Source Area Identification). Sediment concentrations of total PCBs (i.e., sum of the RMP 40 congeners) ranged from 0.003 to 4.96 mg/kg and sediment concentrations of mercury ranged from 0.03 to 1.37 mg/kg.
  - Four flow-weighted composite stormwater runoff samples collected from LID facilities were analyzed for PCBs and five samples were collected and analyzed for mercury to address MQ #4 (Loads & Status). Data presentation, discussion of data quality and interpretation of these data are provided in the WY 2025 LID Monitoring Report, which is submitted as Part A of this IMR.
  - One flow-weighted composite stormwater sample for PCBs and mercury analyses was collected at a catch basin (84-CB3) immediately upstream of the pump house that discharges to San Tomas Aquino Creek. This sample was used to inform MQ #5 (Trends). Total PCBs concentrations for this sample were measured at 4.78 ng/L. Total mercury concentration was measured at 20 ng/L.
  - One receiving water grab sample for PCBs and mercury analysis was collected from Saratoga Creek to inform MQ #5 (Trends). Total PCBs concentrations for the wet season event were measured at 0.11 ng/L. Total mercury concentration

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<sup>6</sup> The accounting above totals greater than 83 samples as individual samples can address more than one POC.

was measured at 20 ng/L. This sample was also analyzed for a broad suite of constituents to inform MQ #6 (Receiving Water Limitations). Discussion of data quality, and interpretation/evaluation of these data can be viewed in the Regional RWL Assessment Report (**Appendix A**).

- Two flow-weighted composite receiving water samples were collected by the RMP in the Santa Clara Valley for PCBs and mercury analysis informing MQ #5 (Trends).
- SCVURPPP continued to provide augmented funding (in collaboration with RMC partners) towards the RMP's Emerging Contaminants Monitoring Strategy.
- In accordance with MRP requirements, a comprehensive QA/QC program was implemented by SCVURPPP covering all aspects of POC monitoring during WY 2025. Overall, the results of the QA/QC review suggest that the data generated during WY 2025 POC monitoring were of sufficient quality for the purposes of this program. While some data were flagged in the project database based on the MQOs and DQOs identified in the QAPPs, none of the data were rejected.

**Recommendations** for WY 2026 POC monitoring include the following:

- SCVURPPP will continue to collect grab and composite urban sediment samples in the MS4 and on private properties for PCBs and mercury analysis to address MQ #1 (Source Identification).
- SCVURPPP will continue to collect composite and/or individual stormwater samples in MS4 catchments during storm events for PCBs and mercury analysis to address MQ #4 (Loads and Status) and MQ #5 (Trends).
- SCVURPPP will continue to work with the SPoT Program to address MQ #5 (Trends). The SPoT Monitoring Program conducts annual dry season monitoring (subject to funding constraints) of sediments collected from a statewide network of large rivers to investigate long-term trends in water quality, including two stations in the Santa Clara Valley (Coyote Creek and Guadalupe River). In most years, sediments are analyzed for PCBs, metals, toxicity, pesticides, and organic pollutants.
- SCVURPPP will continue to participate in the RMP's SPLWG and ECWG and will continue to provide augmented financial contributions to support the ECWG and associated stormwater monitoring for emerging contaminants.
- SCVURPPP will work with BAMSC RMC members to leverage funds available through the recently awarded US Environmental Protection Agency (USEPA) San Francisco Bay Geographic Program Grant to address MQs for PCBs in the Santa Clara Valley. The grant provides \$8.0 million in funding to the BAMSC member agencies to support implementation of the San Francisco Bay PCBs TMDL. During WY 2026, SCVURPPP will use their portion of this funding to supplement the Program's PCBs monitoring efforts described above.
- SCVURPPP will continue to comply with all provision C.8.f POC monitoring requirements in the MRP.

### **3. POC MONITORING ACCOMPLISHMENTS DURING MRP 3.0 THROUGH WY 2025**

The total number of samples collected for each POC during MRP 3.0 to date, the agency conducting the monitoring, and the POC Monitoring MQs addressed are listed in Table 3.1 (PCBs), Table 3.2 (mercury), and Table 3.3 (copper). These tables also show the progress to date to achieve the minimum number of samples required for each MQ over the permit term. The minimum number of PCBs and mercury samples required to address MQs #1 (Source Identification), #2 (Contributions to Bay Impairment), #3 (Management Action Effectiveness), and #6 (RWL Monitoring) has been achieved. The minimum number of copper samples required to address MQ #4 (Loads and Status) has also been achieved. Progress has also been made towards meeting the PCBs and mercury sampling requirements for MQ #4 (Loads and Status) and MQ #5 (Trends).

**Table 3.1. PCBs monitoring accomplishments by SCVURPPP and third parties during MRP 3.0, WY 2022 through WY 2025 in Santa Clara Valley, CA.**

Organization	Matrix	Total Number of PCBs Samples	Management Question <sup>a</sup>					Comments
			1. Source Identification	2. Contributions to Bay Impairment	3. Management Action Effectiveness	4. Loads and Status	5. Trends	
WY 2025								
SCVURPPP	Urban Sediment	76	76	--	--	--	--	Urban sediment collected from MS4 infrastructure or on private properties.
	MS4 Stormwater	5	--	--	--	4	1	Stormwater outfalls and/or manhole immediately upstream of outfalls, LID influent, and/or treated effluent.
	Receiving Water	1	--	--	--	--	1	RWL monitoring samples from Saratoga Creek.
RMP	Channel / Receiving Water	2	--	--	--	--	2	Long term monitoring samples from the Sunnyvale East Channel and Guadalupe River.
WY 2024 <sup>b</sup>								
SCVURPPP	Urban Sediment	43	43	--	--	--	--	Urban sediment collected from the MS4.
	MS4 Stormwater	12	--	--	10	2	--	Stormwater outfalls and/or manhole immediately upstream of outfalls, LID influent, and/or treated effluent.
	Receiving Water	4	--	--	--	--	4	RWL monitoring samples from Saratoga Creek.
RMP	Receiving Water	2	--	--	--	--	2	Long term monitoring samples from Guadalupe River.
WY 2023 <sup>b</sup>								
SCVURPPP	Urban Sediment	18	10	8	--	--	--	Urban sediment collected from MS4 infrastructure.
	MS4 Stormwater	5	--	--	--	5	--	Stormwater outfalls and/or manhole immediately upstream of outfalls
SPoT	Waterbody Sediment	2	--	--	--	--	2	Long term monitoring samples from Guadalupe River and Coyote Creek
RMP	Receiving Water	2	--	--	--	--	2	Long term monitoring samples from Guadalupe River.
WY 2022 <sup>b</sup>								
SCVURPPP	Sediment	8	8	--	--	--	--	Urban sediment collected from the MS4.
<b>Total PCBs Samples per Management Question in MRP 3.0</b>		--	<b>137</b>	<b>8</b>	<b>10</b>	<b>11</b>	<b>14</b>	
<b>Minimum PCBs Samples per Management Question in MRP 3.0<sup>c</sup></b>		--	<b>8</b>	<b>8</b>	<b>8</b>	<b>16</b>	<b>16</b>	

Notes:

LID = Low Impact Development.

MS4 = Municipal Separate Storm Sewer System

<sup>a</sup> Individual samples can address more than one Management Question simultaneously, up to 25% of the total number of samples.

<sup>b</sup> See the WY 2022, WY 2023, and WY 2024 SCVURPPP UCMR, respectively, for additional details (SCVURPPP 2023, SCVURPPP 2024a, SCVURPPP 2025a).

<sup>c</sup> The MRP minimum number of samples must be met by the end of the five-year permit term (i.e., 2027).

**Table 3.2. Mercury monitoring accomplishments by SCVURPPP and third parties during MRP 3.0, WY 2022 through WY 2025 in Santa Clara Valley, CA.**

Organization	Matrix	Total Number of Mercury Samples	Management Question <sup>a</sup>					Comments
			1. Source Identification	2. Contributions to Bay Impairment	3. Management Action Effectiveness	4. Loads and Status	5. Trends	
WY 2025								
SCVURPPP	Urban Sediment	76	76	--	--	--		Urban sediment collected from MS4 infrastructure.
	MS4 Stormwater	6	--	--	--	5	1	Stormwater outfalls and/or manhole immediately upstream of outfalls, LID influent, and/or treated effluent.
	Receiving Water	1	--	--	--	--	1	RWL monitoring samples from Saratoga Creek.
RMP	Channel / Receiving Water	2	--	--	--	--	2	Long term monitoring samples from the Sunnyvale East Channel and Guadalupe River.
WY 2024								
SCVURPPP	Urban Sediment	43	43	--	--	--	--	Urban sediment collected from the MS4.
	MS4 Stormwater	12	--	--	10	2	--	Stormwater outfalls and/or manhole immediately upstream of outfalls, LID influent, and/or treated effluent.
	Receiving Water	4	--	--	--	--	4	RWL monitoring samples from Saratoga Creek.
RMP	Receiving Water	--	--	--	--	--	2	Long term monitoring samples from Guadalupe River.
WY 2023 <sup>b</sup>								
SCVURPPP	Urban Sediment	18	10	8	--	--	--	Urban sediment collected from MS4 infrastructure.
	MS4 Stormwater	5	--	--	--	5	--	Stormwater outfalls and/or manhole immediately upstream of outfalls
WY 2022 <sup>b</sup>								
SCVURPPP	Sediment	8	8	--	--	--	--	Urban sediment collected from the MS4.
<b>Total Mercury Samples per Management Question in MRP 3.0</b>		--	<b>61</b>	<b>8</b>	<b>10</b>	<b>12</b>	<b>10</b>	
<b>Minimum Mercury Samples per Management Question in MRP 3.0</b>		--	<b>8</b>	<b>8</b>	<b>8</b>	<b>16</b>	<b>16</b>	

Notes:

LID = Low Impact Development.

NA = Not Applicable.

<sup>a</sup> Individual samples can address more than one Management Question simultaneously, up to 25% of the total number of samples.

<sup>b</sup> See the WY 2022, WY 2023, and WY 2024 SCVURPPP UCMR, respectively, for additional details regarding specific samples (SCVURPPP 2023, SCVURPPP 2024a, SCVURPPP 2025a).

<sup>c</sup> The MRP minimum number of samples must be met by the end of the five-year permit term (i.e., 2027).

**Table 3.3. Copper monitoring accomplishments by SCVURPPP and third parties during MRP 3.0, WY 2022 through WY 2025 in Santa Clara Valley, CA.**

Organization	Matrix	Total Number of Copper Samples	Management Question <sup>a</sup>					Comments
			1. Source Identification	2. Contributions to Bay Impairment	3. Management Action Effectiveness	4. Loads and Status	5. Trends	
WY 2024								
SCVURPPP	MS4 Stormwater	5	--	--	--	5	--	Treated LID effluent.
	Receiving Water	4	--	--	--	--	4	RWL monitoring samples from Saratoga Creek.
SPoT	Waterbody Sediment	2	--	--	--	--	2	Long term monitoring samples from Guadalupe River.
<b>Total Copper Samples per Management Question in MRP 3.0</b>		--	--	--	--	<b>5</b>	<b>6</b>	
<b>Minimum Copper Samples per Management Question in MRP 3.0<sup>b</sup></b>		--	--	--	--	<b>5</b>	--	

Notes:

NA = Not Applicable.

LID = Low Impact Development.

MS4 = Municipal Separate Storm Sewer System

<sup>a</sup> Individual samples can address more than one Management Question simultaneously, up to 25% of the total number of samples.

<sup>b</sup> See the WY 2024 SCVURPPP UCMR for additional details regarding specific samples (SCVURPPP 2025a).

<sup>b</sup> The MRP minimum number of samples must be met by the end of the five-year permit term (i.e., 2027).

## 4. ANALYSIS OF WATER YEAR 2020 – WATER YEAR 2025 POC DATA

This section presents an analysis of the POC monitoring results for both sediment and stormwater in Santa Clara Valley that were collected by the Program since the publication of the previous IMR Report (SCVURPPP 2020). POC monitoring data in WYs 2020 and 2021 were collected in compliance with MRP 2.0 Provision C.8.e. POC monitoring data in WY 2022 through WY 2025 were collected in compliance with MRP 3.0 Provisions C.8.f, C.11/12.b, and C.11/12.c. The complete dataset for WY 2020-2025 can be viewed in **Appendix B**.

### 4.1. PCBs Data

During WY 2020 to WY 2025, a total of 165 sediment samples and 13 stormwater samples were collected by SCVURPPP and third parties in the Santa Clara Valley for the purposes of PCBs source investigations, loads and status, and/or trends. A majority of the sediment samples (123) were collected in the public ROW while 42 sediment samples were collected as part of on-site investigations of private properties. All 13 stormwater samples were collected in the public ROW.

Descriptive statistics of all PCBs sample results from WY 2020 through WY 2025 are shown in Table 4.1, including the PCBs sediment and stormwater concentrations, and the calculated stormwater particle ratios<sup>7</sup>. The LOG distribution of total PCBs concentrations in sediment and the calculated stormwater particle ratios can be viewed in Figure 4.1. These PCBs concentrations are generally consistent with the historical range of PCBs data collected over the past 20 years in Santa Clara Valley, and consistent with expected spatial variability. No clear upwards or downward trends over the six years of data were observed. Further, data collected during WY 2020 through WY 2025 confirm that elevated concentrations of PCBs are limited and site-specific rather than widespread.

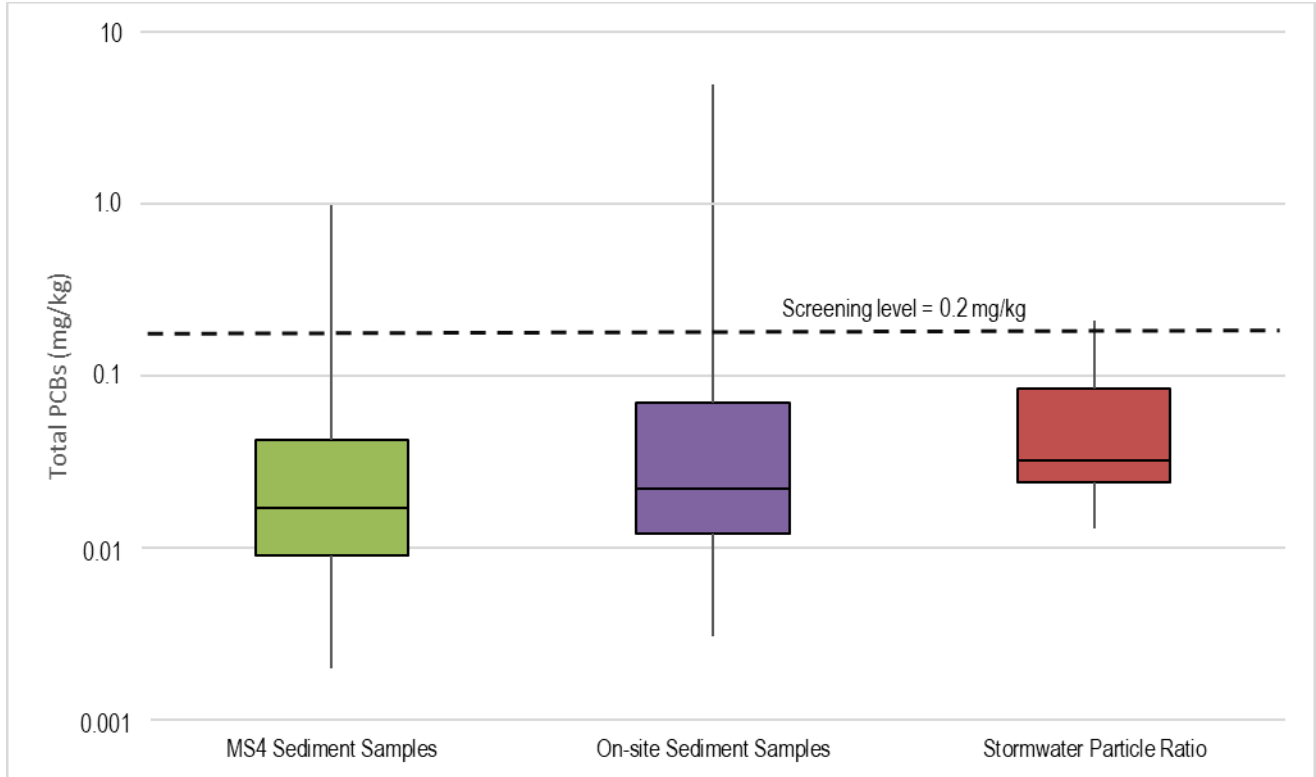
**Table 4.1. Descriptive statistics of Total PCBs concentrations in sediment and stormwater samples collected during WY 2020 to WY 2025 in the Santa Clara Valley, CA.**

Statistic	Total PCBs				Stormwater Suspended Sediment (mg/L)
	Sediment (mg/kg)		Stormwater (ng/L)	Stormwater Particle Ratio (mg/kg) <sup>a</sup>	
	Public ROW Samples	On-site Samples	Public ROW Samples		
Count	123	42	13	13	13
Minimum	0.002	0.003	0.18	0.01	13.9
Quartile 1	0.009	0.012	1.7	0.02	24.3
Median	0.017	0.022	2.4	0.03	80.2
Quartile 3	0.042	0.070	5.7	0.09	139
Maximum	1.01	4.96	54	0.21	264

Notes

<sup>a</sup> Stormwater particle ratios are calculated by dividing the measured pollutant concentration (ng/L) by the measured suspended sediment concentration (mg/L) for a respective sample.

<sup>7</sup> Stormwater particle ratios are calculated by dividing the measured pollutant concentration (ng/L) by the measured suspended sediment concentration (mg/L) for a respective sample.



**Figure 4.1. Distribution of total PCBs in sediment and stormwater particle ratios during WY 2020 – WY 2025 in Santa Clara Valley, CA.**

In general, concentrations of total PCBs in on-site sediment samples are higher than those found in the public ROW samples in the Santa Clara Valley. On-site samples also have a higher rate of both moderate and high concentrations of total PCBs when compared to samples collected from the public ROW as seen in Table 4.2.

**Table 4.2. Rate of low, moderate, and high sample detections for total PCBs during WY 2020 to WY 2025 in Santa Clara Valley, CA.**

Statistic	Total PCBs – Sediment		Total PCBs – Stormwater	Total PCBs – Stormwater Particle Ratio <sup>d</sup>
	Public ROW Samples	On-site Samples	Public ROW Samples	
Rate of Low Samples <sup>a</sup>	93.5%	85.6%	92.3%	92.3%
Rate of Moderate Samples <sup>b</sup>	0.8%	7.2%	--	7.7%
Rate of High Samples <sup>c</sup>	5.7%	7.2%	7.7%	0.0%

Notes

a “Low Samples” for PCBs sediment/particle ratio result < 0.2 mg/kg and stormwater concentrations < 36 ng/L.

b “Moderate Samples” for PCBs sediment/particle ratio result between 0.2 mg/kg and < 1.0 mg/kg.

c “High Samples” for PCBs sediment/particle ratio result ≥ 1 mg/kg and stormwater concentrations ≥ 36 ng/L.

d Stormwater particle ratios are calculated by dividing the total PCBs concentration (ng/L) by the suspended sediment concentration (mg/L) for a respective sample.

#### 4.1.1. PCBs Source Areas

The locations of samples with elevated total PCBs concentrations are shown on Figure 4.2. Samples with PCBs concentrations between 0.2 mg/kg and less than 1 mg/kg in sediment or in the calculated stormwater particle ratio suggest proximity to a moderately elevated source area. Samples with PCBs concentrations or equal to or greater than 1.0 mg/kg suggest proximity to a highly elevated source area. Elevated PCBs samples collected during WY 2020 through WY 2025 were found in the cities of Mountain View and San Jose, including three confirmed moderately PCBs-contributing properties (MPCPs) and four confirmed high PCBs source properties. Additional investigation of the public ROW areas that have elevated PCBs (moderate or high) is currently ongoing. These investigations are focused on identifying additional source properties or locations in the public ROW that will require future controls to reduce PCBs in stormwater.

The Program’s Annual Report, which will be submitted to the Regional Water Board on September 30, 2026, will provide a comprehensive discussion of the moderately and highly elevated PCBs source properties identified to date and follow-up actions at those sites, as well as descriptions of any controls planned or implemented in public ROW areas to address both moderate and high sources of PCBs to the MS4.

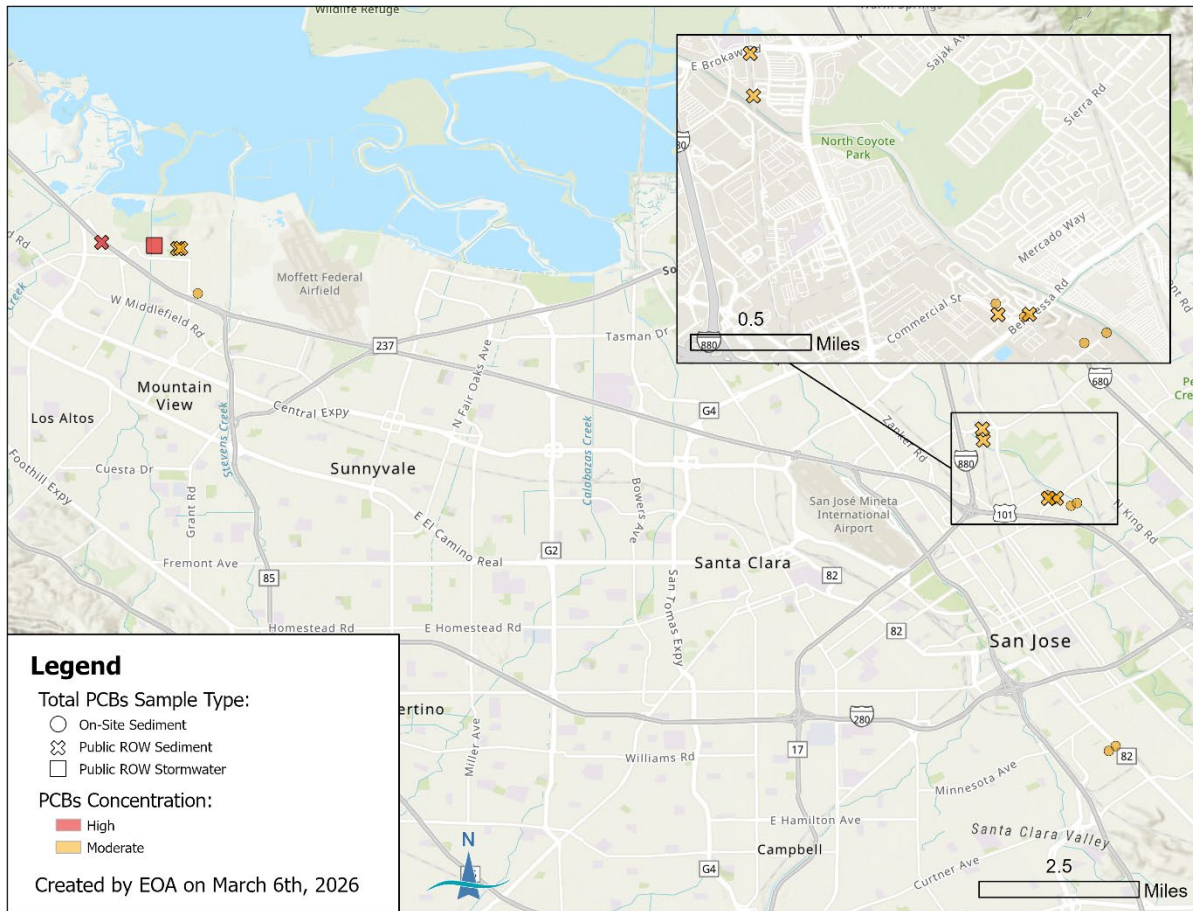


Figure 4.2. Locations of elevated total PCBs concentrations measured in sediment and stormwater samples collected during WY 2020 – 2025 in Santa Clara Valley, CA.

#### 4.1.2. PCBs Stormwater Loads

SCVURPPP performed a simple pollutant mass loading analysis to estimate the catchment-specific storm event PCBs load for each of the thirteen catchments where stormwater samples were collected during WY 2020 – WY 2025. The Simple Method (Schueler, 1987) was applied to estimate the storm event-specific runoff volume for each catchment. The runoff volume was then multiplied by the measured stormwater concentration in the catchment to give the PCBs load from the catchment for the monitored storm event. The Simple Method estimates the runoff volume for an area of interest as a product of the rainfall depth, the fraction of rainfall that produces runoff (assumed to be 0.9), the area of the catchment of interest, and an assumed runoff coefficient. The runoff coefficient for each catchment was estimated based on assumed imperviousness of the land uses within each catchment as detailed in Table 4.3. Rainfall data for each monitored storm event was collected from the San Jose Airport rain gage in the Santa Clara Valley Water District's Alert precipitation gage system<sup>8</sup>.

The estimated catchment-level PCBs load for each monitored storm event is provided in Table 4.3, along with all data inputs and formulas used to calculate the load. The storm event PCBs loads were highly variable, ranging from 0.31 mg/storm to 420 mg/storm. This variability is primarily due to the wide range of catchment sizes (36 – 2,300 acres) and PCBs stormwater concentrations (0.2 – 54 ng/L). Only one of the thirteen stormwater samples collected from a catchment in Mountain View had high PCBs concentrations. However, because this sample was collected from a small catchment (65 acres), the PCBs load during the storm event was relatively low (64 mg/storm). The highest load came from the large 2,300 acres catchment. SCVURPPP is currently investigating the Mountain View catchment that had high stormwater concentrations to identify the PCBs source(s). However, the relatively low stormwater concentrations observed in the Sunnyvale catchment did not warrant further investigation at this time.

The PCBs load estimates in Table 4.3 provide storm-event and catchment specific PCBs loading only. While this information can be used to compare loads across different catchments and for different types of storm events, it does not provide county-level annual loads for direct comparison to TMDL targets. A more in-depth loading analysis is being conducted by the RMP as part of developing the WDM. The WDM will provide robust estimates of annual PCBs loads from the Santa Clara Valley to the Bay that can be used to evaluate trends in the future.

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<sup>8</sup> Available at: <https://valleywateralert.com/>

Table 4.3. Summary of estimated stormwater PCBs loads in catchments where samples were collected during WY 2020 to WY 2025 in Santa Clara Valley, CA.

Permittee	Catchment ID	Sample ID	Storm Date	Precipitation (P) in inches	Runoff Coefficient (Rv)	Impervious Fraction	Stormwater Concentration ng/L	Catchment Area (acres)	Estimated Load (L) mg/storm
Mountain View	017PMC600	017PMC600A	1/16/2020	0.18	0.55	0.55	54	65	64
Mountain View	017SVC500	017SVC500A	1/16/2020	0.16	0.54	0.55	20	209	67
San Jose	051CTC450	051CTC450A	1/16/2020	0.10	0.48	0.48	5.7	244	15
Sunnyvale	034BFL230D	034BFL230D	1/16/2020	0.12	0.55	0.55	3.4	143	5.9
Sunnyvale	SUNWCH_B	SUNWCH_B	1/16/2020	0.12	0.55	0.55	15	2,311	420
Santa Clara	049STA500	049STA500A	12/1/2022	0.43	0.58	0.59	1.6	40	2.9
Santa Clara	049STA600	049STA600A	12/1/2022	0.31	0.55	0.55	1.7	36	2.0
Santa Clara	049STA800	049STA800A	12/1/2022	0.27	0.55	0.55	2.4	246	16
San Jose	066GAC110	066GAC152A	12/3/2022	0.13	0.53	0.53	1.7	276	6.5
San Jose	083LGC525	083LGC525A	12/3/2022	0.30	0.55	0.55	2.1	361	23
Milpitas	036PCL800	036PCL800-1223-SW	12/18/2023	0.08	0.53	0.54	0.30	892	2.1
Milpitas	036PCL810	036PCL810-1223-SW	12/18/2023	0.08	0.54	0.55	0.20	195	0.3
Santa Clara	049STA050	049STA050	3/12/2025	0.14	0.56	0.56	4.8	382	26

Notes

Total PCBs load estimates are calculated using the Simple Method which is governed by the following equation:  $L = [P * P_j * (R_v) / 12] * (C) * (A) * (2.72)$

Load, L = mg of total mercury per storm event

P = rainfall depth (inches) over the estimated storm interval;

P<sub>j</sub> = factor that corrects P for storms that produce no runoff (P<sub>j</sub> = 0.9)

R<sub>v</sub> = runoff coefficient, which expresses the fraction of rainfall which is converted into runoff;  $R_v = 0.05 + 0.9 * I$

I = impervious fraction;

C = flow weighted mean concentration of total mercury in urban runoff (ng/L)

A = Area (acres)

## 4.2. Total Mercury Data

During WY 2020 to WY 2025, a total of 165 sediment samples and 13 stormwater samples were collected by SCVURPPP for the purposes of mercury source investigation, loads and status, and/or trends. A majority of the sediment samples (123) were collected in the public ROW while 42 sediment samples were collected as part of on-site investigations of private properties. All 13 stormwater samples were collected in the public ROW.

Descriptive statistics of all mercury results for sediment and stormwater samples collected during WY 2020 through WY 2025 are shown in Table 4.4. The distribution of sample concentrations for total mercury in sediment and stormwater particle ratios can be viewed in Figure 4.3. These mercury concentrations are generally consistent with the historical range of mercury data collected over the past 20 years in Santa Clara Valley, and consistent with expected spatial variability. No clear upwards or downward trends over the six years of data were observed. Further, data collected during WY 2020 through WY 2025 confirm that elevated concentrations of mercury are limited and site-specific rather than widespread.

**Table 4.4. Descriptive statistics of total mercury concentrations in sediment and stormwater samples collected during WY 2020 to WY 2025 in Santa Clara Valley, CA.**

Statistic	Total Mercury				Stormwater Suspended Sediment (mg/L)
	Sediment (mg/kg)		Stormwater (ng/L)	Stormwater Particle Ratio (mg/kg)	
	Public ROW Samples	On-site Samples	Public ROW Samples		
Count	123	42	13	13	13
Minimum	0.010	0.010	2.1	0.06	13.9
Quartile 1	0.065	0.065	5.0	0.12	24.3
Median	0.091	0.109	8.0	0.15	80.2
Quartile 3	0.148	0.158	21	0.22	139
Maximum	0.67	1.37	44	0.35	264

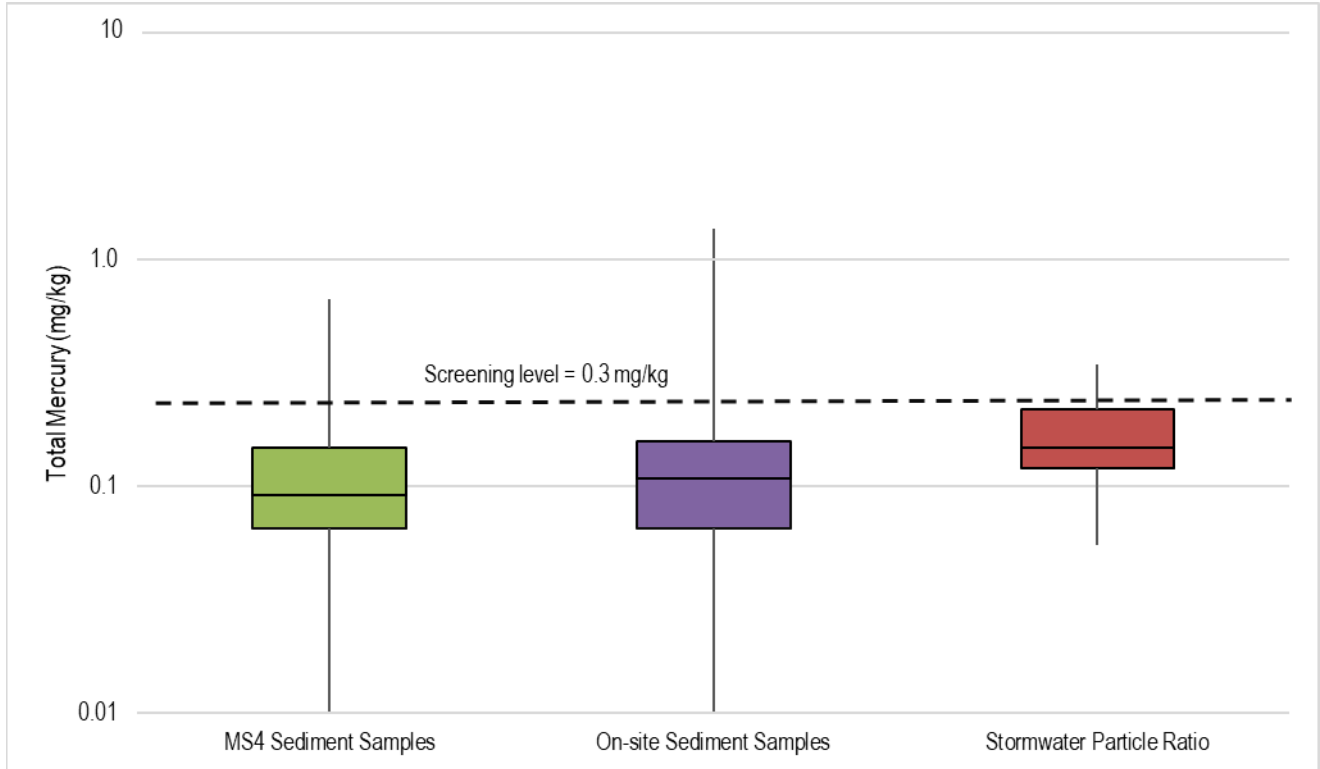


Figure 4.3. Distribution of total mercury concentrations measured in sediment and stormwater samples collected during WY 2020 – WY 2025 in the Santa Clara Valley, CA.

In general, concentrations of total mercury in on-site sediment samples are higher than those found in public ROW samples in the Santa Clara Valley. Like PCBs, on-site samples of mercury also have a higher rate of both moderate and high mercury concentrations when compared to samples collected from the public ROW as seen in Table 4.5.

Table 4.5. Rate of low, moderate, and high sample detections for total mercury during WY 2020 to WY 2025 in the Santa Clara Valley, CA.

Statistic	Total Mercury - Sediment		Total Mercury – Stormwater Particle Ratio
	Public ROW Samples	On-site Samples	Public ROW Samples
Rate of Low Samples <sup>a</sup>	95.9%	85.7%	69.2%
Rate of Moderate Samples <sup>b</sup>	4.1%	11.9%	30.8%
Rate of High Samples <sup>c</sup>	0.0%	2.4%	0.0%

Notes

<sup>a</sup>“Low samples” for total mercury result < 0.3 mg/kg.

<sup>b</sup>“Moderate samples” for total mercury result between 0.3 mg/kg and < 1.0 mg/kg.

<sup>c</sup>“High samples” for total mercury result ≥ 1 mg/kg.

#### 4.2.1. Mercury Source Areas

The locations of samples with elevated total mercury concentrations are shown on Figure 4.4. Samples with mercury concentrations between 0.3 mg/kg and less than 1 mg/kg in sediment or in the calculated stormwater particle ratio suggest proximity to a moderate mercury source area.

Samples with mercury concentrations greater than or equal to 1.0 mg/kg suggest proximity to a high mercury source area. Elevated mercury samples collected during WY 2020 through WY 2025 were found in the cities of Mountain View, Sunnyvale, and San Jose, and include five confirmed moderate mercury-contributing properties and one confirmed high mercury source property. Additional investigation of the public ROW locations with elevated mercury (moderate or high) is currently ongoing to identify additional source properties or public ROW source areas that will require future controls

The Program’s Annual Report which will be submitted to the Regional Water Board on September 30, 2026, will provide a comprehensive discussion of the moderate and high mercury source properties identified to date and follow-up actions at those sites, as well as a description of any controls implemented in public ROW areas to address both moderate and high sources of mercury to the MS4.

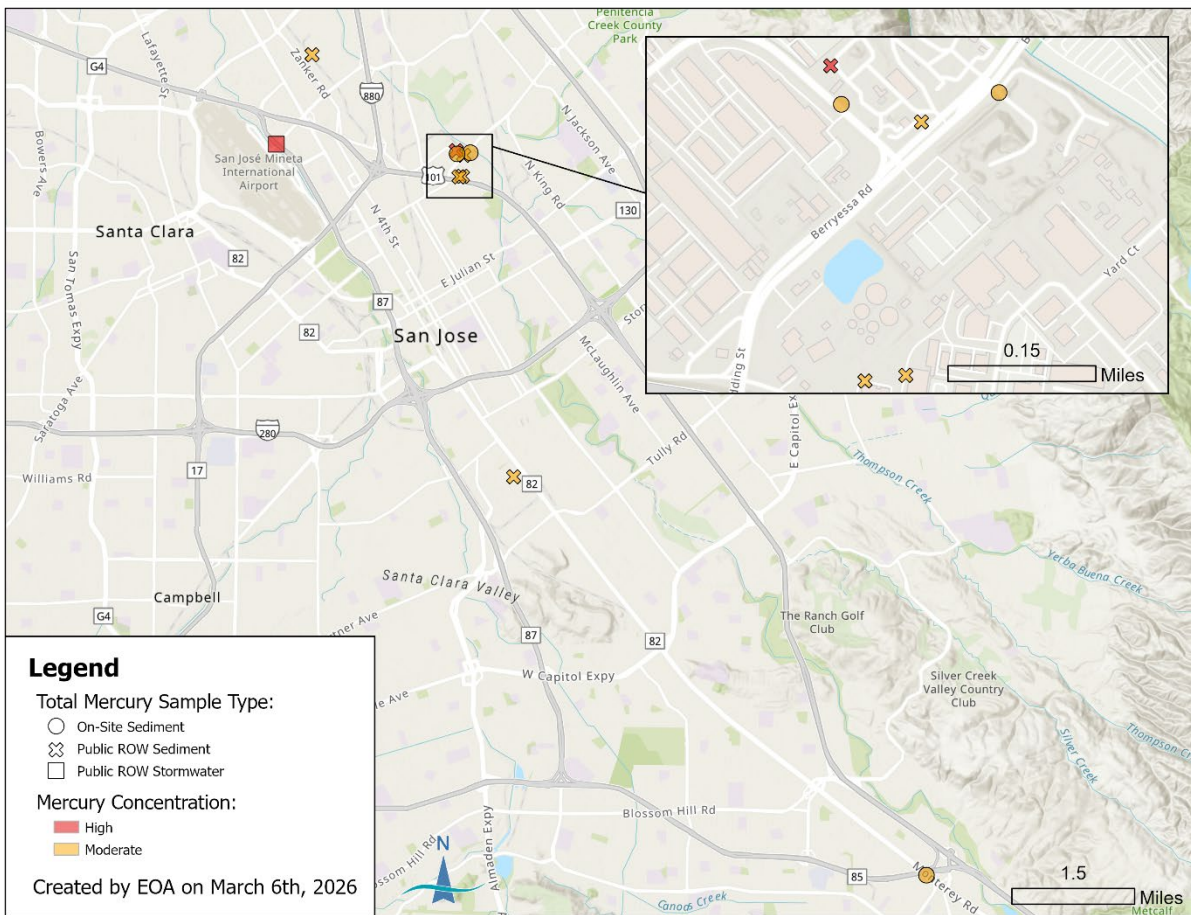


Figure 4.4. Location of elevated total mercury concentrations measured in sediment and stormwater samples WY 2020 – 2025 in the Santa Clara Valley, CA.

#### 4.2.2. Total Mercury Loading

SCVURPPP performed a simple pollutant mass loading analysis to estimate the catchment-specific storm event mercury load for each of the thirteen catchments where stormwater samples were collected during WY 2020 – WY 2025. The Simple Method (Schueler, 1987) was applied to estimate the storm event-specific runoff volume for each catchment. The runoff volume was then multiplied by the measured stormwater concentration in the catchment to provide the total mercury load from the catchment for that storm event. The Simple Method estimates the runoff volume for an area of interest as a product of the rainfall depth, the fraction of rainfall that produces runoff (assumed to be 0.9), the area of the catchment of interest, and an assumed runoff coefficient. The runoff coefficient for each catchment was estimated based on assumed imperviousness of the land uses within each catchment as follows: industrial = 65%; other urban = 55%, open space = 5%. Rainfall data for the monitored storm events were collected from the San Jose Airport rain gage in the Santa Clara Valley Water District's Alert precipitation gage system.<sup>9</sup>

The estimated catchment-level mercury load for each monitored storm event is provided in Table 4.6, along with all data inputs used to calculate the load. The storm event mercury loads were highly variable, ranging from 4.7 to 756 mg/storm. This variability was primarily driven by the size of the catchments, which were also highly variable, ranging from 36 acres to 2,300 acres.

The mercury load estimates in Table 4.6 provide storm-event and catchment specific mercury loading only.. While this information can be used to compare loads across different catchments and for different types of storm events, it does not provide county-level annual loads for direct comparison to TMDL targets. A more in-depth loading analysis is being conducted by the RMP as part of developing the WDM. The WDM will provide a robust estimate of annual mercury loads from the Santa Clara Valley to the Bay that can be used in the future to evaluate trends.

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<sup>9</sup> Available at: <https://valleywateralert.com/>

**Table 4.6. Summary of estimated stormwater mercury loads in catchments where samples were collected during WY 2020 to WY. 2025 in the Santa Clara Valley, CA.**

Permittee	Catchment ID	Sample ID	Storm Date	Precipitation (P) in inches	Runoff Coefficient (Rv)	Impervious Fraction	Catchment Area (acres)	Stormwater Concentration ng/L	Estimated Load (L) mg/storm
Mountain View	017PMC600	017PMC600A	1/16/2020	0.18	0.55	0.55	65	44	52
Mountain View	017SVC500	017SVC500A	1/16/2020	0.16	0.54	0.55	209	21	71
San Jose	051CTC450	051CTC450A	1/16/2020	0.10	0.48	0.48	244	17	44
Sunnyvale	034BFL230D	034BFL230D	1/16/2020	0.12	0.55	0.55	143	12	21
Sunnyvale	SUNWCH_B	SUNWCH_B	1/16/2020	0.12	0.55	0.55	2,311	27	756
Santa Clara	049STA500	049STA500A	12/1/2022	0.43	0.58	0.59	40	2.6	4.7
Santa Clara	049STA600	049STA600A	12/1/2022	0.31	0.55	0.55	36	5	5.8
Santa Clara	049STA800	049STA800A	12/1/2022	0.27	0.55	0.55	246	8	55
San Jose	066GAC110	066GAC152A	12/3/2022	0.13	0.53	0.53	276	6.8	26
San Jose	083LGC525	083LGC525A	12/3/2022	0.30	0.55	0.55	361	6.2	68
Milpitas	036PCL800	036PCL800-1223-SW	12/18/2023	0.08	0.53	0.54	892	2.1	15
Milpitas	036PCL810	036PCL810-1223-SW	12/18/2023	0.08	0.54	0.55	195	3.3	5.2
Santa Clara	049STA050	049STA050	3/12/2025	0.14	0.56	0.56	382	23	127

Notes

Total mercury load estimates are calculated using the Simple Method which is governed by the following equation:  $L=[P*P_j*(R_v/12)]*(C)*(A)*(2.72)$

Load, L = mg of total mercury per storm event

P = rainfall depth (inches) over the estimated storm interval;

P<sub>j</sub> = factor that corrects P for storms that produce no runoff (P<sub>j</sub> = 0.9)

R<sub>v</sub> = runoff coefficient, which expresses the fraction of rainfall which is converted into runoff;  $R_v = 0.05 + 0.9 * I$

I = impervious fraction;

C = flow weighted mean concentration of total mercury in urban runoff (ng/L)

A = Area (acres)

### 4.3. Emerging Contaminants

As noted previously, SCVURPPP Co-permittees are satisfying their MRP 3.0 monitoring requirements for emerging contaminants via additional financial contributions to the RMP. RMP monitoring projects and special studies of emerging contaminants that were ongoing across the region between WY 2020 and WY 2025 are summarized below.

- Spatial Trends and Health Risks of Per- and Polyfluoroalkyl Substances (PFAS) in San Francisco Bay Fish from 2009 to 2019. This study, which was published by the RMP in the American Chemical Society's Journal of Environmental Science and Technology in May 2025, examined the occurrence of PFAS in shiner surfperch (*Cymatogaster aggregata*), striped bass (*Morone saxatilis*), white croaker (*Genyonemus lineatus*), and seven other sport fish from San Francisco Bay over a decade of monitoring to assess the potential risks from dietary exposures (Méndez, et al. 2025a).
- Emerging PFAS Trends in Water and Sediment from San Francisco Bay. This study published in August 2025 examined Bay sediment and surface water to build understanding of the occurrence, fate, and risks of PFAS to ecological and human health. Using a targeted method, 40 PFAS were analyzed in Bay sediment collected in three monitoring cruises from 2017 to 2023, and Bay water collected from 2021 to 2023 during both the dry and wet seasons. The Total Oxidizable Precursor (TOP) assay was used to supplement these findings by indirectly measuring unknown perfluoroalkyl acid (PFAA) precursors of detectable PFAS. The study provides additional information to elucidate the broader levels of PFAS present in samples and better evaluate the exposure and risk to the Bay (Méndez, et al. 2025b).
- Stormwater Contaminants of Emerging Concern (CECs) Monitoring Approach. A Draft report was developed and published in November 2025 to guide implementation of the RMP's stormwater CECs monitoring program (Moran, et al. 2025). The draft report lays out a monitoring design approach intended to address the scientific challenges inherent in CECs monitoring and maximize the value of each sample to support management decisions and help address the following MQs:
  - Which CECs have the potential to adversely impact beneficial uses in San Francisco Bay?
  - What are the sources, pathways, loadings, and processes leading to the presence of individual CECs or groups of CECs in the Bay?
  - What are the physical, chemical, and biological processes that may affect the transport and fate of individual CECs or groups of CECs in the Bay?
  - Have levels of individual CECs or groups of CECs changed over time in the Bay or pathways? What are potential drivers contributing to change?
  - Are the concentrations of individual CECs or groups of CECs predicted to increase or decrease in the future?
  - What are the effects of management actions?

Complete reporting on the data, results and other outcomes of these projects are presented in reports produced by the RMP and available on the San Francisco Estuary Institute (SFEI) website ([www.sfei.org](http://www.sfei.org)).

## 5. RECOMMENDATIONS TO INFORM MRP 4.0

The Program and the Santa Clara Valley Permittees are looking forward to future discussions with the Regional Water Board with regards to Provision C.8 in MRP 4.0. Based on monitoring conducted during WYs 2020 through 2025, SCVURPPP recommends retaining the core POC monitoring framework in MRP 4.0, with refinements to improve efficiency and alignment with management objectives. The Program believes the following aspects of POC monitoring should be considered:

### Continued Collaboration

- SCVURPPP appreciates the ability to collaborate with the SPoT Program, RMP, and other County Stormwater Programs in meeting the information needs and requirements to answer the six Management Questions included in Provision C.8. These collaborations should continue during MRP 4.0.
- Given the difficulty and uncertainty in monitoring CECs, the RMP's SPLWG and ECWG studies are the most appropriate means to better understand the importance of stormwater as a source of CECs to the Bay. As such, the Program would like to continue to provide supplemental funding to the RMP's CECs monitoring program as it is the best resource to meet the evolving information needs in addressing CECs.
- Given the complexity and long-term data needs for mercury and PCBs fate and transport information to support understanding of the expected long-term trajectory of Bay recovery as sources from local watershed are reduced, SCVURPPP would like to continue to address these information needs through participation in the RMP's SPLWG and PCBWG.

### Management Questions Considerations

- For Management Questions 1 through 5, continued emphasis on identifying and controlling localized PCBs and mercury source areas is appropriate. Data collected during WY 2020 through WY 2025 confirm that elevated concentrations are limited and site-specific rather than widespread. Providing flexibility in how samples are allocated among Management Questions would allow the Program to focus monitoring on higher-priority source areas and emerging implementation needs (i.e., source control), where it provides the greatest management value.
- POC monitoring efforts should continue to focus on identifying pollutant sources and source areas. Implementation of control measures in locations where POCs are elevated has been and will continue to be the most effective means to reduce stormwater loadings to the Bay.
- For Management Question 6, continuation of a coordinated regional RWL monitoring program is recommended, with potential refinements to analyte lists and sampling frequency. Future RWL monitoring should prioritize constituents with a demonstrated likelihood of exceedance and avoid duplication of information generated through other monitoring programs.

### Grant-Funded Opportunities

- The nature of PCBs and mercury source investigations is shifting. The USEPA San Francisco Bay Geographic Program Grant funds awarded at the beginning of WY 2026 are allowing the Program to complete large amounts of screening monitoring for PCBs in the public ROW during MRP 3.0. As such, the Program will be more focused on targeted follow-up and on-site sampling during MRP 4.0.
- In light of region-wide funds becoming available through USEPA grants to BAMSC and the RMP to establish a fixed monitoring station network in the Bay Area, Permittees will be well placed to conduct (or support) new POC monitoring associated with this network. MQs #4, #5, and #6 can be addressed via monitoring at these fixed stations. This monitoring focus would allow for more efficient collection of regionally consistent data to better inform these MQs as well as generate more robust datasets to help identify long-term trends regionwide.

### **Consideration of Other MRP Provisions**

- Provision C.8 monitoring requirements should be aligned with monitoring requirements in other permit provisions. For example, in MRP 3.0, C.8 monitoring requirements do not acknowledge the substantial amount of additional POC monitoring that is also required to comply with Provisions C.11.b and C.12.b that goes far beyond the minimum POC requirements identified in C.8 for mercury and PCBs. These additional requirements extended POC monitoring far beyond the requirements identified in C.8 for mercury and PCBs and substantially increased both the overall monitoring effort and monitoring expenditures by SCVURPPP Co-permittees during MRP 3.0. Provision C.8 should acknowledge and align better with these additional monitoring requirements.

## 6. REFERENCES

- BAMSC (Bay Area Municipal Stormwater Collaborative). 2023. Receiving Water Limitations Assessment Report - Receiving Water Limitations Monitoring Plan. Submitted by Alameda Countywide Clean Water Program (ACCWP), Contra Costa Clean Water Program (CCCWP), Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP), San Mateo Countywide Water Pollution Prevention Program (SMCWPPP). March 14, 2023.
- BAMSC. 2025a. Low Impact Development Monitoring (LID) QAPP. Version 2.0. June 4, 2025.
- BAMSC. 2025b. Quality Assurance Project Plan for PCBs TMDL Special Studies and Implementation Project. Prepared for: United States Environmental Protection Agency - Region 9. EPA Water Quality Improvement Fund Grant Award No. W9-97T23001-0. June 30, 2025.
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## **APPENDICES**

**Appendix A**

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**Updated Receiving Water Limitations Assessment Report**

# Receiving Water Limitations Assessment Report – Update 2026

*Submitted in compliance with Provision C.8.h.iv(2)(c) of National Pollutant Discharge Elimination System (NPDES) Permit No. CAS612008, Order No. R2-2022-0018*

*Submitted by*

Alameda Countywide Clean Water Program (ACCWP)

Contra Costa Clean Water Program (CCCWP)

Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP)

San Mateo Countywide Water Pollution Prevention Program (SMCWPPP)

March 31, 2026

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Appendix A: RWL Statistical Evaluation – All Counties Combined  
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## ACRONYMS AND ABBREVIATIONS

ACCWP	Alameda Countywide Clean Water Program
BAMSC	Bay Area Municipal Stormwater Collaboration
BASMAA	Bay Area Stormwater Management Agencies Association
Basin Plan	Water Quality Control Plan for the San Francisco Bay Basin
CCCWP	Contra Costa Clean Water Program
CEDEN	California Environmental Data Exchange Network
CTR	California Toxics Rule
FIB	fecal indicator bacteria
IMR	integrated monitoring report
MP	monitoring plan
MRP	Municipal Regional Stormwater Permit
NPDES	National Pollutant Discharge Elimination System
PAHs	polycyclic aromatic hydrocarbons
PCBs	polychlorinated biphenyls
POCs	pollutants of concern
P&T	pesticides and toxicity
RMC	Regional Monitoring Coalition
RMP	Regional Monitoring Program for Water Quality in San Francisco Bay
RWL	receiving water limitations
RWL MP	receiving water limitations monitoring plan
SF	San Francisco
SFBRWQCB or Regional Water Board	San Francisco Bay Regional Water Quality Control Board
SCVURPPP	Santa Clara Valley Urban Runoff Pollution Prevention Program
SMCWPPP	San Mateo Countywide Water Pollution Prevention Program
SOP	standard operating procedure
SWAMP	California Surface Water Ambient Monitoring Program
TMDL	total maximum daily load
USEPA	United States Environmental Protection Agency
WQO	water quality objective
WY	water year

## 1. INTRODUCTION

This updated Receiving Water Limitations (RWL) Assessment Report was prepared collaboratively by the Alameda Countywide Clean Water Program (ACCWP), the Contra Costa Clean Water Program (CCCWP), the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP), and the San Mateo Countywide Water Pollution Prevention Program (SMCWPPP) per the Municipal Regional Permit (MRP) for urban stormwater issued by the San Francisco Bay Regional Water Quality Control Board (SFBRWQCB or Regional Water Board; Order No. R2-2022-0018). The ACCWP, CCCWP, SCVURPPP, and SMCWPPP are herein referred to as the collaborating Programs. This report fulfills the requirements of MRP Provision C.8.h.iv.(2)(c) for providing an updated Receiving Water Limitations Assessment Report with proposed monitoring to be conducted during the next permit term.

This report addresses comments provided in the Regional Water Board’s Conditional Approval of the Receiving Water Limitations Assessment Report dated June 12, 2023. As documented in the letter, the collaborating Programs must:

- Include a statistical evaluation of RWL data in the March 31, 2026, Integrated Monitoring Report (IMR) required by Provision C.8.h.iv.(2)(c)
- Compare data collected for all RWL analytes to all available instream data for the same county and analyte collected during the last 10 years
- Present data distributions in tabular form, including summary statistics such as minimum, maximum, mean, median, and percentiles
- Present data distributions in graphical form, such as data density plots, histograms, box and whisker plots
- Indicate individual waterbodies and sampling locations in graphical data distributions (e.g., using color and/or symbol shape) to clearly discern RWL data
- Conduct this analysis to assess the representativeness and suitability of selected waterbodies for RWL data collection and to determine their continued use in subsequent permits

This report also addresses the Regional Water Board’s July 3, 2025, comments to the collaborating Programs on their respective water year (WY) 2024 Urban Creeks Monitoring Reports, which requested the following:

- Details of the receiving water body from which water samples were collected (e.g., name and location of the water body, catchment area, outfall(s) discharging into the water body).
- A brief discussion on the RWL monitoring data, including a comparison of data with RWLs associated with the water body.

## 2. BACKGROUND

MRP 3.0 Provision C.8.f. requires water quality monitoring for pollutants of concern (POCs). POC monitoring must address the priority management information needs (i.e., management questions) identified in Provision C.8.f, including Management Question #6: Compliance with Receiving Water Limitations. RWL monitoring, intended to assess whether RWLs are achieved, must be conducted by each collaborating Program, with at least four samples collected during the wet season and one sample collected during the dry season.

### 2.1 Previously Submitted Reports

The collaborating Programs collectively developed and submitted the *Receiving Water Limitations Assessment Report* on March 31, 2023, as required by Provision C.8.h.iv.(2) of the MRP. The Receiving Water Limitations Assessment Report, herein referred to as the RWL Monitoring Plan (MP or RWL MP), describes the regional approach to RWL monitoring and provided the following information:

- Relevant water quality objectives (WQOs) against which to compare monitoring data
- Analytes in addition to those listed in Table 8.2 of MRP Provision C.8 (i.e., copper, zinc, fecal indicator bacteria) to monitor based on assessment of the potential that discharges of these analytes may result in levels in receiving waters approaching or exceeding WQOs and the basis of the determination
- Identification of waterbodies to be sampled, sampling locations within those waterbodies, and the basis for which those waterbodies were selected (i.e., watershed size, percent impervious watershed area, percent developed, presence of upstream impoundment, availability of prior water quality monitoring data)
- Sampling schedule consistent with the requirements in MRP Tables 8.1 and 8.2

On June 12, 2023, the Regional Water Board’s Executive Officer issued a letter of Conditional Approval of the RWL MP (Conditional Approval Letter). The Conditional Approval Letter stated that approval of the RWL MP is subject to two conditions:

1. Inclusion of polycyclic aromatic hydrocarbons (PAHs) in the analyte list
2. Demonstration of the representativeness of the selected monitoring locations submitted with the March 2024 Urban Creeks Monitoring Report

To address the first condition, the collaborating Programs augmented the analyte list to include PAHs. To address the second condition, the collaborating Programs prepared and submitted the *Receiving Water Limitations Assessment Report Addendum: Demonstration of the Representativeness of the Selected Monitoring Locations* on March 31, 2024. The Receiving Water Limitations Assessment Report Addendum, herein referred to as the RWL MP Addendum, identified and characterized watersheds in Alameda, Contra Costa, San Mateo, and Santa Clara counties that drain to San Francisco Bay and compared them to the four selected monitoring locations. The RWL MP Addendum provided a list of creeks represented by the chosen four and a list of creeks that are not well represented, demonstrating the representativeness of the RWL monitoring locations regionally and within an individual county.

## 2.2 Monitored Analytes

To evaluate which analytes to include in the RWL monitoring program, the collaborating Programs accessed and compiled relevant water-quality data from the California Environmental Data Exchange Network (CEDEN) for the last decade (2010-2021). The maximum concentration of each analyte was compared with the most stringent existing water quality threshold developed and used by federal and state regulatory agencies. This data review process was modeled after the Reasonable Potential Analysis method used by NPDES permit writers to determine if pollutants require effluent limits in NPDES permits. For more details on analyte selection, see the RWL MP (BAMSC 2023).

Based on the analysis of readily available data collected from 2010 to 2021 in Bay Area creeks and channels (i.e., receiving waters), the following analytes were included in the RWL monitoring program:

- *E. coli* – applicable fecal indicator bacteria (FIB), required by MRP Provision C.8.f
- Ammonia, pH, specific conductance, temperature – ancillary parameters to calculate un-ionized ammonia
- Un-ionized Ammonia – based on Regional Water Board staff’s recommendation
- Total Nitrogen – based on anticipation of new statewide criteria
- Total Phosphorus – based on anticipation of new statewide criteria
- Hardness – ancillary parameter to calculate site-specific metals WQOs
- Total Mercury – based on the comparison of data to the Water Quality Control Plan for the San Francisco (SF) Bay Basin (Basin Plan) WQOs
- Dissolved copper – required by MRP Provision C.8.f
- Dissolved zinc – required by MRP Provision C.8.f
- Dissolved lead – based on the comparison of data to Basin Plan WQOs
- PAHs – required by the June 12, 2023, Regional Water Board letter of Conditional Approval
- Polychlorinated biphenyls (PCBs) Regional Monitoring Program for Water Quality in San Francisco Bay (RMP) 40<sup>1</sup> – based on the comparison of data to California Toxics Rule (CTR) criteria (USEPA 2000)

Additionally, pesticides and toxicity (P&T) are included in the RWL monitoring program, consistent with the monitoring being conducted in compliance with MRP Provision C.8.g – Pesticides and Toxicity Monitoring. Refer to each collaborating Program’s *Pesticides and Toxicity Monitoring Report*, a companion report submitted as part of their respective IMRs, for details on the P&T monitoring program and results.

## 2.3 Sampling Locations

Each of the collaborating Programs selected a single sampling location for RWL monitoring within their respective county, for a total of four sites. Sampling stations are listed in Table 1 and mapped in Figure 1. All sampling locations are above tidally influenced areas near the bottom of their respective watershed and are influenced by urban runoff. Selected watersheds range in size from 5.5 to 117 square miles, and 6.6 to 49.3 percent impervious area (20.6 to 90.2 percent developed).

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<sup>1</sup> The RMP 40 congener list was developed by the San Francisco Estuary Institute during the early years of RMP implementation and has been used by a variety of monitoring projects in the Bay Area over the last several decades, including stormwater programs subject to MRP for a variety of efforts. A list of these 40 congeners is available at [https://www.sfei.org/sites/default/files/project/Updated\\_DMMO\\_PCB\\_Congener\\_and\\_PAH\\_Analyte\\_Lists.pdf](https://www.sfei.org/sites/default/files/project/Updated_DMMO_PCB_Congener_and_PAH_Analyte_Lists.pdf)

**Table 1 Sampling locations and associated watershed characteristics**

County	Creek	Station ID	Sampling Location	Latitude Longitude	Watershed Size (sq miles)	Developed (%)	Impervious Area (%)
Alameda	Castro Valley Creek	204CVY010	N 3rd Street, Hayward (Japanese Gardens)	37.68016 -122.08059	5.5	90.2	49.3
Contra Costa	Walnut Creek	207R02615	Concord Avenue, Concord	37.97990 -122.05176	116.6	53.8	18.7
San Mateo	San Mateo Creek	204SMA020	3rd Avenue, San Mateo (Gateway Park)	37.56981 -122.31780	33.3	20.6	6.6
Santa Clara	Saratoga Creek	205SAR005	Cabrillo Avenue, Santa Clara (Bowers Park)	37.35973 -121.97336	16.7	49.4	22.5

The representativeness of the four monitoring sites was evaluated by comparing their watershed characteristics to those of other San Francisco Bay-draining watersheds across Alameda, Contra Costa, San Mateo, and Santa Clara counties, as documented in the RWL MP Addendum (BAMSC 2024). Representativeness was assessed using a quadrant-based analysis that compared watershed size to percent developed land and percent impervious area at both the regional and county scales, with median values used to define quadrant groupings to reflect watershed types in the Bay Area.

At the regional scale, three of the four monitored watersheds—Walnut Creek, San Mateo Creek, and Saratoga Creek—fell within Quadrant 4, which represents larger-than-median watersheds with lower-than-median development and imperviousness and contains a substantial proportion of Bay Area watersheds. Castro Valley Creek fell within Quadrant 2, representing smaller, more highly developed watersheds that are also common in the region. Together, the four sites span the two most populated watershed groupings.

A summary of the monitoring locations and watersheds is provided below. Maps of the individual watersheds, including outfalls discharging into the water body, are provided in Figures 2, 3, 4, and 5.

### 2.3.1 Castro Valley Creek (Alameda County)

Castro Valley Creek drains a 5.5-square-mile watershed that encompasses portions of unincorporated Alameda County. Castro Valley Creek is a major tributary to one of the larger watersheds within Alameda County, the 48-square-mile San Lorenzo Creek watershed. The monitoring location is near a long-term USGS gauging station, just below the confluence of Castro Valley Creek and Chabot Creek. Land use is largely suburban throughout these two catchments. Together, these two catchments are nearly fully developed, with mostly high-density residential land uses and approximately 10% open space in the area of upper Castro Valley Creek.

### 2.3.2 Walnut Creek (Contra Costa County)

The Walnut Creek watershed is the largest in Contra Costa County, covering 146 square miles. The Walnut Creek watershed has 309 miles of creek channels, accounting for almost a quarter of all mapped creek channels in Contra Costa County. The monitoring location is located at Concord Avenue in the City of Concord, with the upstream area comprising approximately 116.6 square miles. The cities of San Ramon, Lafayette, Walnut Creek, and Concord; the towns of Danville and Moraga; and portions of Unincorporated Contra Costa County lie partially or entirely within the boundaries of the monitored watershed. Land uses in the Walnut Creek watershed include

approximately 58% urban land, with the remaining land uses comprising agricultural, open space, and recreational areas.

### **2.3.3 San Mateo Creek (San Mateo County)**

San Mateo Creek drains a 33.3-square mile watershed, including parts of unincorporated San Mateo County, the City of San Mateo, and the Town of Hillsborough. Runoff from the upper 88% of the watershed drains to a system of reservoirs were constructed in the late 1800s and are now owned and operated by the San Francisco Public Utilities Commission. Below the reservoirs (i.e., below the Lower Crystal Springs reservoir dam), the watershed encompasses approximately five square miles. Low and medium-density residential land uses characterize the area upstream of El Camino Real, and high-density residential and commercial land uses characterize the watershed downstream of El Camino Real. There is one main tributary in this reach, Polhemus Creek, which enters San Mateo Creek approximately 0.75 miles downstream of the dam. The monitoring location is located within Gateway Park, approximately 1 mile downstream of El Camino Real and 0.2 miles upstream of Highway 101, which marks the approximate upstream extent of the tidally influenced portion of the creek. The monitoring location is co-located with a California Surface Water Ambient Monitoring Program (SWAMP) Stream Pollution Trends (SPoT) long-term monitoring station.

### **2.3.4 Saratoga Creek (Santa Clara County)**

Saratoga Creek drains a 17-square-mile watershed that includes parts of unincorporated Santa Clara County, the Town of Saratoga, and the Cities of Santa Clara and San Jose. Saratoga Creek, a major tributary to San Tomas Aquino Creek, flows for approximately 4.5 miles in an eastern direction through forested terrain, largely contained within Sanborn County Park. It continues for about 1.5 miles through the low-density residential foothill region of the Town of Saratoga and then for another eight miles along the alluvial plain of the Santa Clara Valley, through the cities of San Jose and Santa Clara, which are characterized by high-density residential neighborhoods. The monitoring location is in the City of Santa Clara’s Bowers Park near an elementary school and a middle school.

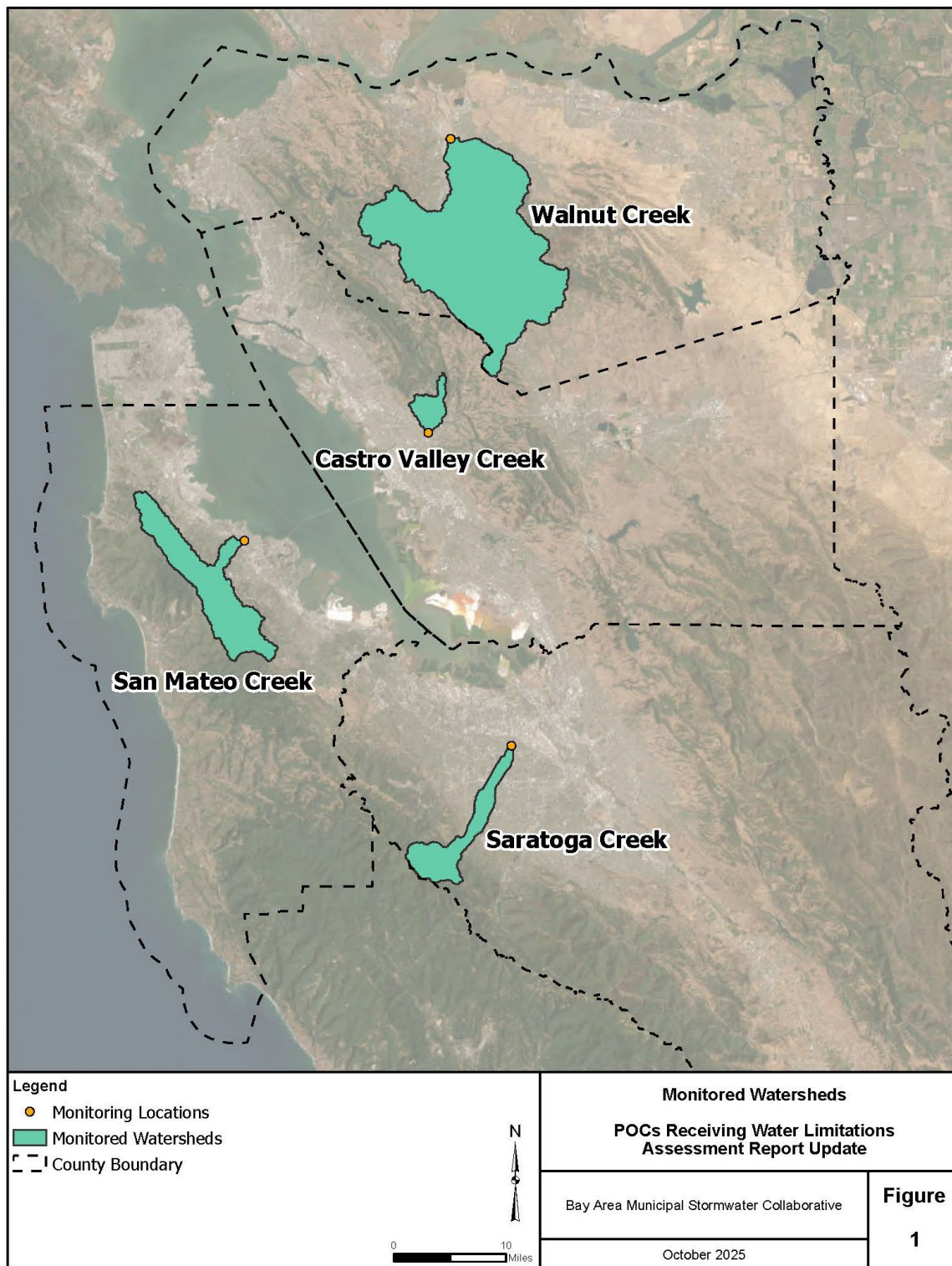


Figure 1. RWL monitoring sites and watershed areas

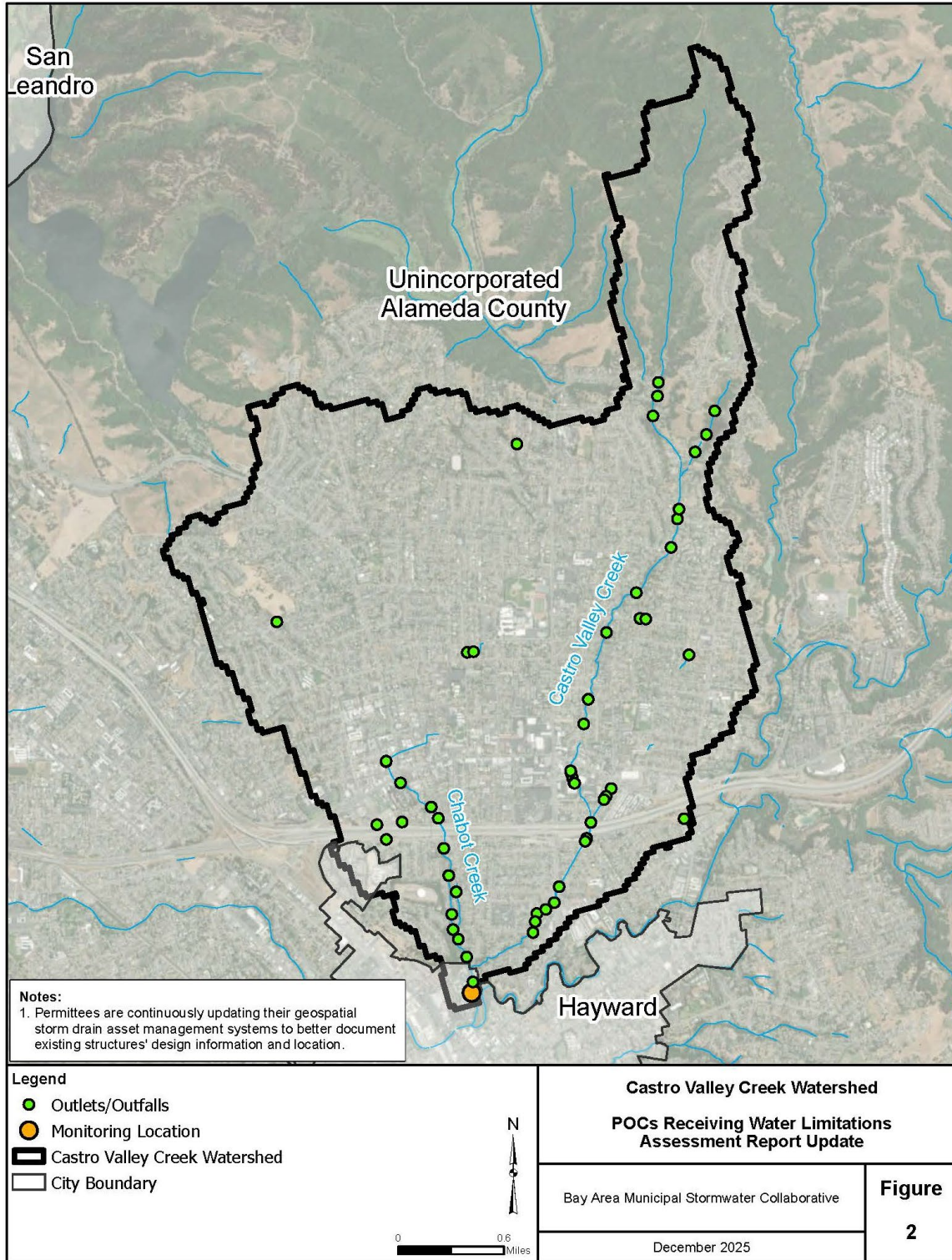


Figure 2. Castro Valley Creek watershed area (Alameda County)

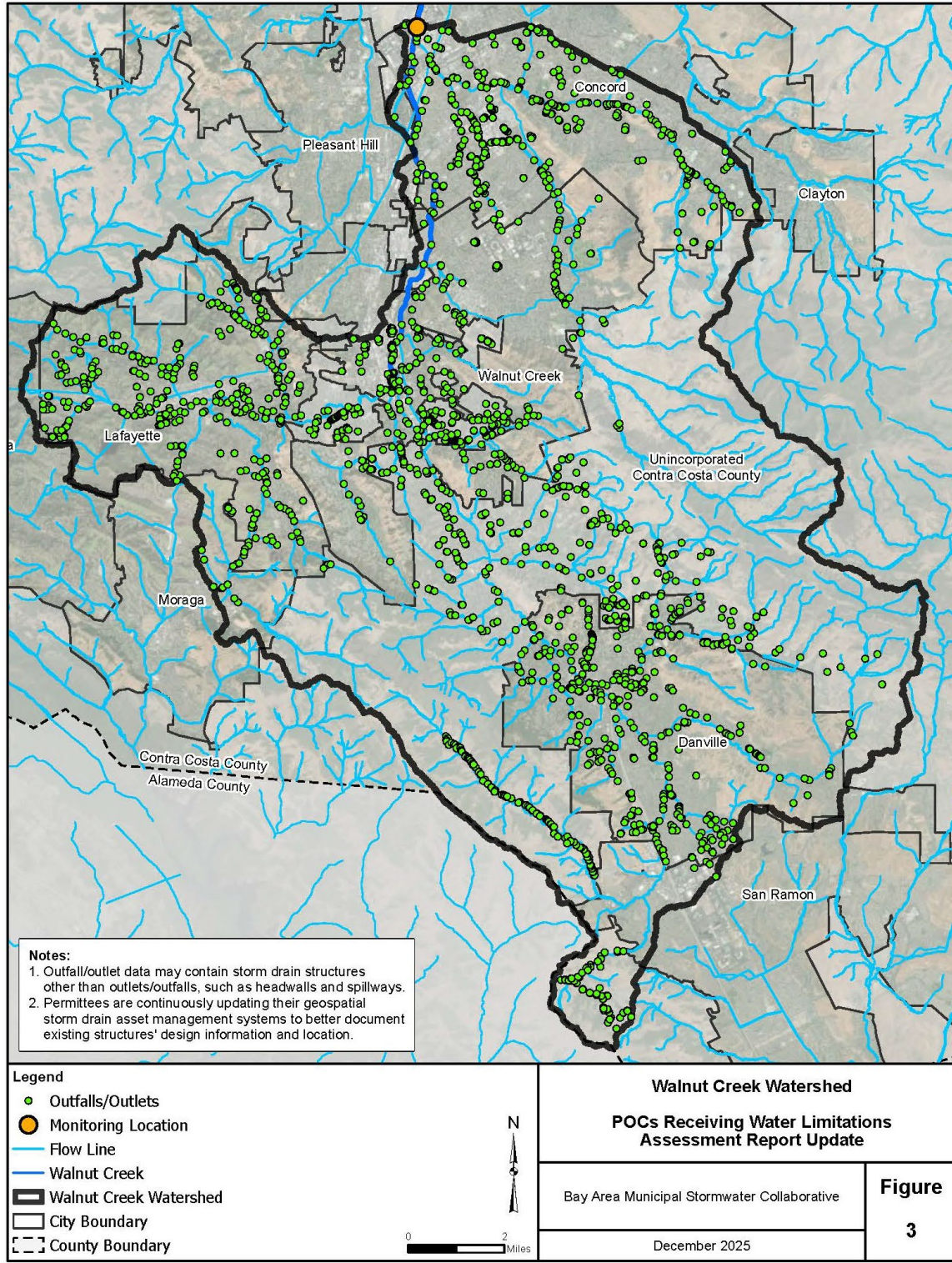
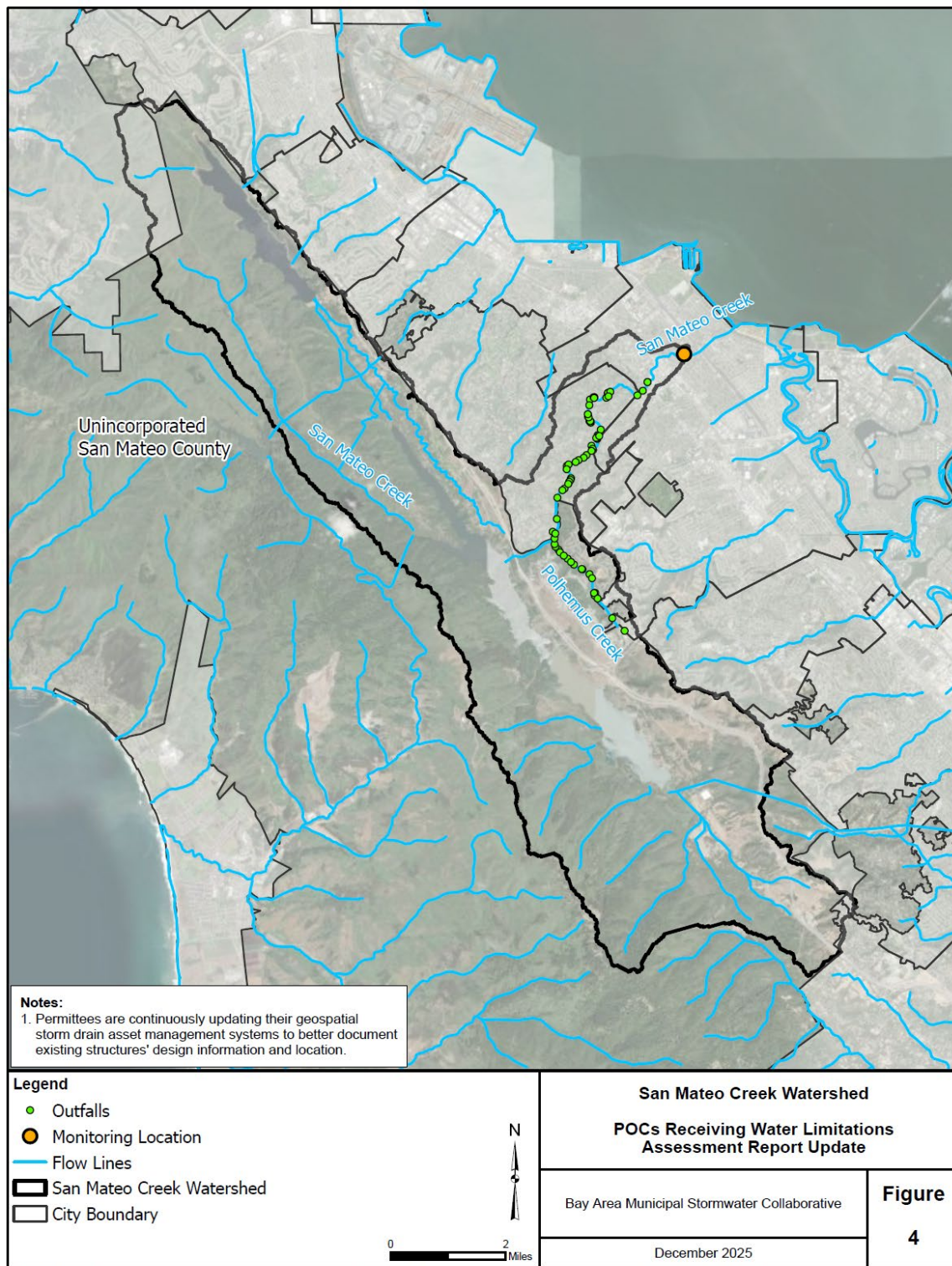
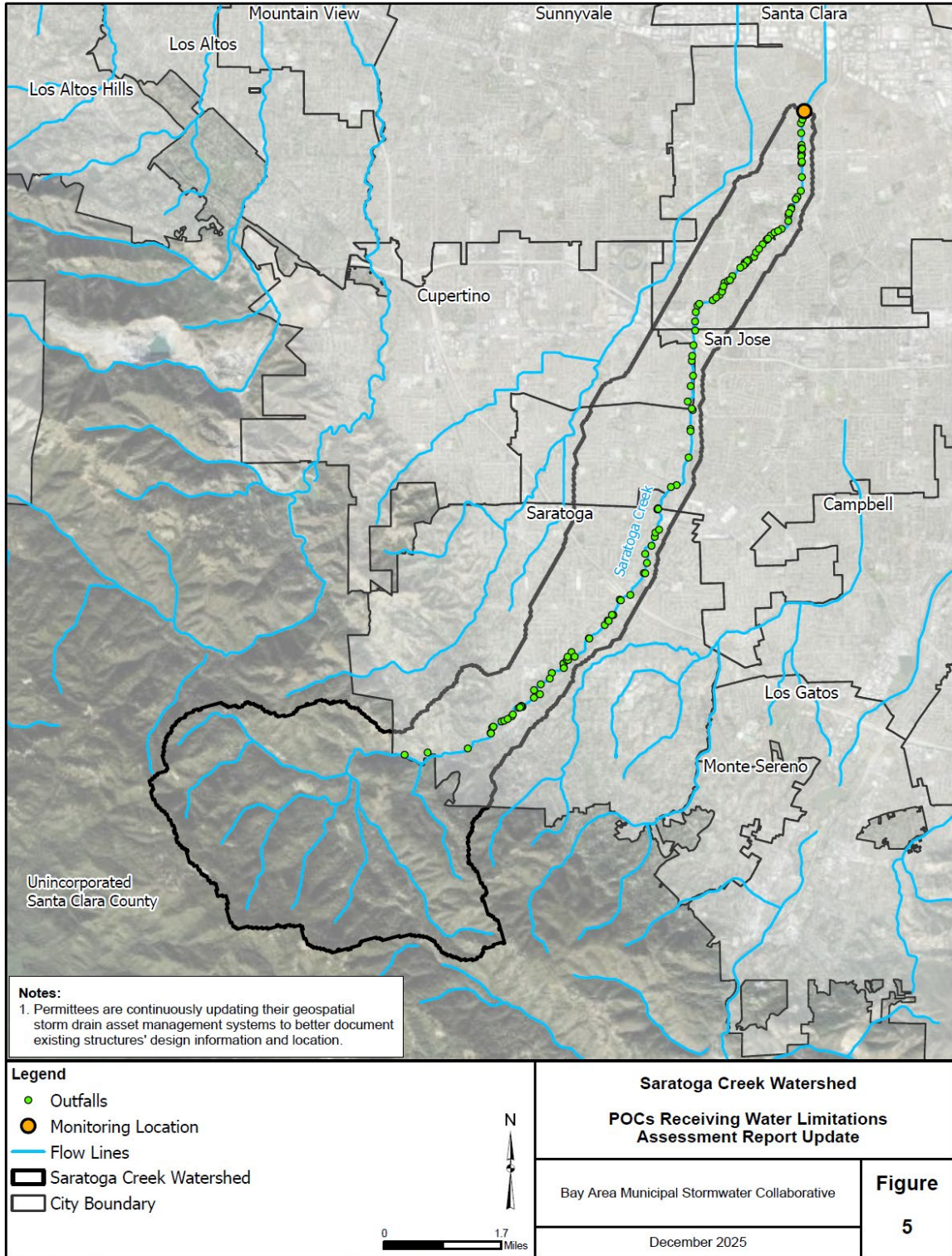


Figure 3. Walnut Creek watershed area (Contra Costa County)



P:\GIS\CCWP\Project\POCs Monitoring\Receiving Water Monitoring\I8\_POCs\_Monitoring\_Oct 2025\_KJ.aprx\San Mateo 12/16/2025 5:39 PM (Yaxin.Jin)

Figure 4. San Mateo Creek watershed area (San Mateo County)



P:\GIS\CCCWP\Project\POCs Monitoring\Receiving Water Monitoring\CR\_POCs\_Monitoring\_Oct 2025\_KLI.aprx\Saratoga 12/16/2025 5:50 PM (yaxin jin)

Figure 5. Saratoga Creek watershed area (Santa Clara County)

## 2.4 Regulatory Listings and Beneficial Uses

The Clean Water Act Section 303(d) list identifies water bodies that do not meet applicable water quality standards and require the development of total maximum daily loads (TMDLs) or alternative restoration strategies. The SF Bay Basin Plan lists beneficial uses. It provides numeric and narrative criteria for a range of water quality constituents applicable to certain receiving water bodies and groundwater basins within the San Francisco Bay region. Specific criteria are provided for the larger, designated water bodies within the area, as well as general criteria or guidelines for ocean waters, bays and estuaries, inland surface waters, and ground waters. Those waters not specifically listed (generally smaller tributaries) are assumed to have the same beneficial uses as the streams, lakes, or reservoirs to which they are tributary.

The current 303(d) listings (SWRCB 2024) and the beneficial uses relevant to the RWL-monitored creeks are shown in Tables 2 and 3, respectively. The applicable water quality criteria are described in Section 2.5.

As shown in Table 2, each of the monitored creeks is listed for pesticides and/or toxic substances for which an approved TMDL exists. MRP 3 Provision C.9 Pesticide Toxicity Control implements requirements of the TMDL for Diazinon and Pesticide-Related Toxicity for Urban Creeks in the SF Bay region. The P&T monitoring program and results are provided in each Program’s companion *Pesticides and Toxicity Monitoring Report*. Two of the creeks – Castro Valley Creek and San Mateo Creek – are listed for bacteria, with a TMDL required by 2037. One creek – Saratoga Creek – is listed for trash of unknown source, which is being addressed by implementing MRP 3 Provision C.10 Trash Load Reduction.

**Table 2 2024 Clean Water Act Section 303(d) listings for the monitored creeks**

Listing	Sources	TMDL	Reference
<b>Castro Valley Creek – Alameda County</b>			
Indicator Bacteria	Unknown	Required by 2037	
Fipronil	Urban Runoff Surface Runoff	Approved by USEPA 2007	SFBRWQCB 2005
Toxicity	Urban Runoff Surface Runoff	Approved by USEPA 2007	SFBRWQCB 2005
<b>Saratoga Creek – Santa Clara County</b>			
Diazinon	Unknown	Approved by USEPA 2007	SFBRWQCB 2005
Trash	Unknown	NA - Listing will be addressed by implementing Provision C.10 of the MRP	
<b>San Mateo Creek, Lower – San Mateo County</b>			
Chlordane	Unknown	Required by 2037	
Indicator Bacteria	Unknown	Required by 2037	
Pyrethroids	Urban Runoff Surface Runoff	Approved by USEPA 2007	SFBRWQCB 2005
Toxicity (sediment) <sup>1</sup>	Unknown	Approved by USEPA 2007	SFBRWQCB 2005
<b>Walnut Creek – Contra Costa County</b>			
Bifenthrin	Urban Runoff Surface Runoff	Approved by USEPA 2007	SFBRWQCB 2005
Diazinon	Urban Runoff Surface Runoff	Approved by USEPA 2007	SFBRWQCB 2005
Pyrethroids	Urban Runoff Surface Runoff	Approved by USEPA 2007	SFBRWQCB 2005
Toxicity	Urban Runoff Surface Runoff	Approved by USEPA 2007	SFBRWQCB 2005

1 This waterbody was already listed for sediment toxicity in a previous listing round. Thus, this is not a new listing. The previous decision field is in error because it is referring to the previous decision for water toxicity. Now that water and sediment toxicity are combined, the current listing will be for toxicity, but it is important to keep in mind that the toxicity is for the sediment compartment.

**Table 3 Beneficial uses for RWL monitored creeks**

County	Waterbody	AGR	MUN	FRSH	GWR	IND	PROC	COMM	SHELL	COLD	EST	MAR	MIGR	RARE	SPWN	WARM	WILD	REC-1	REC-2	NAV
Alameda	Castro Valley Creek									E				E	E	E	E	E	E	
Santa Clara	Saratoga Creek	E		E	E					E						E	E	E	E	
San Mateo	San Mateo Creek			E						E			E	E	E	E	E	E	E	
Contra Costa	Walnut Creek									E			E	E	E	E	E	E	E	

AGR	Agricultural Supply	IND	Industrial Service Supply	REC-1	Water Contact Recreation
COLD	Cold Fresh Water Habitat	MAR	Marine Habitat	REC-2	Non-contact Recreation
COMM	Commercial and Sport Fishing	MIGR	Fish Migration	SHELL	Shellfish Harvesting
E	Existing Use	MUN	Municipal and Domestic Water	SPWN	Fish Spawning
EST	Estuarine	NAV	Navigation	WARM	Warm Freshwater Habitat
FRSH	Freshwater Replenishment	PROC	Industrial Process Supply	WILD	Wildlife Habitat
GWR	Groundwater Recharge	RARE	Preservation of Rare and Endangered Species		

## 2.5 Water Quality Objectives and Thresholds

The WQOs used to evaluate the measured analytes are listed in Table 4 for the SF Bay Basin Plan and Table 5 for the California Toxics Rule (CTR). Pesticide and toxicity monitoring data are

evaluated in compliance with MRP C.8.g permit requirements in the companion *Pesticide and Toxicity Monitoring Reports*. Wet weather events are compared to the acute (1-hour) criteria, and the dry weather event are compared to the chronic (4-day) criteria.

Table 4 SF Bay Basin Plan water quality objectives for analytes measured

Analyte	Reference <sup>1</sup>	Units	SF Bay Basin Plan Water Quality Objective (Freshwater)	
			Acute (1-hour)	Chronic (4-day)
<b>Field Parameters</b>				
pH	Section 3.3.9	pH Units	6.5 – 8.5 <sup>2</sup>	
Temperature	Section 3.3.17	°C	No applicable criteria <sup>3</sup>	
Specific Conductivity	Section 2.2.2	µS/cm	No applicable criteria <sup>4</sup>	
<b>Microbiology</b>				
E. coli	Table 3-1 <sup>5</sup>	CFU/100 mL <sup>6</sup>	STV < 320 <sup>7</sup>	GM < 100 <sup>8</sup>
<b>Conventionals</b>				
Hardness as CaCO <sub>3</sub>	NA	mg/L	No criteria	
<b>Nutrients</b>				
Ammonia as N	Section 3.3.3	mg/L	No numeric criteria <sup>9</sup>	
Un-ionized Ammonia	Section 3.3.20 <sup>10</sup>	mg/L	Annual Median < 0.025	
Nitrite as N	Section 3.3.3	mg/L	No numeric criteria <sup>9</sup>	
Nitrate as N	Section 3.3.3	mg/L	No numeric criteria <sup>9</sup>	
Total Kjeldahl Nitrogen	Section 3.3.3	mg/L	No numeric criteria <sup>9</sup>	
Total Phosphorus as P	Section 3.3.3	mg/L	No numeric criteria <sup>9</sup>	
<b>Total Metals</b>				
Mercury	Table 3-4	ug/L	No applicable criteria <sup>11</sup>	0.025 <sup>12</sup>
<b>Dissolved Metals</b>				
Copper	Table 3-4	ug/L	Variable (hardness-based) <sup>13</sup>	
Lead	Table 3-4	ug/L	Variable (hardness-based) <sup>13</sup>	
Zinc	Table 3-4	ug/L	Variable (hardness-based) <sup>13</sup>	
<b>PCBs and PAHs</b>	Criteria in CTR only; see Table 5 below			

- 1 San Francisco Bay Basin Plan, Chapter 3: Water Quality Objectives (updated through July 22, 2024).
- 2 Controllable water quality factors shall not cause changes greater than 0.5 units in normal ambient pH levels.
- 3 The natural receiving water temperature of inland surface waters shall not be altered unless it can be demonstrated to the satisfaction of the Regional Board that such alteration in temperature does not adversely affect beneficial uses. The temperature of any cold or warm freshwater habitat shall not be increased by more than 5°F (2.8°C) above natural receiving water temperature.
- 4 SF Bay Basin Plan includes a standard applicable to waters designated as MUN. As shown in Table 3, none of the monitored creeks are designated with a MUN beneficial use.
- 5 For water contact recreation beneficial use and based on a minimum of five consecutive samples equally spaced over a 30-day period. As shown in Table 3, all monitored creeks are designated as water contact recreation beneficial use.
- 6 *E. coli* WQOs are given in units of colony forming units per 100 milliliters (CFU/100 mL); however, most laboratory methods present results in units of most probable number of colony forming units per 100 mL (MPN/100 mL). The two units are generally considered interchangeable.
- 7 STV = statistical threshold value; STV shall not be exceeded by more than 10% of the samples collected in a calendar month.
- 8 GM = geometric mean
- 9 Waters shall not contain biostimulatory substances in concentrations that promote aquatic growth to the extent that such growths cause nuisance or adversely affect beneficial uses. Changes in chlorophyll a and associated phytoplankton communities follow complex dynamics that are sometimes associated with a discharge of biostimulatory substances. Irregular and extreme levels of chlorophyll or phytoplankton blooms may indicate exceedance of this objective and require investigation.
- 10 Calculated using Emerson method (Emerson et al. 1975)

**Table 4 SF Bay Basin Plan water quality objectives for analytes measured**

Analyte	Reference <sup>1</sup>	Units	SF Bay Basin Plan Water Quality Objective (Freshwater)	
			Acute (1-hour)	Chronic (4-day)
11	The acute objective of 2.4 ug/L is applicable to mercury in Walker Creek and Soualjule Reservoir and their tributaries; and in waters of the Guadalupe River Watershed, except Los Gatos Creek and its tributaries Upstream of Vasona Dam, Lake Elsmán, Lexington Reservoir, and Vasona Lake (Table 3-4A of the Basin Plan) and thus not applicable to the monitored watersheds.			
12	Part 2 of “Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California —Tribal and Subsistence Fishing Beneficial Uses and Mercury Provisions (Statewide Mercury Provisions),” Section III.D.3 <a href="https://www.waterboards.ca.gov/water_issues/programs/mercury/docs/hg_prov_final.pdf">https://www.waterboards.ca.gov/water_issues/programs/mercury/docs/hg_prov_final.pdf</a>			
13	Hardness-based criteria are presented with the RWL results in Table 8 of this report.			

**Table 5 CTR water quality criteria for analytes measured**

Analyte	Reference	Units	CTR Water Quality Criteria
<b>PCBs</b>			
Total PCBs <sup>1</sup>	Table 1 to Paragraph (b)(1) <sup>2</sup>	ug/L	No applicable criteria <sup>3,4</sup>
<b>PAHs</b>			
Acenaphthene	Table 1 to Paragraph (b)(1) <sup>2</sup>	ug/L	No applicable criteria <sup>4</sup>
Anthracene	Table 1 to Paragraph (b)(1) <sup>2</sup>	ug/L	No applicable criteria <sup>4</sup>
Benz(a)anthracene	Table 1 to Paragraph (b)(1) <sup>2</sup>	ug/L	No applicable criteria <sup>4</sup>
Benzo(a)pyrene	Table 1 to Paragraph (b)(1) <sup>2</sup>	ug/L	No applicable criteria <sup>4</sup>
Benzo(b)fluoranthene	Table 1 to Paragraph (b)(1) <sup>2</sup>	ug/L	No applicable criteria <sup>4</sup>
Benzo(k)fluoranthene	Table 1 to Paragraph (b)(1) <sup>2</sup>	ug/L	No applicable criteria <sup>4</sup>
Chrysene	Table 1 to Paragraph (b)(1) <sup>2</sup>	ug/L	No applicable criteria <sup>4</sup>
Dibenz(a,h)anthracene	Table 1 to Paragraph (b)(1) <sup>2</sup>	ug/L	No applicable criteria <sup>4</sup>
Fluoranthene	Table 1 to Paragraph (b)(1) <sup>2</sup>	ug/L	No applicable criteria <sup>4</sup>
Fluorene	Table 1 to Paragraph (b)(1) <sup>2</sup>	ug/L	No applicable criteria <sup>4</sup>
Indeno(1,2,3-c,d)pyrene	Table 1 to Paragraph (b)(1) <sup>2</sup>	ug/L	No applicable criteria <sup>4</sup>
Pyrene	Table 1 to Paragraph (b)(1) <sup>2</sup>	ug/L	No applicable criteria <sup>4</sup>
Other PAHs (13 compounds)	NA	ug/L	No criteria
Total PAHs (25 compounds)	NA	ug/L	No criteria

- 1 PCBs analyzed in this study include the RMP 40 congeners (see Section 2.2)
- 2 40 CFR Chapter I Subchapter D Part 131 Subpart D Section 131.38  
[https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-131/subpart-D/section-131.38#p-131.38\(b\)\(1\)](https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-131/subpart-D/section-131.38#p-131.38(b)(1))
- 3 The freshwater continuous concentration of 0.014 ug/L pertains to the sum of seven aroclors (1242, 1254, 1221, 1232, 1248, 1260, 1016) and thus not applicable to this study, which included analysis of the RMP 40 congeners.
- 4 Criteria listed for Human Health for Consumption of Organisms Only. However, these criteria only apply to waterbodies designated as COMM or SHELL beneficial uses. None of the monitored waterbodies are designated as COMM or SHELL, as shown in Table 3, and thus the Human Health for Consumption of Organisms Only criteria are not applicable.

### 3. RWL MONITORING

The collaborating Programs completed five of five sampling events required for the MRP 3 permit term during WY 2024 and WY 2025, as described in the RWL MP. Three wet season events and one dry season event were sampled in WY 2024. The fourth and final wet season event was sampled in WY 2025. RWL monitoring fulfills POCs Monitoring Type 6, as described in MRP 3 Table 8.1 (POCs Monitoring Methods) and Table 8.2 (POC Monitoring Parameters, Effort and Type). Monitoring Type 6 is described as:

*Monitoring in receiving waters to assess compliance with RWLs. Monitoring methods shall include:*

- *Collection and analysis of analytes during the wet season in receiving waters (i.e., creeks and rivers that flow to San Francisco Bay) influenced by urban stormwater runoff.*
- *Collection and analysis of analytes during the dry season in receiving waters (i.e., creeks and rivers that flow to San Francisco Bay) influenced by dry season urban runoff.*
- *Sampling locations for RWLs assessment monitoring shall be spatially and temporally representative of the sampled waterbody. Sampled waterbodies shall be representative of the range of receiving waterbody types.*

The RWL sample event rainfall characteristics are provided in Table 6. For each event and location, the antecedent dry periods, storm start, and end dates, rainfall durations, and total rainfall amount are provided. The data reflects variability in rainfall amounts and durations across different events and locations.

**Table 6 RWL sample event rainfall characteristics**

Sample Event Characteristic	Wet Season Event 1 11/18/23	Wet Season Event 2 12/20/23	Wet Season Event 3 02/20/24	Dry Season Event 1 07/09/24	Wet Season Event 4 02/05/25
<b>Castro Valley Creek – Alameda County</b>					
Antecedent dry period (days) <sup>1</sup>	11	11	2.7	66	2.5
Storm Start Date	11/17/23	12/17/23	02/17/24	not applicable	02/04/25
Storm End Date	11/18/23	12/20/23	02/20/24	not applicable	02/04/25
Rainfall Duration (hrs)	17	71	86	not applicable	20
Total Rainfall (inches) <sup>2</sup>	0.59	2.71	2.53	not applicable	1.60
<b>Walnut Creek – Contra Costa County</b>					
Antecedent dry period (days) <sup>1</sup>	12	11	2.5	66	1.4
Storm Start Date	11/17/23	12/17/23	02/17/24	not applicable	02/04/25
Storm End Date	11/18/23	12/20/23	02/20/24	not applicable	02/04/25
Rainfall Duration (hrs)	21	75	84	not applicable	17
Total Rainfall (inches) <sup>3</sup>	0.42	1.53	1.63	not applicable	1.51
<b>San Mateo Creek – San Mateo County</b>					
Antecedent dry period (days) <sup>1</sup>	12	11	2.6	66	1.3
Storm Start Date	11/17/23	12/17/23	02/17/24	not applicable	02/04/25
Storm End Date	11/18/23	12/20/23	02/20/24	not applicable	02/04/25
Rainfall Duration (hrs)	18	61	93	not applicable	17
Total Rainfall (inches) <sup>4</sup>	0.63	2.45	1.80	not applicable	1.59

**Table 6 RWL sample event rainfall characteristics**

Sample Event Characteristic	Wet Season Event 1 11/18/23	Wet Season Event 2 12/20/23	Wet Season Event 3 02/20/24	Dry Season Event 1 07/09/24	Wet Season Event 4 02/05/25
<b>Saratoga Creek – Santa Clara County</b>					
Antecedent dry period (days) <sup>1</sup>	236	29	2.5	66	31.7
Storm Start Date	11/17/23	12/17/23	02/17/24	not applicable	02/04/25
Storm End Date	11/18/23	12/20/23	02/20/24	not applicable	02/04/25
Rainfall Duration (hrs)	12	70	85	not applicable	25
Total Rainfall (inches) <sup>5</sup>	0.31	1.46	0.67	not applicable	0.75
1	Defined as no event exceeding 0.1 inch of cumulative rainfall over a 24-hour period				
2	Rainfall data compiled from ACFCWCD gauge AC #25 at San Miguel (02G0019)				
3	Rainfall data compiled from Weather Underground stations KCACONCO235 and KCACONCO143				
4	Rainfall data compiled from Weather Underground station KCASANMA342				
5	Rainfall data compiled from Santa Clara Valley Water District gauge (sensor #6131)				

The report sections below provide further details on the sampling and laboratory methods, quality assurance/quality control program, and the sample results.

### 3.1 Sampling Detail

All water quality samples for analysis of RWL constituents were collected consistent with methods identified in the Bay Area Stormwater Management Agencies Association (BASMAA) Regional Monitoring Coalition (RMC) Standard Operating Procedures (BASMAA 2016) SOP FS-2, Manual Collection of Water Samples for Chemical Analysis, Bacteriological Analysis, and Toxicity Testing. All samples were collected via manual grabs.

### 3.2 Laboratory Methods

All water quality inorganic, nutrient, and fecal indicator bacteria samples were analyzed by Caltest Analytical in Napa, California. PAHs were analyzed by Physis in Anaheim, California. PCBs were analyzed by Enthalpy Analytical in El Dorado Hills, California. The analytical test methods, reporting limits, and holding times are provided in Table 7.

**Table 7 RWL analytical tests, methods, reporting limits, and holding times**

Water Analytical Test	Method	Reporting Limit	Holding Time
<i>E. coli</i>	SM 9223 B	1.0 MPN/100 mL	8 hours
Hardness as CaCO <sub>3</sub>	SM 2340 C	5.0 mg/L	6 months
Ammonia as N	SM 4500-NH3 C-11	0.10 mg/L	28 days
Nitrate as N	EPA 300.0	0.10 mg/L	48 hours
Nitrite as N	SM 4500-NO2 B-00/-11 (LL)	0.005 mg/L	48 hours
Total Kjeldahl Nitrogen	SM 4500-NH3 C-11	0.10 mg/L	28 days
Total Phosphorus as P	SM 4500-P B/F-11	0.10 mg/L	28 days
Total Mercury	EPA 1631E	0.0005 ug/L	6 months following acidification
Dissolved Copper	EPA 200.8	0.50 ug/L	Filter immediately, 6 months following acidification
Dissolved Lead	EPA 200.8	0.25 ug/L	Filter immediately, 6 months following acidification
Dissolved Zinc	EPA 200.8	1.0 ug/L	Filter immediately, 6 months following acidification

**Table 7 RWL analytical tests, methods, reporting limits, and holding times**

Water Analytical Test	Method	Reporting Limit	Holding Time
PAHs	EPA 625.1	0.005 ug/L	7 days to extraction, 14 to analyze
PCBs (RMP 40 congeners) <sup>1</sup>	EPA 1668C	10 - 40 pg/L <sup>2</sup>	1 year until extraction, 1 year after extraction to analyze

1 San Francisco Bay RMP 40 PCB congeners include PCB-8, 18, 28, 31, 33, 44, 49, 52, 56, 60, 66, 70, 74, 87, 95, 97, 99, 101, 105, 110, 118, 128, 132, 138, 141, 149, 151, 153, 156, 158, 170, 174, 177, 180, 183, 187, 194, 195, 201, and 203.

2 A range is given for the PCB reporting limits due to varying values for the individual PCB congeners.

### 3.3 Statement of Data Quality

The quality assurance/quality control (QA/QC) programs implemented by each of the collaborating Programs covering all aspects of POCs monitoring is provided within their respective 2026 IMR POCs monitoring reports.

### 3.4 Sampling Results

RWL monitoring results for each location are presented in Table 8. Results are compared against the applicable criteria provided above in Table 4 and Table 5.

Table 8 RWL monitoring results

Analyte	Units	204CVY010 Castro Valley Creek					207R02615 Walnut Creek					204SMA020 San Mateo Creek					205SAR005 Saratoga Creek				
		Wet 1	Wet 2	Wet 3	Wet 4	Dry	Wet 1	Wet 2	Wet 3	Wet 4	Dry	Wet 1	Wet 2	Wet 3	Wet 4	Dry	Wet 1	Wet 2	Wet 3	Wet 4	Dry
		11/18/23	12/20/23	02/20/24	02/05/25	07/09/24	11/18/23	12/20/23	02/20/24	02/05/25	07/09/24	11/18/23	12/20/23	02/20/24	02/05/25	07/09/24	11/18/23	12/20/23	02/20/24	02/05/25	07/09/24
<b>Field Parameters</b>																					
pH	pH Units	7.32	7.69	8.18	8.01	7.89	8.00	7.69	7.92	8.09	<b>8.55</b>	7.56	8.1	7.83	8.04	8.24	7.25	7.92	7.99	8.06	8.27
Temperature	°C	15.8	13.1	13.2	10.8	19.1	15.5	13.1	12.9	9.5	18.3	15.2	13.6	12.8	10.6	17.7	15.8	13.5	12	8.5	19.8
Specific Conductivity	µS/cm	155	94.3	602	587	880	765	317	495	469	1,091	200	141	348	322	291	195	109	229	278	1193
<b>Microbiology</b>																					
<i>E. coli</i>	MPN/100 mL	> <b>2419.6</b>	> <b>2419.6</b>	<b>630</b>	> <b>2419.6</b>	> <b>2419.6</b>	> <b>2419.6</b>	> <b>2419.6</b>	> <b>2419.6</b>	> <b>2419.6</b>	<b>1413.6</b>	> <b>2419.6</b>	> <b>2419.6</b>	<b>387.3</b>	<b>866.4</b>	<b>686.7</b>	> <b>2419.6</b>	> <b>2419.6</b>	165.8	<b>579.4</b>	<b>517.2</b>
<b>Conventionals</b>																					
Hardness as CaCO <sub>3</sub>	mg/L	56	42	212	210	260	272	118	188	230	360	86	64	138	122	108	76	82	106	112	570
<b>Nutrients</b>																					
Ammonia as N	mg/L	0.19	0.25	0.099	0.28	0.14	<0.040	0.26	0.24	0.40	0.096J	<0.04	0.18	0.11	0.21	0.08J	<0.04	0.39	0.08J	0.2	0.09J
Un-ionized Ammonia <sup>1</sup>	mg/L	0.001	0.003	0.003	0.008	0.003	NC	0.003	0.005	0.008	0.011	NC	0.005	0.002	0.004	0.004	NC	0.008	0.002	0.004	0.006
Nitrite as N	mg/L	0.018	0.010	0.0053	0.015	0.013	0.0190	0.0067	0.0055	0.0120	0.0120	0.0190	0.0050	<0.0020	0.002J	0.0020J	0.0220	0.0027J	<0.0020	0.0030J	0.0130
Nitrate as N	mg/L	0.58	0.74	2.6	5.5	1.5	0.40	0.33	0.52	1.1	0.23	0.20	0.44	0.18	0.31	0.12	0.43	0.13	0.19	0.51	1.20
Total Kjeldahl Nitrogen	mg/L	1.3	0.72	0.94	1.2	0.8	1.1	0.58	1.4	3.2	0.47	0.91	1.10	0.73	1.25	0.51	1.4	1.20	0.90	1.40	2.10
Total Phosphorus as P	mg/L	0.20	0.20	0.18	0.25	0.14	0.33	0.33	0.34	1.4	0.17	0.25	0.29	0.06	0.08	0.03	0.34	0.49	0.31	0.22	0.02
<b>Total Metals</b>																					
Mercury	µg/L	0.0036	0.0077	0.0068	0.007	0.002	0.0045	0.011	0.019	0.077	0.002	0.0042	0.016	0.006	0.0043	0.0013	0.002	0.037	0.052	0.020	0.001
<b>Dissolved Metals<sup>2</sup></b>																					
Copper (criteria)	µg/L	6.8 (7.8)	4.0 (5.9)	3.1 (27.3)	4.3 (27.0)	1.8 (20.3)	2.1 (34.5)	3.1 (15.7)	3.0 (24.4)	3.4 (29.5)	0.89 (26.8)	4.2 (12)	<b>6.6</b> (6.1)	2.1 (18)	3.4 (16)	1.6 (39.6)	5.1 (10)	2.5 (11)	1.0 (18)	1.4 (15)	0.6 (39.6)
Lead (criteria)	µg/L	0.30 (39.0)	0.28 (27.1)	0.14 (212.5)	0.12 (209.9)	0.071 (10.7)	0.12J (291.8)	0.2J (100.8)	<0.07 (182.4)	<0.07 (235.7)	<0.07 (16.3)	0.19J (67)	0.25 (46)	0.12J (128)	0.19J (105)	<0.07 (3.5)	0.29 (58)	0.23J (63)	<0.07 (88)	0.08J (94)	<0.07 (29.2)
Zinc (criteria)	µg/L	19 (71.7)	17 (56.2)	7.0 (221.5)	9.1 (219.7)	2.1 (265.5)	4.4 (273.6)	9.7 (134.8)	2.4 (200.5)	1.4 (237.3)	<0.78 (349.7)	2.4 (103)	5.4 (80)	1.6 (154)	2.3 (139)	0.83J (126)	12 (93)	6.9 (99)	<0.78 (123)	0.9 J (129)	<0.78 (516)

Table 8 RWL monitoring results

Analyte	Units	204CVY010 Castro Valley Creek					207R02615 Walnut Creek					204SMA020 San Mateo Creek					205SAR005 Saratoga Creek				
		Wet 1	Wet 2	Wet 3	Wet 4	Dry	Wet 1	Wet 2	Wet 3	Wet 4	Dry	Wet 1	Wet 2	Wet 3	Wet 4	Dry	Wet 1	Wet 2	Wet 3	Wet 4	Dry
		11/18/23	12/20/23	02/20/24	02/05/25	07/09/24	11/18/23	12/20/23	02/20/24	02/05/25	07/09/24	11/18/23	12/20/23	02/20/24	02/05/25	07/09/24	11/18/23	12/20/23	02/20/24	02/05/25	07/09/24
<b>PAHs<sup>3</sup></b>																					
Total PAHs <sup>4</sup>	µg/L	0.056	1.006	0.013	0.010	0.067	0.056	0.280	0.045	0.157	0.003	0.061	0.276	0.020	0.017	0.003	0.045	0.549	0.165	0.056	0.003
<b>PCBs<sup>3</sup></b>																					
Total RMP 40 PCB Congeners	pg/L	619	1,606	356	655	865	500	1,407	645	1,660	41.2	927	1,810	280	209	98	175	3,855	254	112	ND <sup>5</sup>

Values in ***Bold Italics*** exceed applicable water quality criteria, as presented in Table 4 and Table 5.

- 1 Calculated using Emerson method (Emerson et al. 1975)
- 2 Dissolved metals in freshwater criteria are calculated using a hardness-based equation. Values reported in italicized parentheses are applicable hardness-based water quality criteria by event. For wet weather events, 1-hour (acute) criterion are applied, and for the dry weather event, 4-day (chronic) criterion is applied.
- 3 Refer to electronic data deliverables (available from CEDEN) for the full list of individual PAH compound and PCB congener concentrations.
- 4 Individual PAH criterion are variable by compound. All individual PAH compound results were compared to applicable water quality criterion, with no value exceeding water quality criterion except for chrysene at station 205SAR005 during the Wet 2 event.
- 5 All PCB congeners were below the method detection limit.
- > *E. coli* concentration exceeds the associated upper limit of the test
- < Analyte not detected at or above the associated method detection limit
- J Analyte was detected; value is considered an estimate since it falls between the method detection limit and the reporting limit
- MPN most probable number
- NC Un-ionized ammonia value is not calculatable due to ammonia value not detected at or above the method detection limit
- ND Not detected at or above the method detection limit

## 4. DATA ANALYSIS AND DISCUSSION

The Regional Water Board’s Conditional Approval of the RWL MP required Permittees to compare data collected for all RWL analytes to all available data for the same county and analyte collected during the last 10 years. To conduct this analysis, the collaborating Programs accessed and compiled relevant water-quality data for the monitored parameters from CEDEN over the last decade (2015-2024). The Programs then reviewed the compiled data on a county-by-county basis to eliminate non-relevant data points (e.g., monitoring at treatment facilities, collected in subtidal areas, associated with “field measurements”, and uncertain data quality). The resulting dataset comprised approximately 4,800 data points. It included *E. coli*, nutrients (ammonia as N, nitrate as N, nitrite as N, total Kjeldahl nitrogen, and phosphorus), metals (dissolved copper, dissolved lead, dissolved zinc, and total mercury), and PCBs. There were no applicable PAH data in CEDEN over the last decade. CEDEN data, similar to the RWL data, is comprised of both wet and dry season results. However, the CEDEN dataset does not contain information on storm conditions and all RWL wet season samples were collected during or immediately following storm events. Many analytes targeted by the RWL program are typically elevated during storms. Because CEDEN does not indicate whether samples were collected during storm events, wet season RWL samples may not be directly comparable or could reasonably be expected to show higher concentrations than CEDEN wet season samples.

Statistical comparisons between the RWL and CEDEN data were conducted using box plots and tabular summaries. For statistical analysis, non-detects in the RWL and CEDEN data were set to zero. Box plot comparisons for all counties combined and for individual counties are provided in Appendix A and Appendix B, respectively, and discussed below. Box plot figures for all analytes (e.g., nitrate as N) or analyte groups (e.g., total PCBs) show the interquartile range (shaded box, 25<sup>th</sup> percentile at the bottom of the box and 75<sup>th</sup> percentile at the top), the median (line within the box), whiskers representing the minimum and maximum values within 1.5 times the interquartile range and outliers (white dots). Tables summarizing the number of RWL and CEDEN non-detects and the number of CEDEN outliers for each analyte are also provided in Appendix A. Individual PAH compounds and PCB congeners were considered unique for the non-detect summary but were summed for each sample event at each location in the statistical box plot comparison. In Table 8, the RWL results shown in bold exceeded the WQOs listed Table 4 and Table 5.

### 4.1 Water Quality Data Evaluation - All Counties Combined

The results presented in Table 8 and the regional box plots, provided in Appendix A, show the following tendencies based on pollutant type:

- **Nutrients:** RWL results did not exceed the applicable WQOs and were generally within the CEDEN interquartile range. Concentrations of ammonia and phosphorous were frequently above the CEDEN 75<sup>th</sup> percentile concentration and concentrations of other nutrients were occasionally above the CEDEN 75<sup>th</sup> percentile concentration.
- ***E. coli*:** RWL results consistently exceeded the applicable WQOs and were frequently above the CEDEN 75<sup>th</sup> percentile concentration.
- **Metals:** RWL results exceeded the applicable WQO on one occasion for dissolved copper at San Mateo Creek on December 20, 2023 (the measured concentration of 6.6 µg/L exceeded the hardness-based WQO of 6.1 µg/L). Other RWL dissolved metal results were frequently above the CEDEN 75<sup>th</sup> percentile concentration and RWL total mercury results were occasionally above the CEDEN 75<sup>th</sup> percentile concentration.

- PCBs: RWL results did not exceed the applicable WQO and were consistently near or below the CEDEN 25<sup>th</sup> percentile concentration.

## 4.2 Water Quality Data Evaluation - Individual Counties

The results presented in Table 8 and box plots for each analyte by county are provided in Appendix B and discussed below:

- Alameda County: The Castro Valley Creek watershed upstream of the sampling point is a small (5.5 square miles) and highly urbanized (90.2% developed, 49.3% impervious) watershed. RWL results showed *E. coli* levels that consistently exceeded the applicable WQO. There were occasional instances of nutrients and frequent instances of dissolved metals above the CEDEN 75<sup>th</sup> percentile, but no WQO exceedances.
- Contra Costa County: The Walnut Creek watershed upstream of the sampling point is a large (116.6 square miles) watershed with moderate development (53.8% developed, 18.7% impervious). RWL results show *E. coli* levels that consistently exceeded the applicable WQO. There were frequent instances of nutrients above the CEDEN 75<sup>th</sup> percentile, but no WQO exceedances. There were no CEDEN data for dissolved copper, zinc, or lead in Contra Costa County.
- San Mateo County: The San Mateo Creek watershed upstream of the sampling point is a moderate-sized (33.3 square miles) and less developed watershed (20% developed, 6.6% impervious) overall; however, the watershed downstream of the Crystal Springs Reservoir dam is small (approximately 4 square miles) with moderate development (approximately 38% impervious). RWL results show *E. coli* levels that consistently exceeded the applicable WQO. The measured dissolved copper concentration of 6.6 µg/L exceeded the applicable hardness-based WQO of 6.1 µg/L on one occasion (wet season Event 2 on December 20, 2023). Other RWL results for nutrients were occasionally above the CEDEN 75<sup>th</sup> percentile, but there were no WQO exceedances. All 10 CEDEN results for dissolved lead in San Mateo County were non-detect.
- Santa Clara County: The Saratoga Creek watershed upstream of the sampling point is 16.7 square miles with mixed development (49.4%, 22.5% impervious). RWL results show *E. coli* levels that exceeded the applicable WQO for four of the five sampled events. *E. coli* concentrations did not exceed the WQO for the wet season Event 3, collected February 20, 2024, and three of the five events were below the CEDEN 75<sup>th</sup> percentile concentration. Other RWL results for phosphorus and total Kjeldahl nitrogen were frequently above the CEDEN 75<sup>th</sup> percentile, and for some metals, were occasionally above the CEDEN 75<sup>th</sup> percentile but did not exceed the WQOs. All 13 CEDEN results for dissolved lead in Santa Clara County were non-detect.

## 5. CONCLUSIONS AND RECOMMENDATIONS

### 5.1 Conclusions

This update to the Receiving Water Limitations Assessment Report summarizes RWL monitoring conducted during WY 2024 and WY 2025 and evaluates the results relative to applicable WQOs and available instream data compiled from CEDEN. Across the four monitored creeks, *E. coli* concentrations consistently exceeded applicable WQOs except for one wet season sample collected at Saratoga Creek. Nutrients, metals, PAHs, and PCBs did not exceed applicable criteria,

except for one exceedance of the dissolved copper criterion observed at San Mateo Creek during one wet weather event and one exceedance of the chrysene (a PAH) criterion observed at Saratoga Creek during one wet weather event. For many analytes, RWL concentrations were frequently higher than the upper quartile of the CEDEN dataset. These findings provide context for consideration of RWL monitoring in future permit terms.

## **5.2 Proposed Monitoring for Next Permit Term**

The collaborating Programs anticipate that the POCs RWL monitoring program will continue into the next permit term. If directed by the Regional Water Board, the Programs will consider selecting new sites for monitoring during MRP 4, with the location informed by the representativeness analysis outlined in the RWL MP Addendum (BAMSC 2024). During MRP 4 discussions on Provision C.8, the collaborating Programs will engage with Regional Water Board staff to discuss whether changes to the analyte list are needed.

## 6. REFERENCES

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**APPENDIX A**  
RWL Statistical Evaluation  
All Counties Combined

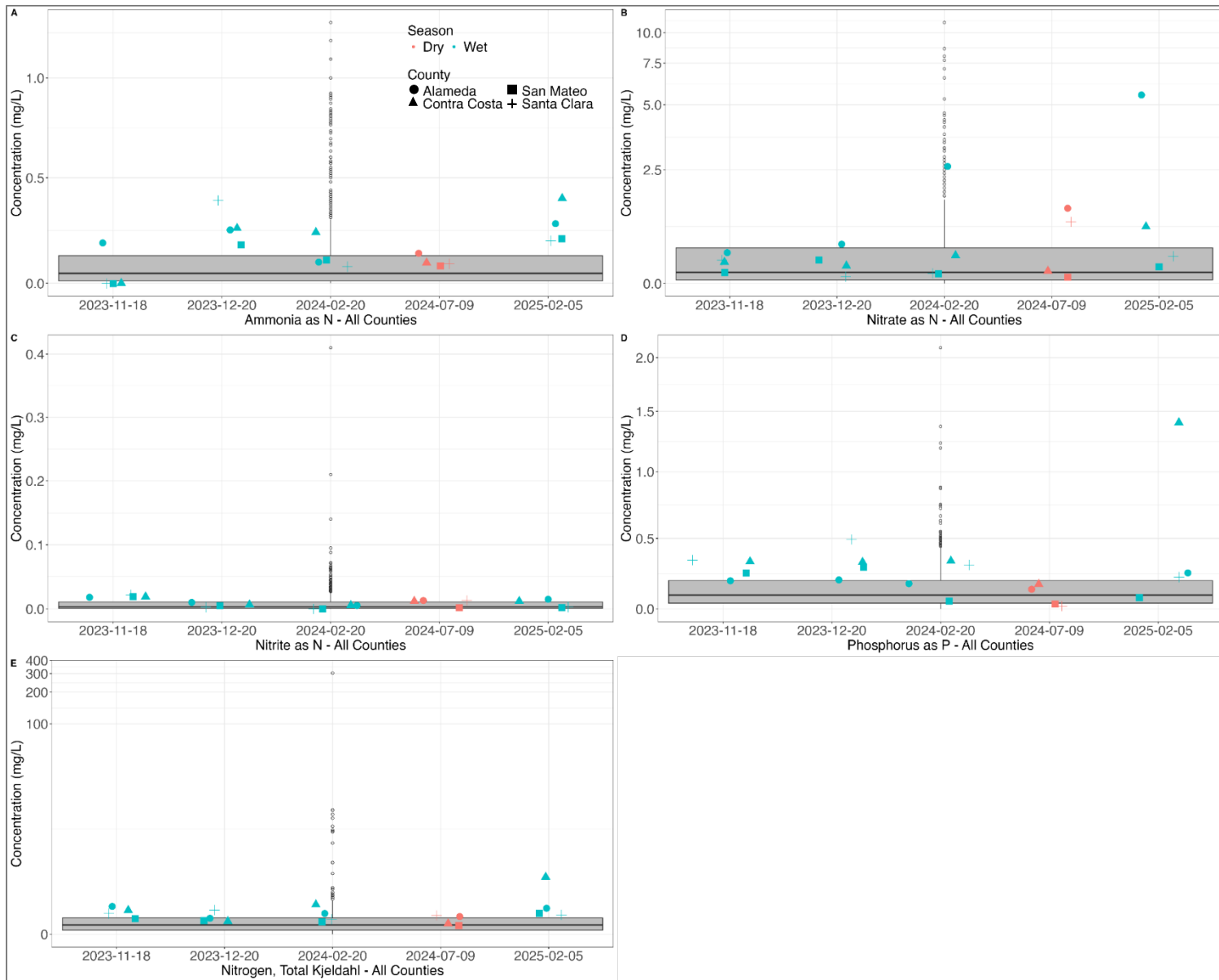


Figure A-1. Comparison of nutrient analyte concentrations across Alameda, Contra Costa, San Mateo and Santa Clara counties

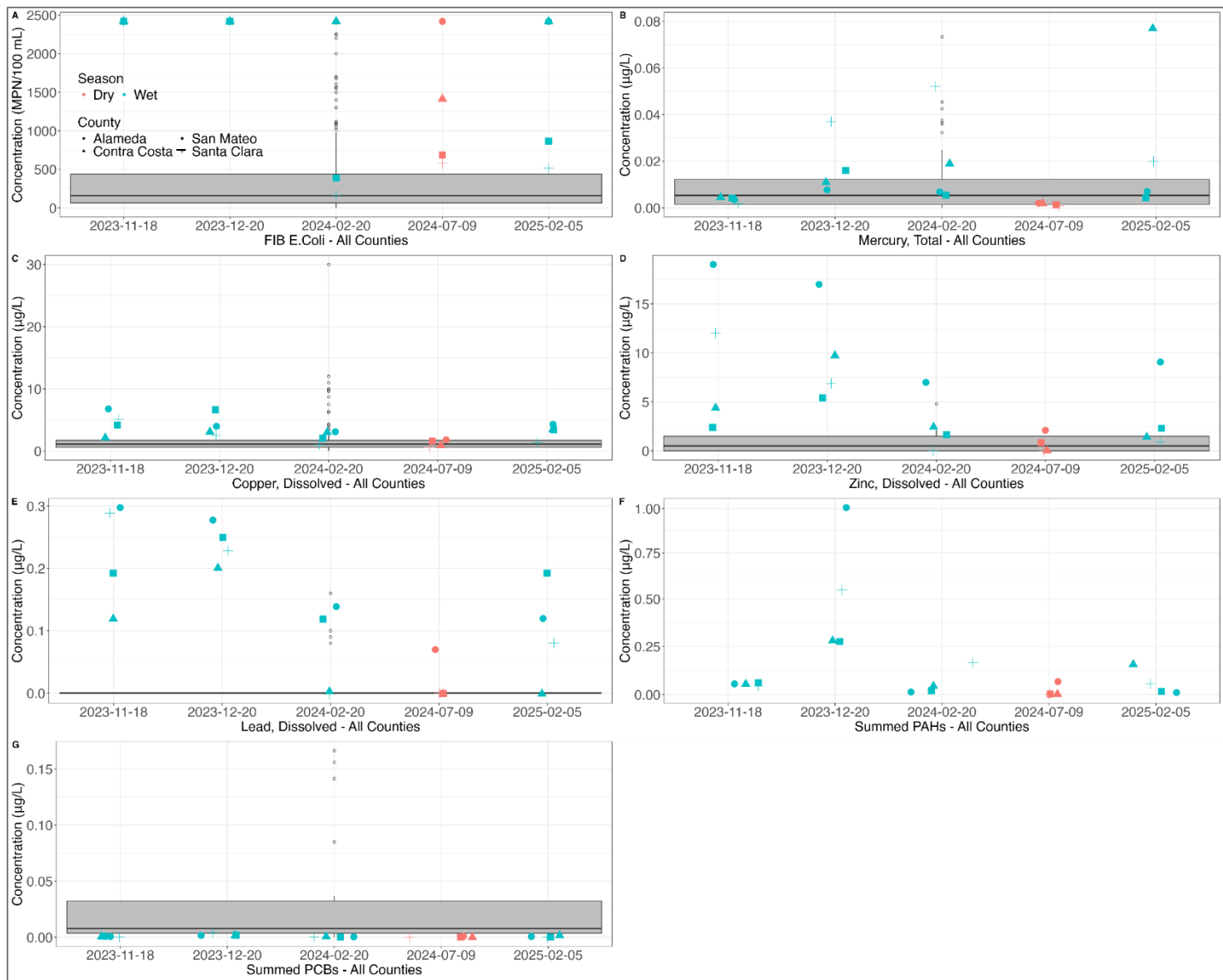


Figure A-2. Comparison of analyte concentrations across Alameda, Contra Costa, San Mateo and Santa Clara counties for E. coli, total mercury, dissolved copper, dissolved zinc, dissolved lead, total PAHs, and total PCBs

CEDEN data for PAHs was not available. E. coli concentrations are capped at 2419.6 MPN/100 mL.

Table A-1 Summary of CEDEN Non-Detects

Analyte	County	Non-Detect Count	Total Count	% Non-Detect
Ammonia as N	Alameda	36	306	11.8%
Ammonia as N	Contra Costa	6	72	8.3%
Ammonia as N	San Mateo	12	137	8.8%
Ammonia as N	Santa Clara	39	248	15.7%
Copper, Dissolved	Alameda	0	23	0
Copper, Dissolved	Contra Costa	NA	NA	NA
Copper, Dissolved	San Mateo	0	26	0
Copper, Dissolved	Santa Clara	2	27	7.4%
FIB ( <i>E.Coli</i> )	Alameda	0	37	0
FIB ( <i>E.Coli</i> )	Contra Costa	0	29	0
FIB ( <i>E.Coli</i> )	San Mateo	3	164	1.8%
FIB ( <i>E.Coli</i> )	Santa Clara	0	94	0
Lead, Dissolved	Alameda	0	4	0
Lead, Dissolved	Contra Costa	NA	NA	NA
Lead, Dissolved	San Mateo	10	10	100
Lead, Dissolved	Santa Clara	13	13	100
Mercury, Total	Alameda	0	16	0
Mercury, Total	Contra Costa	0	7	0
Mercury, Total	San Mateo	0	17	0
Mercury, Total	Santa Clara	7	73	9.6%
Nitrate as N	Alameda	20	153	13.1%
Nitrate as N	Contra Costa	10	56	17.9%
Nitrate as N	San Mateo	18	100	18.0%
Nitrate as N	Santa Clara	18	165	10.9%
Nitrite as N	Alameda	39	180	21.7%
Nitrite as N	Contra Costa	8	54	14.8%
Nitrite as N	San Mateo	22	95	23.3%
Nitrite as N	Santa Clara	45	170	26.5%
Nitrogen, Total Kjeldahl	Alameda	45	271	16.6%
Nitrogen, Total Kjeldahl	Contra Costa	5	71	7.0%
Nitrogen, Total Kjeldahl	San Mateo	10	137	7.3%
Nitrogen, Total Kjeldahl	Santa Clara	24	212	11.3%
PCBs	Alameda	40	455	8.8%
PCBs	Contra Costa	8	310	2.6%
PCBs	San Mateo	53	306	17.3%
PCBs	Santa Clara	46	87	52.9%
Phosphorus as P	Alameda	6	273	2.2%
Phosphorus as P	Contra Costa	10	73	13.7%
Phosphorus as P	San Mateo	5	140	3.6%
Phosphorus as P	Santa Clara	9	218	4.1%
Zinc, Dissolved	Alameda	1	4	25.0%
Zinc, Dissolved	Contra Costa	NA	NA	NA
Zinc, Dissolved	San Mateo	4	10	40.0%
Zinc, Dissolved	Santa Clara	6	16	37.5%

Table A-2 Summary of RWL Non-Detects

Analyte	County	Non-Detect Count	Total Count	% Non-Detect
Ammonia as N	Alameda	0	5	0
Ammonia as N	Contra Costa	0	5	0
Ammonia as N	San Mateo	0	5	0
Ammonia as N	Santa Clara	1	5	20%
Copper, Dissolved	Alameda	0	5	0
Copper, Dissolved	Contra Costa	0	5	0
Copper, Dissolved	San Mateo	0	5	0
Copper, Dissolved	Santa Clara	0	5	0
FIB (E.Coli)	Alameda	0	5	0
FIB (E.Coli)	Contra Costa	0	5	0
FIB (E.Coli)	San Mateo	0	5	0
FIB (E.Coli)	Santa Clara	0	5	0
Lead, Dissolved	Alameda	0	5	0
Lead, Dissolved	Contra Costa	0	5	0
Lead, Dissolved	San Mateo	0	5	0
Lead, Dissolved	Santa Clara	2	5	40%
Mercury, Total	Alameda	0	5	0
Mercury, Total	Contra Costa	0	5	0
Mercury, Total	San Mateo	0	5	0
Mercury, Total	Santa Clara	0	5	0
Nitrate as N	Alameda	0	5	0
Nitrate as N	Contra Costa	0	5	0
Nitrate as N	San Mateo	0	5	0
Nitrate as N	Santa Clara	0	5	0
Nitrite as N	Alameda	0	5	0
Nitrite as N	Contra Costa	0	5	0
Nitrite as N	San Mateo	0	5	0
Nitrite as N	Santa Clara	1	5	20%
Nitrogen, Total Kjeldahl	Alameda	0	5	0
Nitrogen, Total Kjeldahl	Contra Costa	0	5	0
Nitrogen, Total Kjeldahl	San Mateo	0	5	0
Nitrogen, Total Kjeldahl	Santa Clara	0	5	0
PAHs	Alameda	60	125	48.0%
PAHs	Contra Costa	57	125	45.6%
PAHs	San Mateo	68	125	54.4%
PAHs	Santa Clara	57	125	45.6%
PCBs	Alameda	77	195 <sup>a</sup>	39.5%
PCBs	Contra Costa	86	195 <sup>a</sup>	44.1%
PCBs	San Mateo	98	195 <sup>a</sup>	50.3%
PCBs	Santa Clara	122	195 <sup>a</sup>	62.6%
Phosphorus as P	Alameda	0	5	0
Phosphorus as P	Contra Costa	0	5	0
Phosphorus as P	San Mateo	0	5	0
Phosphorus as P	Santa Clara	0	5	0
Zinc, Dissolved	Alameda	0	5	0
Zinc, Dissolved	Contra Costa	0	5	0
Zinc, Dissolved	San Mateo	0	5	0
Zinc, Dissolved	Santa Clara	2	5	40%

a Total number of PCBs congeners across the five events is 195 rather than 200 due to how the laboratory reports co-elutions, where two congeners are reported together.

**Table A3 Summary of Outliers in the CEDEN-compiled data (2015-2024)**

Analyte	Outlier Count	Total Count	Outlier Min	Outlier Max	Unit
Total PCBs	3	27	0.01	0.156	µg/L
Ammonia as N	78	763	0.27	1.3	mg/L
FIB ( <i>E. coli</i> )	31	324	609	90,000	MPN/100 mL
Nitrate as N	43	474	0.57	11	mg/L
Nitrite as N	48	499	0.009	0.41	mg/L
Phosphorus as P	45	704	0.219	2.1	mg/L
Nitrogen, Total Kjeldahl	31	691	1.3	303	mg/L
Mercury, Total	20	113	0.015	5.13	µg/L
Zinc, Dissolved	1	30	4.8	4.8	µg/L
Lead, Dissolved	1	27	0.16	0.16	µg/L
Copper, Dissolved	8	76	2.4	2.4	µg/L

**APPENDIX B**  
RWL Statistical Evaluation  
Individual Counties

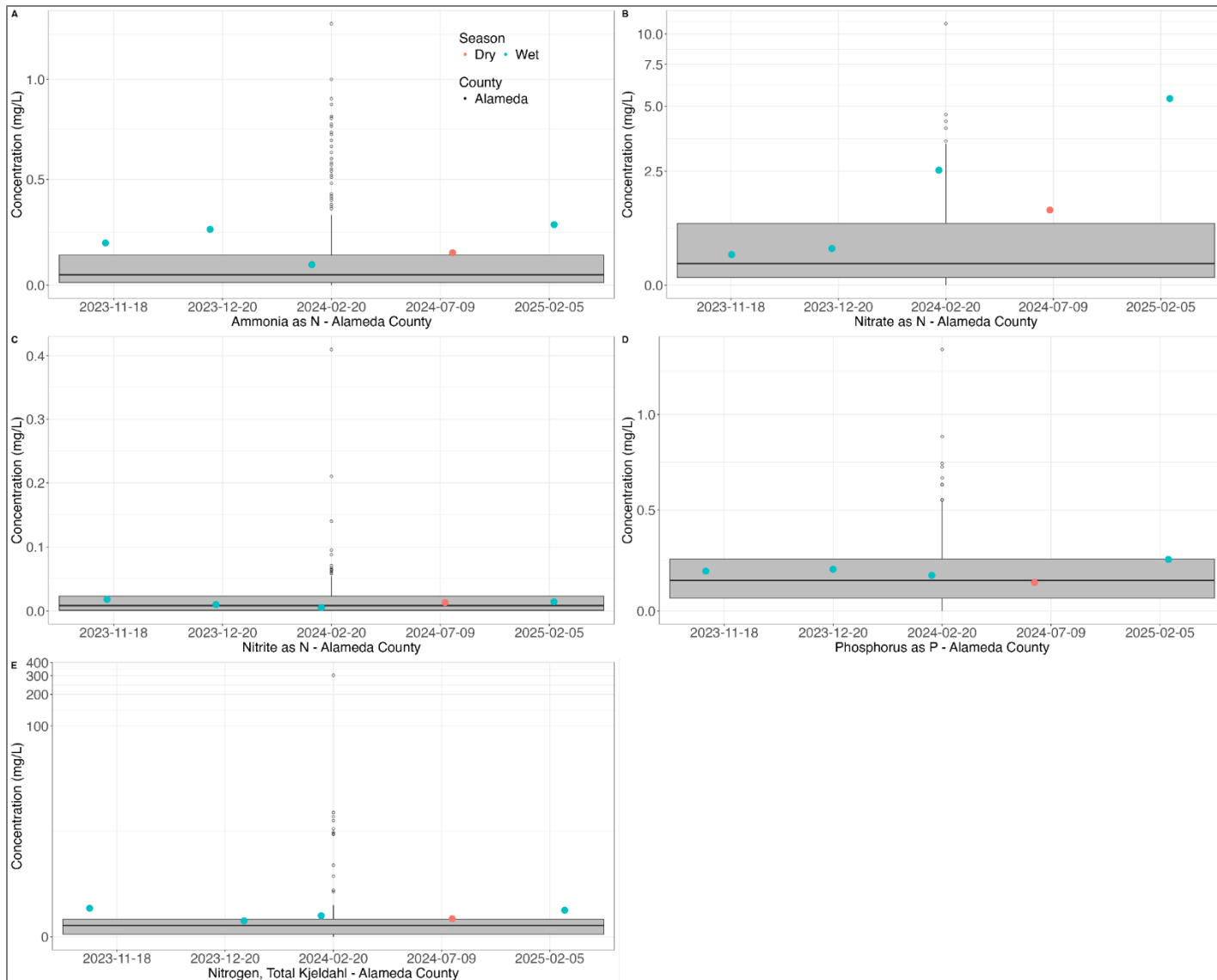


Figure B-1. Comparison of nutrient analyte concentrations within Alameda County

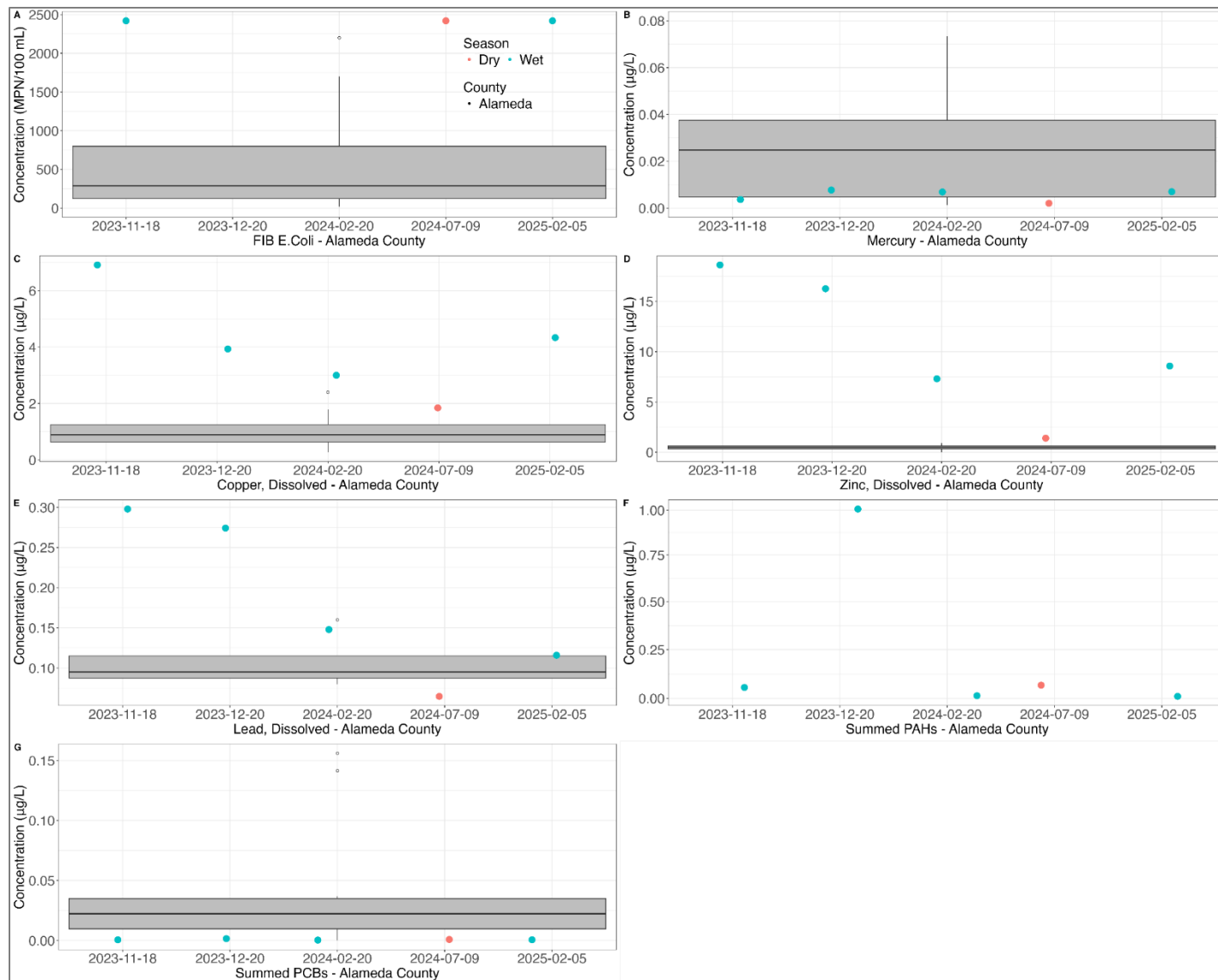


Figure B-2. Comparison of analyte concentrations within Alameda County for E. coli, mercury, copper, zinc, lead, PAHs, and PCBs

No CEDEN data available for PAHs. E. coli concentrations are capped at 2419.6 MPN/100 mL.

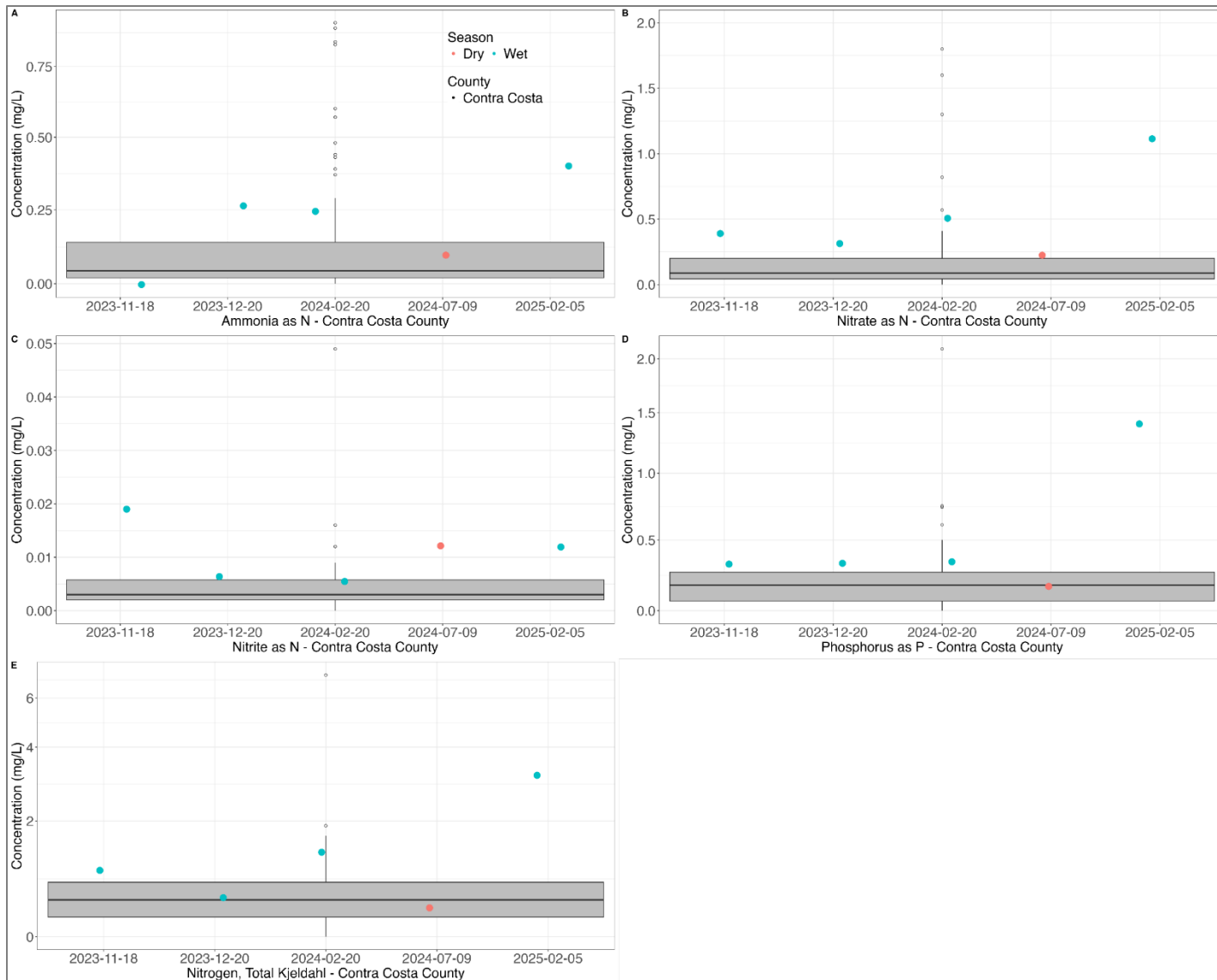
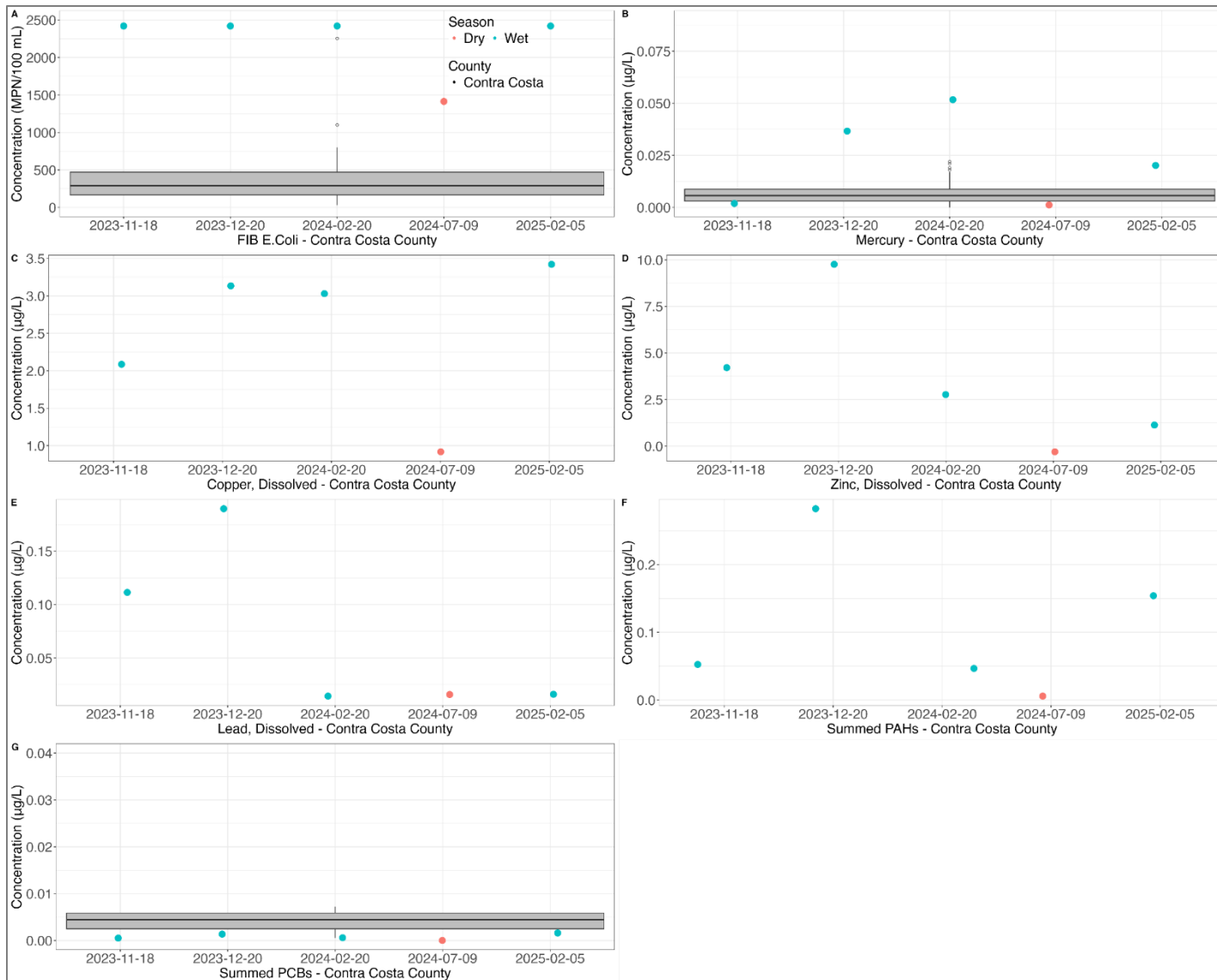


Figure B-3. Comparison of nutrient analyte concentrations within Contra Costa County



**Figure B-4. Comparison of analyte concentrations within Contra Costa County for E. coli, total mercury, dissolved copper, dissolved zinc, dissolved lead, PAHs, and PCBs**

*No CEDEN data for Contra Costa County is available for dissolved copper, dissolved zinc, dissolved lead, and PAHs. E. coli concentrations are capped at 2419.6 MPN/100 mL.*

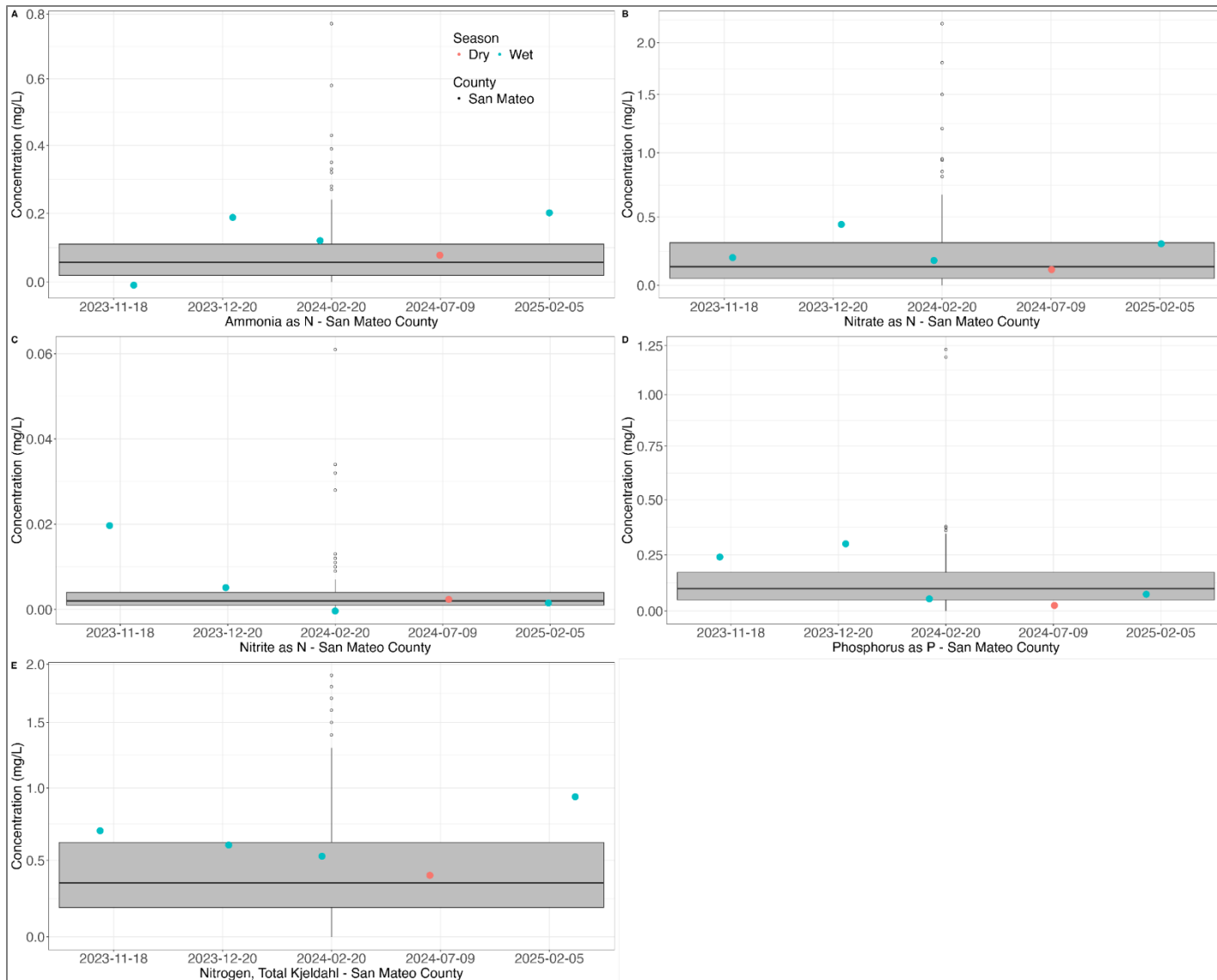
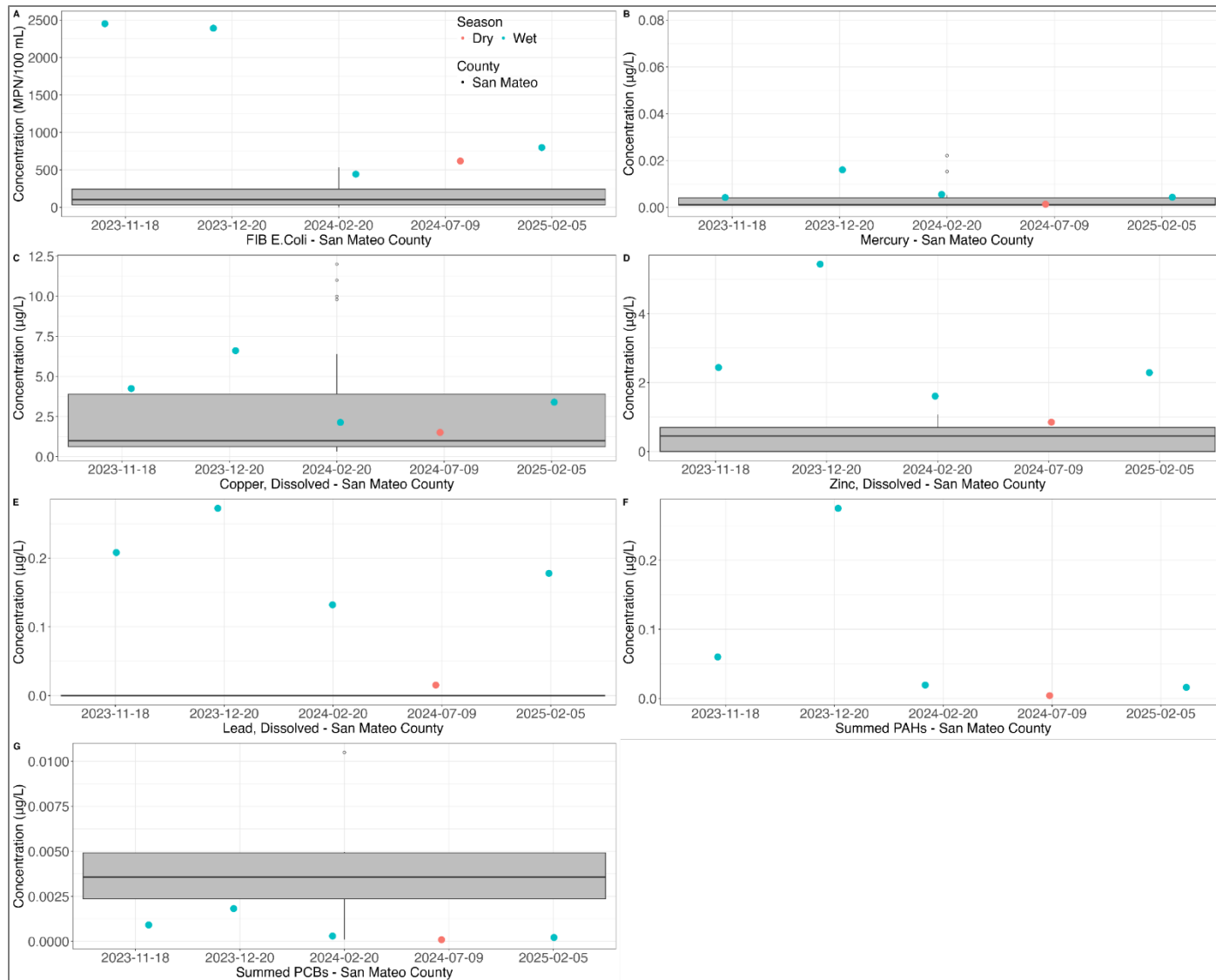


Figure B-5. Comparison of nutrient analyte concentrations within San Mateo County



**Figure B-6. Comparison of analyte concentrations within San Mateo County for E. coli, total mercury, dissolved copper, dissolved zinc, dissolved lead, PAHs, and PCBs**

*No CEDEN data for San Mateo County is available for PAHs and all dissolved lead results were non-detect above the method detection limit. E. coli concentrations are capped at 2419.6 MPN/100 mL.*

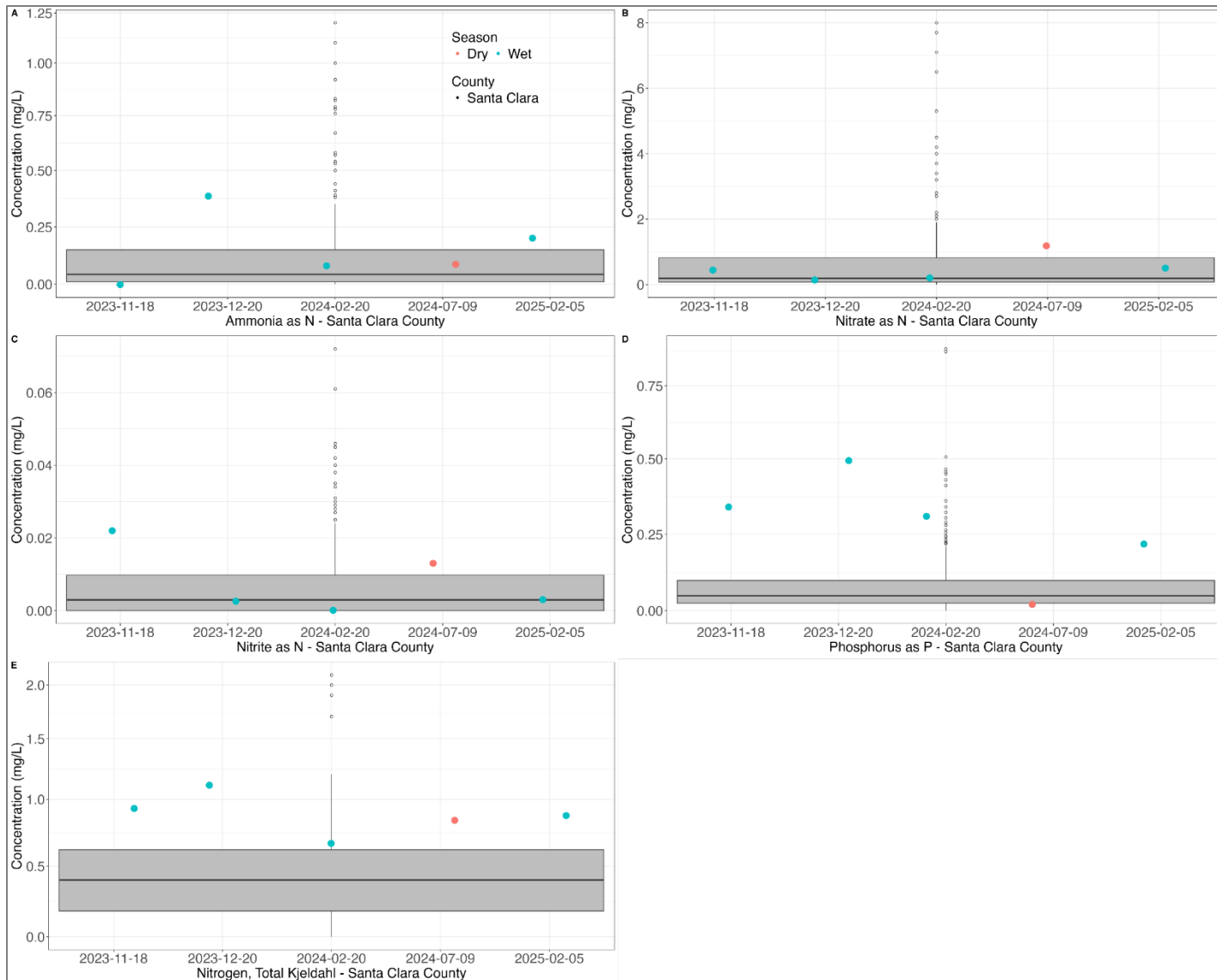
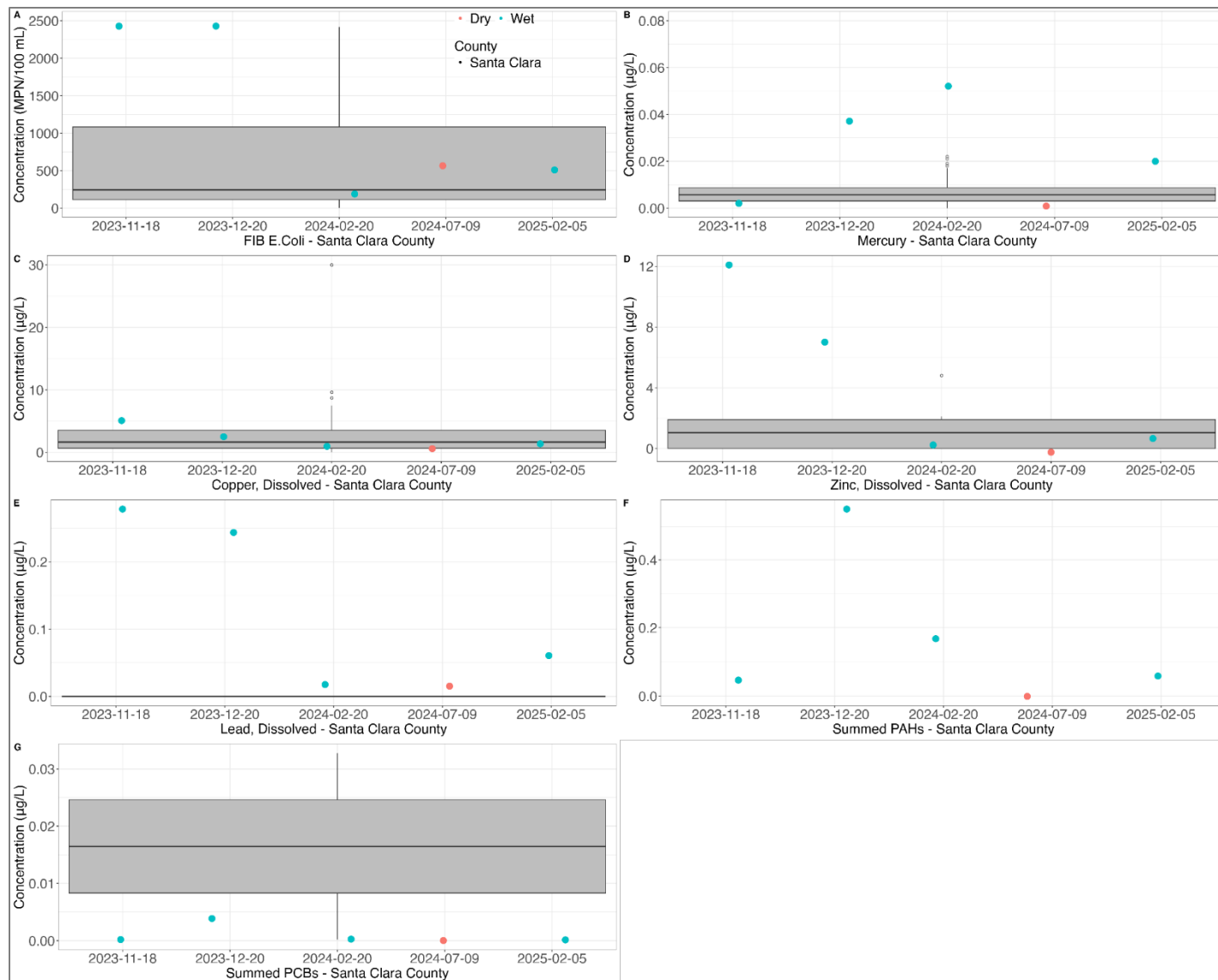


Figure B-7. Comparison of nutrient analyte concentrations within Santa Clara County



**Figure B-8. Comparison of analyte concentrations within Santa Clara County for E. coli, total mercury, dissolved copper, dissolved zinc, dissolved lead, PAHs, and PCBs**

*No CEDEN data for Santa Clara County is available for PAHs and all dissolved lead results were non-detect above the method detection limit. E. coli concentrations are capped at 2419.6 MPN/100 mL.*

## **Appendix B**

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### **PCB and Mercury Concentrations by Sample Date for All Monitoring Conducted by SCVURPPP and Third Parties in the Santa Clara Basin WY 2020 – 2025**

Table B-1. SCVURPPP and Third Party Sediment PCBs and Mercury Samples WY 2020 through 2025.

Organization	Permittee	Sample ID	Sample Date	Sample Location Type	Public ROW / On-site	Latitude	Longitude	Total PCBs <sup>a</sup>	Total Mercury
								(mg/kg) <sup>b</sup>	
SCVURPPP	San Jose	SC-SJY-04-Q	11/07/2019	Other	On-site	37.3867	-121.914	0.02	0.08
SCVURPPP	San Jose	SC-SJY-04-S	11/07/2019	Other	Public ROW	37.38513	-121.914	0.03	0.11
SCVURPPP	San Jose	SC-SJY-04-U	11/07/2019	Street/Curb	Public ROW	37.38493	-121.912	0.02	0.26
SCVURPPP	San Jose	SC-SJY-04-V	11/07/2019	Street/Curb	Public ROW	37.37567	-121.92	0.04	0.23
SCVURPPP	San Jose	SC-SJY-08-AF	11/07/2019	Street/Curb	Public ROW	37.37176	-121.901	0.06	0.14
SCVURPPP	San Jose	SC-SJY-14-N	11/07/2019	Street/Curb	Public ROW	37.36245	-121.883	0.02	0.09
SCVURPPP	San Jose	SC-SJY-14-O	11/07/2019	Street/Curb	Public ROW	37.36284	-121.878	0.01	0.10
SCVURPPP	San Jose	SC-SJY-14-P	11/07/2019	Street/Curb	Public ROW	37.36272	-121.877	0.01	0.09
SCVURPPP	Mountain View	SC-MOV-0821-A	08/31/2021	Manhole	Public ROW	37.42318	-122.08064	<b>0.46</b>	0.20
SCVURPPP	Mountain View	SC-MOV-0821-B	08/31/2021	Manhole	Public ROW	37.42326	-122.07996	<b>0.21</b>	<b>0.34</b>
SCVURPPP	Mountain View	SC-MOV-0821-C	08/31/2021	Manhole	Public ROW	37.42331	-122.07822	0.04	0.08
SCVURPPP	Mountain View	SC-MOV-0821-D	08/31/2021	Street/curb	Public ROW	37.42127	-122.07813	0.08	0.06
SCVURPPP	Mountain View	SC-MOV-0821-E	08/31/2021	Inlet / Catch Basin	Public ROW	37.42363	-122.07916	0.01	0.05
SCVURPPP	Mountain View	SC-MOV-0821-F	08/31/2021	Other	On-site	37.42501	-122.08122	0.03	0.12
SCVURPPP	San Jose	SC-SJY-0821-A	08/31/2021	Other	Public ROW	37.37994	-121.89874	<b>0.68</b>	0.19
SCVURPPP	San Jose	SC-SJY-0821-B	08/31/2021	Other	Public ROW	37.38249	-121.89894	<b>0.21</b>	0.14
SCVURPPP	San Jose	SC-SJY-0821-C	08/31/2021	Other	Public ROW	37.38313	-121.89899	0.02	0.23
SCVURPPP	Sunnyvale	SC_SNV-0821-A	08/31/2021	Other	Public ROW	37.42179	-122.0225	0.16	<b>0.31</b>
SCVURPPP	Mountain View	MV-PMC-0822-1	08/23/2022	Manhole Vault	Public ROW	37.41219	-122.08651	0.02	0.03
SCVURPPP	Mountain View	MV-PMC-0822-2	08/23/2022	Manhole Vault	Public ROW	37.39469	-122.07693	0.01	0.09
SCVURPPP	Mountain View	MV-SVC-0822-1	08/23/2022	Drop Inlet/Catch Basin	On-site	37.4117	-122.07389	0.01	0.07
SCVURPPP	Mountain View	MV-SVC-0822-2	08/23/2022	Drop Inlet/Catch Basin	On-site	37.41306	-122.07607	<b>0.22</b>	0.07
SCVURPPP	Mountain View	MV-SVC-0822-3	08/23/2022	Gravel Pad	Public ROW	37.42813	-122.06942	0.01	0.07
SCVURPPP	Mountain View	MV-SVC-0822-4	08/23/2022	Driveway	Public ROW	37.38958	-122.06599	0.02	0.06
SCVURPPP	Mountain View	MV-XXX-0822-1	08/23/2022	Vault	Public ROW	37.4246	-122.09781	<b>1.01</b>	0.09
SCVURPPP	Unincorporated County	SCC-PMC-0822-1	08/23/2022	Gravel Pad	Public ROW	37.3233	-122.0798	0.002	0.11
SCVURPPP	Mountain View	MV-XXX-0823-01	08/28/2023	Street/Curb-Driveway	Public ROW	37.41886	-122.09124	0.01	0.11
SCVURPPP	Mountain View	MV-XXX-0823-02	08/28/2023	Manhole	Public ROW	37.4188	-122.09107	0.01	0.21
SCVURPPP	Mountain View	MV-XXX-0823-03	08/28/2023	Street/Curb-Driveway	Public ROW	37.41877	-122.09192	0.01	0.08
SCVURPPP	Mountain View	MV-XXX-0823-04	08/28/2023	Street/Curb-Driveway	Public ROW	37.41865	-122.09311	0.02	0.07
SCVURPPP	Mountain View	MV-XXX-0823-05	08/28/2023	Street/Curb-Driveway	Public ROW	37.41861	-122.09343	0.004	0.14
SCVURPPP	Mountain View	MV-XXX-0823-06	08/28/2023	Street/Curb-Driveway	Public ROW	37.41926	-122.10004	0.05	0.11
SCVURPPP	Mountain View	MV-XXX-0823-07	08/28/2023	Manhole	Public ROW	37.41695	-122.10037	0.01	0.11
SCVURPPP	Mountain View	MV-XXX-0823-08	08/28/2023	Street/Curb-Driveway	Public ROW	37.41697	-122.09938	0.004	0.06
SCVURPPP	Sunnyvale	SN-SVE-0823-01	08/29/2023	Street/Curb-Driveway	Public ROW	37.39838	-122.02084	0.01	0.05
SCVURPPP	Sunnyvale	SN-SVE-0823-02	08/29/2023	Street/Curb-Driveway	Public ROW	37.38511	-122.05124	0.01	0.09
SCVURPPP	Sunnyvale	SN-SVW-0823-01	08/29/2023	Street/Curb-Driveway	Public ROW	37.38568	-122.05162	0.004	0.14
SCVURPPP	Sunnyvale	SN-SVW-0823-02	08/29/2023	Street/Curb-Driveway	Public ROW	37.38323	-122.04442	0.002	0.05
SCVURPPP	Sunnyvale	SN-SVW-0823-03	08/29/2023	Street/Curb-Railway	Public ROW	37.38403	-122.04803	0.02	0.10
SCVURPPP	Sunnyvale	SN-SVW-0823-04	08/29/2023	Street/Curb-Railway	Public ROW	37.38251	-122.04349	0.002	0.07
SCVURPPP	Sunnyvale	SN-SVW-0823-05	08/29/2023	Street/Curb-Driveway	Public ROW	37.38154	-122.04047	0.06	0.07
SCVURPPP	Sunnyvale	SN-SVW-0823-06	08/29/2023	Street/Curb-Driveway	Public ROW	37.38035	-122.03925	0.002	0.13
SCVURPPP	Sunnyvale	SN-SVW-0823-07	08/29/2023	Street/Curb-Driveway	Public ROW	37.38004	-122.03781	0.002	0.05
SCVURPPP	Sunnyvale	SN-SVW-0823-08	08/29/2023	Street/Curb-Driveway	Public ROW	37.39838	-122.02084	0.04	0.04
SCVURPPP	Sunnyvale	SN-SVW-0823-09	08/29/2023	Street/Curb-Driveway	Public ROW	37.38511	-122.05124	0.16	0.06
SCVURPPP	Santa Clara	SC-SNV-0923-01	09/19/2023	Railway	Public ROW	37.37038	-121.9873	0.004	0.14
SCVURPPP	Sunnyvale	SN060424-01	06/04/2024	Drop Inlet/Catch Basin	On-site	37.415301	-122.014834	0.02	0.09
SCVURPPP	Sunnyvale	SN060424-02	06/04/2024	Manhole Vault	On-site	37.415189	-122.013791	0.02	0.16
SCVURPPP	Sunnyvale	SN060424-03	06/04/2024	Manhole Vault	On-site	37.415523	-122.015185	0.01	0.07
SCVURPPP	Sunnyvale	SN060424-04	06/04/2024	Drop Inlet/Catch Basin	On-site	37.416338	-122.014410	0.01	0.13
SCVURPPP	Sunnyvale	SN060424-05	06/04/2024	Drop Inlet/Catch Basin	On-site	37.415693	-122.013452	0.01	0.03
SCVURPPP	Sunnyvale	SN060424-07	06/04/2024	Drop Inlet/Catch Basin	On-site	37.384881	-122.013276	0.04	0.26
SCVURPPP	Sunnyvale	SN060424-08	06/04/2024	Drop Inlet/Catch Basin	On-site	37.376769	-122.012112	0.01	0.04
SCVURPPP	Sunnyvale	SN060424-09	06/04/2024	Drop Inlet/Catch Basin	Public ROW	37.374141	-122.008893	0.01	0.17
SCVURPPP	Sunnyvale	SN060424-10	06/04/2024	Drop Inlet/Catch Basin	Public ROW	37.375502	-122.015328	0.08	0.02
SCVURPPP	Sunnyvale	SN060424-11	06/04/2024	Street/curb	Public ROW	37.375773	-122.016640	0.08	0.01
SCVURPPP	San Jose	SJ060524-01	06/05/2024	Drop Inlet/Catch Basin	On-site	37.364943	-121.879117	0.07	0.01
SCVURPPP	San Jose	SJ060524-03	06/05/2024	Drop Inlet/Catch Basin	On-site	37.364376	-121.879576	0.05	0.01
SCVURPPP	San Jose	SJ060524-04	06/05/2024	Other	On-site	37.365384	-121.878320	0.05	0.02
SCVURPPP	San Jose	SJ060524-05	06/05/2024	Drop Inlet/Catch Basin	On-site	37.365137	-121.878903	<b>0.53</b>	0.08

Table B-1. SCVURPPP and Third Party Sediment PCBs and Mercury Samples WY 2020 through 2025.

Organization	Permittee	Sample ID	Sample Date	Sample Location Type	Public ROW / On-site	Latitude	Longitude	Total PCBs <sup>a</sup>	Total Mercury
								(mg/kg) <sup>b</sup>	
SCVURPPP	San Jose	SJ060524-06	06/05/2024	Drop Inlet/Catch Basin	On-site	37.365750	-121.877568	1.65	0.06
SCVURPPP	San Jose	SJ060524-07	06/05/2024	Drop Inlet/Catch Basin	On-site	37.365950	-121.878083	0.03	0.16
SCVURPPP	San Jose	SJ060524-08	06/05/2024	Street/curb	On-site	37.365262	-121.876681	0.01	0.11
SCVURPPP	San Jose	SJ060524-09	06/05/2024	Drop Inlet/Catch Basin	On-site	37.364170	-121.877625	0.02	0.04
SCVURPPP	San Jose	SJ060524-10	06/05/2024	Street/curb	On-site	37.363892	-121.877970	0.04	0.15
SCVURPPP	San Jose	SJ060624-11	06/06/2024	Drop Inlet/Catch Basin	On-site	37.365039	-121.881031	0.02	0.11
SCVURPPP	San Jose	SJ060624-13	06/06/2024	Drop Inlet/Catch Basin	On-site	37.363934	-121.879761	0.02	0.09
SCVURPPP	San Jose	SJ060624-14	06/06/2024	Drop Inlet/Catch Basin	On-site	37.363863	-121.880473	0.07	0.15
SCVURPPP	San Jose	SJ060624-15	06/06/2024	Drop Inlet/Catch Basin	On-site	37.362974	-121.882735	0.13	0.94
SCVURPPP	San Jose	SJ060624-16	06/06/2024	Drop Inlet/Catch Basin	On-site	37.363599	-121.880440	0.08	0.04
SCVURPPP	San Jose	SJ060624-17	06/06/2024	Drop Inlet/Catch Basin	On-site	37.362882	-121.883486	0.03	0.39
SCVURPPP	San Jose	SJ060624-18	06/06/2024	Street/curb	Public ROW	37.367154	-121.881096	0.08	0.45
SCVURPPP	San Jose	SJ060624-19	06/06/2024	Street/curb	Public ROW	37.366862	-121.882196	0.20	0.25
SCVURPPP	San Jose	SJ060624-20	06/06/2024	Drop Inlet/Catch Basin	Public ROW	37.368873	-121.886957	0.01	0.10
SCVURPPP	San Jose	SJ060624-21	06/06/2024	Drop Inlet/Catch Basin	Public ROW	37.368760	-121.886825	0.03	0.14
SCVURPPP	San Jose	SJ060624-22	06/06/2024	Drop Inlet/Catch Basin	Public ROW	37.366947	-121.884000	0.09	0.67
SCVURPPP	San Jose	SJ060624-23	06/06/2024	Drop Inlet/Catch Basin	Public ROW	37.366840	-121.884069	0.25	0.21
SCVURPPP	Santa Clara	SC071024-01 <sup>c</sup>	07/10/2024	Drop Inlet/Catch Basin	Public ROW	37.367893	-121.941675	0.01	0.07
SCVURPPP	Santa Clara	SC071024-02 <sup>c</sup>	07/10/2024	Drop Inlet/Catch Basin	Public ROW	37.366594	-121.943924	0.01	0.09
SCVURPPP	Santa Clara	SC071024-03 <sup>c</sup>	07/10/2024	Drop Inlet/Catch Basin	Public ROW	37.366396	-121.941727	0.15	0.04
SCVURPPP	Santa Clara	SC071024-04 <sup>c</sup>	07/10/2024	Drop Inlet/Catch Basin	Public ROW	37.366543	-121.946234	0.01	0.13
SCVURPPP	Santa Clara	SC071024-06 <sup>c</sup>	07/10/2024	Street/curb	Public ROW	37.366380	-121.946197	0.19	0.15
SCVURPPP	Santa Clara	SC071024-07 <sup>c</sup>	07/10/2024	Drop Inlet/Catch Basin	Public ROW	37.366433	-121.943982	0.08	0.09
SCVURPPP	Santa Clara	SC071024-08 <sup>c</sup>	07/10/2024	Drop Inlet/Catch Basin	Public ROW	37.368162	-121.950171	0.02	0.15
SCVURPPP	Santa Clara	SC071024-09 <sup>c</sup>	07/10/2024	Drop Inlet/Catch Basin	Public ROW	37.359324	-121.944828	0.02	0.11
SCVURPPP	Santa Clara	SC071024-10 <sup>c</sup>	07/10/2024	Drop Inlet/Catch Basin	Public ROW	37.360712	-121.945421	0.02	0.12
SCVURPPP	Santa Clara	SC071024-11 <sup>c</sup>	07/10/2024	Drop Inlet/Catch Basin	Public ROW	37.369865	-121.949068	0.01	0.05
SCVURPPP	Santa Clara	SC071024-12 <sup>c</sup>	07/10/2024	Drop Inlet/Catch Basin	Public ROW	37.363309	-121.946697	0.01	0.07
SCVURPPP	Santa Clara	SC071024-13 <sup>c</sup>	07/10/2024	Other	Public ROW	37.366439	-121.945553	0.04	0.15
SCVURPPP	San Jose	SJ060225-01	06/02/2025	Other	On-site	37.31116	-121.87085	0.01	0.09
SCVURPPP	San Jose	SJ060225-03	06/02/2025	Street/curb	On-site	37.31168	-121.86961	0.06	0.18
SCVURPPP	San Jose	SJ060225-04	06/02/2025	Drop Inlet/Catch Basin	On-site	37.31096	-121.86887	4.96	0.15
SCVURPPP	San Jose	SJ060225-05	06/02/2025	Other	On-site	37.30988	-121.8704	4.19	0.67
SCVURPPP	San Jose	SJ060225-06	06/02/2025	Manhole Vault	On-site	37.31915	-121.87066	0.02	0.12
SCVURPPP	San Jose	SJ060225-07	06/02/2025	Street/curb	On-site	37.31949	-121.87199	0.01	0.10
SCVURPPP	San Jose	SJ060225-08	06/02/2025	Other	On-site	37.34732	-121.92367	0.04	0.16
SCVURPPP	San Jose	SJ060225-09	06/02/2025	Other	On-site	37.34645	-121.92222	0.14	0.12
SCVURPPP	San Jose	SJ060325-10	06/03/2025	Other	On-site	37.38288	-121.92176	0.01	0.11
SCVURPPP	San Jose	SJ060325-11	06/03/2025	Other	On-site	37.38411	-121.91655	0.01	0.37
SCVURPPP	San Jose	SJ060325-13	06/03/2025	Street/curb	On-site	37.39048	-121.91863	0.004	0.05
SCVURPPP	San Jose	SJ060325-14	06/03/2025	Street/curb	On-site	37.39154	-121.91752	0.003	0.08
SCVURPPP	San Jose	SJ060325-15	06/03/2025	Other	On-site	37.36827	-121.88219	0.01	0.06
SCVURPPP	San Jose	SJ060325-16	06/03/2025	Other	On-site	37.36944	-121.88486	0.01	0.07
SCVURPPP	San Jose	SJ060425-18	06/04/2025	Street/curb	On-site	37.3667	-121.88252	0.44	0.37
SCVURPPP	San Jose	SJ060425-19	06/04/2025	Drop Inlet/Catch Basin	On-site	37.36751	-121.88421	0.58	1.37
SCVURPPP	San Jose	SJ060425-20	06/04/2025	Street/curb	On-site	37.36653	-121.88335	0.14	0.16
SCVURPPP	San Jose	SJ060425-21	06/04/2025	Other	On-site	37.36664	-121.88513	0.02	0.15
SCVURPPP	San Jose	SJ060425-22	06/04/2025	Drop Inlet/Catch Basin	On-site	37.31116	-121.86998	0.01	0.06
SCVURPPP	San Jose	SJ060625-23	06/06/2025	Drop Inlet/Catch Basin	Public ROW	37.23762	-121.7875	0.01	0.07
SCVURPPP	San Jose	SJ060625-24	06/06/2025	Street/curb	Public ROW	37.23961	-121.77641	0.01	0.09
SCVURPPP	San Jose	SJ060625-25	06/06/2025	Street/curb	Public ROW	37.24032	-121.77758	0.01	0.53
SCVURPPP	San Jose	SJ060625-26	06/06/2025	Street/curb	Public ROW	37.25209	-121.79687	0.02	0.09
SCVURPPP	San Jose	SJ060625-27	06/06/2025	Street/curb	Public ROW	37.23394	-121.76612	0.03	0.17
SCVURPPP	San Jose	SJ060625-28	06/06/2025	Drop Inlet/Catch Basin	Public ROW	37.32963	-121.85801	0.01	0.03
SCVURPPP	San Jose	SJ060625-30	06/06/2025	Drop Inlet/Catch Basin	Public ROW	37.32821	-121.86166	0.05	0.19
SCVURPPP	San Jose	SJ060925-31	06/09/2025	Drop Inlet/Catch Basin	Public ROW	37.33507	-121.85625	0.05	0.06
SCVURPPP	San Jose	SJ060925-33	06/09/2025	Drop Inlet/Catch Basin	Public ROW	37.33482	-121.85188	0.01	0.17
SCVURPPP	San Jose	SJ060925-34	06/09/2025	Drop Inlet/Catch Basin	Public ROW	37.33457	-121.85176	0.03	0.29
SCVURPPP	San Jose	SJ060925-35	06/09/2025	Street/curb	Public ROW	37.3256	-121.87848	0.01	0.18
SCVURPPP	San Jose	SJ060925-36	06/09/2025	Drop Inlet/Catch Basin	Public ROW	37.32508	-121.87932	0.02	0.18

Table B-1. SCVURPPP and Third Party Sediment PCBs and Mercury Samples WY 2020 through 2025.

Organization	Permittee	Sample ID	Sample Date	Sample Location Type	Public ROW / On-site	Latitude	Longitude	Total PCBs <sup>a</sup>	Total Mercury
								(mg/kg) <sup>b</sup>	
SCVURPPP	San Jose	SJ060925-37	06/09/2025	Street/curb	Public ROW	37.32416	-121.8771	0.01	0.25
SCVURPPP	San Jose	SJ060925-38	06/09/2025	Drop Inlet/Catch Basin	Public ROW	37.32463	-121.87639	0.16	0.26
SCVURPPP	San Jose	SJ060925-39	06/09/2025	Street/curb	Public ROW	37.32128	-121.87482	0.01	0.11
SCVURPPP	San Jose	SJ060925-40	06/09/2025	Street/curb	Public ROW	37.31778	-121.87152	0.02	0.08
SCVURPPP	San Jose	SJ061025-42	06/10/2025	Street/curb	Public ROW	37.32916	-121.90011	0.02	0.10
SCVURPPP	San Jose	SJ061025-43	06/10/2025	Drop Inlet/Catch Basin	Public ROW	37.32911	-121.9016	0.02	0.07
SCVURPPP	San Jose	SJ061025-44	06/10/2025	Drop Inlet/Catch Basin	Public ROW	37.32813	-121.90105	0.02	0.18
SCVURPPP	San Jose	SJ061025-45	06/10/2025	Drop Inlet/Catch Basin	Public ROW	37.32654	-121.90118	0.03	0.08
SCVURPPP	San Jose	SJ061025-46	06/10/2025	Street/curb	Public ROW	37.35117	-121.90831	0.005	0.27
SCVURPPP	San Jose	SJ061025-47	06/10/2025	Drop Inlet/Catch Basin	Public ROW	37.3547	-121.9056	0.02	0.13
SCVURPPP	San Jose	SJ061025-48	06/10/2025	Drop Inlet/Catch Basin	Public ROW	37.36284	-121.88533	0.02	0.08
SCVURPPP	San Jose	SJ061025-50	06/10/2025	Drop Inlet/Catch Basin	Public ROW	37.36376	-121.88553	0.01	0.05
SCVURPPP	San Jose	SJ061025-51	06/10/2025	Drop Inlet/Catch Basin	Public ROW	37.3696	-121.8925	0.005	0.03
SCVURPPP	San Jose	SJ061025-52	06/10/2025	Drop Inlet/Catch Basin	Public ROW	37.38887	-121.90827	0.01	0.08
SCVURPPP	San Jose	SJ061025-53	06/10/2025	Drop Inlet/Catch Basin	Public ROW	37.39072	-121.90679	0.01	0.09
SCVURPPP	San Jose	SJ061125-54	06/11/2025	Manhole Vault	Public ROW	37.39452	-121.90909	0.01	0.06
SCVURPPP	San Jose	SJ061125-55	06/11/2025	Manhole Vault	Public ROW	37.39387	-121.90845	0.03	0.06
SCVURPPP	San Jose	SJ061125-56	06/11/2025	Manhole Vault	Public ROW	37.39561	-121.91032	0.01	0.07
SCVURPPP	San Jose	SJ061125-57	06/11/2025	Street/curb	Public ROW	37.39591	-121.91063	0.01	0.04
SCVURPPP	San Jose	SJ061125-58	06/11/2025	Street/curb	Public ROW	37.39695	-121.91166	0.01	0.07
SCVURPPP	San Jose	SJ061125-59	06/11/2025	Street/curb	Public ROW	37.40287	-121.88681	0.03	0.03
SCVURPPP	San Jose	SJ061125-60	06/11/2025	Street/curb	Public ROW	37.3509	-121.92338	0.03	0.06
SCVURPPP	San Jose	SJ061225-61	06/12/2025	Street/curb	Public ROW	37.41793	-121.97485	0.02	0.07
SCVURPPP	San Jose	SJ061625-62	06/16/2025	Street/curb	Public ROW	37.34132	-121.86341	0.06	0.12
SCVURPPP	Mountain View	MV061225-01	06/12/2025	Street/curb	Public ROW	37.42874	-122.09987	0.03	0.06
SCVURPPP	Mountain View	MV061225-02	06/12/2025	Drop Inlet/Catch Basin	Public ROW	37.4084	-122.07139	0.05	0.10
SCVURPPP	Mountain View	MV061225-03	06/12/2025	Street/curb	Public ROW	37.38252	-122.06862	0.004	0.04
SCVURPPP	Mountain View	MV061224-04	06/12/2025	Street/curb	Public ROW	37.38133	-122.06993	0.01	0.05
SCVURPPP	Mountain View	MV061225-05	06/12/2025	Street/curb	Public ROW	37.3815	-122.06971	0.01	0.04
SCVURPPP	Mountain View	MV061225-07	06/12/2025	Street/curb	Public ROW	37.38157	-122.07176	0.01	0.04
SCVURPPP	Mountain View	MV061625-08	06/16/2025	Other	Public ROW	37.40241	-122.09637	0.11	0.12
SCVURPPP	Mountain View	MV061625-09	06/16/2025	Other	Public ROW	37.41021	-122.11148	0.01	0.09
SCVURPPP	Mountain View	MV061625-10	06/16/2025	Other	Public ROW	37.39017	-122.06555	0.01	0.07
SCVURPPP	Mountain View	MV061625-11	06/16/2025	Other	Public ROW	37.38881	-122.06131	0.01	0.10
SCVURPPP	Santa Clara	SC061625-01	06/16/2025	Street/curb	Public ROW	37.37633	-121.98803	0.004	0.15
SCVURPPP	Santa Clara	SC061625-02	06/16/2025	Street/curb	Public ROW	37.38043	-121.97916	0.01	0.05
SCVURPPP	Santa Clara	SC061725-03	06/17/2025	Street/curb	Public ROW	37.35621	-121.94672	0.02	0.12
SCVURPPP	Santa Clara	SC061725-04	06/17/2025	Street/curb	Public ROW	37.36007	-121.94967	0.10	0.06
SCVURPPP	Santa Clara	SC061725-05	06/17/2025	Street/curb	Public ROW	37.3641	-121.94977	0.01	0.21
SCVURPPP	Santa Clara	SC061725-06	06/17/2025	Street/curb	Public ROW	37.36261	-121.95288	0.07	0.08
SCVURPPP	Santa Clara	SC061725-07	06/17/2025	Street/curb	Public ROW	37.36504	-121.95529	0.02	0.16
SCVURPPP	Santa Clara	SC061725-08	06/17/2025	Street/curb	Public ROW	37.36503	-121.95448	0.03	0.10
SCVURPPP	Santa Clara	SC061725-09	06/17/2025	Street/curb	Public ROW	37.36504	-121.95561	0.04	0.06
SCVURPPP	Santa Clara	SC061725-10	06/17/2025	Street/curb	Public ROW	37.36619	-121.95482	0.01	0.08
SCVURPPP	Santa Clara	SC061725-11	06/17/2025	Street/curb	Public ROW	37.36489	-121.95269	0.01	0.28
SPoT	San Jose	205COY060	06/2023	Channel	Public ROW	37.3954	-121.9149	--	NM
SPoT	San Jose	205GUA020	06/2023	Channel	Public ROW	37.3734	-121.9328	--	NM

Notes:

**Bolded Values** indicate an exceedance of 0.2 mg/kg for total PCBs or an exceedance of 0.3 mg/kg for mercury.

<sup>a</sup> Total PCBs in source investigation samples are calculated as sum of RMP 40 congeners with non-detects (NDs) assigned a value of ½ the method detection limit (MDL).

<sup>b</sup> Samples were analyzed for total solids so that dry weight (dw) concentrations could be calculated.

<sup>c</sup> Total PCBs data not previously reported in WY 2024 UCMR.

Table B-2. SCVURPPP and Third Party Stormwater PCBs and Mercury Samples WY 2020 through 2025.

Organization	Permittee	Sample ID	Sample Date	Sample Location Type	Public ROW / On-site	Latitude	Longitude	Total PCBs <sup>a</sup>		Total Mercury		SSC (mg/L)
								(ng/L)	Particle Ratio (mg/kg) <sup>b</sup>	(ng/L)	Particle Ratio (mg/kg)	
SCVURPPP	Mountain View	017PMC600A	01/16/2020	Manhole Vault	Public ROW	37.4239	-122.0859	54	0.21	44	0.17	264
SCVURPPP	Mountain View	017SVC500A	01/16/2020	Outfall Pipe	Public ROW	37.4218	-122.0778	20	0.14	21	0.15	144
SCVURPPP	San Jose	051CTC450A	01/16/2020	Outfall Pipe	Public ROW	37.3818	-121.902	5.7	0.04	17	0.12	139
SCVURPPP	Sunnyvale	034BFL230D	01/16/2020	Manhole Vault	Public ROW	37.412	-122.018	3.4	0.03	12	0.12	100
SCVURPPP	Sunnyvale	SUNWCH_B	01/16/2020	Channel	Public ROW	37.4124	-122.0206	15	0.12	27	0.22	124
SCVURPPP	Santa Clara	049STA500A	12/01/2022	Manhole Vault	Public ROW	37.379467	-121.96888	1.6	0.03	2.6	0.06	47.7
SCVURPPP	Santa Clara	049STA600A	12/01/2022	Outfall Pipe	Public ROW	37.377661	-121.96874	1.7	0.02	5.0	0.07	73.1
SCVURPPP	Santa Clara	049STA800A	12/01/2022	Manhole Vault	Public ROW	37.371955	-121.97204	2.4	0.03	8.0	0.10	80.2
SCVURPPP	San Jose	066GAC152A	12/03/2022	Manhole Vault	Public ROW	37.368161	-121.92416	1.7	0.09	6.8	0.35	19.7
SCVURPPP	San Jose	083LGC525A	12/03/2022	Manhole Vault	Public ROW	37.323867	-121.90316	2.1	0.02	6.2	0.26	24.3
SCVURPPP	Milpitas	036PCL800-1223-SW	12/18/2023	Manhole Vault	Public ROW	37.40433	-121.90038	0.3	0.02	2.1	0.14	15.3
SCVURPPP	Milpitas	036PCL810-1223-SW	12/18/2023	Manhole Vault	Public ROW	37.40431	-121.90049	0.2	0.01	3.3	0.24	13.9
SCVURPPP	Santa Clara	049STA050	03/12/2025	Manhole Vault	Public ROW	37.39638	-121.96754	4.8	0.03	23	0.15	156
RMP	Sunnyvale	Sunnyvale East	10/24/2021	Channel	Public ROW	37.394698	-122.01039	--	--	--	--	--
RMP	San Jose	205GUA020	12/01/2022	Channel	Public ROW	37.37389	-121.93194	--	--	NM	NM	--
RMP	San Jose	205GUA020	12/27/2022	Channel	Public ROW	37.37389	-121.93194	--	--	NM	NM	--
RMP	Santa Clara	Guadalupe R abv Hwy 101	01/21/2024	Channel	Public ROW	37.374158	-121.93318	--	--	--	--	--
RMP	Santa Clara	Guadalupe R abv Hwy 101	01/31/2024	Channel	Public ROW	37.374158	-121.93318	--	--	--	--	--
RMP	San Jose	GuadalupeR_Hwy101	02/13/2025	Channel	Public ROW	37.373555	-121.9327	--	--	--	--	--
RMP	Sunnyvale	SunnyvaleEastCh_Ahwanee	02/04/2025	Channel	Public ROW	37.394602	-122.01046	--	--	--	--	--

## Notes

-- Data not yet reported / validated by RMP.

NM Not monitored.

<sup>a</sup> Total PCBs in source investigation samples are calculated as sum of RMP 40 congeners with non-detects (NDs) assigned a value of ½ the method detection limit (MDL).<sup>b</sup> The PCBs particle ratio in stormwater is calculated by dividing the stormwater concentration by the SSC.

**Appendix C**

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**Letter Describing Approach to Emerging Contaminant Monitoring**



**Santa Clara Valley  
Urban Runoff  
Pollution Prevention Program**

Campbell • Cupertino • Los Altos • Los Altos Hills • Los Gatos • Milpitas • Monte Sereno • Mountain View • Palo Alto  
San Jose • Santa Clara • Saratoga • Sunnyvale • Santa Clara County • Santa Clara Valley Water District

March XX, 2023

Ms. Eileen White  
Executive Officer  
San Francisco Bay Region  
Regional Water Quality Control Board  
1515 Clay Street, Suite 1400  
Oakland, CA 94612

**Subject: Regional Stormwater Monitoring Strategy for Emerging Contaminants**

Dear Ms. White:

This letter transmits the regional stormwater monitoring strategy for emerging contaminants in compliance with provision C.8.f.ii of the Municipal Regional Permit for Stormwater (MRP 3.0), NPDES Permit No. CAS612008 (Order No. R2-2022-0018), on behalf of Permittees that participate in the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP or Program). Provision C.8.f.ii (Table 8.2, footnote c) of the MRP states that:

*Permittees, collectively, shall produce or cause to be produced a stormwater monitoring strategy for emerging contaminants (ECs) by April 1, 2023 that prioritizes ECs for stormwater monitoring listed in this table and possibly others and establishes an approach for sampling stormwater ECs based on specific or likely physico-chemical properties, sources, transport pathways, and fate of prioritized ECs. Permittees must conduct or cause to be conducted ECs stormwater monitoring to execute the ECs stormwater monitoring strategy at a level of effort indicated in the table. This level of effort can be satisfied either through sampling and analysis of the number of samples indicated in this table or through augmentation of the San Francisco Bay Regional Monitoring Program Emerging Contaminants Monitoring Strategy in the amount of \$100,000 per year for all Permittees combined.*

As approved by the Program's Management Committee, SCVURPPP Permittees have agreed to satisfy this MRP 3.0 requirement by annually contributing their equitable share of \$100,000 to augment the San Francisco Bay Regional Monitoring Program (RMP) EC Monitoring Strategy<sup>1</sup> (see Table 1). For Permittees in Santa Clara County, annual contributions will be made through SCVURPPP.

**Table 1.** Contributions that MRP Permittees have agreed to make annually to augment the RMP's Emerging Contaminant Monitoring Strategy during the term of the permit.

Permittee Group	Annual Contribution	Relative Percentage <sup>2</sup>
Alameda County Permittees	\$30,923	30.92%
Contra Costa County Permittees	\$21,649	21.65%
Santa Clara County Permittees	\$33,489	33.49%
San Mateo County Permittees	\$13,939	13.94%
<b>Total</b>	<b>\$100,000</b>	<b>100%</b>

<sup>1</sup> [https://www.sfei.org/sites/default/files/biblio\\_files/CEC%20Strategy%20-%202020%20Update%20-%20Final\\_92320.pdf](https://www.sfei.org/sites/default/files/biblio_files/CEC%20Strategy%20-%202020%20Update%20-%20Final_92320.pdf)

<sup>2</sup> Relative percentages are based on the populations within the MRP-associated portions of each county at the start of MRP 3.0 (Department of Finance, January 2022).

The stormwater portion of the RMP's EC Monitoring Strategy is currently under development and builds upon a stormwater EC screening study conducted from 2018 through 2023 and ongoing watershed hydrology, sediment, and pollutant loads modeling. The stormwater portion of the RMP's EC Monitoring Strategy is scheduled for completion in late 2023 and will be implemented during the term of MRP 3.0 through the RMP. This portion of the RMP's EC Monitoring Strategy includes both watershed/stormwater modeling and monitoring tasks to address high priority management questions established collaboratively through the RMP and consistent with those included in MRP 3.0.

SCVURPPP Permittees look forward to continuing to participate in the RMP and the development and implementation of the stormwater portion of the EC Monitoring Strategy. Please contact me or Program staff (Chris Sommers - [csommers@eoainc.com](mailto:csommers@eoainc.com)) if you have any comments or questions.

Very truly yours,

A handwritten signature in black ink, appearing to read "Adam W. Olivieri", followed by a horizontal line.

Adam W. Olivieri, Dr. P.H., P.E.  
Program Manager

cc: SCVURPPP Management Committee Members  
Dr. Thomas Mumley, Assistant Executive Officer, SF Bay Regional Water Board  
Dr. Jay Davis, SF Bay RMP Lead Scientist, San Francisco Estuary Institute

## **Appendix D**

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# **Fate and Transport Study of Mercury/PCBs: Urban Runoff Impact on San Francisco Bay Margins**



engineers | scientists | innovators



# **FATE AND TRANSPORT STUDY OF MERCURY AND PCBS**

## **Urban Runoff Impact on San Francisco Bay Margins**

*Prepared for*

**Alameda Countywide Clean Water Program  
Contra Costa Clean Water Program**

*Prepared by*

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March 2026

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## ACRONYMS AND ABBREVIATIONS

BAMSC	Bay Area Municipal Stormwater Collaborative
Bay	San Francisco Bay
CEC	Contaminants of Emerging Concern
g	gram
IMR	Integrated Monitoring Report
µg	microgram
MRP	Municipal Regional Permit
MST	Mercury Strategy Team
ng	nanogram
PCB	Polychlorinated Biphenyl
PMU	Priority Margin Unit
RMP	Regional Monitoring Program
SFEI	San Francisco Estuary Institute
SFBRWQCB	San Francisco Bay Regional Water Quality Control Board (Regional Water Board)
TMDL	Total Maximum Daily Load

## 1. BACKGROUND

The magnitude and nature of mercury, polychlorinated biphenyls (PCBs), and other pollutants reaching San Francisco Bay (Bay) in urban runoff and the ultimate fate of these pollutants, including biological uptake, continue to be studied to address uncertainties. Municipal Regional Permit (MRP) 3.0<sup>1</sup> Provisions C.11.g. and C.12.i. require Permittees to conduct, or cause to be conducted, studies on the fate, transport, and biological uptake of mercury and PCBs, respectively, discharged from urban runoff into Bay margin areas. These provisions state that the specific information needs for the studies include an understanding of the in-Bay transport of mercury and PCBs discharged in urban runoff, the sediment and food web mercury and PCBs concentrations in margin areas receiving urban runoff, the influence of urban runoff on the patterns of food web mercury and PCBs accumulation, especially in Bay margins, and the identification of drainages where urban runoff mercury and PCBs are particularly important in food web accumulation. The provisions also state that the studies should focus on nearshore areas contaminated with mercury or PCBs from historical activities and on the expected trajectory of recovery as sources from local watersheds are reduced. Permittees are required to report in the March 2026 Integrated Monitoring Report (IMR)<sup>2</sup> the findings and results of studies completed, planned, or in progress, as well as the implications of studies for potential control measures to be investigated, piloted, or implemented in future permit cycles.

Permittees are addressing Provisions C.11.g. and C.12.i. through participation in the Regional Monitoring Program for Water Quality (RMP). The RMP was created by the San Francisco Bay Regional Water Quality Control Board (Regional Water Board) in 1993 to ensure water quality management decisions and investments are guided by sound, science-based reasoning. The RMP is a collaborative of regulators, dischargers, industry representatives, non-governmental organizations, and scientists. The San Francisco Estuary Institute (SFEI) was formed in 1993<sup>3</sup> to develop, staff, and manage the decades-long monitoring program and identify and conduct the studies needed to help managers and policymakers stay ahead of emerging threats. The RMP has specific workgroups to address mercury and PCBs:

- The RMP established a Mercury Strategy Team (MST) in 2007 to plan and guide mercury-specific studies.
- The RMP PCBs Workgroup<sup>4</sup> provides a forum for identifying priority information needs to support PCBs management in the region and planning and implementing studies to address those needs.

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<sup>1</sup> Order No. R2-2022-0018.

<sup>2</sup> Although MRP Provisions C.11.g and C.12.i state that the IMR is due March 15, 2026, although as stated in Provision C.8.h.iv., the IMR is due on March 31.

<sup>3</sup> SFEI evolved from the Aquatic Habitat Institute, which was established in 1986 to study pollutants in the Bay.

<sup>4</sup> SFEI formed a Chlorinated Hydrocarbon Workgroup—which focused on PCBs—at its first meeting in July 1998.

## 2. MERCURY FATE AND TRANSPORT

### 2.1 Mercury TMDL Background

In 2004, the Regional Water Board staff published a report that synthesized information available at that time to provide the technical background and basis for a proposed amendment to the Water Quality Control Plan, San Francisco Bay Region (Basin Plan), to establish a total maximum daily load (TMDL) for mercury (SFBRWQB, 2004). The TMDL was adopted in 2008.

The mercury TMDL addresses two water quality objectives. The first, established to protect people who consume Bay fish, applies to fish large enough to be consumed by humans. The objective is 0.2 milligrams (mg) of mercury per kilogram (kg) of fish tissue (average wet weight concentration measured in the muscle tissue of fish large enough to be consumed by humans). The second objective, established to protect aquatic organisms and wildlife, applies to small fish (3-5 centimeters in length) commonly consumed by the California least tern, an endangered species. This objective is 0.03 mg mercury per kg fish (average wet weight concentration). To achieve the human health and wildlife fish tissue and bird egg monitoring targets and to attain water quality standards, the Bay-wide suspended sediment mercury concentration target is 0.2 mg mercury per kg dry sediment.

A roughly 50% decrease in sediment, fish tissue, and bird egg mercury concentrations is necessary for the Bay to meet water quality standards. Reductions in sediment mercury concentrations are assumed to result in a proportional reduction in the total amount of mercury in the system, which will result in the achievement of target fish tissue and bird egg concentrations (SFBRWQCB, 2004).

### 2.2 Mercury Special Studies

For a few years after the adoption of the TMDL, the RMP conducted a series of special studies focused on mercury, culminating in another synthesis of the new information in 2014 (Davis, et al., 2014). The Regional Water Board is planning to revise the Mercury TMDL in 2028 and outlined information needs to address in preparation for this revision. In response, the RMP MST reconvened in 2025. The MST is conducting a review and synthesis of information generated since the last RMP mercury synthesis, focusing on the following items:

- Status and trends of mercury in biota
- Status and trends of mercury in surface sediment
- Active sediment layer information review
- Atmospheric deposition literature review
- Central Valley and Guadalupe River watershed loads
- Wastewater inputs
- Small tributary inputs (i.e., stormwater)
- Buried sediment fluxes

- Recovery trajectories of Bay segments and the Bay as a whole

The synthesis will also provide a means to report the results of the analysis of mercury in surface sediment samples archived in 2023.

New information to be included in the TMDL revision process is needed by July 2026. Consequently, the synthesis timeline consists of a draft report by April 2026, followed by a final report in July 2026.

### 3. PCBs FATE AND TRANSPORT

#### 3.1 PCBs TMDL Background

The PCBs TMDL was developed based on a fish tissue target of 10 nanograms (ng) of PCBs per gram (g) of fish tissue. This target is based on a cancer risk of one case per an exposed population of 100,000 for the 95<sup>th</sup> percentile San Francisco Bay Area sport and subsistence fisher consumer (32 g fish per day) (SFBRWQCB, 2008). A food web model was developed by SFEI to identify the sediment target concentration that would yield the fish tissue target; this sediment target was found to be 1 microgram ( $\mu\text{g}$ ) of PCBs per kg of sediment. This is equivalent to reducing the total mass of PCBs in the active layer of the San Francisco Bay to 160 kg. The San Francisco Estuary Institute (Davis, 2003; SFEI, 2007) developed a mass budget model that identified the total external load of PCBs to the Bay that would attain a long-term (i.e., equilibrated) PCBs mass in the Bay of 160 kg within approximately 30 years. The mass budget model estimated that reduction of the external load to 10 kg of PCBs per year would achieve this goal, assuming a starting Bay-wide PCBs concentration in surface sediment of 4.65 micrograms per kilogram ( $\mu\text{g}/\text{kg}$ )<sup>5</sup> (SFEI, 2007). Twenty percent of the estimated allowable external load was allocated to urban stormwater runoff.

#### 3.2 PCBs Special Studies

The PCBs Workgroup is leading a multi-year effort to develop conceptual models of PCBs fate and transport in selected nearshore portions of the Bay called Priority Margin Units (PMUs), in order to clarify contributions from adjacent watersheds to Bay impairment, inform future management decisions, and track trends in PCBs loads from those watersheds. RMP documents available via the links below address this MRP requirement by providing details on studies and anticipated schedules.

In 2014, the PCBs Workgroup identified four PMUs for initial study located downstream of urban watersheds where PCBs management actions are either planned or ongoing:

- Emeryville Crescent (Alameda County)
- San Leandro Bay (Alameda County)

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<sup>5</sup> Bay-wide PCBs concentration in surface sediment estimated based on Regional Monitoring Program 2004 – 2006 data (SFEI, 2007).

- Steinberger Slough (San Mateo County)
- Richmond Harbor (Contra Costa County)

The project has developed conceptual and pollutant mass budget models for the first three PMUs and will begin developing a conceptual model for Richmond Harbor in 2026. RMP has conducted monitoring and modeling for the first three PMUs to evaluate trends in pollutant levels and track responses to reductions in pollutant loads.

The objectives of the RMP's effort to model and investigate Bay PMUs include:

- Characterizing concentrations and the spatial distribution of pollutants in sediment and food web biota in the PMUs, including establishing baseline data on PCBs concentration and loading.
- Evaluating the response of PMU receiving waters over time to load reduction efforts in the watershed, such as remediation of PCBs-contaminated properties, including tracking PCBs in sport fish as the ultimate indicator of progress in reduction of impairment.
- Informing the review and possible revision of the PCBs TMDL.

In addition, the PMU conceptual models, and associated ongoing hydrodynamic, sediment, and food web modeling, are intended to help improve the understanding of pollutant fate and transport, provide a foundation for monitoring to track responses to pollutant load reductions, and help guide planning of management actions for PCBs, mercury, contaminants of emerging concern (CEC), and other pollutants.

Bay Area Municipal Stormwater Collaborative (BAMSC) representatives participate in the RMP PCBs Workgroup to help oversee the project.

### **3.3 Status of PMU Conceptual Models**

The following sections summarize the status of studies in each of the four PMUs.

#### **3.3.1 Emeryville Crescent**

The Emeryville Crescent was the first PMU to be studied, using available data from the RMP and other sources, in 2015-2016. The Conceptual Model Report concluded that the Emeryville Crescent experiences relatively rapid turnover of PCBs loads through exchange of water and sediment with the open Bay, and that food-web monitoring would be a promising indicator for tracking future responses to projected load reductions in the watershed. A final conceptual model report (dated April 2017) is available on the SFEI website:

- [https://www.sfei.org/sites/default/files/biblio\\_files/Emeryville%20Crescent%20Draft%20Final%20Report%2005-02-17%20Final%20Clean\\_0.pdf](https://www.sfei.org/sites/default/files/biblio_files/Emeryville%20Crescent%20Draft%20Final%20Report%2005-02-17%20Final%20Clean_0.pdf)

The report's key finding, based on a simple one-box pollutant fate model and dependent on assumptions about the model's input parameters, was that PCBs concentrations in sediment and

the food web could potentially decline within 10 years in response to load reductions from the watershed.

### 3.3.2 San Leandro Bay

A conceptual model for San Leandro Bay was developed in three phases, with reports available on the SFEI website. The Phase 1 report (dated June 2017) presented analyses of watershed loading, initial retention, and long-term fate, including results of sediment sampling in 2016:

- [sfei.org/sites/default/files/biblio\\_files/Yee%20et%20al%202017%20Conceptual%20Model%20Report%20San%20Leandro%20Bay%20Phase%201.pdf](https://sfei.org/sites/default/files/biblio_files/Yee%20et%20al%202017%20Conceptual%20Model%20Report%20San%20Leandro%20Bay%20Phase%201.pdf)

The Phase 2 report (dated December 2017) is designated a data report and documents the methods, quality assurance, and results of the 2016 field study:

- [sfei.org/sites/default/files/biblio\\_files/San%20Leandro%20Bay%20PCB%20Study%20Data%20Report%20Final.pdf](https://sfei.org/sites/default/files/biblio_files/San%20Leandro%20Bay%20PCB%20Study%20Data%20Report%20Final.pdf)

The Phase 3 report (dated November 2019) is available here:

- [sfei.org/sites/default/files/biblio\\_files/San%20Leandro%20Bay%20PCBs%20Phase%20203%20Final%20Report%20\\_0.pdf](https://sfei.org/sites/default/files/biblio_files/San%20Leandro%20Bay%20PCBs%20Phase%20203%20Final%20Report%20_0.pdf)

The Phase 3 report incorporates the results of the 2016 field study. It includes additional discussion of the potential influence of contaminated sites in the watershed and the results of passive sampling by Stanford researchers. It also includes a comparative analysis of long-term fate in San Leandro Bay and the Emeryville Crescent, a section on bioaccumulation, and a concluding section with answers to the management questions that were the impetus for the work.

The RMP PCBs Workgroup continues sediment and PCBs fate modeling efforts in San Leandro Bay through a two-phase study. Phase 1 of the study developed an initial sediment and PCBs fate model for San Leandro Bay. Phase 2 of the study refined model predictions, evaluated PCBs recovery under different management scenarios, and extracted key lessons for broader contaminant-fate modeling across other PMUs and the full Bay system. San Leandro Bay was selected as a study site due to its role as a key depositional environment, where PCBs-laden sediments accumulate from urban tributaries. The modeling results directly address PCBs management questions by estimating recovery rates, assessing sediment transport processes, and evaluating the effectiveness of watershed load reductions.

Model results confirmed that PCBs recovery in San Leandro Bay is highly dependent on watershed load reductions as opposed to the Emeryville Crescent which experiences relatively rapid turnover of PCBs loads through exchange of water and sediment with the open Bay. Under existing conditions in San Leandro Bay, PCBs concentrations in surface sediments decline slowly, with persistent contamination from historical sources. The primary contributors to PCBs-contaminated bed sediment are East Creek, Damon Slough, and Elmhurst Creek, making them high-priority targets for stormwater management in the watershed, such as remediation of contaminated properties.

### 3.3.3 Steinberger Slough / Redwood Creek

A final conceptual model for Steinberger Slough / Redwood Creek PMU (dated January 2021) is available on the SFEI website:

- [sfei.org/sites/default/files/biblio\\_files/Steinberger%20Slough%20Final%20Report%20with%20Cover.pdf](https://sfei.org/sites/default/files/biblio_files/Steinberger%20Slough%20Final%20Report%20with%20Cover.pdf)

Like the other conceptual models, it includes results of monitoring in the PMU and watershed, analyses of watershed loading, development of a mass budget, and long-term fate modeling, including projected PCBs concentrations in sediment and the food web in response to load reductions from the watershed. A simple mass budget model suggested that concentrations of PCBs in water and sediment would respond fairly quickly to reductions in loads, but not as quickly as Emeryville Crescent. The conceptual model report concluded that recovery of the PMU from PCBs contamination would be maximized by a load-reduction strategy that focuses on highly contaminated source areas and, more generally, older industrial areas in the PMU watershed.

The 2021 Final Conceptual Model also recommended enhanced sediment sampling to provide more detailed baseline information on the spatial distribution of PCBs throughout the PMU, including the use of passive sampling devices to provide pollutant depth profiles. That study found the highest PCBs concentrations in areas that drain known PCBs sources (Pulgas Creek outlet and Seaport stations). It demonstrated that passive sampling data, in combination with more conventional sediment sampling data, can provide improved contaminant bioavailability information to better support planned food web monitoring in the PMU. The report (dated October 2024) is available on the SFEI website:

- [Study of Historic Loading and Spatial Distribution of Polychlorinated Biphenyls \(PCBs\) using Passive Sampling Devices \(PSDs\) in the Steinberger Slough and Redwood Creek Complex in San Francisco Bay, California, USA\\_0.pdf](#)

### 3.3.4 Richmond Harbor

The Regional Water Board has identified a list of information that is needed to be addressed by July 2028 to support the revision of the PCBs TMDL. One of the items on the list is a summary of available information, mass budgets, and forecasts of recovery trajectories of the selected PMUs. Richmond Harbor was identified as a PMU by the PCBs Workgroup in 2015. However, a conceptual model report has not yet been developed for Richmond Harbor because the PMU studies to date have focused on three other PMUs. Stakeholders have expressed continued interest in a conceptual model for Richmond Harbor since 2015, due to significant management activities in the watershed. The RMP will begin a study in 2026 that will follow the template used for the other PMU conceptual model reports, including literature reviews, model estimates of loading from the watershed, fate and recovery trajectories of sediment PCBs in the PMU, and bioaccumulation. The Richmond Harbor PMU study will include a review of the large body of work that has been done on DDT (an organochlorine with similar properties to PCBs) in one part of the Harbor, the Lauritzen Channel. This study will also include a preliminary application of the in-Bay model for PCBs fate, which is in development.

### 3.4 Other RMP Special Studies Related to PMUs

Various types of RMP Special Studies related to PMUs have been conducted, including the following:

- Shiner Surfperch PCBs Monitoring in PMUs – shiner surfperch is a crucial indicator of impairment, due to its explicit inclusion as an indicator species in the TMDL, importance as a sport fish species, tendency to accumulate high concentrations, site fidelity, and other factors. The conceptual site models recommend periodic monitoring of shiner surfperch to track trends in the PMUs and serve as the ultimate indicator of progress in reducing impairment. The final report is available here:
  - [https://www.sfei.org/sites/default/files/biblio\\_files/PCBs%20in%20Shiner%20Surfperch%20in%20Priority%20Margin%20Areas%20of%20San%20Francisco%20Bay.pdf](https://www.sfei.org/sites/default/files/biblio_files/PCBs%20in%20Shiner%20Surfperch%20in%20Priority%20Margin%20Areas%20of%20San%20Francisco%20Bay.pdf)
- Assess Loading and Spatial Distribution of PCBs in PMUs – this study established baseline data for evaluating the response of these receiving waters to load reduction efforts in the PMUs. Passive sampling devices were deployed in the Steinberger Slough/ Redwood Creek and San Leandro Bay PMUs to assess spatial patterns in dissolved PCBs in pore water and surface water and provide information on spatial patterns in an index of current biotic exposure. In addition, analysis of depth profiles of pore water with passive sampling devices, accompanied by bulk sediment chemistry in cores, provided information on the chronology of loading and exposure over the past 50 years. The final reports are available here:
  - [Study of Historic Loading and Spatial Distribution of Polychlorinated Biphenyls \(PCBs\) using Passive Sampling Devices \(PSDs\) in the Steinberger Slough and Redwood Creek Complex in San Francisco Bay, California, USA\\_0.pdf](#)
  - [San Leandro Bay Passive Sampling Study 2021 Final Report\\_0.pdf](#).
- Steinberger Slough/Redwood Creek Sediment and Prey Fish Study – this two-year effort commenced in 2022 and collected composite sediment samples from 16 sites, distributed throughout the Steinberger Slough / Redwood Creek PMU complex. Prey fish were sampled at five sites (three composites at each), consisting primarily of topsmelt.

## 4. IMPLICATIONS OF STUDIES ON POTENTIAL CONTROL MEASURES

In response to MRP Provisions C.11 and C.12, the Bay Area countywide stormwater programs developed and are implementing Old Industrial Area Control Measure Plans. These plans include schedules for implementing control measures in old industrial areas with known moderate and high concentrations of mercury and PCBs, including the PMUs, to address the load reduction requirements in the TMDLs. Control measures being implemented in old industrial areas include:

- Source property identification and abatement
- Moderate property control program

- Operations and maintenance measures
- Retrofit with treatment controls or green stormwater infrastructure
- Redevelopment

Additional control measures being implemented in all areas include controlling PCBs from electrical utilities and managing PCBs-containing materials and wastes during building demolition. Mercury load avoidance and reduction focuses on source controls and recycling programs in addition to the PCBs control measures, which also reduce loads of mercury.

In Fiscal Year 2026/27, Permittees will consider the results of the RMP's revised mercury synthesis report to determine whether additional mercury control measures should be investigated, piloted, or implemented in future permit cycles.

BAMSC representatives will also continue to participate in the RMP PCBs Workgroup to help oversee the PMU studies and guide the development of information to support the ongoing implementation of control measures in the PMUs and other old industrial areas and to determine whether additional PCBs control measures should be investigated, piloted, or implemented in future permit cycles.

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