NOTICE AND AGENDA

MANAGEMENT COMMITTEE for the MONTEREY REGIONAL STORMWATER MANAGEMENT PROGRAM

DATE: March 22, 2023
TIME: 9:30 a.m.
LOCATION: Monterey One Water Conference Room, 5 Harris Court, Building D, Monterey

NOTE: Under the terms and conditions of the Memorandum of Understanding for the Monterey Regional Storm Water Management Program *(MRSWMP),* the Management Committee (*MC*) was created to provide overall Program coordination, review, and budget oversight with respect to the NPDES permit. The MC is to consider permit compliance, with majority concurrence of the Permittees (*listed below as Participating Entities*), as the primary objective in approving Program tasks and corresponding budgets. The MC is comprised of one representative from each of the Permittees. None of the representatives are elected officials or policy makers for the entities they represent.

Stakeholder feedback may either be provided during the "Public Comment" agenda item or the Program Manager may be contacted regarding any questions or feedback for the Management Committee. Responses to these items will be reported in the Management Committee Meeting Minutes. Should an interested stakeholder or a member of the public wish to make a presentation to the Group, the Program Manager should be contacted to schedule the presentation for a subsequent meeting.

Officers: Chairperson: Leon Gomez, City of Sand City
Vice-Chairperson: Ron Fucci, City of Del Rey Oaks

Participating Entities:
City of Carmel-by-the-Sea
City of Del Rey Oaks
City of Monterey
City of Pacific Grove
City of Sand City
City of Seaside
County of Monterey

Other Coordinating Entities:
Carmel Unified School District
Pacific Grove Unified School District
Monterey Peninsula Unified School District
Pebble Beach Company

Ex-Officio Members:
Association of Monterey Bay Governments
Monterey Bay National Marine Sanctuary

AGENDA ITEMS		**Page #**
1. **Call to Order / Roll Call**		n/a
2. **Public Comments**		n/a
CONSENT AGENDA		
3. **Approve Management Committee Meeting Minutes for 2/22/23**	*(Attach. 1)*	3
INFORMATION AND DISCUSSION ITEMS		
4. **Update on Public Education and Public Outreach Program**		

	a. Update on TV Ad Development		n/a
	b. Update on Earth Day Events		n/a
5.	**Presentation of MRSWMP Monitoring Program Draft Report**	*(Attach. 2)*	7
6.	**Update on Mutual Aid Agreements**		n/a
7.	**Update on Post-Construction Requirements**		
	a. Update on O&M Fact Sheets	*(Attach. 3)*	64
	b. Update on PCR Training – April 27		n/a
	c. Update on O&M Training – May 25		n/a
8.	**Update on Phase II MS4 Permit**		
	a. Update on Cost of Compliance Requirements		n/a
9.	**Update on Trash Amendment**		
	a. Update on Trash Assessments		n/a
10.	**Discussion of the FY2023/24 MRSWMP Budget and Cost Allocation**	*(Attach. 4)*	65

ADMINISTRATIVE REPORTS

11.	**Management Committee Member and Program Manager Reports**	n/a

SCHEDULE NEXT MEETING / ADJOURNMENT

12.	**Schedule Next Meeting**: The next MRSWMP Meeting date is tentatively scheduled for Wednesday, April 26, at 9:30a.m.	n/a
13.	**Meeting Adjournment**	n/a

Monterey Regional Stormwater Management Program

Management Committee

MEETING MINUTES
For February 22, 2022

AGENDA ITEMS

1. **Call to Order / Roll-Call**
   Chairperson Gomez (City of Sand City) called the meeting to order at 9:32a.m. and performed roll call.

Management Committee (MC) Members:
City of Carmel – Jessica Juico
City of Del Rey Oaks – Ron Fucci
City of Monterey - Tricia Wotan
City of Pacific Grove – George Fuerst
City of Sand City – Leon Gomez
City of Seaside –Melissa Savage
County of Monterey – Michael Trapani

MRSWMP Staff:
Program Manager – Jeff Condit

Other:
Maris Sidenstecker – Save the Whales
Jackie McCloud – City of Watsonville
Merrill Taylor – Craft Water Engineering, Inc.
Lindsay Brown – National Marine Sanctuary Foundation
Nathaniel Milam – Whitson Engineers
Lucas Sharkey, Trent Buchanan – Regional Board
Bob Bourke
Doug Dowden

2. **Public Comment**
   Lucas Sharkey introduced Trent Buchanan as a new member of the Regional Board's team. He will be focused on MS4's in the Santa Cruz region, as well as IGP and CGP items.

CONSENT AGENDA

3. **Approve Management Committee Meeting Minutes for 1/25/23**

   - ***Action:*** On a motion by Wotan *(City of Monterey)*, seconded by Gomez *(City of Sand City)*, Management Committee approved the Management Committee Meeting Minutes for 1/25/23 *(6-0, Del Rey Oaks arrived after the vote).*

     - ***Ayes*:** Juico, Trapani, Wotan, Fuerst, Gomez, Grogan
     - ***Noes*:** None
     - ***Abstain*:** None

DISCUSSION ITEMS

4. **Update on COVID-19 Situation**

A brief discussion ensued regarding impacts the current COVID-19 situation has had on stormwater programs and local government in general. Highlights included:

- Condit shared that the Governor's Executive Order that has allowed for virtual meetings throughout the Covid pandemic will come to an end on Feb. 28. The MRSWMP will resume meeting in person at the Monterey One Water Administrative Conference Room for their March 22 meeting.

5. **City of Watsonville Green Infrastructure Plan**

Jackie McCloud of the City of Watsonville provided a presentation regarding their recently completed Green Infrastructure Plan. She was joined by Merrill Taylor of Craft Water Engineering, Inc. Ms. McCloud and Mr. Taylor discussed their process and highlights of the Plan. The Green Infrastructure Plan can be found at the following link: https://drive.google.com/file/d/12Jkm-52ht1VG-p-y7gYB0xotpnahlgRy/view?ts=61ba3c8c

The Green Infrastructure Plan included Concept Designs for eight projects that proved to be very helpful in pursuing grant funding from grantors such as the California Natural Resource Agency, the Department of Water Resources, and the Bay Area Council Foundation. They have had success in moving forward with a few of the initial designs. An extended discussion ensued.

6. **Update on Public Education and Public Outreach Program**

a. Update on TV Ad Development
Condit and Fuerst provided an update to members on the development of new TV Ads to support outreach efforts. The effort includes the participation of our regional collaborative of Permittees from Monterey and Santa Cruz Counties.

a. Community-Based Social Marketing Workshop – Feb. 7-9
Condit and Sidenstecker shared highlights of a recent training workshop they participated in regarding Community-Based Social Marketing. They noted that the training was well-attended by regional partners and the non-profit community. Condit and Sidenstecker have signed on for an additional training opportunity meant to focus on real-world applications. They will report back to the group following this exercise.

7. **Update on Mutual Aid Agreements**

Following up on member direction from the January 25 MRSWMP Meeting, Condit presented a Staff Report presenting his research on existing mutual aid agreements and emergency procurement policies. Members currently rely on their Emergency Operation Centers for coordination in the event of an emergency. Members discussed the potential for developing an inventory of available resources that could be made available in the event of an emergency. Members directed Condit to review the County Office of Emergency Services' Multi-Jurisdiction Hazard Mitigation Plan to understand if this is a resource for storm event situations **(Action Item – Condit).** Members directed Condit to meet with the County OES team during their open 'Office Hours' to gain additional insight **(Action Item – Condit).**

8. **Update on Proposed 2022-24 303(d) List of Impaired Water Bodies**

Condit shared that the State Water Board announced a Public Comment period regarding the proposed 2022-24 303(d) List of Impaired Water Bodies. Although this is an off-cycle year for the Central Coast, the State Water Board included 29 new water bodies on their proposed list.

Wotan shared that past efforts included challenges in the form of errors in nomenclature for specific drainages, regarding the naming of some drainages.

9. Update on Post-Construction Requirements

a. Discussion of SCM O&M Fact Sheets
Members requested additional time for their review of the proposed SCM O&M Fact Sheets. Condit provided a new deadline of March 16 for members to complete their review.

b. Update on PCR Training – April 27
Condit is in the process of coordinating a PCR Training with a tentative date of April 27. The virtual training will include an overview of the Post-Construction Requirements, the Stormwater Technical Guide, and a Case Study of an actual PCR project. Valerie Huff is available to facilitate the training. The training will be geared towards both the development community and municipal staff.

Milam recommended obtaining questions from the development community prior to the event, possibly during the registration process.

c. Update on O&M Training
Condit is also in the process of coordinating an O&M Training for PCR facilities. This training will be aligned with the release of the O&M Fact Sheets. Members appeared open to the idea of a virtual training. The training will target municipal staff as well as private contractors. It would be helpful to capture questions from the participants prior to the training.

Sharkey shared that there may be resources available regarding O&M practices from Ohio State University and North Carolina State University.

Update on Trash Amendment

a. Update on Trash Assessments
Condit shared that he will begin Trash Assessments on behalf of members in the coming weeks. He is working with Sidenstecker to identify CSUMB Service Learning Students to participate in the effort. He will utilize the Second Nature Trash Module to collect the data.

<u>ADMINISTRATIVE REPORTS</u>

10. Management Committee Member and Program Manager Reports

a. **<u>City of Del Rey Oaks</u>** – Fucci shared that the City is exploring some stormwater capture and reuse opportunities in their jurisdiction in partnership with Monterey One Water.

b. **<u>City of Carmel</u>** – Juico shared that Agnes Martelet has moved on from the City. Juico looks forward to working with members during the transition.

c. **City of Sand City** – Gomez shared that he is exploring the implementation of the green street in his main thoroughfare.
d. **County of Monterey –** Trapani shared that he is looking to develop a sewer lateral maintenance program for the County. He is interested in learning more about the County of Santa Cruz program during a presentation at an upcoming MRSWMP meeting.
e. **Program Manager** – Condit shared that he is a Co-Chair of the CASQA Training Sub-Committee. His focus will be on the development of a statewide Stormwater 101 Training initiative.

ADJOURNMENT / SCHEDULE NEXT MEETING

11. Schedule Next Meeting

The next Management Committee meeting is scheduled for Wednesday, March 22, at 9:30am.

12. **Meeting Adjournment**

The meeting was adjourned at 11:07a.m.

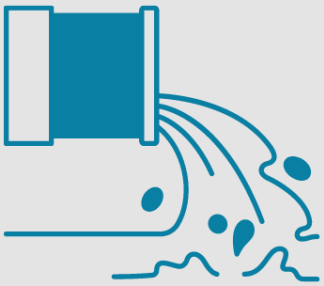
CMSF
www.CaliforniaMSF.org

MONTEREY BAY NATIONAL MARINE SANCTUARY

California Marine Sanctuary Foundation in partnership with Monterey Bay National Marine Sanctuary

2022 MRSWMP Dry Run & First Flush Monitoring Report

MARCH 17, 2023



Prepared by:

Lindsay Brown, Water Quality Program Coordinator
California Marine Sanctuary Foundation | Monterey Bay National Marine Sanctuary

Bridget Hoover, Water Quality Protection Program Director
Monterey Bay National Marine Sanctuary

Funded by:

Monterey Stormwater Education Alliance

MONTEREY SEA
Stormwater Education Alliance
Carmel-by-the-Sea • County of Monterey • Del Rey Oaks
Monterey • Pacific Grove • Sand City • Seaside

Figure 1. Sites monitored during the MRSWMP 2022-2023 First Flush.

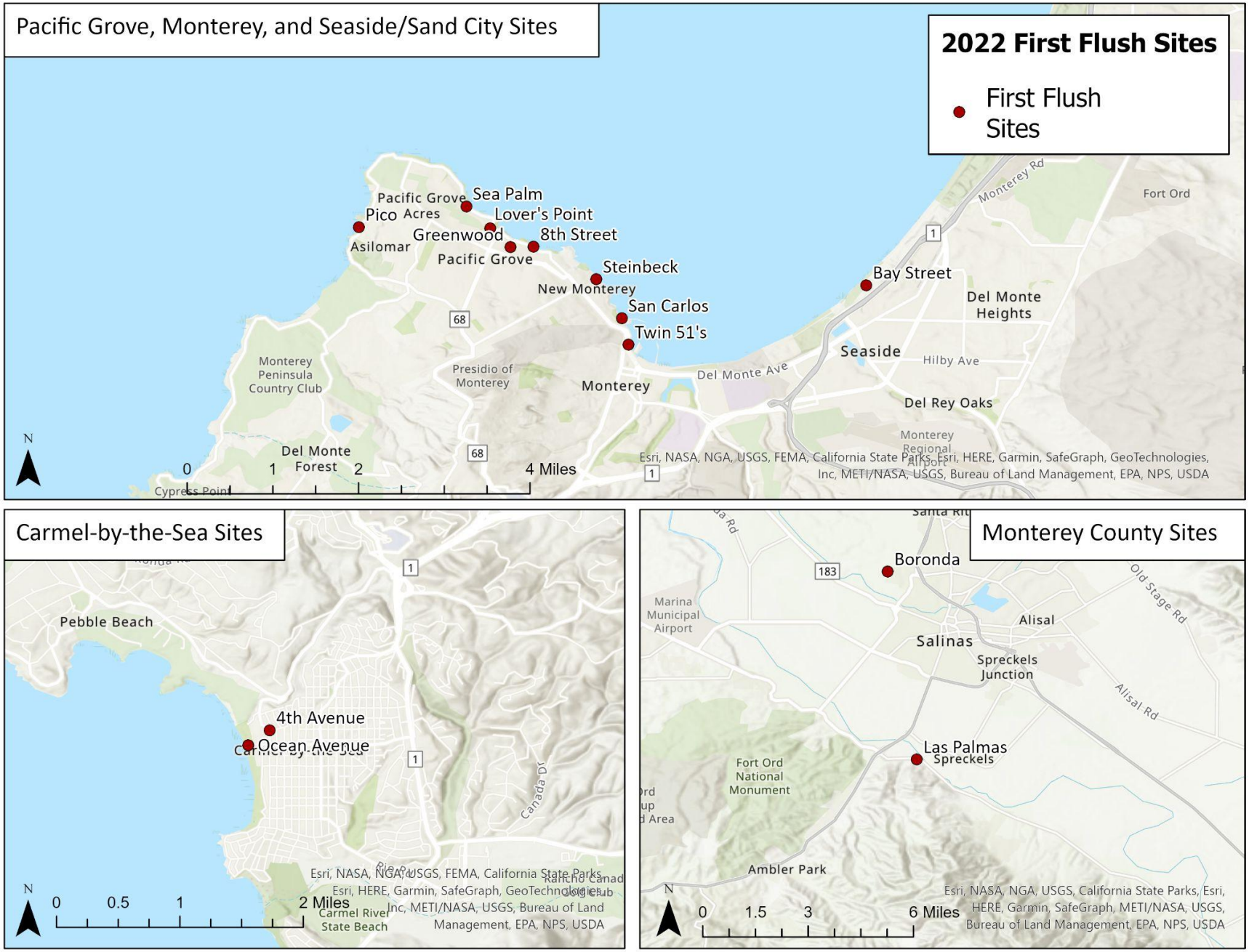


Figure 2. Sites monitored by region during the MRSWMP 2022-2023 First Flush.

Introduction

The Monterey Stormwater Education Alliance (Monterey SEA) water quality monitoring program is modeled after Monterey Bay National Marine Sanctuary's (MBNMS) Dry Run-First Flush monitoring program. MBNMS' Dry Run and First Flush volunteers collect water samples from storm drain outfalls prior to the first major rainstorm of the year (Dry Run) and during the first major rainstorm of the winter season (First Flush). Samples are analyzed for common urban pollutants such as detergents, bacteria, metals, sediment, and nutrients.

Samples collected during dry weather prior to the first major rainstorm provide information about dry weather flows such as pollutant concentrations, amount of groundwater base flow, or contributions from urban sources such as car washing, pressure washing, irrigation, or illicit discharges. Dry weather flows are an important component of water quality monitoring since contaminants are more concentrated which causes them to be more easily detected and traced to their source. While water samples collected during the first major rainstorm of the winter season provide information on the concentration of contaminants in stormwater after months of dry weather accumulation of pollutants on land in urban areas. All runoff from the Monterey region eventually flows into MBNMS except in areas where diversions have been installed that capture some dry and wet weather storm drain system flows and divert it to the sanitary sewer. The cities of Pacific Grove, Salinas, and Carmel-by-the-Sea have constructed diversions which facilitate reuse of runoff while minimizing contaminants flowing to MBNMS. It is hoped that this data collected for Monterey Regional
Stormwater Management Program's (MRSWMP) water quality monitoring program provides local cities with information on where to implement best management practices focused on improving water quality.

The MRSWMP water quality monitoring program promotes volunteer participation, stewardship, and environmental education while providing important data regarding the quality of water flowing into MBNMS. This monitoring program is designed to meet E.8.ii requirements under the Phase II Stormwater Permit, satisfying public involvement and participation elements of the permit. This monitoring program does not fulfill the E.13 requirements pertaining to ASBS Monitoring, TMDL Monitoring, 303(d) Monitoring, or Receiving Water Monitoring which are completed by permittees individually or through regional programs.

Methods

The same protocols and laboratory analyses are used for both MRSWMP water quality monitoring events. Dry Run and First Flush volunteers attend an online, or in-person training that covers why samples are collected and how. During non-COVID years, after training the volunteers then participate in hands-on practice during the Dry Run, a half day event where volunteers demonstrate their skills, visit outfall sites, and collect water samples if flowing water is found. In 2022, due to COVID, training was conducted in-person in small groups with masks and Dry Run was conducted by CMSF, MBNMS and MRSWMP staff, with assistance from a few volunteers.

During Dry Run, field measurements (water temperature, pH, electrical conductivity, and transparency) are taken in-situ and water samples are collected for lab analysis of nutrients (nitrate, orthophosphate, ammonia, and urea), bacteria (*Eschericia coli* and enterococcus), metals (copper, lead, and zinc), total suspended solids, color, Methylene Blue Active Substances (MBAS) detergents, hardness (as CaCO3), potassium, and turbidity.

Once Dry Run has been completed, the wait for the first major rainstorm begins. Waiting for a storm big enough to conduct First Flush sampling can take weeks or sometimes months. Volunteers are mobilized for the First Flush when at least 0.10 inches of rain has fallen, there is sheeting water on roadways, and storm water conductivity is at or below 1000 µS. During First Flush, volunteers take the same field measurements as during Dry Run (water temperature, pH, electrical conductivity, and transparency) and collect the same water samples for lab analysis of nutrients (nitrate, orthophosphate, ammonia, and urea), bacteria (*Eschericia coli* and Enterococcus), metals (copper, lead, and zinc), total suspended solids, color, Methylene Blue Active Substances (MBAS) detergents, hardness (as CaCO3), potassium, and turbidity. Samples and field equipment are delivered immediately to the monitoring coordinator once sample collection is complete. Once all the samples are received, the monitoring coordinator delivers the samples to a certified lab.

Dry Run monitoring entails collecting a single grab sample from each site with flowing water. During First Flush, two sets of grab samples are collected 30 minutes apart for two time series samples. In this report, First Flush results reported by *analyte* are averaged between the two time series, and First Flush results reported by *jurisdiction* have individual time series results listed. Samples for urea are only collected during the first time series and therefore represent a single sample result for each event.

The Cities of Carmel-by-the-Sea and Pacific Grove operate dry weather storm drain diversions for dry and some wet weather flows to the storm drain system. Two sites in Carmel-by-the-Sea, 4th Avenue and Ocean Avenue, are within the city's diversion system boundaries, where dry weather storm drain flows are retained and diverted into infiltration trenches. The City of Carmel's diversion is never on during First Flush. The 4th Avenue (Carmel) site is monitored above the connection point with the diversion system for Dry Run and First Flush due to access issues at the outfall. Ocean Avenue is sampled at the outfall for both Dry Run and First Flush events as outfall access is available year-round.

The City of Pacific Grove's diversion collects dry and wet weather storm drain flows and pumps them into the sanitary sewer. Sites monitored in 2022 within the City of Pacific Grove's diversion system boundaries are: 8th Street, Greenwood Park, and Lover's Point. During dry weather, 8th Street and Lover's Point are sampled at the outfall, which may or may not have flow as any flow is diverted unless the system is blocked by debris and some water bypasses the diversion. Greenwood Park is always monitored above the diversion system in both dry and wet weather due to safety and access issues at the outfall. If the City of Pacific Grove's diversion remains on during First Flush, as it was this year, sites are still monitored as follows: Greenwood Park and Lover's Point are monitored above the diversion system; 8th Street is monitored at the outfall if flow is present, as it was this year. Water quality data from sites monitored above any dry or wet weather diversions are still valuable as contaminants identified in the runoff may not flow to the ocean.

Most results (lab and field) in this study are compared to receiving water standards established for beneficial uses in a stream, lake, or the ocean (**Table 1**). These receiving water quality standards are not meant for end-of-pipe monitoring, such as for this MRSWMP water quality monitoring program, except for the analytes that refer to the MS4 General Permit. However, lacking standards for most end-of-pipe monitoring, receiving water standards are used for comparison. MBAS detergents and metal results are compared to the Water Quality Control Plan for the Central Coast Basin (Basin Plan) Water Quality Objectives (WQO) set by the Regional Water Quality Control Board (RWQCB) for the protection of marine or aquatic life. Since there are no numerical water quality objectives in the Basin Plan for *E. coli*, Enterococcus, nitrate, orthophosphate, and total suspended solids (TSS), those results are compared with the U.S. Environmental Protection Agency (U.S. EPA) WQOs or Central Coast Ambient Monitoring Program's (CCAMP) Action Levels. The U.S. EPA objectives are for the protection of human health while CCAMP's Action Levels are benchmarks that are set for receiving water concentrations at which pollutants may impact cold-water fish. Action Levels typically represent existing regulatory standards; levels derived from the literature or other agency references; or from data that shows levels are elevated relative to the data distribution for that parameter on the Central Coast. It is important to reiterate that both RWQCB Basin Plan Water Quality Objectives and CCAMP Action Levels are established for receiving waters and not for end-of-pipe discharges such as is collected for the MRSWMP monitoring. There are no end-of-pipe objectives for most of the monitored analytes of the MRSWMP monitoring program, however, the State Water Resources Control Board's (SWRCB) National Pollution Discharge and Elimination System (NPDES) MS4 General Permit does provide end-of-pipe water quality Action Levels for: ammonia, color, hardness, potassium, and turbidity. For turbidity, the SWRCB NPDES MS4 Action Levels have been supplanted by CCAMP Action Levels that are more protective of water quality.

Grab sample results are reported as concentration, consistent with how the water quality objectives are defined. However, this does not give an indication of the load of pollutants being discharged. To facilitate calculation of instantaneous load, instantaneous flow was measured by filling a container of known volume (a bucket), timing how fast the container filled, and estimating how much of the flow was captured while filling the container. Dry Run instantaneous flow calculations are from a single sample, while the First Flush instantaneous flow calculations are an average of two time series samples. We provide this information to give an indication of the amount of flow at the time of sampling.

Figure 3. First Flush sampling on September 18th near Fisherman's Wharf in Monterey. Photo: B. Hoover.

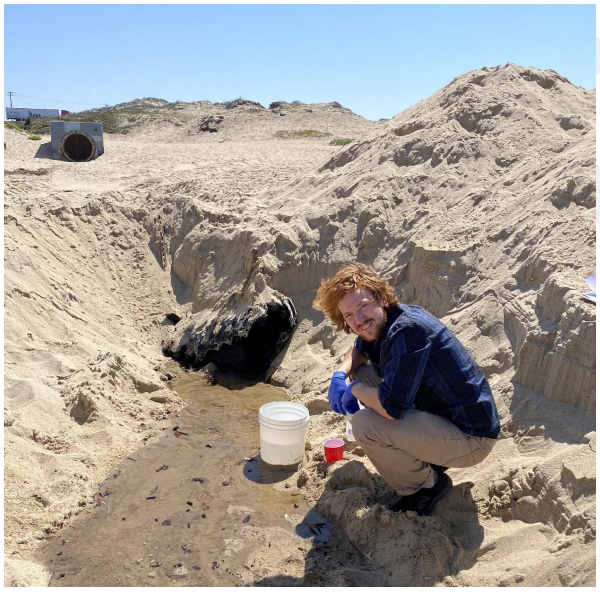


Figure 4. Dry Run sampling at Bay Street. Photo: B. Hoover

Figure 5. A sunny First Flush sampling after a rain event at Las Palmas in Salinas. Photo: B. Hoover

Table 1: Receiving Water Quality Objectives

Parameter (reporting units)	Water Quality Objectives	Source of Objective
Ammonia (mg/L)	Not to exceed 50	SWRCB NPDES MS4 General Permit
Color (color units)	Not to exceed 500	SWRCB NPDES MS4 General Permit
Copper (µg/L)	Not to exceed 30[1]	Water Quality Control Plan for the Central Coast- RWQCB
E. coli (MPN/100mL)	Not to exceed 235[2]	National Recommended Water Quality Criteria
Enterococcus (MPN/100mL)	Not to exceed 104	National Recommended Water Quality Criteria
Hardness as CaCO3 (mg/L)	Not ≤ 10 or ≥ 2,000	SWRCB NPDES MS4 General Permit
Lead (µg/L)	Not to exceed 30[1]	Water Quality Control Plan for the Central Coast- RWQCB
MBAS Detergents (mg/L)	Not to exceed 0.2	Water Quality Control Plan for the Central Coast- RWQCB
Nitrate as N (mg/L)	Not to exceed 2.25[3]	Central Coast Ambient Monitoring Program (CCAMP)
Orthophosphate as P (mg/L)	Not to exceed 0.12[4]	Central Coast Ambient Monitoring Program (CCAMP)
pH (pH units)	Not < 6.5 or > 8.5	Water Quality Control Plan for the Central Coast- RWQCB
Potassium (mg/L)	Not to exceed 20	SWRCB NPDES MS4 General Permit
Total Suspended Solids (TSS) (mg/L)	Not to exceed 500[5]	Central Coast Ambient Monitoring Program (CCAMP)
Transparency (cm)	Not less than 25 [6]	Central Coast Ambient Monitoring Program (CCAMP)
Turbidity (NTU)	Not to exceed 25	Central Coast Ambient Monitoring Program (CCAMP)
Zinc (µg/L)	Not to exceed 200 [1]	Water Quality Control Plan for the Central Coast- RWQCB

Note: Urea is not listed because it does not have a Water Quality Objective or Action Level.

[1] Water Quality Control Plan for Central Coast Cold Water Objective for Hard Water.
[2] Environmental Protection Agency, Updated WQO.
[3] Central Coast Ambient Monitoring Program, Pajaro River Watershed Characterization Report 1998, rev 2003.
[4] Williamson, The Establishment of Nutrient Objectives, Sources, Impacts and Best Management Practices for the Pajaro River and Llagas Creek, 1994.
[5] Central Coast Ambient Monitoring Program, Salinas River Watershed Characterization Report 1999, rev. 2000.
[6] Based upon equivalent guideline value used for 303(d) Listing Guideline Value (Sigler et al., 1985).

Results

Three main monitoring events took place during the 2022 MRSWMP permit year:

- Dry Run was conducted on Friday September 16th at 12 sites. Only six of the 12 sites had enough flowing water to be sampled for the Dry Run in 2022. Due to COVID restrictions, employees from Monterey National Marine Sanctuary, Keegan Angerer and Bridget Hoover, two volunteers, and Jeff Condit with MRSWMP assisted with sample collection.
- One First Flush event was conducted on September 18th, 2022, the earliest in First Flush history. All but two sites in Monterey County were visited with the help of 11 volunteers who donated over 60 hours to collect and deliver storm drain samples. Volunteers were mobilized at 10:00 pm when a rain event dropped an inch of rain over a span of two hours over the Monterey Peninsula.
- The final First Flush event occurred for the two sites in Monterey County (Las Palmas and Boronda) during a separate rain event on November 1st in the afternoon.

Flow was measured by volunteers at the time of sampling except at sites where low flow during Dry Run prohibited accurate flow measurements or during First Flush when an ISCO pump was used to pull sample water from a collection area. ISCOs were used during First Flush at Las Palmas (Monterey County), Bay Street (Seaside-Sand City), and Lover's Point (Pacific Grove). All other instantaneous flow estimates are listed in **Table 2**.

Table 2: Instantaneous flow estimates in liters per minute (lpm) per site. NA= data not available due to accessibility to end of pipe because of safety concerns or low flow; NR= Not recorded; NF= No flow

Jurisdiction	Site Description	Site ID	Dry Run	First Flush
Carmel	4th Avenue	307-CASD-01	NF	227
	Ocean Avenue	307-CASD-02	NF	333
Monterey	Twins	309-MSD-03	9.08	454
	San Carlos Beach	309-MSD-04	NF	1,135
	Steinbeck	309-MSD-05	NR	781
Monterey County	Boronda	309-SASD-01	NF	97
	Las Palmas	309-SASD-02	NF	NA
Pacific Grove	8th Street	309-PGSD-01	NF	330
	Greenwood Park	309-CENTR-31	0.41	1,135
	Lover's Point	309-PGSD-03	NA	NA
	Sea Palm	309-PGSD-15	4.50	233
	Pico	309-PGSD-04	0.04	7.80
Seaside/ Sand City	Bay Street	309-SSD-02	NR	NA

Each analyte is described below and includes a reporting of the Minimum Detection Limit (MDL), the lowest concentration that lab equipment can reliably detect. MDL is a statistical analysis of the

confidence of results. Results below the MDL are reported as non-detect since lab equipment cannot reliably determine where the results lay between zero and the MDL.

Box and whisker graphs that show the data divided into dry weather (DR) and wet weather (FF) results by site. Dry weather monitoring events include Dry Runs and any previous Spring Run and Summer Run events. Wet weather monitoring is inclusive of First Flush and any previous Second Flush events. Box and whisker graphs show a distribution of the dataset in a convenient format for making comparisons between sites and the range of concentrations over the years. The box represents the range of 50% of the data above and below the median. The lines above and below the boxes are upper and lower whiskers that represent the remaining upper and lower 25% of the data. The end point of each whisker represents the maximum and minimum average result for that analyte at that location and provides an indication of the best- and worst-case results at that site.

Nutrients

Nitrate, orthophosphate, ammonia, and urea are nutrients. Excess concentrations can assist in identifying a discharge of sewage as well as industrial or commercial liquid wastes. Nitrogen and phosphorus are elements needed for plant growth. Primary sources of **nitrate** in runoff include overwatering of fertilized lawns, agricultural and pasture lands, construction sites, and septic or sewer system leachate. Nitrate in runoff can lead to excessive nitrate in groundwater or increased growth of algal blooms that degrade water quality as algae die off and consume oxygen in their decomposition.

The CCAMP Action Level for nitrate as N (NO_3-N) is 2.25 mg-N/L. The MDL was 0.01 mg-N/L for the Dry Run and 0.04 mg-N/L for the First Flush for all sites, except for the Monterey County sites at 0.01 mg-N/L. **Figure 6** represents Dry Run and **Figure 8** represents the First Flush nitrate (NO_3-N) data since 2000. All outfall results are listed in **Appendix 2**.

- **Dry Run**: In 2022, one of the six sites exceeded the Action Level at Bay Street in Seaside at 11.9 mg-N/L.
- **First Flush:** None of the outfall sites exceeded the Action Level in 2022.

Phosphorus is also an essential element for plant growth. Orthophosphate is a form of phosphorus commonly found bound to soil particles, in sewage, fertilizers, and in detergents that contain phosphates. In aquatic systems, orthophosphate is rapidly taken up by algae and aquatic plants. When excessive amounts are present, large algal blooms can occur which can lead to degraded water quality conditions toxic to marine or aquatic life.

The CCAMP Action Level for orthophosphate (PO_4-P) is 0.12 mg-P/L. The MDL was 0.05 mg-P/L for the Dry Run and 0.20 mg-P/L for First Flush for all sites, except for the Monterey County sites at 0.05 mg-P/L. **Figure 6** represents the Dry Run and **Figure 8** represents the First Flush data for all MRSWMP orthophosphate data since 2000. All outfall results are listed in **Appendix 2**.

- **Dry Run:** In 2022, four of the six outfalls (67%) had results that exceeded the Action Level. The highest result of 0.64 was from Bay Street in Seaside.

- **First Flush:** All results exceeded the Action Level in 2022. The highest average result of 1.07 mg-P/L was at Steinbeck in Monterey.

Ammonia, in conjunction with other analytes, can assist in identifying a discharge of sewage as well as industrial or commercial liquid wastes. The SWRCB NPDES MS4 General Permit Action Level for ammonia as N is 50 mg/L; the MDL was 0.05 mg/L for the Dry Run and First Flush. **Figure 7** represents the Dry Run and **Figure 9** represents the First Flush data for all MRSWMP ammonia as N data since 2014. All outfall results are listed in **Appendix 2**. The WQO is not depicted on the graph, because all results since 2013 are far below the WQO of 50 mg/L.

- **Dry Run and First Flush**: None of the outfall sites exceeded the Action Level in 2022.

Urea is an organic compound that is often used in agricultural and urban fertilizers. While there is not an established Action Level or WQO, urea concentrations are compared between sites. The MDL for urea was 8 µg/L for Dry Run and First Flush. **Figure 7** represents the Dry Run and **Figure 9** represents the First Flush data for all MRSWMP urea as N data since 2006. There is no WQO for urea. All outfall results are listed in **Appendix 2**.

- **Dry Run**: In 2022, the highest urea result of 450 µg/L was from Twin 51's in Monterey.
- **First Flush**: In 2022, the highest result of 1,170 µg/L was from Steinbeck in Monterey.

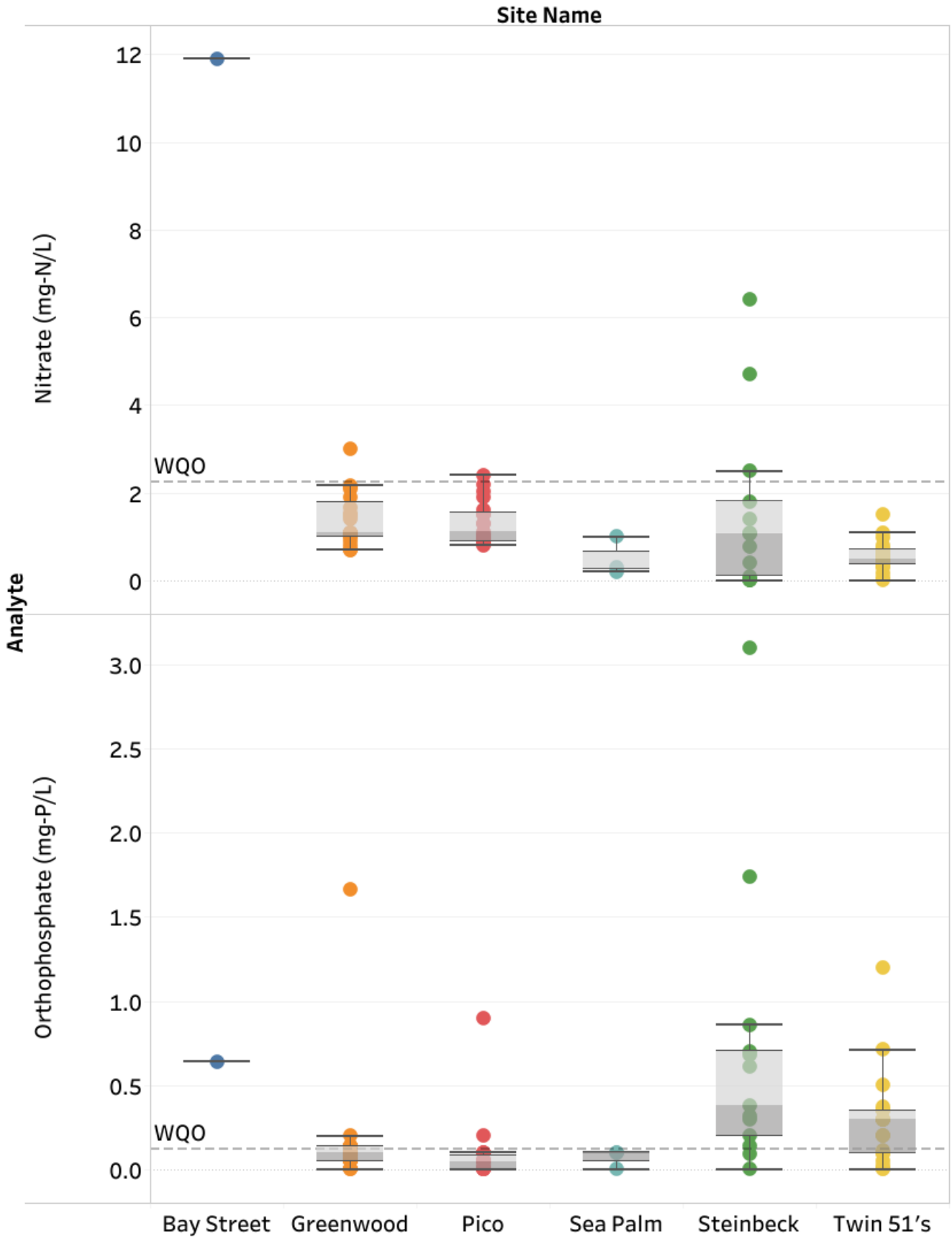


Figure 6. 2000- 2023 Dry Run MRSWMP nitrate as N and orthophosphate as P results. The WQO is indicated by the dotted line. This is the first year that Bay Street has been flowing/sampled on the Dry Run.

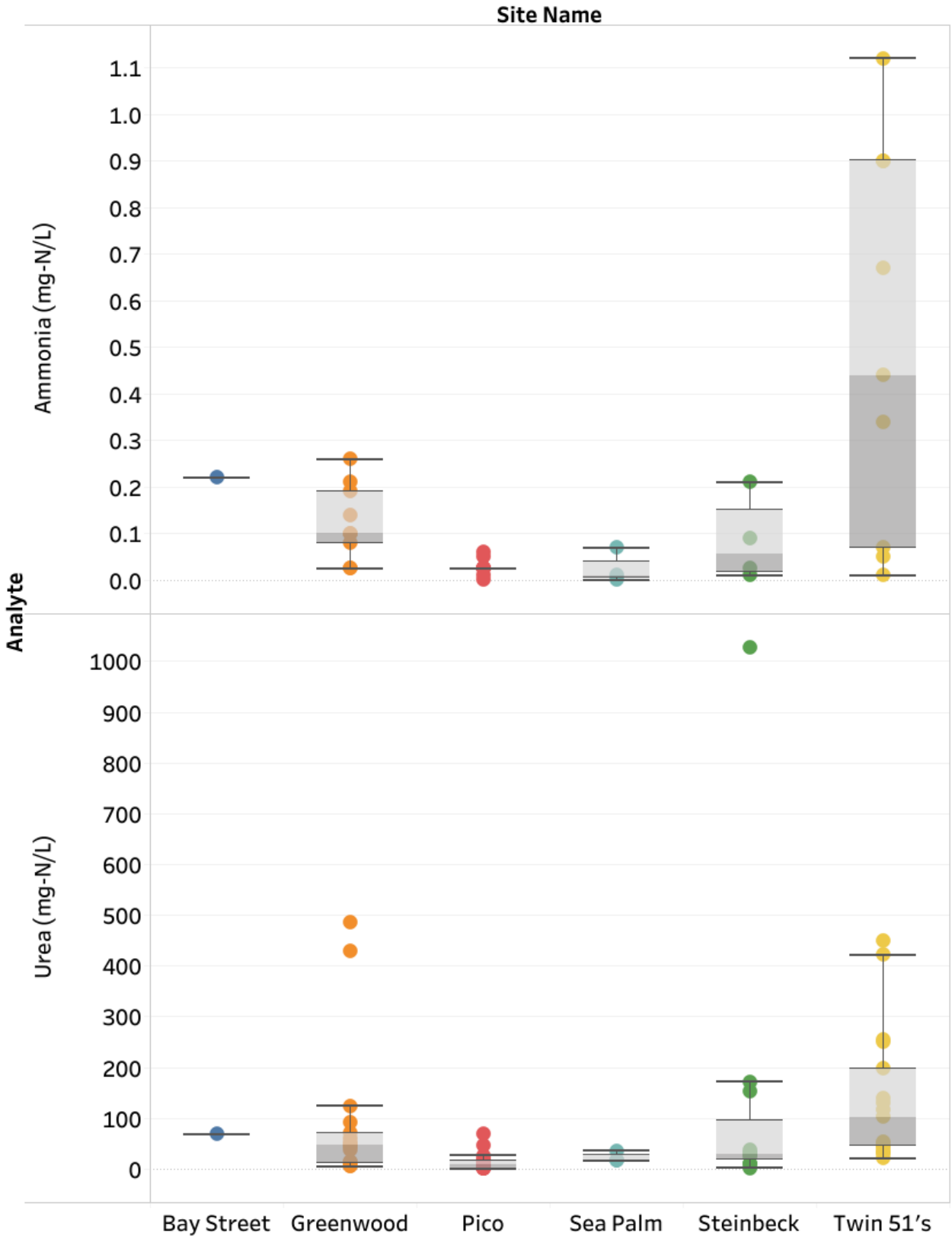


Figure 7. 2014- 2023 ammonia as N and 2006- 2023 urea as N Dry Run MRSWMP results. There is no WQO indicated for urea and the WQO for ammonia is 50 mg-N/L. This is much higher than all results depicted, so the line was left out. This is the first year that Bay Street has been flowing/sampled on the Dry Run.

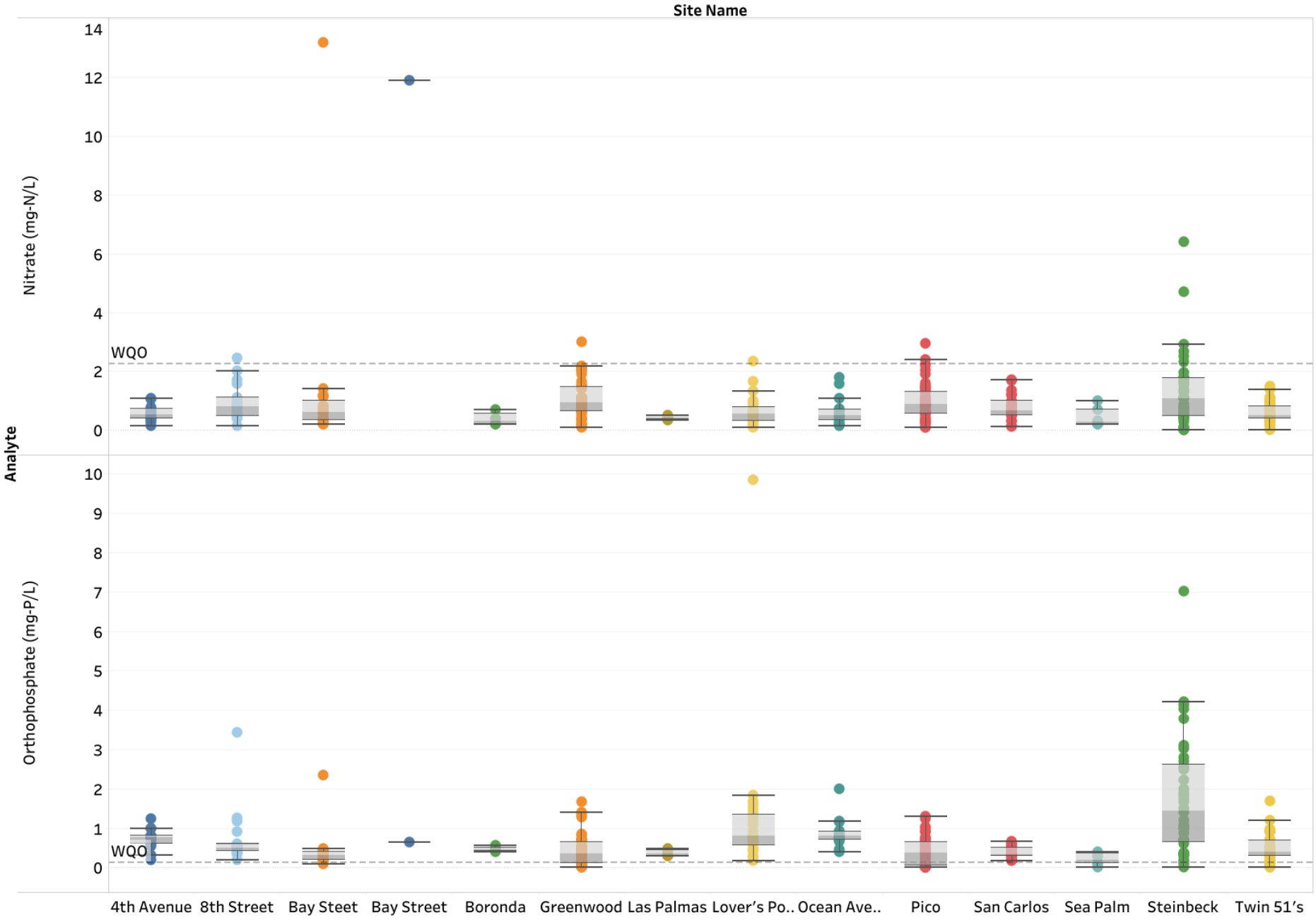


Figure 8. 2000- 2023 First Flush MRSWMP nitrate as N and orthophosphate as P results. The WQO is indicated by the dotted line.

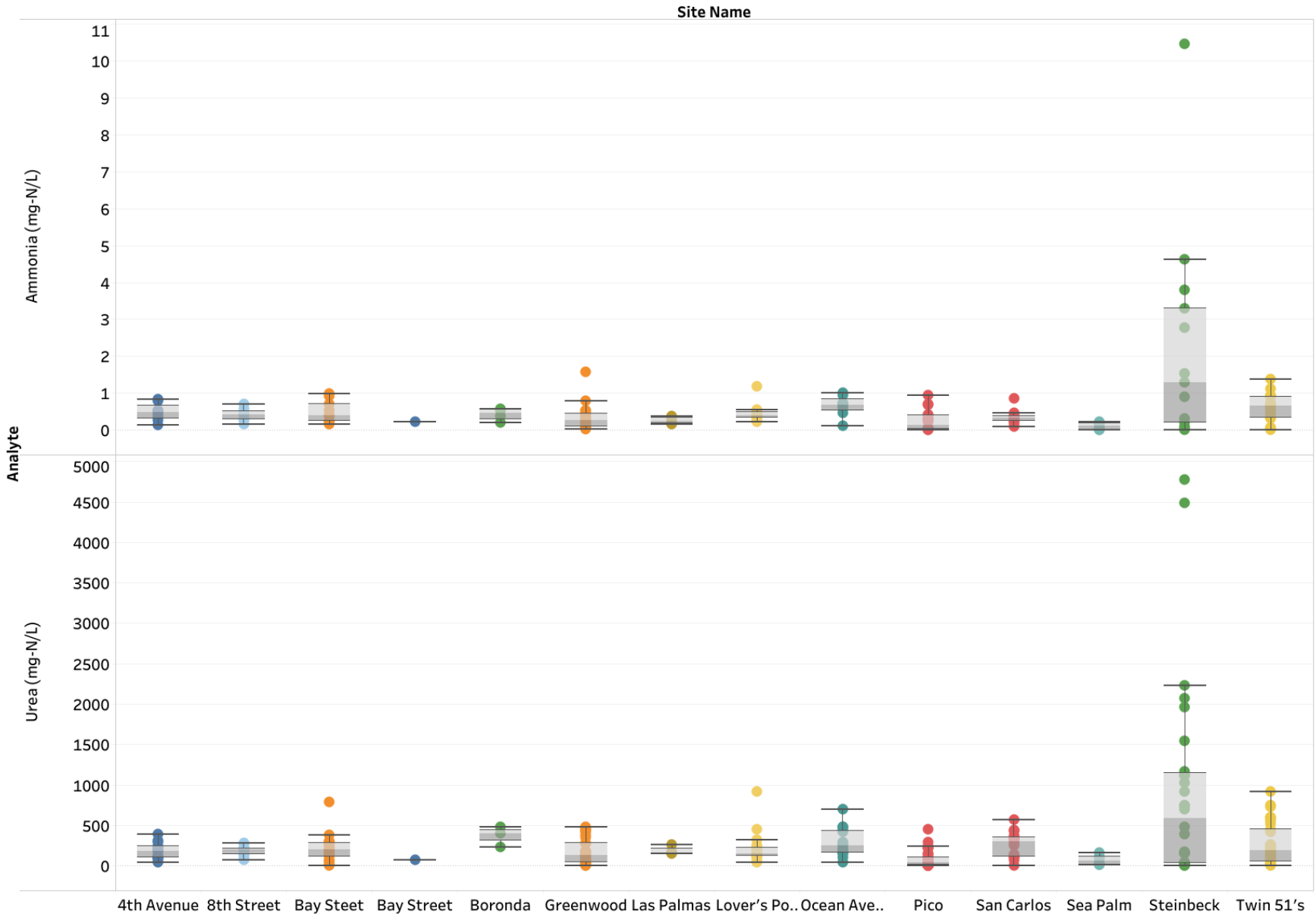


Figure 9. 2014- 2023 ammonia as N and 2006- 2023 urea as N First Flush MRSWMP results. There is no WQO indicated for urea and the WQO for ammonia is 50 mg-N/L. This is much higher than all results depicted, so the line was left out.

Metals

Metals in higher concentrations can be toxic to marine organisms and can cause reduced reproduction, developmental deformities, reduced photosynthesis, and mortality. Heavy metal toxicity can be mitigated by the presence of sediment or other binding compounds that may reduce the metal's bioavailability. For this monitoring, the focus is on copper, lead, and zinc.

Copper is present in some brake pads, pesticides, wood preservatives, roofing materials, and architectural structures such as gutters and downspouts.

The Basin Plan WQO established for total copper is 30 µg/L; the MDL for copper was 7 µg/L for Dry Run and First Flush. **Figure 10** represents the Dry Run and **Figure 11** represents the First Flush data for all MRSWMP copper, lead, and zinc results since 2000. All outfall results are listed in **Appendix 2**.

- **Dry Run:** For 2022, no sites exceeded the WQO.
- **First Flush:** Results from five of the 13 outfall sites monitored (38%) exceeded the WQO in 2022. The highest average result of 104 µg/L was from Ocean Avenue in Carmel.

Lead is present in some types of paint, water distribution systems, auto emissions, and can also be passed through the food web via uptake by plants that are grown in lead contaminated soils.

The Basin Plan WQO established for total lead is 30 µg/L; the MDL for lead was 0.1 µg/L for both the Dry Run and First Flush.

- **Dry Run:** None of the outfall sites exceeded the WQO in 2022. One non-detect was reported at Pico in Pacific Grove.
- **First Flush:** None of the outfall sites exceeded the WQO in 2022. One non-detect was reported at Ocean Avenue in Carmel.

Zinc is present in tires, paint, and outdoor zinc surfaces such as galvanized surfaces.

The Basin Plan WQO for total zinc is 200 µg/L. The zinc MDL was 10 µg/L for the Dry Run and First Flush.

- **Dry Run:** None of the outfall sites exceeded the WQO in 2022. Two non-detects were reported at Sea Palm and Pico in Pacific Grove.
- **First Flush:** For 2022, one of the 13 sites exceeded the WQO at 275 µg/L at Boronda in Monterey County.

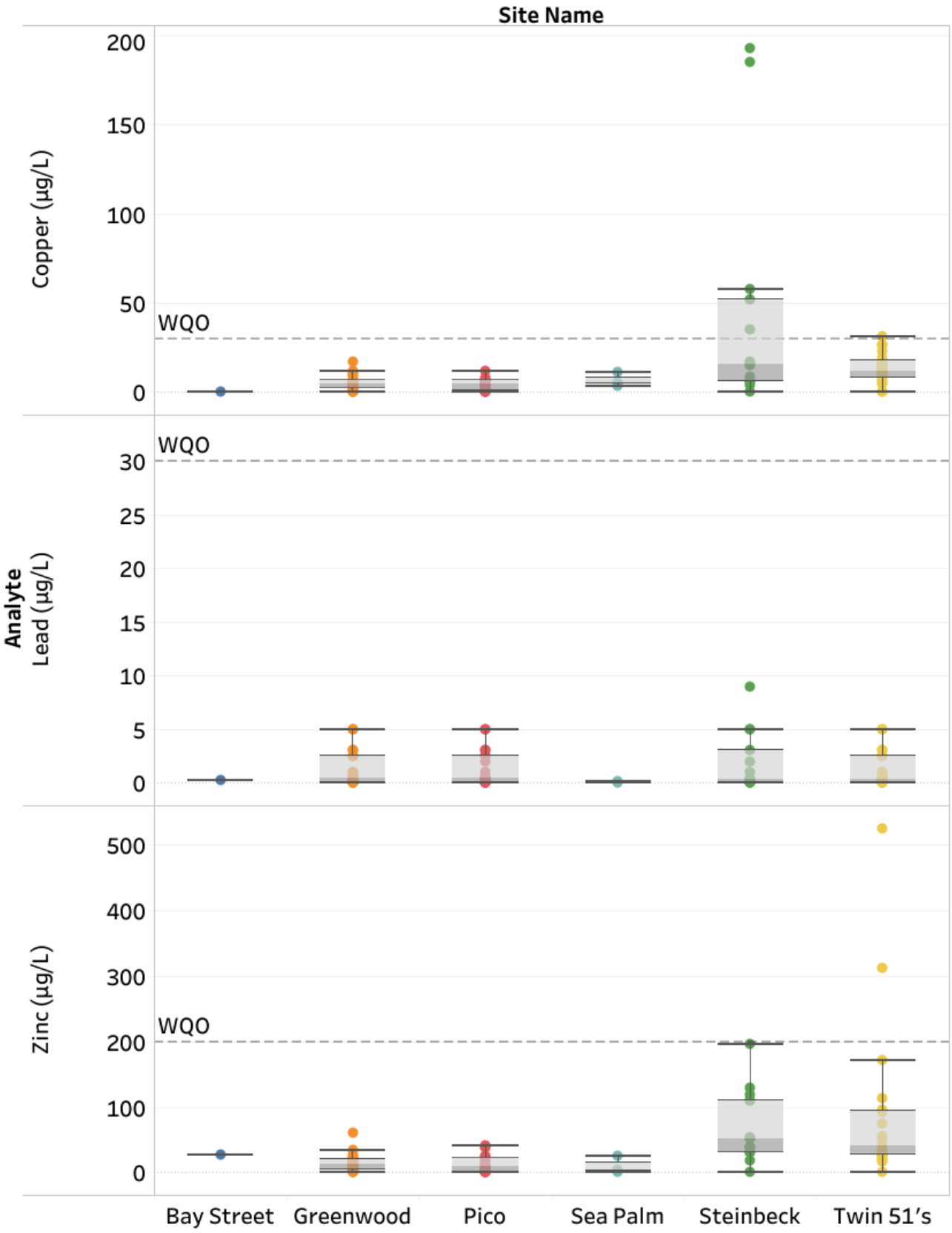


Figure 10. 2000- 2023 copper, lead, and zinc Dry Run MRSWMP results. WQO indicated by the dotted line. This is the first year that Bay Street has been flowing/sampled on the Dry Run.

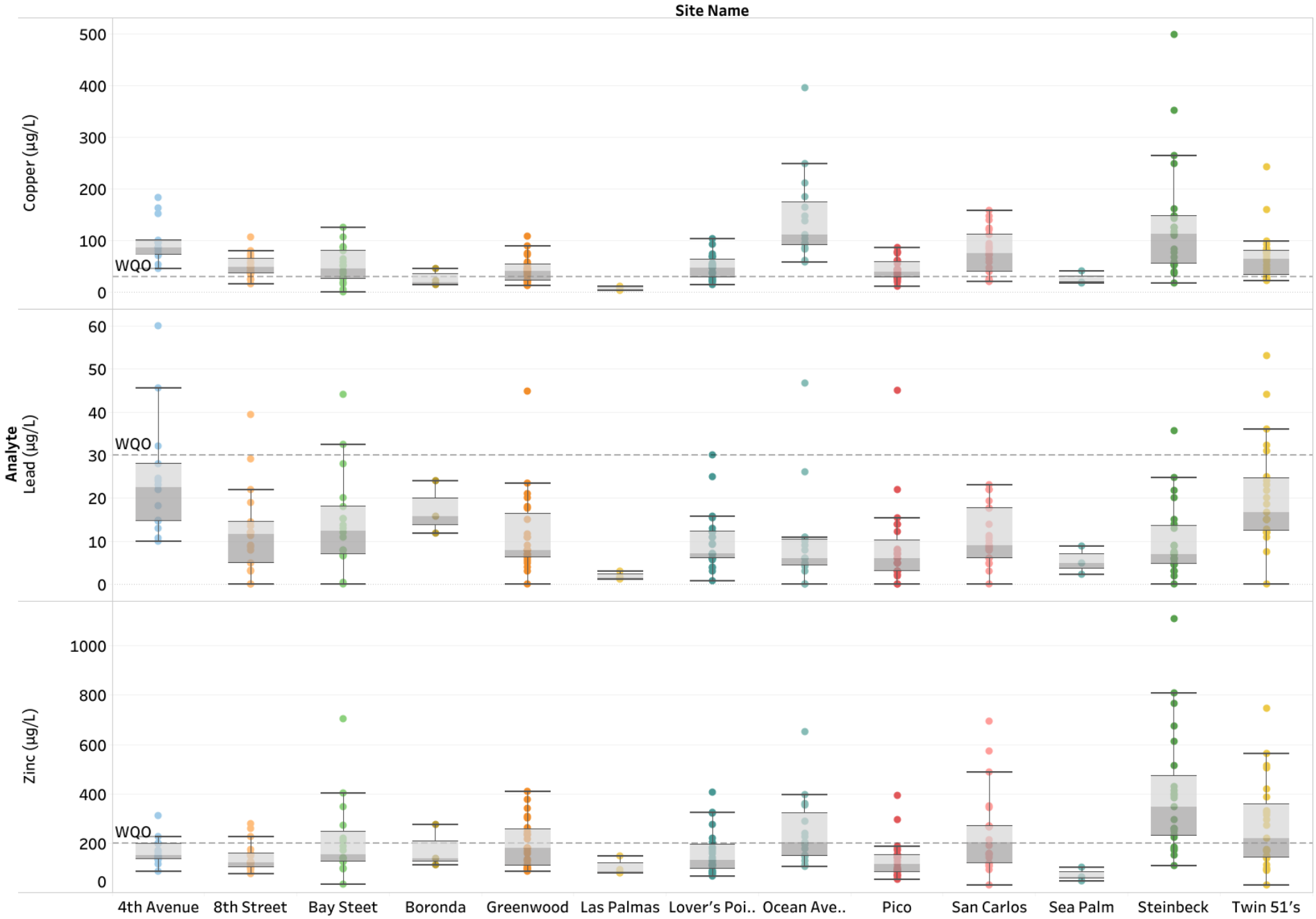


Figure 11. 2000- 2023 copper, lead, and zinc First Flush MRSWMP results. The WQO is indicated by the dotted line.

Clarity

Color, in conjunction with other analytes, can assist in identifying a discharge of sewage, wash water, as well as industrial or commercial liquid wastes. The SWRCB NPDES MS4 General Permit Action Level for color is 500 color units; the MDL for color was 3 and 6 color units for the Dry Run and between 3 and 300 color units for the First Flush. **Figure 12** represents Dry Run and **Figure 13** represents all First Flush MRSWMP color data since 2013. All outfall results are listed in **Appendix 2**.

- **Dry Run:** None of the outfall sites exceeded the Action Level in 2022.
- **First Flush:** One of the outfall sites exceeded the Action Level in 2022 at 750 color units at Boronda in Monterey County.

Total suspended solids (TSS) are measured because high amounts of sediment can destroy habitat, suffocate eggs in freshwater systems, limit the food supply, clog gills, or impair an organism's vision when feeding. While TSS measures the weight of the solids in the water that contribute to less water clarity, turbidity measures the transparency of water. Both are useful measurements for water clarity but have different methodologies for analysis.

The CCAMP Action Level for TSS is 500 mg/L; the MDL was 2 mg/L for both the Dry Run and First Flush. **Figure 12** represents Dry Run and **Figure 13** represents all First Flush MRSWMP TSS data since 2004. All outfall results are listed in **Appendix 2**.

- **Dry Run:** No sites exceeded the Action Level in 2022. One non-detect was reported at Twin 51's in Monterey.
- **First Flush:** One site of the thirteen monitored sites (8%) exceeded the Action Level in 2022. The one exceeding site was measured at 1,224 mg/L at Boronda in Monterey County.

Turbidity measures the transparency of water while TSS measures the weight of the solids in the water that contribute to less transparency. Both are useful measurements for water clarity but have different methodologies for analysis.

The Action Level for turbidity provided by the State Board in the General Permit is not greater than 1000 NTU. As a comparison, CCAMP lists turbidity to be not greater than 25 NTU; the CCAMP Action Level will be used for this set of data as it is more protective of water quality. The MDL was 0.1 NTU for the Dry Run and between 0.1 and 1 NTU for the First Flush. **Figure 12** represents Dry Run and **Figure 13** represents all First Flush MRSWMP turbidity data since 2013. All outfall results are listed in **Appendix 2**.

- **Dry Run:** No sites exceeded the Action Level in 2022.
- **First Flush:** Four of the thirteen monitored sites (31%) exceeded the Action Level in 2022. The highest average result of 210 NTU was from Boronda in Monterey County.

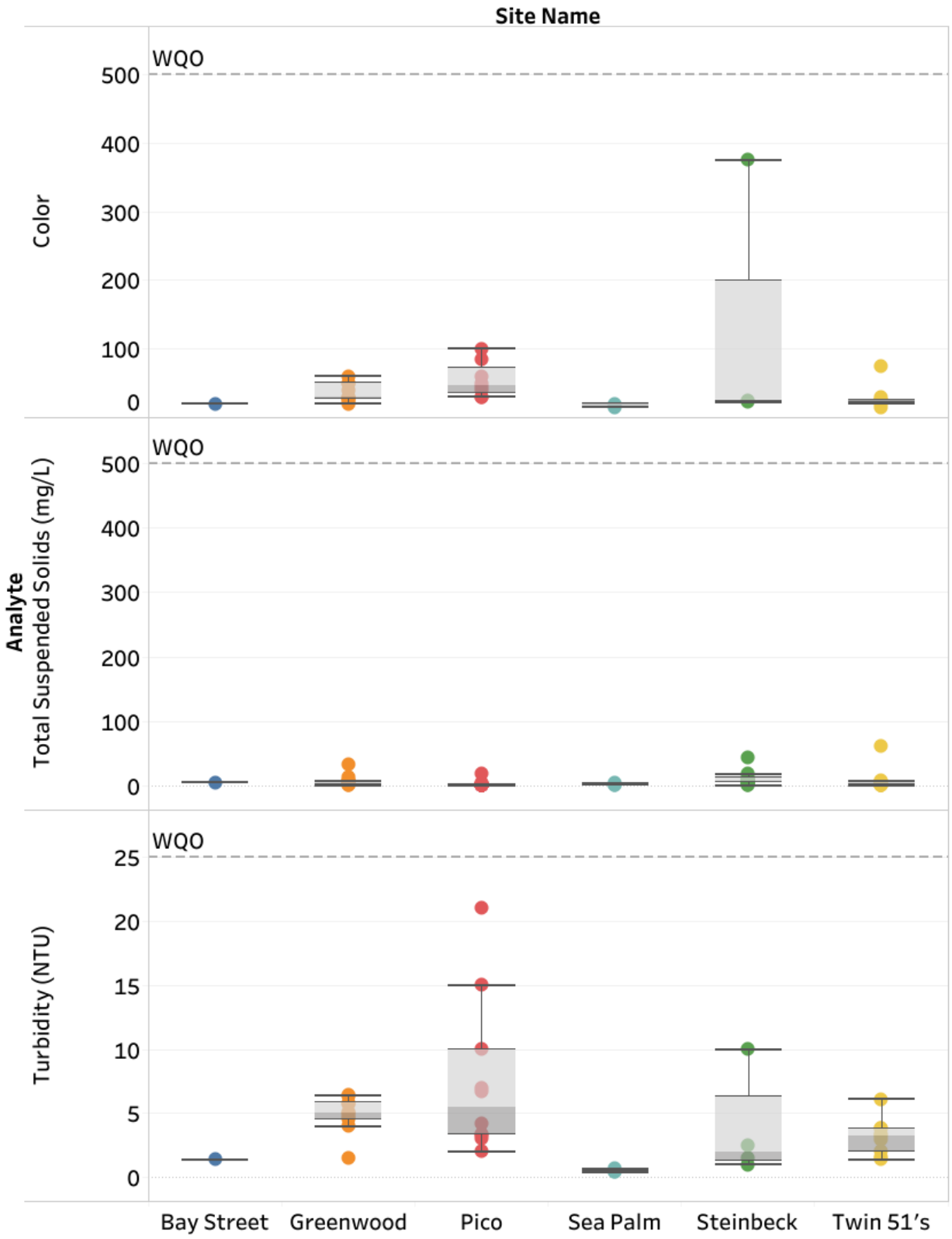


Figure 12. 2013- 2023 color and turbidity and 2004- 2023 total suspended solids Dry Run MRSWMP results. WQO indicated by the dotted line. This is the first year that Bay Street has been flowing/sampled on the Dry Run.

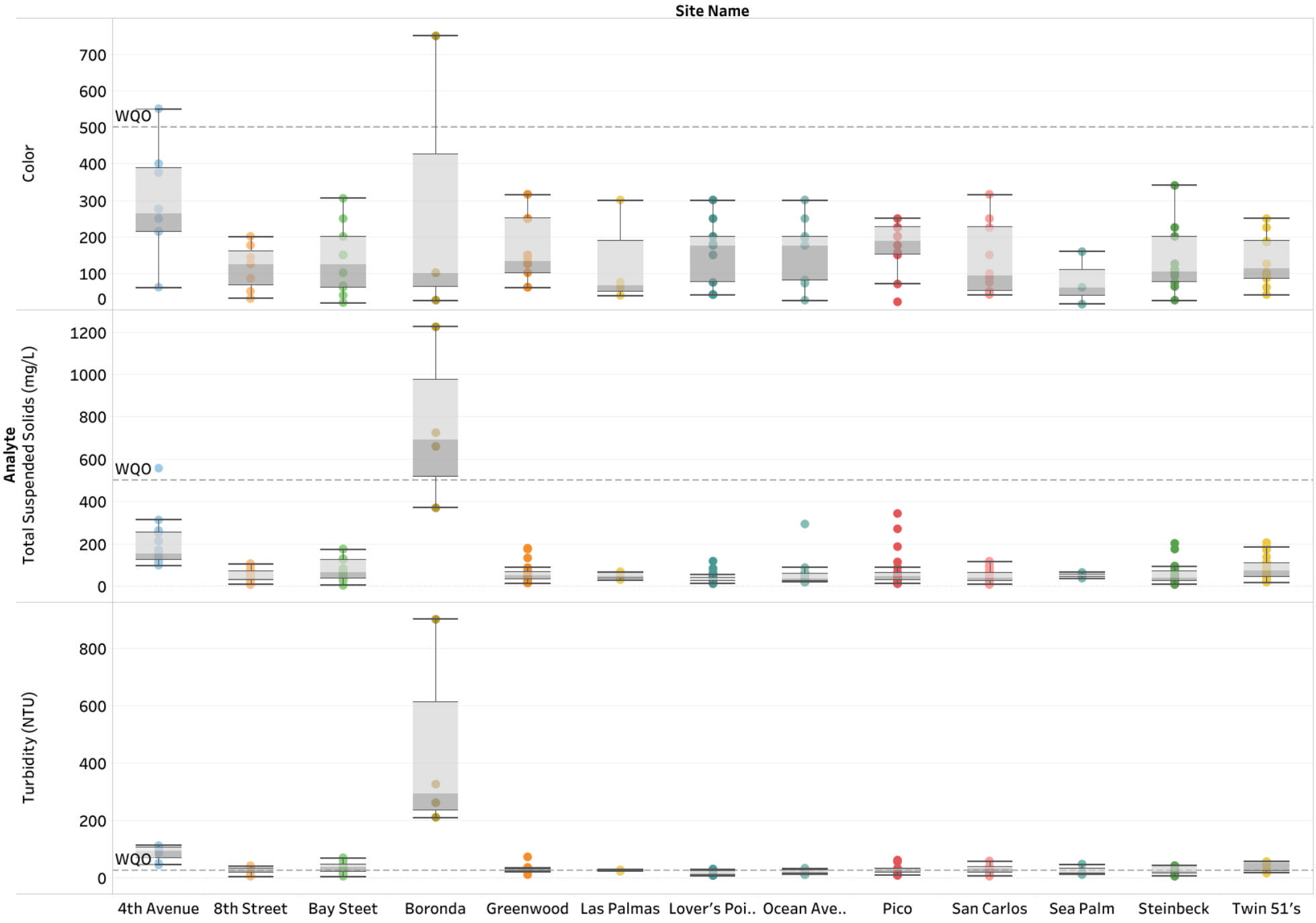


Figure 13. 2013- 2023 color and turbidity and 2004- 2023 total suspended solids First Flush MRSWMP results. WQO indicated by the dotted line.

Fecal Indicator Bacteria

Escherichia coli (*E. coli*) and Enterococcus are both a type of indicator bacteria found in warm-blooded animals. While concentrations of generic *E. coli* and Enterococcus are not closely correlated with disease in humans, they are pollutants of concern because detection above the objective indicates the potential presence of pathogens that may cause disease in humans and wildlife.

The National Recommended Water Quality Criteria for *E. coli* is 235 MPN/100mL. The MDL for *E. coli* was 2 or 10 MPN/100mL for the Dry Run and between 2 and 100 MPN/100mL for the First Flush. **Figure 14** represents Dry Run and **Figure 15** represents all First Flush MRSWMP *E. coli* data since 2004. All outfall results are listed in **Appendix 2**.

- **Dry Run:** Two of the six (33%) outfall sites exceeded the WQO for *E. coli* in 2022. The highest *E. coli* result of 24,196 MPN/100mL was from Greenwood Park in Pacific Grove. This site is diverted to the sanitary sewer. Two sites were non-detects at Bay Street in Seaside and Sea Palm in Pacific Grove.
- **First Flush:** All of the outfall sites exceeded the WQO in 2022. The highest average result of 155,310 MPN/100mL was from Greenwood in Pacific Grove.

The nationally recommended water quality criteria for Enterococcus is 104 MPN/100mL. The MDL for Enterococcus was 2 or 10 MPN/100mL for the Dry Run and between 2 and 100 MPN/100mL for the First Flush. **Figure 14** represents Dry Run and **Figure 15** represents all First Flush MRSWMP Enterococcus data since 2007. All outfall results are listed in **Appendix 2**.

- **Dry Run:** three of the six (50%) outfall sites monitored exceeded the WQO for Enterococcus in 2022. The highest enterococcus result of 24,196 MPN/100mL was from Greenwood Park in Pacific Grove, this site is diverted to the sanitary sewer downstream of the collection site.
- **First Flush:** All outfall sites monitored exceeded the WQO in 2022. The highest average result of 241,960 MPN/100mL was from Steinbeck in Monterey.

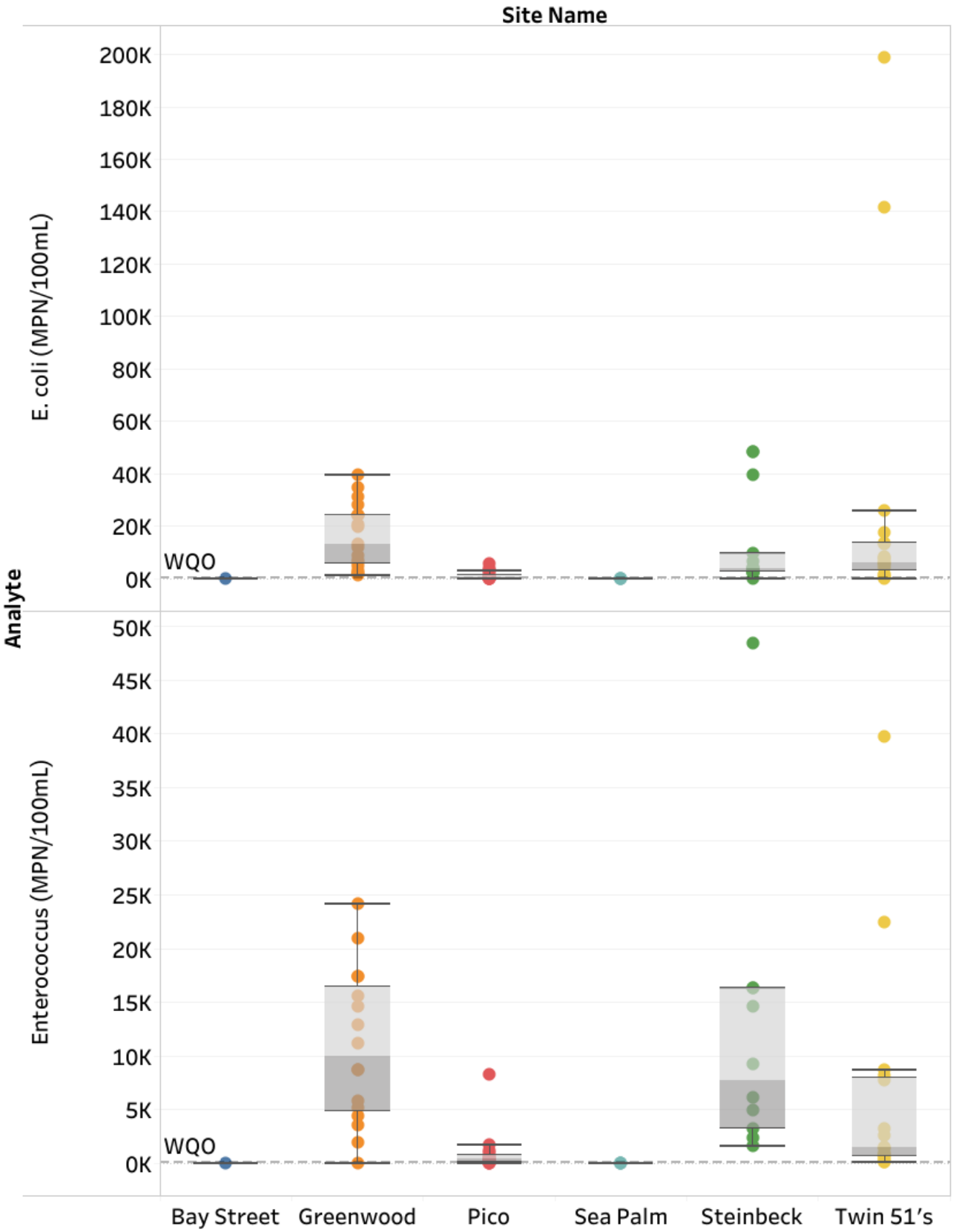


Figure 14. 2004- 2023 *E. coli* and 2007- 2023 Enterococcus Dry Run MRSWMP results. WQO indicated by the dotted line. This is the first year that Bay Street has been flowing/sampled on the Dry Run.

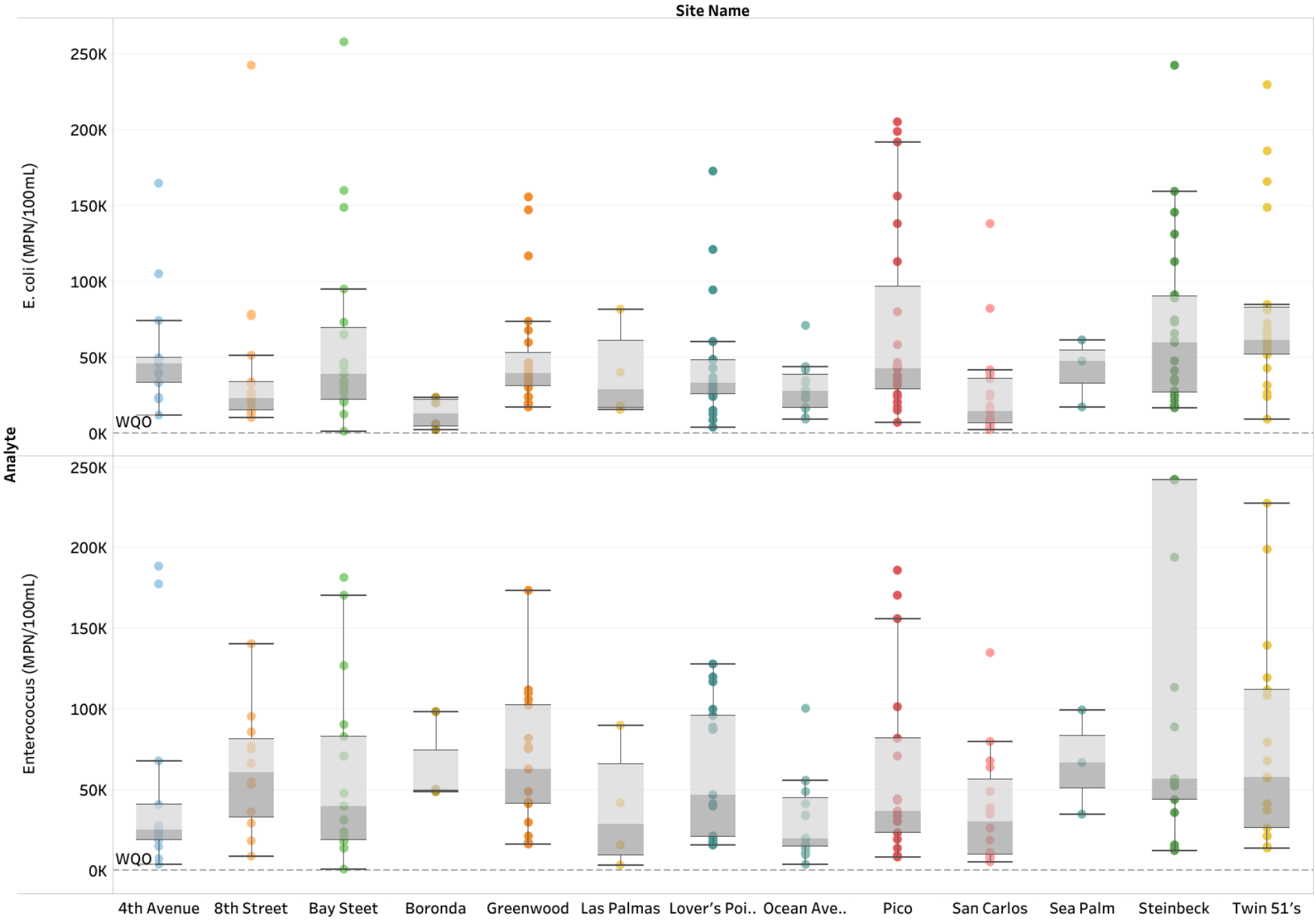


Figure 15. 2004- 2023 *E. coli* and 2007- 2023 Enterococcus First Flush MRSWMP results. WQO indicated by the dotted line.

Liquid Waste Identifiers

Hardness (as $CaCO_3$) in conjunction with other analytes, can assist in identifying a discharge of sewage, wash water, tap water, and industrial or commercial liquid wastes. Additionally, when hardness increases, the amount of dissolved metals biologically available to aquatic and marine life decreases resulting in a decrease in the toxicity of the metal.

The SWRCB NPDES MS4 General Permit Action Level for hardness is not less than or equal to 10 mg/L or greater than or equal to 2,000 mg/L; the MDL for hardness (as CaCO3) was 1 mg/L for the Dry Run and First Flush. **Figure 16** represents Dry Run and **Figure 17** represents all First Flush MRSWMP hardness, detergents, and potassium data since 2013. All outfall results are listed in **Appendix 2**.

- **Dry Run and First Flush:** None of the outfall results exceeded the acceptable range in 2022.

MBAS detergents in sample water can indicate a discharge from sewage or wash water, and in conjunction with other analytes, can assist in identifying a discharge of industrial or commercial liquid wastes.

The Basin Plan's WQO established for MBAS detergents is 0.2 mg/L; the MDL for MBAS detergents was 0.02 mg/L for the Dry Run and between 0.02 mg/L to 0.4 mg/L for the First Flush.

- **Dry Run:** Two of the six (33%) sites were above the WQO for MBAS concentrations in 2022. The highest average result was at Steinbeck in Monterey at 0.6 mg/L.
- **First Flush:** All of the 13 sites were at or above the WQO. The highest average result of 1.68 mg/L was from 4th Avenue in Carmel.

Potassium, in conjunction with other analytes, can assist in identifying a discharge of sewage, industrial, or commercial liquid wastes.

The SWRCB NPDES MS4 General Permit Action Level for potassium is 20 mg/L; the MDL was 0.3 mg/L for both the Dry Run and First Flush.

- **Dry Run:** No sites exceeded the Action Level in 2022.
- **First Flush:** One site of the thirteen sites (8%) exceeded the Action Level in 2022. The highest average result of 132 mg/L was from Boronda in Monterey County.

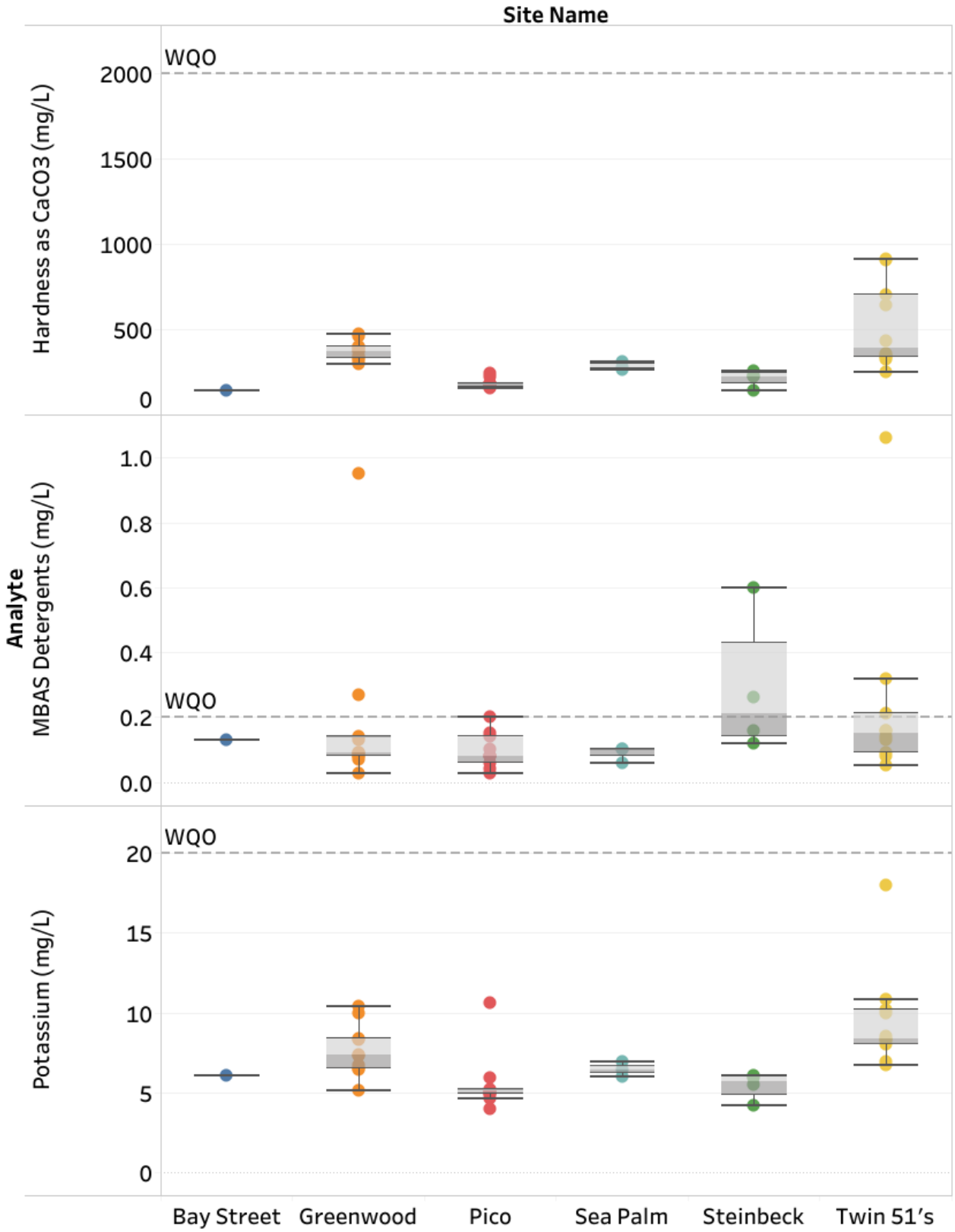


Figure 16. 2013- 2023 hardness, detergents, and potassium Dry Run MRSWMP results. WQO indicated by the dotted line. This is the first year that Bay Street has been flowing/sampled on the Dry Run.

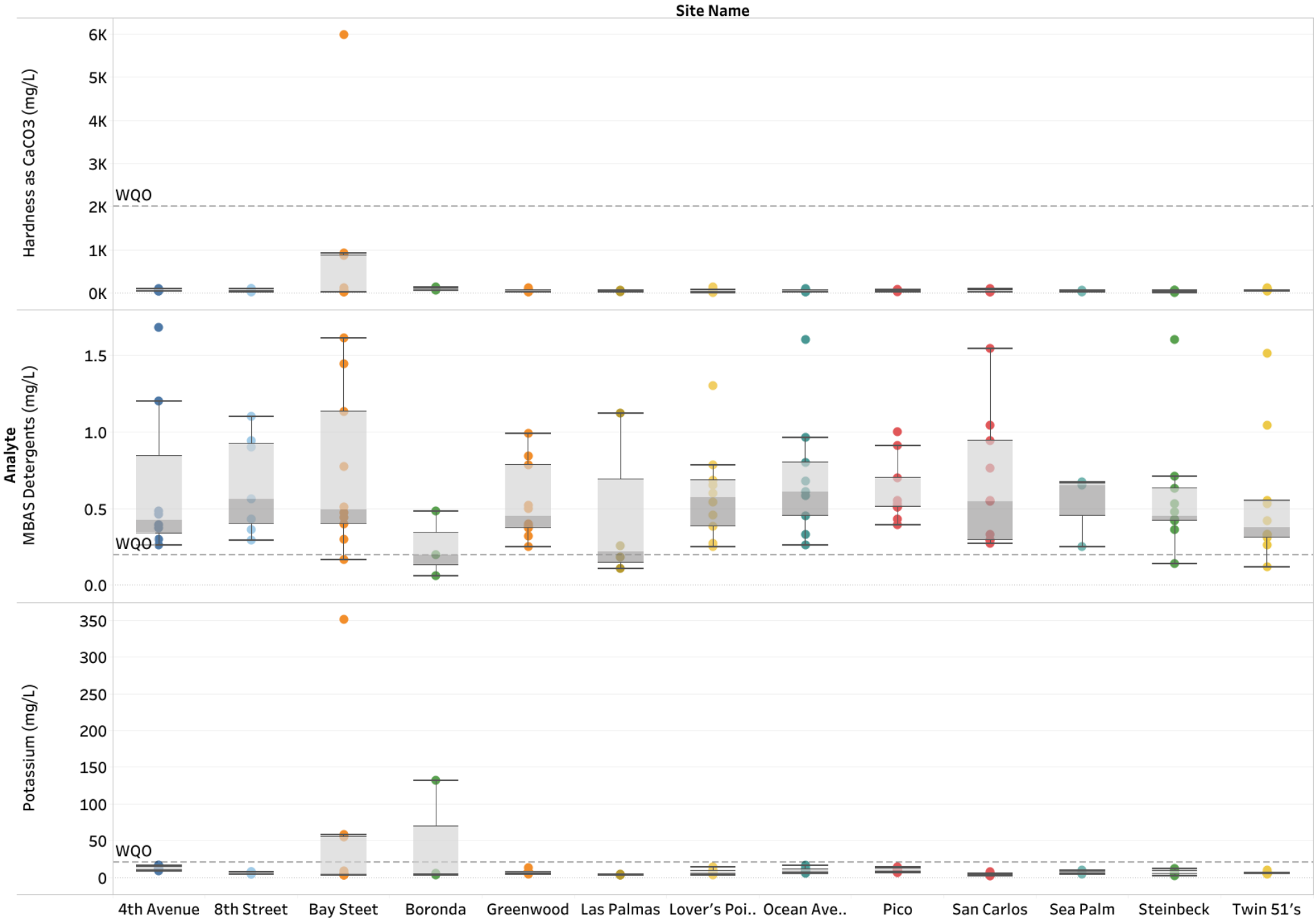


Figure 17. 2013- 2023 hardness, detergents, and potassium First Flush MRSWMP results. WQO indicated by the dotted line.

Results by Jurisdiction

The following section is broken out by city or county for this permit year. All 2022 outfall results can be found in **Appendix 2** and by jurisdiction in **Appendix 3**.

Carmel-by-the-Sea

For the 2022-2023 permit year, two sites were monitored in Carmel: 4th Avenue and Ocean Avenue. There was no flow at either of the sites for the Dry Run.

For the First Flush:

- Copper exceeded the Basin Plan WQO in all samples at both sites. The highest single sample copper result from all 2022 MRSWMP sampled sites of 104 µg/L was from Ocean Avenue. 4th Avenue was the second highest in copper concentration at 81 µg/L.
- *E. coli* and Enterococcus results exceeded the U.S. EPA WQO in all samples at both sites.
- MBAS surfactant results exceeded the Basin Plan WQO in all samples at 4th Avenue and Ocean Avenue.
- Orthophosphate as P results exceeded the CCAMP Action Level in all samples at both sites.
- Turbidity results exceeded the CCAMP Action Level in all samples from 4th Avenue.
- Ammonia, color, hardness, nitrate as N, potassium, total suspended solids, and zinc results were all below WQOs and Action Levels for both time series samples at both sites.

Monterey

For the 2022-2023 permit year, three sites were monitored: Twins, San Carlos, and Steinbeck. Only Twins had flowing water during the Dry Run.

For the Dry Run:

- *E. coli* and Enterococcus results exceeded the U.S. EPA WQOs.
- Nitrate as N results exceeded the CCAMP Action Level at just one site, San Carlos, with a result of 4.3 mg-N/L.
- Orthophosphate as P results exceeded the CCAMP Action Level with a result of 0.30 mg-P/L.
- MBAS detergents exceeded the WQO and was the highest of any site monitored for the Dry Run with a result of 0.32 mg/L.
- Ammonia, color, copper, hardness, lead, nitrate, potassium, total suspended solids, turbidity, and zinc results were below WQOs or Action Levels during the Dry Run.

During the First Flush:

- Copper exceeded the Basin Plan WQO in both series from Steinbeck.
- *E. coli* and Enterococcus exceeded the U.S. EPA WQO in all samples at all Monterey sites. Greenwood Park had the highest *E. coli* result at 155,310 MPN/100mL. Steinbeck had the highest Enterococcus result at 241,960 MPN/100mL.
- MBAS detergents exceeded the Basin Plan WQO in all samples at all Monterey sites.
- Orthophosphate exceeded the CCAMP Action Level in all samples at all Monterey sites. Steinbeck had the highest orthophosphate result at 1.07 mg-P/L.
- Turbidity exceeded the CCAMP Action Level in all samples from Twin.
- Ammonia, color, hardness, lead, nitrate as N, potassium, total suspended solids, and zinc were all below WQOs and Action Levels for both time series samples at all sites.

Monterey County
For the 2022-2023 permit year, two sites were monitored: Boronda and Las Palmas. There was no flow at either site during the Dry Run.

During the First Flush:

- *E. coli* and Enterococcus results exceeded the U.S. EPA WQO in all samples at both Monterey County sites.
- MBAS detergents exceeded the Basin Plan WQO in all samples from Boronda and all samples from Las Palmas were at the WQO.
- Copper exceeded the Basin Plan WQO in both series from Boronda.
- Zinc exceeded the Basin Plan WQO in both series from Boronda. Boronda had the highest zinc result at 275 µg/L.
- Orthophosphate results exceeded the CCAMP Action Level in all samples at both Monterey County sites.
- Total suspended solids exceeded the CCAMP Action Level in both samples at Boronda and was the highest of all single samples with a result of 1,224 mg/L.
- Turbidity results exceeded the CCAMP Action Level in both samples from Boronda which had the highest single sample result of all 2022-2023 MRSWMP samples with a result of 210 mg/L.
- Color exceeded the SWRCB NPDES MS4 General Permit Action Level from both samples at Boronda and was the highest color result out of all 2022-2023 MRSWMP samples with a result of 750.
- Potassium exceeded SWRCB NPDES MS4 General Permit Action Level in both series at Boronda. Boronda had the highest potassium result at 132 mg/L.
- Ammonia, hardness, lead, and nitrate as N results did not exceed WQOs or Action Levels for any samples during the First Flush.

Pacific Grove
For the 2022-2023 permit year, five sites were monitored: 8th Street, Greenwood Park, Lover's Point, Sea Palm, and Pico. Again in 2022 due to COVID, Hopkins Marine Station was closed to the public including First Flush volunteers so two sites on campus historically monitored were not sampled and the site at Sea Palm was sampled instead. The 8th Street, Greenwood Park, and Lover's Point watersheds have dry weather urban runoff within the storm drain system diverted to Monterey One Water for treatment from April to October. In recent years, this dry-weather diversion has been left on throughout the winter season which impacts storm drain flows into the ocean within the diversion area. For the 2022 Dry Run and First Flush the diversion remained in operation. Dry Run samples were collected at the following sites: Greenwood Park (upstream of the diversion), Sea Palm (outside of the diversion area), and Pico (outside of the diversion area). For First Flush, all sites were sampled: 8th Street (downstream of diversion), Greenwood Park (upstream of the diversion), Lover's Point (upstream of the diversion), Sea Palm (outside of the diversion area), and Pico (outside of the diversion area).

For the Dry Run:

- *E. coli* and Enterococcus were above the U.S. EPA WQO at Greenwood Park. The highest *E. coli* result for all 2022 MRSWMP sites of 24,196 MPN/100mL was from Greenwood Park. The highest Enterococcus result was also from Greenwood Park at 24,196 MPN/100mL.
- Orthophosphate exceeded the CCAMP Action Level at Greenwood Park.
- Ammonia, color, copper, hardness, lead, MBAS detergents, nitrate as N, potassium, total suspended solids, turbidity, and zinc were all below WQOs and Action Levels at all sites.

During the First Flush:

- *E. coli* results exceeded the U.S. EPA WQO in all samples at all sites.
- Enterococcus results exceeded the U.S. EPA WQO in all samples at all sites.
- Copper results exceeded the Basin Plan WQO at 8th Street and Pico.
- MBAS surfactant results exceeded the RWQCB Basin Plan WQO for all samples at all sites.
- Orthophosphate results exceeded the CCAMP Action Level in all samples at all sites.
- Ammonia, color, lead, nitrate as N, potassium, total suspended solids, turbidity, hardness, and zinc were all below WQOs and Action Levels for both time series samples at all sites.

Seaside and Sand City

For the 2022-2023 permit year, Bay Street was the only site monitored. This year was the first time since Bay Street has been monitored that there has been flow during the Dry Run.

For the Dry Run:

- Nitrate exceeded the CCAMP Action Level at Bay Street. Bay Street had the highest nitrate as N result out of all the samples collected during the 2022-2023 MRSWMP monitoring at 11.9 mg/L.
- Orthophosphate exceeded the CCAMP Action Level at Bay Street.

During the First Flush:

- Copper exceeded the Basin Plan WQO in only the first time series sample.
- *E. coli* and Enterococcus exceeded the U.S. EPA WQO in both samples.
- MBAS surfactant results exceeded the RWQCB Basin Plan WQO in both samples.
- Orthophosphate exceeded the CCAMP Action Level in both samples.
- Turbidity results were equal to the CCAMP Action Level in both samples.
- Ammonia, color, hardness, lead, nitrate as N, total suspended solids, copper, potassium, and zinc results did not exceed any WQOs or Action Levels for any samples.

All 2022 outfall results can be found in Appendix 2 and by jurisdiction in Appendix 3.

Conclusion

Since 2006, the MRSWMP Monterey SEA program has utilized MBNMS' Dry Run and First Flush protocols to ascertain what concentrations of pollutants are found in both dry and wet weather storm drain flows that discharge into surface waters or the ocean. The outfall sites monitored as part of the MRSWMP program were selected as sites representative of water quality throughout a jurisdiction. For the 2022-2023 permit year, thirteen outfall sites were monitored for Dry Run and First Flush in six jurisdictions: Monterey County, Seaside-Sand City, Monterey, Pacific Grove, and Carmel-by-the-Sea.

Outfall monitoring results provide city representatives and residents with information on the concentration and fate of pollutants from their own streets and neighborhoods. Cities can use this information not only to satisfy permit requirements but also engage and inform residents on practical solutions for preventing storm drain pollution. While First Flush results due to higher loads typically indicate worst-case scenarios of water quality, results can provide insight into sub-watersheds within each jurisdiction that warrant further attention and investigation into pollutant sources. Source tracking within sub-watersheds is an important and useful tool for local jurisdictions. Using these results can help pinpoint problem watersheds to track down sources of pollutants before they reach receiving water and Monterey Bay National Marine Sanctuary. Sub-watersheds with elevated copper or MBAS are high on the list for watersheds needing further investigation into sources and possible mitigation through public education campaigns.

First Flush data is also useful for cities to track major storms and total rainfall impacted by climate change. Prior to 2016, First Flush generally occurred during the second half of October to the first half of November. Starting in 2017, each year was successively later for the First Flush, with 2020's First Flush occurring mid-December. However, this year's First Flush was the earliest on record occurring in mid-September. In the uncertain climate future, storms are predicted to become less frequent but stronger with heavier rainfall which may impact First Flush results as watersheds get a greater dousing that creates more flow through the storm drain system. Resident engagement will become essential in preparing for First Flush by removing outside oil or paint cans, trash, pet waste, or other debris that can get picked up by strong rainwater flows and enter the storm drain system and Monterey Bay National Marine Sanctuary.

Through coordinated and collaborative efforts, water quality within the MRSWMP region can improve for the benefit of residents on the land and in the ocean.

Appendix 1: MRSWMP Monitoring Sites

MRSWMP Monitoring Sites- listed from North to South

Jurisdiction	Site ID	Site Name	Drainage Area (acres)	Primary Land Use	MRSWMP Outfall #	Pipe ID (Inches)
Monterey County	SASD-01	Boronda	86	39% Residential 23% Cultivated 19% Industrial	MC-013	24”
Monterey County	SASD-02	Las Palmas	158	3% Commercial 31% Residential 60% Open space	MSP-025	Box culvert
Seaside & Sand City	SSD-02	Bay Street	1200	80% Residential 10% Commercial 10% Public/Other	SC-1	90
Monterey	MSD-03	Twin 51’s	291	63% Residential 15% Commercial 22% Public/Other	M-15	51” (x2)
Monterey	MSD-04	San Carlos	22	12% Commercial 38% Residential 50% Public/Other	M-7	24”
Monterey	MSD-05	Steinbeck	37	66% Commercial 12% Residential 22% Public/Other	M-3	36”
Pacific Grove	PGSD-01	8th Street	35	100% Residential	PG-32	24”
Pacific Grove	CENTR-31	Greenwood Park	238.3	71% Residential 5% Commercial 25% Public/Other	PG-28	36”
Pacific Grove	PGSD-03	Lover’s Point	240	54% Residential 1% Commercial 20% Other	PG-22	54”
Pacific Grove	PGSD-15	Sea Palm	32.2		PG-15	18”
Pacific Grove	PGSD-04	Pico	17.56	60% Residential 40% Public	PG-03	40”
Carmel	CASD-01	4th Avenue	128.0	86% residential 7% Comm/Res 7% Public/Other	C-1	36”x60” Box culvert
Carmel	CASD-02	Ocean Avenue	115.2	22% Commercial 71% Residential 7% Comm/Res	C-2	24”

Appendix 2: Results by Analyte (listed alphabetically)

Run	Site ID	Site Name	Year	Analyte	Result	WQO	Units
Dry Run	309-SSD-02	Bay Street	2022	Ammonia	0.22	50	mg/L
Dry Run	309-MSD-03	Twin 51's	2022	Ammonia	0.67	50	mg/L
Dry Run	309-MSD-05	Steinbeck	2022	Ammonia	0.21	50	mg/L
Dry Run	309-CENTR-31	Greenwood	2022	Ammonia	0.14	50	mg/L
Dry Run	309-PGSD-15	Sea Palm	2022	Ammonia	0.07	50	mg/L
Dry Run	309-PGSD-04	Pico	2022	Ammonia	0.06	50	mg/L
Dry Run	309-SSD-02	Bay Street	2022	Color	20	500	Color Units
Dry Run	309-MSD-03	Twin 51's	2022	Color	50	500	Color Units
Dry Run	309-MSD-05	Steinbeck	2022	Color	35	500	Color Units
Dry Run	309-CENTR-31	Greenwood	2022	Color	50	500	Color Units
Dry Run	309-PGSD-15	Sea Palm	2022	Color	30	500	Color Units
Dry Run	309-PGSD-04	Pico	2022	Color	30	500	Color Units
Dry Run	309-SSD-02	Bay Street	2022	Copper	ND	30	µg/L
Dry Run	309-MSD-03	Twin 51's	2022	Copper	16	30	µg/L
Dry Run	309-MSD-05	Steinbeck	2022	Copper	16	30	µg/L
Dry Run	309-CENTR-31	Greenwood	2022	Copper	12	30	µg/L
Dry Run	309-PGSD-15	Sea Palm	2022	Copper	5.7	30	µg/L
Dry Run	309-PGSD-04	Pico	2022	Copper	5.1	30	µg/L
Dry Run	309-SSD-02	Bay Street	2022	Detergents	0.13	0.2	mg/L
Dry Run	309-MSD-03	Twin 51's	2022	Detergents	0.32	0.2	mg/L
Dry Run	309-MSD-05	Steinbeck	2022	Detergents	0.6	0.2	mg/L
Dry Run	309-CENTR-31	Greenwood	2022	Detergents	0.13	0.2	mg/L
Dry Run	309-PGSD-15	Sea Palm	2022	Detergents	0.1	0.2	mg/L
Dry Run	309-PGSD-04	Pico	2022	Detergents	0.1	0.2	mg/L
Dry Run	309-SSD-02	Bay Street	2022	E. coli	ND	235	MPN/100 mL
Dry Run	309-MSD-03	Twin 51's	2022	E. coli	17329	235	MPN/100 mL

Dry Run	309-MSD-05	Steinbeck	2022	E. coli	10	235	MPN/100 mL
Dry Run	309-CENTR-31	Greenwood	2022	E. coli	24196	235	MPN/100 mL
Dry Run	309-PGSD-15	Sea Palm	2022	E. coli	ND	235	MPN/100 mL
Dry Run	309-PGSD-04	Pico	2022	E. coli	187	235	MPN/100 mL
Dry Run	309-SSD-02	Bay Street	2022	Enterococcus	ND	104	MPN/100 mL
Dry Run	309-MSD-03	Twin 51's	2022	Enterococcus	2595	104	MPN/100 mL
Dry Run	309-MSD-05	Steinbeck	2022	Enterococcus	6131	104	MPN/100 mL
Dry Run	309-CENTR-31	Greenwood	2022	Enterococcus	24196	104	MPN/100 mL
Dry Run	309-PGSD-15	Sea Palm	2022	Enterococcus	ND	104	MPN/100 mL
Dry Run	309-PGSD-04	Pico	2022	Enterococcus	10	104	MPN/100 mL
Dry Run	309-SSD-02	Bay Street	2022	Hardness	141	2000	mg/L
Dry Run	309-MSD-03	Twin 51's	2022	Hardness	321	2000	mg/L
Dry Run	309-MSD-05	Steinbeck	2022	Hardness	257	2000	mg/L
Dry Run	309-CENTR-31	Greenwood	2022	Hardness	397	2000	mg/L
Dry Run	309-PGSD-15	Sea Palm	2022	Hardness	280	2000	mg/L
Dry Run	309-PGSD-04	Pico	2022	Hardness	184	2000	mg/L
Dry Run	309-SSD-02	Bay Street	2022	Lead	0.3	30	µg/L
Dry Run	309-MSD-03	Twin 51's	2022	Lead	0.4	30	µg/L
Dry Run	309-MSD-05	Steinbeck	2022	Lead	0.4	30	µg/L
Dry Run	309-CENTR-31	Greenwood	2022	Lead	0.2	30	µg/L
Dry Run	309-PGSD-15	Sea Palm	2022	Lead	0.2	30	µg/L
Dry Run	309-PGSD-04	Pico	2022	Lead	ND	30	µg/L
Dry Run	309-SSD-02	Bay Street	2022	Nitrate	11.9	2.25	mg-N/L
Dry Run	309-MSD-03	Twin 51's	2022	Nitrate	0.5	2.25	mg-N/L
Dry Run	309-MSD-05	Steinbeck	2022	Nitrate	1.1	2.25	mg-N/L
Dry Run	309-CENTR-31	Greenwood	2022	Nitrate	1.1	2.25	mg-N/L
Dry Run	309-PGSD-15	Sea Palm	2022	Nitrate	0.3	2.25	mg-N/L
Dry Run	309-PGSD-04	Pico	2022	Nitrate	1.3	2.25	mg-N/L

Dry Run	309-SSD-02	Bay Street	2022	Orthophosphate	0.64	0.12	mg-P/L
Dry Run	309-MSD-03	Twin 51's	2022	Orthophosphate	0.3	0.12	mg-P/L
Dry Run	309-MSD-05	Steinbeck	2022	Orthophosphate	0.61	0.12	mg-P/L
Dry Run	309-CENTR-31	Greenwood	2022	Orthophosphate	0.14	0.12	mg-P/L
Dry Run	309-PGSD-15	Sea Palm	2022	Orthophosphate	ND	0.12	mg-P/L
Dry Run	309-PGSD-04	Pico	2022	Orthophosphate	ND	0.12	mg-P/L
Dry Run	309-SSD-02	Bay Street	2022	Potassium	6.1	20	mg/L
Dry Run	309-MSD-03	Twin 51's	2022	Potassium	8.3	20	mg/L
Dry Run	309-MSD-05	Steinbeck	2022	Potassium	6.1	20	mg/L
Dry Run	309-CENTR-31	Greenwood	2022	Potassium	8.3	20	mg/L
Dry Run	309-PGSD-15	Sea Palm	2022	Potassium	6.4	20	mg/L
Dry Run	309-PGSD-04	Pico	2022	Potassium	5	20	mg/L
Dry Run	309-SSD-02	Bay Street	2022	Total Suspended Solids	5	500	mg/L
Dry Run	309-MSD-03	Twin 51's	2022	Total Suspended Solids	ND	500	mg/L
Dry Run	309-MSD-05	Steinbeck	2022	Total Suspended Solids	4	500	mg/L
Dry Run	309-CENTR-31	Greenwood	2022	Total Suspended Solids	4	500	mg/L
Dry Run	309-PGSD-15	Sea Palm	2022	Total Suspended Solids	4	500	mg/L
Dry Run	309-PGSD-04	Pico	2022	Total Suspended Solids	3	500	mg/L
Dry Run	309-SSD-02	Bay Street	2022	Turbidity	1.4	25	NTU
Dry Run	309-MSD-03	Twin 51's	2022	Turbidity	3.2	25	NTU
Dry Run	309-MSD-05	Steinbeck	2022	Turbidity	1.5	25	NTU
Dry Run	309-CENTR-31	Greenwood	2022	Turbidity	5.7	25	NTU

Dry Run	309-PGSD-15	Sea Palm	2022	Turbidity	0.65	25	NTU
Dry Run	309-PGSD-04	Pico	2022	Turbidity	2	25	NTU
Dry Run	309-SSD-02	Bay Street	2022	Urea-N	68	NA	mg-N/L
Dry Run	309-MSD-03	Twin 51's	2022	Urea-N	450	NA	mg-N/L
Dry Run	309-MSD-05	Steinbeck	2022	Urea-N	38	NA	mg-N/L
Dry Run	309-CENTR-31	Greenwood	2022	Urea-N	61	NA	mg-N/L
Dry Run	309-PGSD-15	Sea Palm	2022	Urea-N	16	NA	mg-N/L
Dry Run	309-PGSD-04	Pico	2022	Urea-N	9	NA	mg-N/L
Dry Run	309-SSD-02	Bay Street	2022	Zinc	28	200	µg/L
Dry Run	309-MSD-03	Twin 51's	2022	Zinc	42	200	µg/L
Dry Run	309-MSD-05	Steinbeck	2022	Zinc	30	200	µg/L
Dry Run	309-CENTR-31	Greenwood	2022	Zinc	20	200	µg/L
Dry Run	309-PGSD-15	Sea Palm	2022	Zinc	ND	200	µg/L
Dry Run	309-PGSD-04	Pico	2022	Zinc	ND	200	µg/L
First Flush	309-SASD-01	Boronda	2022	Ammonia	0.57	50	mg-N/L
First Flush	309-SASD-02	Las Palmas	2022	Ammonia	0.37	50	mg-N/L
First Flush	309-SSD-02	Bay Street	2022	Ammonia	0.24	50	mg-N/L
First Flush	309-MSD-03	Twin 51's	2022	Ammonia	0.58	50	mg-N/L
First Flush	309-MSD-04	San Carlos	2022	Ammonia	0.1	50	mg-N/L
First Flush	309-MSD-05	Steinbeck	2022	Ammonia	1.3	50	mg-N/L
First Flush	309-PGSD-01	8th Street	2022	Ammonia	0.26	50	mg-N/L
First Flush	309-CENTR-31	Greenwood	2022	Ammonia	0.38	50	mg-N/L
First Flush	309-PGSD-03	Lover's Point	2022	Ammonia	0.4	50	mg-N/L
First Flush	309-PGSD-15	Sea Palm	2022	Ammonia	0.18	50	mg-N/L
First Flush	309-PGSD-04	Pico	2022	Ammonia	0.42	50	mg-N/L
First Flush	307-CASD-01	4th Avenue	2022	Ammonia	0.53	50	mg-N/L
First Flush	307-CASD-02	Ocean Avenue	2022	Ammonia	0.72	50	mg-N/L
First Flush	309-SASD-01	Boronda	2022	Color	750	500	Color Units
First Flush	309-SASD-02	Las Palmas	2022	Color	300	500	Color Units
First Flush	309-SSD-02	Bay Street	2022	Color	100	500	Color Units
First Flush	309-MSD-03	Twin 51's	2022	Color	125	500	Color Units
First Flush	309-MSD-04	San Carlos	2022	Color	75	500	Color Units

First Flush	309-MSD-05	Steinbeck	2022	Color	100	500	Color Units
First Flush	309-PGSD-01	8th Street	2022	Color	200	500	Color Units
First Flush	309-CENTR-31	Greenwood	2022	Color	150	500	Color Units
First Flush	309-PGSD-03	Lover's Point	2022	Color	150	500	Color Units
First Flush	309-PGSD-15	Sea Palm	2022	Color	15	500	Color Units
First Flush	309-PGSD-04	Pico	2022	Color	150	500	Color Units
First Flush	307-CASD-01	4th Avenue	2022	Color	250	500	Color Units
First Flush	307-CASD-02	Ocean Avenue	2022	Color	200	500	Color Units
First Flush	309-SASD-01	Boronda	2022	Copper	46	30	µg/L
First Flush	309-SASD-02	Las Palmas	2022	Copper	12	30	µg/L
First Flush	309-SSD-02	Bay Street	2022	Copper	19	30	µg/L
First Flush	309-MSD-03	Twin 51's	2022	Copper	24	30	µg/L
First Flush	309-MSD-04	San Carlos	2022	Copper	21	30	µg/L
First Flush	309-MSD-05	Steinbeck	2022	Copper	53	30	µg/L
First Flush	309-PGSD-01	8th Street	2022	Copper	35	30	µg/L
First Flush	309-CENTR-31	Greenwood	2022	Copper	21	30	µg/L
First Flush	309-PGSD-03	Lover's Point	2022	Copper	28	30	µg/L
First Flush	309-PGSD-15	Sea Palm	2022	Copper	20	30	µg/L
First Flush	309-PGSD-04	Pico	2022	Copper	37	30	µg/L
First Flush	307-CASD-01	4th Avenue	2022	Copper	81	30	µg/L
First Flush	307-CASD-02	Ocean Avenue	2022	Copper	104	30	µg/L
First Flush	309-SASD-01	Boronda	2022	Detergents	0.2	0.2	mg/L
First Flush	309-SASD-02	Las Palmas	2022	Detergents	1.12	0.2	mg/L
First Flush	309-SSD-02	Bay Street	2022	Detergents	0.44	0.2	mg/L
First Flush	309-MSD-03	Twin 51's	2022	Detergents	1.04	0.2	mg/L
First Flush	309-MSD-04	San Carlos	2022	Detergents	0.76	0.2	mg/L
First Flush	309-MSD-05	Steinbeck	2022	Detergents	1.6	0.2	mg/L
First Flush	309-PGSD-01	8th Street	2022	Detergents	0.94	0.2	mg/L
First Flush	309-CENTR-31	Greenwood	2022	Detergents	0.5	0.2	mg/L
First Flush	309-PGSD-03	Lover's Point	2022	Detergents	0.78	0.2	mg/L

First Flush	309-PGSD-15	Sea Palm	2022	Detergents	0.65	0.2	mg/L
First Flush	309-PGSD-04	Pico	2022	Detergents	0.91	0.2	mg/L
First Flush	307-CASD-01	4th Avenue	2022	Detergents	1.68	0.2	mg/L
First Flush	307-CASD-02	Ocean Avenue	2022	Detergents	0.96	0.2	mg/L
First Flush	309-SASD-01	Boronda	2022	E. coli	19608	235	MPN/100 mL
First Flush	309-SASD-02	Las Palmas	2022	E. coli	39726	235	MPN/100 mL
First Flush	309-SSD-02	Bay Street	2022	E. coli	22398	235	MPN/100 mL
First Flush	309-MSD-03	Twin 51's	2022	E. coli	68670	235	MPN/100 mL
First Flush	309-MSD-04	San Carlos	2022	E. coli	2212	235	MPN/100 mL
First Flush	309-MSD-05	Steinbeck	2022	E. coli	72700	235	MPN/100 mL
First Flush	309-PGSD-01	8th Street	2022	E. coli	77010	235	MPN/100 mL
First Flush	309-CENTR-31	Greenwood	2022	E. coli	155310	235	MPN/100 mL
First Flush	309-PGSD-03	Lover's Point	2022	E. coli	36540	235	MPN/100 mL
First Flush	309-PGSD-15	Sea Palm	2022	E. coli	17220	235	MPN/100 mL
First Flush	309-PGSD-04	Pico	2022	E. coli	46110	235	MPN/100 mL
First Flush	307-CASD-01	4th Avenue	2022	E. coli	48840	235	MPN/100 mL
First Flush	307-CASD-02	Ocean Avenue	2022	E. coli	23820	235	MPN/100 mL
First Flush	309-SASD-01	Boronda	2022	Enterococcus	48392	104	MPN/100 mL
First Flush	309-SASD-02	Las Palmas	2022	Enterococcus	15402	104	MPN/100 mL
First Flush	309-SSD-02	Bay Street	2022	Enterococcus	31062	104	MPN/100 mL
First Flush	309-MSD-03	Twin 51's	2022	Enterococcus	41060	104	MPN/100 mL
First Flush	309-MSD-04	San Carlos	2022	Enterococcus	7308	104	MPN/100 mL

First Flush	309-MSD-05	Steinbeck	2022	Enterococcus	241960	104	MPN/100 mL
First Flush	309-PGSD-01	8th Street	2022	Enterococcus	36090	104	MPN/100 mL
First Flush	309-CENTR-31	Greenwood	2022	Enterococcus	48392	104	MPN/100 mL
First Flush	309-PGSD-03	Lover's Point	2022	Enterococcus	41060	104	MPN/100 mL
First Flush	309-PGSD-15	Sea Palm	2022	Enterococcus	34480	104	MPN/100 mL
First Flush	309-PGSD-04	Pico	2022	Enterococcus	36540	104	MPN/100 mL
First Flush	307-CASD-01	4th Avenue	2022	Enterococcus	26130	104	MPN/100 mL
First Flush	307-CASD-02	Ocean Avenue	2022	Enterococcus	19560	104	MPN/100 mL
First Flush	309-SASD-01	Boronda	2022	Hardness	138	2000	mg/L
First Flush	309-SASD-02	Las Palmas	2022	Hardness	59	2000	mg/L
First Flush	309-SSD-02	Bay Street	2022	Hardness	19	2000	mg/L
First Flush	309-MSD-03	Twin 51's	2022	Hardness	64	2000	mg/L
First Flush	309-MSD-04	San Carlos	2022	Hardness	22	2000	mg/L
First Flush	309-MSD-05	Steinbeck	2022	Hardness	36	2000	mg/L
First Flush	309-PGSD-01	8th Street	2022	Hardness	58	2000	mg/L
First Flush	309-CENTR-31	Greenwood	2022	Hardness	25	2000	mg/L
First Flush	309-PGSD-03	Lover's Point	2022	Hardness	36	2000	mg/L
First Flush	309-PGSD-15	Sea Palm	2022	Hardness	28	2000	mg/L
First Flush	309-PGSD-04	Pico	2022	Hardness	53	2000	mg/L
First Flush	307-CASD-01	4th Avenue	2022	Hardness	38	2000	mg/L
First Flush	307-CASD-02	Ocean Avenue	2022	Hardness	56	2000	mg/L
First Flush	309-SASD-01	Boronda	2022	Lead	24.1	30	µg/L
First Flush	309-SASD-02	Las Palmas	2022	Lead	1.2	30	µg/L
First Flush	309-SSD-02	Bay Street	2022	Lead	6.6	30	µg/L
First Flush	309-MSD-03	Twin 51's	2022	Lead	15	30	µg/L
First Flush	309-MSD-04	San Carlos	2022	Lead	8.4	30	µg/L
First Flush	309-MSD-05	Steinbeck	2022	Lead	2	30	µg/L
First Flush	309-PGSD-01	8th Street	2022	Lead	3.3	30	µg/L
First Flush	309-CENTR-31	Greenwood	2022	Lead	0.1	30	µg/L
First Flush	309-PGSD-03	Lover's Point	2022	Lead	0.8	30	µg/L

First Flush	309-PGSD-15	Sea Palm	2022	Lead	2.4	30	µg/L
First Flush	309-PGSD-04	Pico	2022	Lead	2.4	30	µg/L
First Flush	307-CASD-01	4th Avenue	2022	Lead	13	30	µg/L
First Flush	307-CASD-02	Ocean Avenue	2022	Lead	ND	30	µg/L
First Flush	309-SASD-01	Boronda	2022	Nitrate	0.7	2.25	mg-N/L
First Flush	309-SASD-02	Las Palmas	2022	Nitrate	0.5	2.25	mg-N/L
First Flush	309-SSD-02	Bay Street	2022	Nitrate	0.3	2.25	mg-N/L
First Flush	309-MSD-03	Twin 51's	2022	Nitrate	0.4	2.25	mg-N/L
First Flush	309-MSD-04	San Carlos	2022	Nitrate	0.7	2.25	mg-N/L
First Flush	309-MSD-05	Steinbeck	2022	Nitrate	0.6	2.25	mg-N/L
First Flush	309-PGSD-01	8th Street	2022	Nitrate	0.5	2.25	mg-N/L
First Flush	309-CENTR-31	Greenwood	2022	Nitrate	0.2	2.25	mg-N/L
First Flush	309-PGSD-03	Lover's Point	2022	Nitrate	0.3	2.25	mg-N/L
First Flush	309-PGSD-15	Sea Palm	2022	Nitrate	0.2	2.25	mg-N/L
First Flush	309-PGSD-04	Pico	2022	Nitrate	0.3	2.25	mg-N/L
First Flush	307-CASD-01	4th Avenue	2022	Nitrate	0.4	2.25	mg-N/L
First Flush	307-CASD-02	Ocean Avenue	2022	Nitrate	0.4	2.25	mg-N/L
First Flush	309-SASD-01	Boronda	2022	Orthophosphate	0.45	0.12	mg-P/L
First Flush	309-SASD-02	Las Palmas	2022	Orthophosphate	0.47	0.12	mg-P/L
First Flush	309-SSD-02	Bay Street	2022	Orthophosphate	0.24	0.12	mg-P/L
First Flush	309-MSD-03	Twin 51's	2022	Orthophosphate	0.48	0.12	mg-P/L
First Flush	309-MSD-04	San Carlos	2022	Orthophosphate	0.32	0.12	mg-P/L
First Flush	309-MSD-05	Steinbeck	2022	Orthophosphate	1.07	0.12	mg-P/L
First Flush	309-PGSD-01	8th Street	2022	Orthophosphate	0.44	0.12	mg-P/L
First Flush	309-CENTR-31	Greenwood	2022	Orthophosphate	0.34	0.12	mg-P/L
First Flush	309-PGSD-03	Lover's Point	2022	Orthophosphate	0.45	0.12	mg-P/L
First Flush	309-PGSD-15	Sea Palm	2022	Orthophosphate	0.28	0.12	mg-P/L

First Flush	309-PGSD-04	Pico	2022	Orthophosphate	0.5	0.12	mg-P/L
First Flush	307-CASD-01	4th Avenue	2022	Orthophosphate	0.77	0.12	mg-P/L
First Flush	307-CASD-02	Ocean Avenue	2022	Orthophosphate	0.7	0.12	mg-P/L
First Flush	309-SASD-01	Boronda	2022	Potassium	132	20	mg/L
First Flush	309-SASD-02	Las Palmas	2022	Potassium	4.4	20	mg/L
First Flush	309-SSD-02	Bay Street	2022	Potassium	3	20	mg/L
First Flush	309-MSD-03	Twin 51's	2022	Potassium	5.4	20	mg/L
First Flush	309-MSD-04	San Carlos	2022	Potassium	1.8	20	mg/L
First Flush	309-MSD-05	Steinbeck	2022	Potassium	5.3	20	mg/L
First Flush	309-PGSD-01	8th Street	2022	Potassium	7	20	mg/L
First Flush	309-CENTR-31	Greenwood	2022	Potassium	5.4	20	mg/L
First Flush	309-PGSD-03	Lover's Point	2022	Potassium	6.9	20	mg/L
First Flush	309-PGSD-15	Sea Palm	2022	Potassium	4	20	mg/L
First Flush	309-PGSD-04	Pico	2022	Potassium	9.9	20	mg/L
First Flush	307-CASD-01	4th Avenue	2022	Potassium	7.9	20	mg/L
First Flush	307-CASD-02	Ocean Avenue	2022	Potassium	10.6	20	mg/L
First Flush	309-SASD-01	Boronda	2022	Total Suspended Solids	1224	500	mg/L
First Flush	309-SASD-02	Las Palmas	2022	Total Suspended Solids	28	500	mg/L
First Flush	309-SSD-02	Bay Street	2022	Total Suspended Solids	47	500	mg/L
First Flush	309-MSD-03	Twin 51's	2022	Total Suspended Solids	27	500	mg/L
First Flush	309-MSD-04	San Carlos	2022	Total Suspended Solids	8	500	mg/L
First Flush	309-MSD-05	Steinbeck	2022	Total Suspended Solids	18	500	mg/L
First Flush	309-PGSD-01	8th Street	2022	Total Suspended Solids	17	500	mg/L

First Flush	309-CENTR-31	Greenwood	2022	Total Suspended Solids	42	500	mg/L
First Flush	309-PGSD-03	Lover's Point	2022	Total Suspended Solids	24	500	mg/L
First Flush	309-PGSD-15	Sea Palm	2022	Total Suspended Solids	35	500	mg/L
First Flush	309-PGSD-04	Pico	2022	Total Suspended Solids	16	500	mg/L
First Flush	307-CASD-01	4th Avenue	2022	Total Suspended Solids	170	500	mg/L
First Flush	307-CASD-02	Ocean Avenue	2022	Total Suspended Solids	17	500	mg/L
First Flush	309-SASD-01	Boronda	2022	Turbidity	210	25	NTU
First Flush	309-SASD-02	Las Palmas	2022	Turbidity	24	25	NTU
First Flush	309-SSD-02	Bay Street	2022	Turbidity	25	25	NTU
First Flush	309-MSD-03	Twin 51's	2022	Turbidity	53	25	NTU
First Flush	309-MSD-04	San Carlos	2022	Turbidity	23	25	NTU
First Flush	309-MSD-05	Steinbeck	2022	Turbidity	17	25	NTU
First Flush	309-PGSD-01	8th Street	2022	Turbidity	11	25	NTU
First Flush	309-CENTR-31	Greenwood	2022	Turbidity	21	25	NTU
First Flush	309-PGSD-03	Lover's Point	2022	Turbidity	12	25	NTU
First Flush	309-PGSD-15	Sea Palm	2022	Turbidity	11	25	NTU
First Flush	309-PGSD-04	Pico	2022	Turbidity	9.6	25	NTU
First Flush	307-CASD-01	4th Avenue	2022	Turbidity	50	25	NTU
First Flush	307-CASD-02	Ocean Avenue	2022	Turbidity	11	25	NTU
First Flush	309-SASD-01	Boronda	2022	Urea-N	398	NA	mg-N/L
First Flush	309-SASD-02	Las Palmas	2022	Urea-N	260	NA	mg-N/L
First Flush	309-SSD-02	Bay Street	2022	Urea-N	261	NA	mg-N/L
First Flush	309-MSD-03	Twin 51's	2022	Urea-N	240	NA	mg-N/L
First Flush	309-MSD-04	San Carlos	2022	Urea-N	116	NA	mg-N/L
First Flush	309-MSD-05	Steinbeck	2022	Urea-N	1170	NA	mg-N/L
First Flush	309-PGSD-01	8th Street	2022	Urea-N	216	NA	mg-N/L
First Flush	309-CENTR-31	Greenwood	2022	Urea-N	271	NA	mg-N/L

First Flush	309-PGSD-03	Lover's Point	2022	Urea-N	218	NA	mg-N/L
First Flush	309-PGSD-15	Sea Palm	2022	Urea-N	165	NA	mg-N/L
First Flush	309-PGSD-04	Pico	2022	Urea-N	221	NA	mg-N/L
First Flush	307-CASD-01	4th Avenue	2022	Urea-N	203	NA	mg-N/L
First Flush	307-CASD-02	Ocean Avenue	2022	Urea-N	476	NA	mg-N/L
First Flush	309-SASD-01	Boronda	2022	Zinc	275	200	µg/L
First Flush	309-SASD-02	Las Palmas	2022	Zinc	92	200	µg/L
First Flush	309-SSD-02	Bay Street	2022	Zinc	98	200	µg/L
First Flush	309-MSD-03	Twin 51's	2022	Zinc	87	200	µg/L
First Flush	309-MSD-04	San Carlos	2022	Zinc	105	200	µg/L
First Flush	309-MSD-05	Steinbeck	2022	Zinc	183	200	µg/L
First Flush	309-PGSD-01	8th Street	2022	Zinc	90	200	µg/L
First Flush	309-CENTR-31	Greenwood	2022	Zinc	95	200	µg/L
First Flush	309-PGSD-03	Lover's Point	2022	Zinc	80	200	µg/L
First Flush	309-PGSD-15	Sea Palm	2022	Zinc	62	200	µg/L
First Flush	309-PGSD-04	Pico	2022	Zinc	78	200	µg/L
First Flush	307-CASD-01	4th Avenue	2022	Zinc	153	200	µg/L
First Flush	307-CASD-02	Ocean Avenue	2022	Zinc	111	200	µg/L

Appendix 3: Results by Jurisdiction (listed alphabetically)

Run	Jurisdiction	Site ID	Site Name	Year	Analyte	Result	WQO	Units
Dry Run	Monterey	309-MSD-03	Twin 51's	2022	Ammonia	0.67	50	mg/L
Dry Run	Monterey	309-MSD-05	Steinbeck	2022	Ammonia	0.21	50	mg/L
Dry Run	Monterey	309-MSD-03	Twin 51's	2022	Color	50	500	Color Units
Dry Run	Monterey	309-MSD-05	Steinbeck	2022	Color	35	500	Color Units
Dry Run	Monterey	309-MSD-03	Twin 51's	2022	Copper	16	30	µg/L
Dry Run	Monterey	309-MSD-05	Steinbeck	2022	Copper	16	30	µg/L
Dry Run	Monterey	309-MSD-03	Twin 51's	2022	Detergents	0.32	0.2	mg/L
Dry Run	Monterey	309-MSD-05	Steinbeck	2022	Detergents	0.6	0.2	mg/L
Dry Run	Monterey	309-MSD-03	Twin 51's	2022	E. coli	17329	235	MPN/100 mL
Dry Run	Monterey	309-MSD-05	Steinbeck	2022	E. coli	10	235	MPN/100 mL
Dry Run	Monterey	309-MSD-03	Twin 51's	2022	Enterococcus	2595	104	MPN/100 mL
Dry Run	Monterey	309-MSD-05	Steinbeck	2022	Enterococcus	6131	104	MPN/100 mL
Dry Run	Monterey	309-MSD-03	Twin 51's	2022	Hardness	321	2000	mg/L
Dry Run	Monterey	309-MSD-05	Steinbeck	2022	Hardness	257	2000	mg/L
Dry Run	Monterey	309-MSD-03	Twin 51's	2022	Lead	0.4	30	µg/L
Dry Run	Monterey	309-MSD-05	Steinbeck	2022	Lead	0.4	30	µg/L
Dry Run	Monterey	309-MSD-03	Twin 51's	2022	Nitrate	0.5	2.25	mg-N/L
Dry Run	Monterey	309-MSD-05	Steinbeck	2022	Nitrate	1.1	2.25	mg-N/L
Dry Run	Monterey	309-MSD-03	Twin 51's	2022	Orthophosphate	0.3	0.12	mg-P/L
Dry Run	Monterey	309-MSD-05	Steinbeck	2022	Orthophosphate	0.61	0.12	mg-P/L
Dry Run	Monterey	309-MSD-03	Twin 51's	2022	Potassium	8.3	20	mg/L
Dry Run	Monterey	309-MSD-05	Steinbeck	2022	Potassium	6.1	20	mg/L
Dry Run	Monterey	309-MSD-03	Twin 51's	2022	Total Suspended Solids	ND	500	mg/L
Dry Run	Monterey	309-MSD-05	Steinbeck	2022	Total Suspended Solids	4	500	mg/L

Dry Run	Monterey	309-MSD-03	Twin 51's	2022	Turbidity	3.2	25	NTU
Dry Run	Monterey	309-MSD-05	Steinbeck	2022	Turbidity	1.5	25	NTU
Dry Run	Monterey	309-MSD-03	Twin 51's	2022	Urea-N	450	NA	mg-N/L
Dry Run	Monterey	309-MSD-05	Steinbeck	2022	Urea-N	38	NA	mg-N/L
Dry Run	Monterey	309-MSD-03	Twin 51's	2022	Zinc	42	200	µg/L
Dry Run	Monterey	309-MSD-05	Steinbeck	2022	Zinc	30	200	µg/L
Dry Run	Pacific Grove	309-CENTR-31	Greenwood	2022	Ammonia	0.14	50	mg/L
Dry Run	Pacific Grove	309-PGSD-15	Sea Palm	2022	Ammonia	0.07	50	mg/L
Dry Run	Pacific Grove	309-PGSD-04	Pico	2022	Ammonia	0.06	50	mg/L
Dry Run	Pacific Grove	309-CENTR-31	Greenwood	2022	Color	50	500	Color Units
Dry Run	Pacific Grove	309-PGSD-15	Sea Palm	2022	Color	30	500	Color Units
Dry Run	Pacific Grove	309-PGSD-04	Pico	2022	Color	30	500	Color Units
Dry Run	Pacific Grove	309-CENTR-31	Greenwood	2022	Copper	12	30	µg/L
Dry Run	Pacific Grove	309-PGSD-15	Sea Palm	2022	Copper	5.7	30	µg/L
Dry Run	Pacific Grove	309-PGSD-04	Pico	2022	Copper	5.1	30	µg/L
Dry Run	Pacific Grove	309-CENTR-31	Greenwood	2022	Detergents	0.13	0.2	mg/L
Dry Run	Pacific Grove	309-PGSD-15	Sea Palm	2022	Detergents	0.1	0.2	mg/L
Dry Run	Pacific Grove	309-PGSD-04	Pico	2022	Detergents	0.1	0.2	mg/L
Dry Run	Pacific Grove	309-CENTR-31	Greenwood	2022	E. coli	24196	235	MPN/100 mL
Dry Run	Pacific Grove	309-PGSD-15	Sea Palm	2022	E. coli	ND	235	MPN/100 mL
Dry Run	Pacific Grove	309-PGSD-04	Pico	2022	E. coli	187	235	MPN/100 mL
Dry Run	Pacific Grove	309-CENTR-31	Greenwood	2022	Enterococcus	24196	104	MPN/100 mL
Dry Run	Pacific Grove	309-PGSD-15	Sea Palm	2022	Enterococcus	ND	104	MPN/100 mL
Dry Run	Pacific Grove	309-PGSD-04	Pico	2022	Enterococcus	10	104	MPN/100 mL
Dry Run	Pacific Grove	309-CENTR-31	Greenwood	2022	Hardness	397	2000	mg/L
Dry Run	Pacific Grove	309-PGSD-15	Sea Palm	2022	Hardness	280	2000	mg/L

Dry Run	Pacific Grove	309-PGSD-04	Pico	2022	Hardness	184	2000	mg/L
Dry Run	Pacific Grove	309-CENTR-31	Greenwood	2022	Lead	0.2	30	µg/L
Dry Run	Pacific Grove	309-PGSD-15	Sea Palm	2022	Lead	0.2	30	µg/L
Dry Run	Pacific Grove	309-PGSD-04	Pico	2022	Lead	ND	30	µg/L
Dry Run	Pacific Grove	309-CENTR-31	Greenwood	2022	Nitrate	1.1	2.25	mg-N/L
Dry Run	Pacific Grove	309-PGSD-15	Sea Palm	2022	Nitrate	0.3	2.25	mg-N/L
Dry Run	Pacific Grove	309-PGSD-04	Pico	2022	Nitrate	1.3	2.25	mg-N/L
Dry Run	Pacific Grove	309-CENTR-31	Greenwood	2022	Orthophosphate	0.14	0.12	mg-P/L
Dry Run	Pacific Grove	309-PGSD-15	Sea Palm	2022	Orthophosphate	ND	0.12	mg-P/L
Dry Run	Pacific Grove	309-PGSD-04	Pico	2022	Orthophosphate	ND	0.12	mg-P/L
Dry Run	Pacific Grove	309-CENTR-31	Greenwood	2022	Potassium	8.3	20	mg/L
Dry Run	Pacific Grove	309-PGSD-15	Sea Palm	2022	Potassium	6.4	20	mg/L
Dry Run	Pacific Grove	309-PGSD-04	Pico	2022	Potassium	5	20	mg/L
Dry Run	Pacific Grove	309-CENTR-31	Greenwood	2022	Total Suspended Solids	4	500	mg/L
Dry Run	Pacific Grove	309-PGSD-15	Sea Palm	2022	Total Suspended Solids	4	500	mg/L
Dry Run	Pacific Grove	309-PGSD-04	Pico	2022	Total Suspended Solids	3	500	mg/L
Dry Run	Pacific Grove	309-CENTR-31	Greenwood	2022	Turbidity	5.7	25	NTU
Dry Run	Pacific Grove	309-PGSD-15	Sea Palm	2022	Turbidity	0.65	25	NTU
Dry Run	Pacific Grove	309-PGSD-04	Pico	2022	Turbidity	2	25	NTU
Dry Run	Pacific Grove	309-CENTR-31	Greenwood	2022	Urea-N	61	NA	mg-N/L
Dry Run	Pacific Grove	309-PGSD-15	Sea Palm	2022	Urea-N	16	NA	mg-N/L
Dry Run	Pacific Grove	309-PGSD-04	Pico	2022	Urea-N	9	NA	mg-N/L
Dry Run	Pacific Grove	309-CENTR-31	Greenwood	2022	Zinc	20	200	µg/L
Dry Run	Pacific Grove	309-PGSD-15	Sea Palm	2022	Zinc	ND	200	µg/L
Dry Run	Pacific Grove	309-PGSD-04	Pico	2022	Zinc	ND	200	µg/L

Dry Run	Seaside/Sand City	309-SSD-02	Bay Street	2022	Ammonia	0.22	50	mg/L
Dry Run	Seaside/Sand City	309-SSD-02	Bay Street	2022	Color	20	500	Color Units
Dry Run	Seaside/Sand City	309-SSD-02	Bay Street	2022	Copper	ND	30	µg/L
Dry Run	Seaside/Sand City	309-SSD-02	Bay Street	2022	Detergents	0.13	0.2	mg/L
Dry Run	Seaside/Sand City	309-SSD-02	Bay Street	2022	E. coli	ND	235	MPN/100 mL
Dry Run	Seaside/Sand City	309-SSD-02	Bay Street	2022	Enterococcus	ND	104	MPN/100 mL
Dry Run	Seaside/Sand City	309-SSD-02	Bay Street	2022	Hardness	141	2000	mg/L
Dry Run	Seaside/Sand City	309-SSD-02	Bay Street	2022	Lead	0.3	30	µg/L
Dry Run	Seaside/Sand City	309-SSD-02	Bay Street	2022	Nitrate	11.9	2.25	mg-N/L
Dry Run	Seaside/Sand City	309-SSD-02	Bay Street	2022	Orthophosphate	0.64	0.12	mg-P/L
Dry Run	Seaside/Sand City	309-SSD-02	Bay Street	2022	Potassium	6.1	20	mg/L
Dry Run	Seaside/Sand City	309-SSD-02	Bay Street	2022	Total Suspended Solids	5	500	mg/L
Dry Run	Seaside/Sand City	309-SSD-02	Bay Street	2022	Turbidity	1.4	25	NTU
Dry Run	Seaside/Sand City	309-SSD-02	Bay Street	2022	Urea-N	68	NA	mg-N/L
Dry Run	Seaside/Sand City	309-SSD-02	Bay Street	2022	Zinc	28	200	µg/L
First Flush	Carmel-by-the-Sea	307-CASD-01	4th Avenue	2022	Ammonia	0.53	50	mg-N/L
First Flush	Carmel-by-the-Sea	307-CASD-02	Ocean Avenue	2022	Ammonia	0.72	50	mg-N/L
First Flush	Carmel-by-the-Sea	307-CASD-01	4th Avenue	2022	Color	250	500	Color Units
First Flush	Carmel-by-the-Sea	307-CASD-02	Ocean Avenue	2022	Color	200	500	Color Units
First Flush	Carmel-by-the-Sea	307-CASD-01	4th Avenue	2022	Copper	81	30	µg/L

First Flush	Carmel-by-the-Sea	307-CASD-02	Ocean Avenue	2022	Copper	104	30	µg/L
First Flush	Carmel-by-the-Sea	307-CASD-01	4th Avenue	2022	Detergents	1.68	0.2	mg/L
First Flush	Carmel-by-the-Sea	307-CASD-02	Ocean Avenue	2022	Detergents	0.96	0.2	mg/L
First Flush	Carmel-by-the-Sea	307-CASD-01	4th Avenue	2022	E. coli	48840	235	MPN/100 mL
First Flush	Carmel-by-the-Sea	307-CASD-02	Ocean Avenue	2022	E. coli	23820	235	MPN/100 mL
First Flush	Carmel-by-the-Sea	307-CASD-01	4th Avenue	2022	Enterococcus	26130	104	MPN/100 mL
First Flush	Carmel-by-the-Sea	307-CASD-02	Ocean Avenue	2022	Enterococcus	19560	104	MPN/100 mL
First Flush	Carmel-by-the-Sea	307-CASD-01	4th Avenue	2022	Hardness	38	2000	mg/L
First Flush	Carmel-by-the-Sea	307-CASD-02	Ocean Avenue	2022	Hardness	56	2000	mg/L
First Flush	Carmel-by-the-Sea	307-CASD-01	4th Avenue	2022	Lead	13	30	µg/L
First Flush	Carmel-by-the-Sea	307-CASD-02	Ocean Avenue	2022	Lead	ND	30	µg/L
First Flush	Carmel-by-the-Sea	307-CASD-01	4th Avenue	2022	Nitrate	0.4	2.25	mg-N/L
First Flush	Carmel-by-the-Sea	307-CASD-02	Ocean Avenue	2022	Nitrate	0.4	2.25	mg-N/L
First Flush	Carmel-by-the-Sea	307-CASD-01	4th Avenue	2022	Orthophosphate	0.77	0.12	mg-P/L
First Flush	Carmel-by-the-Sea	307-CASD-02	Ocean Avenue	2022	Orthophosphate	0.7	0.12	mg-P/L
First Flush	Carmel-by-the-Sea	307-CASD-01	4th Avenue	2022	Potassium	7.9	20	mg/L
First Flush	Carmel-by-the-Sea	307-CASD-02	Ocean Avenue	2022	Potassium	10.6	20	mg/L
First Flush	Carmel-by-the-Sea	307-CASD-01	4th Avenue	2022	Total Suspended Solids	170	500	mg/L
First Flush	Carmel-by-the-Sea	307-CASD-02	Ocean Avenue	2022	Total Suspended Solids	17	500	mg/L
First Flush	Carmel-by-the-Sea	307-CASD-01	4th Avenue	2022	Turbidity	50	25	NTU

First Flush	Carmel-by-the-Sea	307-CASD-02	Ocean Avenue	2022	Turbidity	11	25	NTU
First Flush	Carmel-by-the-Sea	307-CASD-01	4th Avenue	2022	Urea-N	203	NA	mg-N/L
First Flush	Carmel-by-the-Sea	307-CASD-02	Ocean Avenue	2022	Urea-N	476	NA	mg-N/L
First Flush	Carmel-by-the-Sea	307-CASD-01	4th Avenue	2022	Zinc	153	200	µg/L
First Flush	Carmel-by-the-Sea	307-CASD-02	Ocean Avenue	2022	Zinc	111	200	µg/L
First Flush	Monterey	309-MSD-03	Twin 51's	2022	Ammonia	0.58	50	mg-N/L
First Flush	Monterey	309-MSD-04	San Carlos	2022	Ammonia	0.1	50	mg-N/L
First Flush	Monterey	309-MSD-05	Steinbeck	2022	Ammonia	1.3	50	mg-N/L
First Flush	Monterey	309-MSD-03	Twin 51's	2022	Color	125	500	Color Units
First Flush	Monterey	309-MSD-04	San Carlos	2022	Color	75	500	Color Units
First Flush	Monterey	309-MSD-05	Steinbeck	2022	Color	100	500	Color Units
First Flush	Monterey	309-MSD-03	Twin 51's	2022	Copper	24	30	µg/L
First Flush	Monterey	309-MSD-04	San Carlos	2022	Copper	21	30	µg/L
First Flush	Monterey	309-MSD-05	Steinbeck	2022	Copper	53	30	µg/L
First Flush	Monterey	309-MSD-03	Twin 51's	2022	Detergents	1.04	0.2	mg/L
First Flush	Monterey	309-MSD-04	San Carlos	2022	Detergents	0.76	0.2	mg/L
First Flush	Monterey	309-MSD-05	Steinbeck	2022	Detergents	1.6	0.2	mg/L
First Flush	Monterey	309-MSD-03	Twin 51's	2022	E. coli	68670	235	MPN/100 mL
First Flush	Monterey	309-MSD-04	San Carlos	2022	E. coli	2212	235	MPN/100 mL
First Flush	Monterey	309-MSD-05	Steinbeck	2022	E. coli	72700	235	MPN/100 mL

First Flush	Monterey	309-MSD-03	Twin 51's	2022	Enterococcus	41060	104	MPN/100 mL
First Flush	Monterey	309-MSD-04	San Carlos	2022	Enterococcus	7308	104	MPN/100 mL
First Flush	Monterey	309-MSD-05	Steinbeck	2022	Enterococcus	241960	104	MPN/100 mL
First Flush	Monterey	309-MSD-03	Twin 51's	2022	Hardness	64	2000	mg/L
First Flush	Monterey	309-MSD-04	San Carlos	2022	Hardness	22	2000	mg/L
First Flush	Monterey	309-MSD-05	Steinbeck	2022	Hardness	36	2000	mg/L
First Flush	Monterey	309-MSD-03	Twin 51's	2022	Lead	15	30	µg/L
First Flush	Monterey	309-MSD-04	San Carlos	2022	Lead	8.4	30	µg/L
First Flush	Monterey	309-MSD-05	Steinbeck	2022	Lead	2	30	µg/L
First Flush	Monterey	309-MSD-03	Twin 51's	2022	Nitrate	0.4	2.25	mg-N/L
First Flush	Monterey	309-MSD-04	San Carlos	2022	Nitrate	0.7	2.25	mg-N/L
First Flush	Monterey	309-MSD-05	Steinbeck	2022	Nitrate	0.6	2.25	mg-N/L
First Flush	Monterey	309-MSD-03	Twin 51's	2022	Orthophosphate	0.48	0.12	mg-P/L
First Flush	Monterey	309-MSD-04	San Carlos	2022	Orthophosphate	0.32	0.12	mg-P/L
First Flush	Monterey	309-MSD-05	Steinbeck	2022	Orthophosphate	1.07	0.12	mg-P/L
First Flush	Monterey	309-MSD-03	Twin 51's	2022	Potassium	5.4	20	mg/L
First Flush	Monterey	309-MSD-04	San Carlos	2022	Potassium	1.8	20	mg/L
First Flush	Monterey	309-MSD-05	Steinbeck	2022	Potassium	5.3	20	mg/L
First Flush	Monterey	309-MSD-03	Twin 51's	2022	Total Suspended Solids	27	500	mg/L
First Flush	Monterey	309-MSD-04	San Carlos	2022	Total Suspended Solids	8	500	mg/L

First Flush	Monterey	309-MSD-05	Steinbeck	2022	Total Suspended Solids	18	500	mg/L
First Flush	Monterey	309-MSD-03	Twin 51's	2022	Turbidity	53	25	NTU
First Flush	Monterey	309-MSD-04	San Carlos	2022	Turbidity	23	25	NTU
First Flush	Monterey	309-MSD-05	Steinbeck	2022	Turbidity	17	25	NTU
First Flush	Monterey	309-MSD-03	Twin 51's	2022	Urea-N	240	NA	mg-N/L
First Flush	Monterey	309-MSD-04	San Carlos	2022	Urea-N	116	NA	mg-N/L
First Flush	Monterey	309-MSD-05	Steinbeck	2022	Urea-N	1170	NA	mg-N/L
First Flush	Monterey	309-MSD-03	Twin 51's	2022	Zinc	87	200	µg/L
First Flush	Monterey	309-MSD-04	San Carlos	2022	Zinc	105	200	µg/L
First Flush	Monterey	309-MSD-05	Steinbeck	2022	Zinc	183	200	µg/L
First Flush	Monterey County	309-SASD-01	Boronda	2022	Ammonia	0.57	50	mg-N/L
First Flush	Monterey County	309-SASD-02	Las Palmas	2022	Ammonia	0.37	50	mg-N/L
First Flush	Monterey County	309-SASD-01	Boronda	2022	Color	750	500	Color Units
First Flush	Monterey County	309-SASD-02	Las Palmas	2022	Color	300	500	Color Units
First Flush	Monterey County	309-SASD-01	Boronda	2022	Copper	46	30	µg/L
First Flush	Monterey County	309-SASD-02	Las Palmas	2022	Copper	12	30	µg/L
First Flush	Monterey County	309-SASD-01	Boronda	2022	Detergents	0.2	0.2	mg/L
First Flush	Monterey County	309-SASD-02	Las Palmas	2022	Detergents	1.12	0.2	mg/L
First Flush	Monterey County	309-SASD-01	Boronda	2022	E. coli	19608	235	MPN/100 mL
First Flush	Monterey County	309-SASD-02	Las Palmas	2022	E. coli	39726	235	MPN/100 mL

First Flush	Monterey County	309-SASD-01	Boronda	2022	Enterococcus	48392	104	MPN/100 mL
First Flush	Monterey County	309-SASD-02	Las Palmas	2022	Enterococcus	15402	104	MPN/100 mL
First Flush	Monterey County	309-SASD-01	Boronda	2022	Hardness	138	2000	mg/L
First Flush	Monterey County	309-SASD-02	Las Palmas	2022	Hardness	59	2000	mg/L
First Flush	Monterey County	309-SASD-01	Boronda	2022	Lead	24.1	30	µg/L
First Flush	Monterey County	309-SASD-02	Las Palmas	2022	Lead	1.2	30	µg/L
First Flush	Monterey County	309-SASD-01	Boronda	2022	Nitrate	0.7	2.25	mg-N/L
First Flush	Monterey County	309-SASD-02	Las Palmas	2022	Nitrate	0.5	2.25	mg-N/L
First Flush	Monterey County	309-SASD-01	Boronda	2022	Orthophosphate	0.45	0.12	mg-P/L
First Flush	Monterey County	309-SASD-02	Las Palmas	2022	Orthophosphate	0.47	0.12	mg-P/L
First Flush	Monterey County	309-SASD-01	Boronda	2022	Potassium	132	20	mg/L
First Flush	Monterey County	309-SASD-02	Las Palmas	2022	Potassium	4.4	20	mg/L
First Flush	Monterey County	309-SASD-01	Boronda	2022	Total Suspended Solids	1224	500	mg/L
First Flush	Monterey County	309-SASD-02	Las Palmas	2022	Total Suspended Solids	28	500	mg/L
First Flush	Monterey County	309-SASD-01	Boronda	2022	Turbidity	210	25	NTU
First Flush	Monterey County	309-SASD-02	Las Palmas	2022	Turbidity	24	25	NTU
First Flush	Monterey County	309-SASD-01	Boronda	2022	Urea-N	398	NA	mg-N/L
First Flush	Monterey County	309-SASD-02	Las Palmas	2022	Urea-N	260	NA	mg-N/L
First Flush	Monterey County	309-SASD-01	Boronda	2022	Zinc	275	200	µg/L
First Flush	Monterey County	309-SASD-02	Las Palmas	2022	Zinc	92	200	µg/L

First Flush	Pacific Grove	309-PGSD-01	8th Street	2022	Ammonia	0.26	50	mg-N/L
First Flush	Pacific Grove	309-CENTR-31	Greenwood	2022	Ammonia	0.38	50	mg-N/L
First Flush	Pacific Grove	309-PGSD-03	Lover's Point	2022	Ammonia	0.4	50	mg-N/L
First Flush	Pacific Grove	309-PGSD-15	Sea Palm	2022	Ammonia	0.18	50	mg-N/L
First Flush	Pacific Grove	309-PGSD-04	Pico	2022	Ammonia	0.42	50	mg-N/L
First Flush	Pacific Grove	309-PGSD-01	8th Street	2022	Color	200	500	Color Units
First Flush	Pacific Grove	309-CENTR-31	Greenwood	2022	Color	150	500	Color Units
First Flush	Pacific Grove	309-PGSD-03	Lover's Point	2022	Color	150	500	Color Units
First Flush	Pacific Grove	309-PGSD-15	Sea Palm	2022	Color	15	500	Color Units
First Flush	Pacific Grove	309-PGSD-04	Pico	2022	Color	150	500	Color Units
First Flush	Pacific Grove	309-PGSD-01	8th Street	2022	Copper	35	30	µg/L
First Flush	Pacific Grove	309-CENTR-31	Greenwood	2022	Copper	21	30	µg/L
First Flush	Pacific Grove	309-PGSD-03	Lover's Point	2022	Copper	28	30	µg/L
First Flush	Pacific Grove	309-PGSD-15	Sea Palm	2022	Copper	20	30	µg/L
First Flush	Pacific Grove	309-PGSD-04	Pico	2022	Copper	37	30	µg/L
First Flush	Pacific Grove	309-PGSD-01	8th Street	2022	Detergents	0.94	0.2	mg/L
First Flush	Pacific Grove	309-CENTR-31	Greenwood	2022	Detergents	0.5	0.2	mg/L
First Flush	Pacific Grove	309-PGSD-03	Lover's Point	2022	Detergents	0.78	0.2	mg/L
First Flush	Pacific Grove	309-PGSD-15	Sea Palm	2022	Detergents	0.65	0.2	mg/L
First Flush	Pacific Grove	309-PGSD-04	Pico	2022	Detergents	0.91	0.2	mg/L

First Flush	Pacific Grove	309-PGSD-01	8th Street	2022	E. coli	77010	235	MPN/100 mL
First Flush	Pacific Grove	309-CENTR-3 1	Greenwood	2022	E. coli	155310	235	MPN/100 mL
First Flush	Pacific Grove	309-PGSD-03	Lover's Point	2022	E. coli	36540	235	MPN/100 mL
First Flush	Pacific Grove	309-PGSD-15	Sea Palm	2022	E. coli	17220	235	MPN/100 mL
First Flush	Pacific Grove	309-PGSD-04	Pico	2022	E. coli	46110	235	MPN/100 mL
First Flush	Pacific Grove	309-PGSD-01	8th Street	2022	Enterococcus	36090	104	MPN/100 mL
First Flush	Pacific Grove	309-CENTR-3 1	Greenwood	2022	Enterococcus	48392	104	MPN/100 mL
First Flush	Pacific Grove	309-PGSD-03	Lover's Point	2022	Enterococcus	41060	104	MPN/100 mL
First Flush	Pacific Grove	309-PGSD-15	Sea Palm	2022	Enterococcus	34480	104	MPN/100 mL
First Flush	Pacific Grove	309-PGSD-04	Pico	2022	Enterococcus	36540	104	MPN/100 mL
First Flush	Pacific Grove	309-PGSD-01	8th Street	2022	Hardness	58	2000	mg/L
First Flush	Pacific Grove	309-CENTR-3 1	Greenwood	2022	Hardness	25	2000	mg/L
First Flush	Pacific Grove	309-PGSD-03	Lover's Point	2022	Hardness	36	2000	mg/L
First Flush	Pacific Grove	309-PGSD-15	Sea Palm	2022	Hardness	28	2000	mg/L
First Flush	Pacific Grove	309-PGSD-04	Pico	2022	Hardness	53	2000	mg/L
First Flush	Pacific Grove	309-PGSD-01	8th Street	2022	Lead	3.3	30	µg/L
First Flush	Pacific Grove	309-CENTR-3 1	Greenwood	2022	Lead	0.1	30	µg/L
First Flush	Pacific Grove	309-PGSD-03	Lover's Point	2022	Lead	0.8	30	µg/L
First Flush	Pacific Grove	309-PGSD-15	Sea Palm	2022	Lead	2.4	30	µg/L
First Flush	Pacific Grove	309-PGSD-04	Pico	2022	Lead	2.4	30	µg/L

First Flush	Pacific Grove	309-PGSD-01	8th Street	2022	Nitrate	0.5	2.25	mg-N/L
First Flush	Pacific Grove	309-CENTR-31	Greenwood	2022	Nitrate	0.2	2.25	mg-N/L
First Flush	Pacific Grove	309-PGSD-03	Lover's Point	2022	Nitrate	0.3	2.25	mg-N/L
First Flush	Pacific Grove	309-PGSD-15	Sea Palm	2022	Nitrate	0.2	2.25	mg-N/L
First Flush	Pacific Grove	309-PGSD-04	Pico	2022	Nitrate	0.3	2.25	mg-N/L
First Flush	Pacific Grove	309-PGSD-01	8th Street	2022	Orthophosphate	0.44	0.12	mg-P/L
First Flush	Pacific Grove	309-CENTR-31	Greenwood	2022	Orthophosphate	0.34	0.12	mg-P/L
First Flush	Pacific Grove	309-PGSD-03	Lover's Point	2022	Orthophosphate	0.45	0.12	mg-P/L
First Flush	Pacific Grove	309-PGSD-15	Sea Palm	2022	Orthophosphate	0.28	0.12	mg-P/L
First Flush	Pacific Grove	309-PGSD-04	Pico	2022	Orthophosphate	0.5	0.12	mg-P/L
First Flush	Pacific Grove	309-PGSD-01	8th Street	2022	Potassium	7	20	mg/L
First Flush	Pacific Grove	309-CENTR-31	Greenwood	2022	Potassium	5.4	20	mg/L
First Flush	Pacific Grove	309-PGSD-03	Lover's Point	2022	Potassium	6.9	20	mg/L
First Flush	Pacific Grove	309-PGSD-15	Sea Palm	2022	Potassium	4	20	mg/L
First Flush	Pacific Grove	309-PGSD-04	Pico	2022	Potassium	9.9	20	mg/L
First Flush	Pacific Grove	309-PGSD-01	8th Street	2022	Total Suspended Solids	17	500	mg/L
First Flush	Pacific Grove	309-CENTR-31	Greenwood	2022	Total Suspended Solids	42	500	mg/L
First Flush	Pacific Grove	309-PGSD-03	Lover's Point	2022	Total Suspended Solids	24	500	mg/L
First Flush	Pacific Grove	309-PGSD-15	Sea Palm	2022	Total Suspended Solids	35	500	mg/L

First Flush	Pacific Grove	309-PGSD-04	Pico	2022	Total Suspended Solids	16	500	mg/L
First Flush	Pacific Grove	309-PGSD-01	8th Street	2022	Turbidity	11	25	NTU
First Flush	Pacific Grove	309-CENTR-3 1	Greenwood	2022	Turbidity	21	25	NTU
First Flush	Pacific Grove	309-PGSD-03	Lover's Point	2022	Turbidity	12	25	NTU
First Flush	Pacific Grove	309-PGSD-15	Sea Palm	2022	Turbidity	11	25	NTU
First Flush	Pacific Grove	309-PGSD-04	Pico	2022	Turbidity	9.6	25	NTU
First Flush	Pacific Grove	309-PGSD-01	8th Street	2022	Urea-N	216	NA	mg-N/L
First Flush	Pacific Grove	309-CENTR-3 1	Greenwood	2022	Urea-N	271	NA	mg-N/L
First Flush	Pacific Grove	309-PGSD-03	Lover's Point	2022	Urea-N	218	NA	mg-N/L
First Flush	Pacific Grove	309-PGSD-15	Sea Palm	2022	Urea-N	165	NA	mg-N/L
First Flush	Pacific Grove	309-PGSD-04	Pico	2022	Urea-N	221	NA	mg-N/L
First Flush	Pacific Grove	309-PGSD-01	8th Street	2022	Zinc	90	200	µg/L
First Flush	Pacific Grove	309-CENTR-3 1	Greenwood	2022	Zinc	95	200	µg/L
First Flush	Pacific Grove	309-PGSD-03	Lover's Point	2022	Zinc	80	200	µg/L
First Flush	Pacific Grove	309-PGSD-15	Sea Palm	2022	Zinc	62	200	µg/L
First Flush	Pacific Grove	309-PGSD-04	Pico	2022	Zinc	78	200	µg/L
First Flush	Seaside/Sand City	309-SSD-02	Bay Street	2022	Ammonia	0.24	50	mg-N/L
First Flush	Seaside/Sand City	309-SSD-02	Bay Street	2022	Color	100	500	Color Units
First Flush	Seaside/Sand City	309-SSD-02	Bay Street	2022	Copper	19	30	µg/L
First Flush	Seaside/Sand City	309-SSD-02	Bay Street	2022	Detergents	0.44	0.2	mg/L

First Flush	Seaside/Sand City	309-SSD-02	Bay Street	2022	E. coli	22398	235	MPN/100 mL
First Flush	Seaside/Sand City	309-SSD-02	Bay Street	2022	Enterococcus	31062	104	MPN/100 mL
First Flush	Seaside/Sand City	309-SSD-02	Bay Street	2022	Hardness	19	2000	mg/L
First Flush	Seaside/Sand City	309-SSD-02	Bay Street	2022	Lead	6.6	30	µg/L
First Flush	Seaside/Sand City	309-SSD-02	Bay Street	2022	Nitrate	0.3	2.25	mg-N/L
First Flush	Seaside/Sand City	309-SSD-02	Bay Street	2022	Orthophosphate	0.24	0.12	mg-P/L
First Flush	Seaside/Sand City	309-SSD-02	Bay Street	2022	Potassium	3	20	mg/L
First Flush	Seaside/Sand City	309-SSD-02	Bay Street	2022	Total Suspended Solids	47	500	mg/L
First Flush	Seaside/Sand City	309-SSD-02	Bay Street	2022	Turbidity	25	25	NTU
First Flush	Seaside/Sand City	309-SSD-02	Bay Street	2022	Urea-N	261	NA	mg-N/L
First Flush	Seaside/Sand City	309-SSD-02	Bay Street	2022	Zinc	98	200	µg/L

Monterey Regional Storm Water Management Program (MRSWMP)

The Supporting Documents for Agenda Item 7.a are
forthcoming and will be provided prior to the March 22 Meeting.

Monterey Regional Stormwater Management Program
Cost-Share Allocation - Fiscal Year 2023/24

PROGRAM ELEMENT	Budgeted Cost	M1W Administration Fee (+10%)	TOTAL Line-Item BUDGET	Cost-Share Allocation Schedule
Program Manager - *Salary and Benefits - total*	*$ 148,181*	*$ 14,818*	*$ 162,999*	*A (total)*
- Program Manager -Fixed Fee Portion	$ 70,000	$ -	$ 70,000	A-1
- Program Manager - Population-based portion	$ 78,181	$ 14,818	$ 92,999	A-2
Stormwater Monitoring Program (E.8 & E.14)	*$ 32,632*	*$ 3,263*	*$ 35,895*	--
- Program and Analysis Costs	$ 18,432	$ 1,843	$ 20,275	C
- Lab Fees	$ 14,200	$ 1,420	$ 15,620	C
Programs Budget	**$ 6,000**	$ 600	$ 6,600	B
PE/PO Contract (E.7 & E.8)	**$ 132,243**	$ 13,224	$ 145,467	B
Our Water Our World License	**$ 2,085**	$ 209	$ 2,294	B
Web Development	**$ 1,500**	$ 150	$ 1,650	B
Contingency	**$ 8,000**	$ 800	$ 8,800	B
PEAIP Software License	**$ 32,422**	$ 3,242	$ 35,664	D
BUDGET COMPONENT TOTALS	$ 363,063	$ 36,306	**$ 399,369**	

Cost Share Schedule	Basis of Calculation	Total Budgeted Cost
A (total)	*Program Manager*	*$ 162,999*
A-1	Fixed Fee portion	$ 70,000
A-2	Population-Based portion	$ 92,999
B	Population, Permitted Area	$ 164,811
C	No. of Monitoring Locations	$ 35,895
D	Divided per Jurisdiction	$ 35,664
	Total	399,369

Note: Participants' Fixed-Fee Portion of Program Manager Salary + Benefits = **$ 10,000**

PARTICIPATING ENTITIES	Cost Share Schedule A							Cost Share Schedule B			Cost Share Schedule C			Schedule D	PERMITTEE SHARE COST (A+B+C+D)
	Fixed Fee Share			Population-Based Share		Total									
	Participant	Participant Share	Fixed Cost (A1)	Participant Population (2020)	Population - Based Cost (A2)	Schedule A Share Cost Total (A1+A2)		Population (2020)	Population Share	Population Share Cost (B)	Monitoring Locations (Total)	Monitoring Share Cost (See Monitoring Program Worksheet)	Monitoring Share Cost (Including +10% M1W Admin. Fee) (C)	Participant Cost	
TRADITIONAL PERMITTEES															
Carmel-by-the-Sea	1	14.3%	$ 10,000	3,220	$ 2,168	$ 12,168		3,220	2.3%	$ 3,720	2	$ 4,662	$ 5,128	$ 2,684	$ 23,700
Del Rey Oaks	1	14.3%	$ 10,000	1,592	$ 1,072	$ 11,072		1,592	1.1%	$ 1,839	0	$ -	$ -	$ 824	$ 13,735
Monterey	1	14.3%	$ 10,000	30,212	$ 20,339	$ 30,339		30,212	21.2%	$ 34,904	4	$ 9,323	$ 10,256	$ 8,245	$ 83,743
Pacific Grove	1	14.3%	$ 10,000	15,090	$ 10,159	$ 20,159		15,090	10.6%	$ 17,433	5	$ 11,654	$ 12,820	$ 8,245	$ 58,657
Sand City	1	14.3%	$ 10,000	325	$ 219	$ 10,219		325	0.2%	$ 375	0.2	$ 466	$ 513	$ 824	$ 11,931
Seaside	1	14.3%	$ 10,000	32,366	$ 21,789	$ 31,789		32,366	22.7%	$ 37,392	0.8	$ 1,865	$ 2,051	$ 6,597	$ 77,829
County of Monterey Urban, Unincorporated	1	14.3%	$ 10,000	55,339	$ 37,254	$ 47,254		55,339	38.8%	$ 63,932	2	$ 4,662	$ 5,128	$ 8,245	$ 124,560
Participating Entities' TOTAL	*7*			*138,144*				*138,144*			*14*			*$ 35,664*	*$ 394,154*
NON-TRADITIONAL PERMITTEES															
	0	0.0%	$ -	0	$ -	$ -		0	0.0%	$ -	0	$ -	$ -	$ -	$ -
Coordinating Entities' TOTAL	*0*			*0*				*0*			*0*			*0*	
COORDINATING ENTITIES															
Pebble Beach Co (Del Monte Forest)	0	0.0%	$ -	0	$ -	$ -		4,514	3.2%	$ 5,215	0	$ -	$ -	$ -	$ 5,215
	0			*0*				*4,514*			*0*			*0*	
Participants' TOTAL	*7*	*100.0%*	*$ 70,000*	*138,144*	*$ 92,999*	*$ 162,999*		*142,658*	*100.0%*	*$ 164,811*	*14*	*$ 32,632*	*$ 35,895*	*$ 35,664*	*$ 399,369*