ORDER No. R2-2017-00XX
NPDES No. CA0038849

WASTE DISCHARGE REQUIREMENTS FOR MERCURY AND PCBS FROM MUNICIPAL AND INDUSTRIAL WASTEWATER DISCHARGES TO SAN FRANCISCO BAY

The following dischargers are subject to waste discharge requirements (WDRs) set forth in this Order, for the purpose of implementing the San Francisco Bay Mercury and PCBs Total Maximum Daily Load (TMDL) wasteload allocations for municipal and industrial wastewater discharges to San Francisco Bay and its contiguous bay segments:

Table 1A. Municipal Discharger Information

Discharger	Facility Name	Facility Address	Minor/ Major
American Canyon, City of	Wastewater Treatment and Reclamation Facility	151 Mezzetta Court American Canyon, CA 94503 Napa County	Major
Benicia, City of	Benicia Wastewater Treatment Plant	614 East Fifth Street Benicia, CA 94510 Solano County	Major
Burlingame, City of	Burlingame Wastewater Treatment Plant	1103 Airport Boulevard Burlingame, CA 94010 San Mateo County	Major
Calistoga, City of	Dunaweal Wastewater Treatment Plant	1100 Dunaweal Lane Calistoga, CA 94515 Napa County	Minor
Central Contra Costa Sanitary District	Central Contra Costa Sanitary District Wastewater Treatment Plant	5019 Imhoff Place Martinez, CA 94553 Contra Costa County	Major
Central Marin Sanitation Agency	Central Marin Sanitation Agency Wastewater Treatment Plant	1301 Andersen Drive San Rafael, CA 94901 Marin County	Major
Crockett Community Services District	Port Costa Wastewater Treatment Plant	End of Canyon Lake Drive Port Costa, CA 94569 Contra Costa County	Minor
Delta Diablo Sanitation District	Delta Diablo Wastewater Treatment Plant	2500 Pittsburg-Antioch Highway Antioch, CA 94509 Contra Costa County	Major
East Bay Dischargers Authority (EBDA); Cities of Hayward and San Leandro; Oro Loma Sanitary District; Castro Valley Sanitary District; Union Sanitary District; Livermore-Amador Valley Water Management Agency; Dublin San Ramon Services District; and City of Livermore	EBDA Common Outfall	EBDA Common Outfall 14150 Monarch Bay Drive San Leandro, CA 94577 Alameda County	Major
	Hayward Water Pollution Control Facility		
	San Leandro Water Pollution Control Plant		
	Oro Loma/Castro Valley Sanitary Districts Water Pollution Control Plant		
	Raymond A. Boege Alvarado Wastewater Treatment Plant		

Discharger	Facility Name	Facility Address	Minor/ Major
	Livermore-Amador Valley Water Management Agency Export and Storage Facilities		
	Dublin San Ramon Services District Wastewater Treatment Plant		
	City of Livermore Water Reclamation Plant		
East Bay Municipal Utility District	East Bay Municipal Utility District, Special District No. 1 Wastewater Treatment Plant (WWTP)	2020 Wake Avenue Oakland, CA 94607 Alameda County	Major
Fairfield-Suisun Sewer District	Fairfield-Suisun Wastewater Treatment Plant	1010 Chadbourne Road Fairfield, CA 94534 Solano County	Major
Las Gallinas Valley Sanitary District	Las Gallinas Valley Sanitary District Sewage Treatment Plant	300 Smith Ranch Road San Rafael, CA 94903 Marin County	Major
Marin County (Paradise Cove), Sanitary District No. 5 of	Paradise Cove Treatment Plant	3700 Paradise Drive Tiburon, CA 94920 Marin County	Minor
Marin County (Tiburon), Sanitary District No. 5 of	Wastewater Treatment Plant	2001 Paradise Drive Tiburon, CA 94920 Marin County	Major
Millbrae, City of	Water Pollution Control Plant	400 East Millbrae Avenue Millbrae, CA 94030 San Mateo County	Major
Mt. View Sanitary District	Mt. View Sanitary District Wastewater Treatment Plant	3800 Arthur Road Martinez, CA 94553 Contra Costa County	Major
Napa Sanitation District	Soscol Water Recycling Facility	1515 Soscol Ferry Road Napa, CA 94558 Napa County	Major
Novato Sanitary District	Novato Sanitary District Wastewater Treatment Plant	500 Davidson Street Novato, CA 94945 Marin County	Major
Palo Alto, City of	Palo Alto Regional Water Quality Control Plant	2501 Embarcadero Way Palo Alto, CA 94303 Santa Clara County	Major
Petaluma, City of	Municipal Wastewater Treatment Plant	3890 Cypress Drive Petaluma, CA 94954 Sonoma County	Major
Pinole, City of	Pinole-Hercules Water Pollution Control Plant	11 Tennent Avenue Pinole, CA, 94564 Contra Costa County	Major
Rodeo Sanitary District	Rodeo Sanitary District Water Pollution Control Facility	800 San Pablo Avenue Rodeo, CA 94572 Contra Costa County	Major
Saint Helena, City of	City of St. Helena Wastewater Treatment and Reclamation Plant	1 Thomann Lane St. Helena, CA 94574 Napa County	Minor
San Francisco (San Francisco International Airport), City and County of	Mel Leong Treatment Plant, Sanitary Plant	Bldg. 924 Clearwater Drive San Francisco, CA 94128 San Mateo County	Major

Discharger	Facility Name	Facility Address	Minor/ Major
San Francisco (Southeast Plant), City and County of	Southeast Water Pollution Control Plant	750 Phelps Street San Francisco, CA 94124 San Francisco County	Major
San Jose and Santa Clara, Cities of	San Jose/Santa Clara Water Pollution Control Plant	700 Los Esteros Road San Jose, CA 95134 Santa Clara County	Major
San Mateo, City of	City of San Mateo Wastewater Treatment Plant	2050 Detroit Drive San Mateo, CA 94404 San Mateo County	Major
Sausalito-Marin City Sanitary District	Sausalito-Marin City Sanitary District Wastewater Treatment Plant	1 East Road Sausalito, CA 94965 Marin County	Major
Sewerage Agency of Southern Marin	Wastewater Treatment Plant	450 Sycamore Avenue Mill Valley, CA 94941 Marin County	Major
Silicon Valley Clean Water	Silicon Valley Clean Water Wastewater Treatment Plant	1400 Radio Road Redwood City, CA 94065 San Mateo County	Major
Sonoma Valley County Sanitation District	Municipal Wastewater Treatment Plant	22675 8th Street East Sonoma, CA 95476 Sonoma County	Major
South San Francisco and San Bruno, Cities of	South San Francisco and San Bruno Water Quality Control Plant	195 Belle Air Road South San Francisco, CA 94080 San Mateo County	Major
Sunnyvale, City of	Sunnyvale Water Pollution Control Plant	1444 Borregas Avenue, Sunnyvale, CA 94089 Santa Clara County	Major
U.S. Department of Navy (Treasure Island)	Treasure Island Wastewater Treatment Plant	1220 Avenue M San Francisco, CA 94130 San Francisco County	Major
Vallejo Flood and Wastewater District	Vallejo Flood and Wastewater District Wastewater Treatment Plant	450 Ryder Street Vallejo, CA 94590 Solano County	Major
West County Agency; West County Wastewater District; City of Richmond ; and Richmond Municipal Sewer District No. 1	West County Agency Combined Outfall West County Wastewater District Treatment Plant Richmond Municipal Sewer District Water Pollution Control Plant	2910 Hilltop Drive Richmond, CA 94806 Contra Costa County	Major
Yountville, Town of	Municipal Wastewater Treatment Plant	7501 Solano Avenue Yountville, CA 94599 Napa County	Minor

Table 1B. Industrial Discharger Information

Discharger	Name of Facility	Facility Address	Minor/ Major
Non-Petroleum Refineries			
C&H Sugar Company, Inc., and Crockett Community Services District, Crockett Sanitary Department	Joint Use Phillip F. Meads Water Treatment Plant	830 Loring Avenue Crockett, CA 94525 Contra Costa County	Major

Discharger	Name of Facility	Facility Address	Minor/ Major
Crockett Cogeneration, LP	Crockett Cogeneration Plant	550 Loring Avenue Crockett, CA 94525-1232 Contra Costa County	Minor
Eco Services Operations LLC	Eco Services Martinez Plant	100 Mococo Road Martinez, CA 94553 Contra Costa County	Major
GenOn Delta, LLC	Pittsburg Power Plant	696 W. 10th Street Pittsburg, CA 94565 Contra Costa County	Major
USS-Posco Industries	Pittsburg Plant	900 Loveridge Road Pittsburg, CA 94565 Contra Costa County	Major
Petroleum Refineries			
Chevron Products Company	Richmond Refinery	841 Chevron Way Richmond, CA 94801 Contra Costa County	Major
Phillips 66 (formerly ConocoPhillips)	San Francisco Refinery	1380 San Pablo Avenue Rodeo, CA 94572-1354 Contra Costa County	Major
Shell Oil Products US and Equilon Enterprises LLC	Shell Martinez Refinery	3485 Pacheco Blvd Martinez CA 94553 Contra Costa County	Major
Tesoro Refining & Marketing Co.	Golden Eagle Refinery	150 Solano Way Martinez, CA 94553 Contra Costa County	Major
Valero Refining Company	Valero Benicia Refinery	3400 East Second Street Benicia, CA 94510-1005 Solano County	Major

Table 2A. Municipal Discharger Locations

Discharger	Discharge Points	Discharge Point Latitude (North)	Discharge Point Longitude (West)	Receiving Water
American Canyon, City of	001	38.187917º	-122.277139º	North Slough
	003	38.184917º	-122.279111º	Constructed freshwater wetlands
Benicia, City of	001	38.041667º	-122.279111º	Carquinez Strait
Burlingame, City of	002[1]	37.665278º	-122.361389º	Lower San Francisco Bay
Calistoga, City of	001	38.559444 º	-122.557778 º	Napa River
	002	38.570278º	-122.561111º	Napa River
	003	38.569341º	-122.556744º	Napa River
Central Contra Costa Sanitary District	001	38.045556º	-122.098611º	Suisun Bay
Central Marin Sanitation Agency	001	37.948333º	-122.456389º	Central San Francisco Bay
Crockett Community Services District	001	38.048611º	-122.182222º	Carquinez Strait
Delta Diablo Sanitation District	001	38.027778º	-122.837222º	New York Slough
East Bay Dischargers Authority (EBDA); Cities of Hayward and San Leandro; Oro Loma Sanitary District; Castro Valley Sanitary District; Union Sanitary District; Livermore-Amador Valley Water Management Agency; Dublin San Ramon Services District; and City of Livermore	001	37.625556º	-122.130556º	Lower San Francisco Bay
East Bay Municipal Utility District	001	37.817222º	-122.348611º	Central San Francisco Bay

Discharger	Discharge Points	Discharge Point Latitude (North)	Discharge Point Longitude (West)	Receiving Water
Fairfield-Suisun Sewer District	001	38.209167º	-122.056667º	Boynton Slough
	002	38.214444º	-122.065556º	Duck Pond 1
	003	38.209722º	-122.058056º	Duck Pond 2
	005	38.233333º	-122.058889º	Ledgewood Creek
Las Gallinas Valley Sanitary District	001	38.025556º	-122.516111º	Miller Creek
	002	38.025278º	-122.513333º	Miller Creek
Marin County (Paradise Cove), Sanitary District No. 5 of	001	37.897222º	-122.461111º	Central San Francisco Bay
Marin County (Tiburon), Sanitary District No. 5 of	001	37.870000º	-122.361389º	Raccoon Strait in Central San Francisco Bay
Millbrae, City of	001	37.665278º	-122.361389º	Lower San Francisco Bay
Mt. View Sanitary District	001	38.021111º	-122.103611º	Peyton Slough, a tributary to Carquinez Strait
Napa Sanitation District	001	38.235833º	-122.286111º	Napa River
Novato Sanitary District	001	38.060001º	-122.489995º	San Pablo Bay
	002[2]	38.063333º	-122.510278º	San Pablo Bay
Palo Alto, City of	001	37.458333º	-122.110278º	South San Francisco Bay
	002	37.441667º	-122.112500º	Matedero Creek via Renzel Marsh Pond
Petaluma, City of	001	38.209167º	-122.572778º	Petaluma River
Pinole, City of	001	38.051667º	-122.270000º	San Pablo Bay
Rodeo Sanitary District	001	38.051667º	-122.270000º	San Pablo Bay
Saint Helena, City of	001	38.502778º	-122.437500º	Napa River
San Francisco (San Francisco International Airport), City and County of	002[1]	37.665278º	-122.361389º	Lower San Francisco Bay
San Francisco (Southeast Plant), City and County of	001	37.749444º	-122.372778º	Lower San Francisco Bay
San Jose and Santa Clara, Cities of	001	37.439722º	-121.958056º	Artesian Slough, a tributary to Coyote Creek and South San Francisco Bay
San Mateo, City of	001	37.580556º	-122.245833º	Lower San Francisco Bay
Sausalito-Marin City Sanitary District	001	37.843333º	-122.476111º	Central San Francisco Bay
Sewerage Agency of Southern Marin	001	37.870000º	-122.451389º	Raccoon Strait in Central San Francisco Bay
Silicon Valley Clean Water	001	37.561111º	-122.217222º	Lower San Francisco Bay
Sonoma Valley County Sanitary District	001	38.237222º	-122.430833º	Schell Slough, a tributary to the San Pablo Bay
South San Francisco and San Bruno, Cities of	002[1]	37.665278º	-122.361389º	Lower San Francisco Bay
Sunnyvale, City of	001	37.420278º	-122.016667º	Moffett Channel, a tributary to South San Francisco Bay via Guadalupe Slough
U.S. Department of Navy (Treasure Island)	001	37.832778º	-122.369444º	Central San Francisco Bay
Vallejo Flood and Wastewater District	001	38.064722º	-122.228333º	Carquinez Strait
	002	38.089722º	-122.253333º	Mare Island Strait, a tributary to Carquinez Strait
West County Agency; West County Wastewater District; City of Richmond ; and Richmond Municipal Sewer District No. 1	001	37.913056º	-122.418333º	Central San Francisco Bay
Yountville, Town of	001	38.406114º	-122.342233º	Napa River

Footnotes:

[1] These Dischargers share the North Bayside System Unit outfall, which serves as combined Discharge Point No. 002 into San Francisco Bay. However, each Discharger must comply with the requirements of this Order at its individual monitoring location specified in the individual NPDES permit listed in Attachment B of this Order.

[2] Discharge Point No. 002 is subsequent to relocation of discharge to a new San Pablo Bay wetland. The exact location (latitude and longitude) may change slightly from what is indicated in this table.

Table 2B. Industrial Discharger Locations

Discharger	Discharge Point	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
Industrial Wastewater Discharger (Non-Petroleum Refinery)				
C&H Sugar Company, Inc., and Crockett Community Services District, Crockett Sanitary Dept.	002 [1]	38.058333º	-122.224444º	Carquinez Strait
Crockett Cogeneration, LP	001	38.056111º	-122.218056º	Carquinez Strait
Eco Services Operations LLC	001	38.038333º	-122.116944º	Carquinez Strait
GenOn Delta, LLC	001[1]	38º 2' 29"	121º 53' 25"	Suisun Bay
USS-Posco Industries	001[1]	38.030000º	-121.86444º	New York Slough
Industrial Wastewater Discharger (Petroleum Refinery)				
Chevron Products Company	001	37.970833º	-122.429167º	San Pablo Bay
Phillips 66 [1]	002	38.056111º	-122.261430º	San Pablo Bay
Shell Oil Products US and Equilon Enterprises LLC	001	38.032222º	-122.128889º	Carquinez Strait
Tesoro Refining & Marketing Co.	001	38.048333º	-122.089444º	Suisun Bay
Valero Refining Company	001	38.055000º [2]	-122.118611º[2]	Suisun Bay

Footnotes:

[1] This Order applies to the mercury discharges from internal waste streams discharged through these discharge points, and not to any once-through cooling water discharges.

[2] Latitude and longitude may change with outfall upgrade as specified in the Discharger's individual NPDES permit listed in Attachment B of this Order.

Table 3. Administrative Information

This Order was adopted on:	DATE
This Order shall become effective on:	January 1, 2018
This Order shall expire on:	December 31, 2022

I, Bruce H. Wolfe, Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of the Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on the date indicated above.

_____

Bruce H. Wolfe**,** Executive Officer

Contents

Tables

Attachments

I. FACILITY INFORMATION

Information describing the facilities subject to this Order is summarized in Tables 1A and 1B and in Fact Sheet (Attachment F) sections I and II.

II. FINDINGS

The California Regional Water Quality Control Board, San Francisco Bay Region (Regional Water Board), finds:

A. Legal Authorities. This Order serves as WDRs pursuant to California Water Code article 4, chapter 4, division 7 (commencing with § 13260). This Order is also issued pursuant to federal Clean Water Act (CWA) section 402 and implementing regulations adopted by U.S. EPA and Water Code chapter 5.5, division 7 (commencing with § 13370). It shall serve as a National Pollutant Discharge Elimination System (NPDES) permit for point source discharges of mercury and PCBs from the Discharger facilities listed in Attachment B to surface waters.

B. Background and Rationale for Requirements. The Regional Water Board developed the requirements in this Order based on the detailed technical analyses that provide the foundation for the Mercury and PCBs TMDLs. The Fact Sheet contains background information and rationales for this Order's requirements and is hereby incorporated into and constitutes findings for this Order. Attachments A, B, C, and E are also incorporated into this Order.

C. Provisions and Requirements Implementing State Law. No provisions or requirements in this Order are included to implement State law only.

D. Notification of Interested Parties. The Regional Water Board notified the Dischargers and interested agencies and persons of its intent to prescribe these WDRs and provided an opportunity to submit written comments and recommendations. The Fact Sheet provides details regarding the notification.

E. Consideration of Public Comment. The Regional Water Board, in a public meeting, heard and considered all comments pertaining to the discharges. The Fact Sheet provides details regarding the public hearing.

THEREFORE, IT IS HEREBY ORDERED that Order No. R2-2012-0096 (previous order) is rescinded upon the effective date of this Order, except for enforcement purposes, and, in order to meet the provisions of Water Code division 7 (commencing with § 13000) and regulations adopted thereunder and the provisions of the CWA and regulations and guidelines adopted thereunder, the Dischargers shall comply with the requirements in this Order. This action in no way prevents the Regional Water Board from taking enforcement action for past violations of the previous order.

III. DISCHARGE PROHIBITIONS

This Order does not establish additional discharge prohibitions.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Municipal Discharger Effluent Limitations. Municipal Dischargers shall comply with the following mass and concentration effluent limitations at discharge points and monitoring locations specified in Attachment E.

Table 4A. Mercury Effluent Limitations for Municipal Dischargers

Discharger	Average Annual Effluent Limit (kg/yr)[1]	Average Monthly Effluent Limit (µg/L)	Average Weekly Effluent Limit (µg/L)
American Canyon, City of	0.095	0.025	0.027
Benicia, City of	0.088	0.066	0.072
Burlingame, City of	0.089	0.066	0.072
Calistoga, City of	0.016	0.066	0.072
Central Contra Costa Sanitary District	1.3	0.066	0.072
Central Marin Sanitation Agency	0.11	0.066	0.072
Crockett Community Services District, Port Costa Sanitary Dept.	0.00072	0.066	0.072
Delta Diablo Sanitation District	0.19	0.066	0.072
East Bay Dischargers Authority (EBDA); Cities of Hayward and San Leandro; Oro Loma Sanitary District; Castro Valley Sanitary District; Union Sanitary District; Livermore-Amador Valley Water Management Agency; Dublin San Ramon Services District; and City of Livermore	2.2	0.066	0.072
East Bay Municipal Utility District	1.5	0.066	0.072
Fairfield-Suisun Sewer District	0.17	0.025	0.027
Las Gallinas Valley Sanitary District	0.10	0.066	0.072
Marin County (Paradise Cove), Sanitary District No. 5 of	0.00055	0.066	0.072
Marin County (Tiburon), Sanitary District No. 5 of	0.0099	0.066	0.072
Millbrae, City of	0.052	0.066	0.072
Mt. View Sanitary District	0.034	0.025	0.027
Napa Sanitation District	0.17	0.066	0.072
Novato Sanitary District	0.079	0.066	0.072
Palo Alto, City of	0.31	0.025	0.027
Petaluma, City of	0.063	0.066	0.072
Pinole, City of	0.055	0.066	0.072
Rodeo Sanitary District	0.060	0.066	0.072
Saint Helena, City of	0.047	0.066	0.072
San Francisco (San Francisco International	0.032	0.066	0.072

Discharger	Average Annual Effluent Limit (kg/yr)[1]	Average Monthly Effluent Limit (µg/L)	Average Weekly Effluent Limit (µg/L)
Airport), City and County of			
San Francisco (Southeast Plant), City and County of	1.6	0.066	0.072
San Jose and Santa Clara, Cities of	0.8	0.025	0.027
San Mateo, City of	0.19	0.066	0.072
Sausalito-Marin City Sanitary District	0.078	0.066	0.072
Sewerage Agency of Southern Marin	0.076	0.066	0.072
Silicon Valley Clean Water	0.32	0.066	0.072
Sonoma Valley County Sanitary District	0.041	0.066	0.072
South San Francisco and San Bruno, Cities of	0.18	0.066	0.072
Sunnyvale, City of	0.12	0.025	0.027
U.S. Department of Navy (Treasure Island)[2]	0.026	0.066	0.072
Vallejo Flood and Wastewater District	0.34	0.066	0.072
West County Agency; West County Wastewater District; City of Richmond; and Richmond Municipal Sewer District No. 1	0.23	0.066	0.072
Yountville, Town of	0.040	0.066	0.072
Aggregate Mass Emission Limit (kg/yr)[1],[3]	**11**	**Not Applicable**	**Not Applicable**

Unit Abbreviations:

kg/yr = kilograms per year
µg/L = micrograms per liter

Footnotes:

[1] Compliance with the Average Annual Effluent Limitations is determined annually for each Municipal Discharger each calendar year and is attained if the sum of all individual Municipal Dischargers' mercury mass emissions, calculated as described below, is not greater than the Aggregate Mass Emission Limit of 11 kg/yr. If the sum of all individual Municipal Dischargers' mercury mass emissions is greater than 11 kg/yr, the Municipal Dischargers whose mercury mass emissions exceed their individual limitations in Table 4A shall be deemed to be in violation of their mercury mass limitations. For compliance determination, mass emissions shall be determined as defined below:

a. The total annual aggregate mass emission shall be the sum of the individual annual mass emissions from each Municipal Discharger. The sum shall be rounded to the nearest kilogram for comparison with the 11 kg/yr limit.

b. The annual average mass emission for each Discharger shall be computed for the period January 1 through December 31, annually.

c. The annual average mass emission for each Discharger listed in Table 4A above shall be the sum of monthly emissions on a calendar year basis and computed as follows:

$$Annual\ Mass\ Emission, kg/year = \sum \left(Monthly\ Mass\ Emission\ Rates, kg/month \right)$$

or, for Dischargers with less frequent mercury monitoring than monthly, the Annual Mass Emission shall be computed using the arithmetic average of available monthly mass emissions as follows:

$$Annual\ Mass\ Emission,\ kg\ /\ year = \left(\frac{\sum \quad Monthly\ Mass\ Emission, kg\ /\ month}{Number\ of\ \ Monthly\ Mass\ Emissions\ Calculated} \right) * 12\ months\ /\ year$$

where:

$$Monthly\ Mass\ Emission, kg/month = \left(\frac{0.003785}{N}\right) * \left(\sum_{i=1}^{N} Q_i C_i\right) * 30.5 = \frac{0.1154425}{N} * \left(\sum_{i=1}^{N} Q_i C_i\right)$$

and where:

C_i = mercury concentration of each individual sample, µg/L
Q_i = Discharger flow rate on date of sample, millions of gallons per day (MGD)
N = number of samples collected during the month
0.003785 = conversion factor to convert (µg/L)*(MGD) into kg/day
30.5 = number of days in a standard month
0.1154425 = product of (conversion factor)*(number of standard days per month)

For intermittent Dischargers (Dischargers that do not discharge every day in a calendar month, or that have no discharge for an entire month [Qi = 0]), Q_i shall be computed as follows:

$$Q_i = \left(\frac{\sum_{d=1}^{D} Q_d}{30.5}\right)$$

where:

Q_d = total flow for the day when discharge occurred, million gallons
D = total number of days where discharge occurred in a month
30.5 = number of days in a standard month

d. The Monthly Mass Emission for a Discharger that provides recycled wastewater for industrial supply shall include the effluent discharge adjustment granted to the Industrial Discharger for its recycled wastewater use as described in Provision VI.C.5 of this Order. The monthly effluent discharge adjustment mass shall be reported in each Self-Monitoring Report and noted in the Annual Report.

[2] This Discharger serves domestic customers but is not a municipality. For the purpose of this Order, this Discharger is a "Municipal Discharger."

[3] Total differs slightly from the column sum due to rounding to the nearest kilogram.

Table 4B. PCBs Effluent Limitations for Municipal Dischargers

Discharger	Average Monthly Effluent Limit (µg/L)	Maximum Daily Effluent Limit (µg/L)
American Canyon, City of	0.00039	0.00049
Benicia, City of	0.012	0.017
Burlingame, City of	0.012	0.017
Calistoga, City of	0.012	0.017
Central Contra Costa Sanitary District	0.012	0.017
Central Marin Sanitation Agency	0.012	0.017
Crockett Community Services District, Port Costa Sanitary Dept.	0.012	0.017
Delta Diablo Sanitation District	0.012	0.017
East Bay Dischargers Authority (EBDA); Cities of Hayward and San Leandro; Oro Loma Sanitary District; Castro Valley Sanitary District; Union Sanitary District; Livermore-Amador Valley Water Management Agency; Dublin San Ramon Services District; and City of Livermore	0.012	0.017
East Bay Municipal Utility District	0.012	0.017
Fairfield-Suisun Sewer District	0.00039	0.00049
Las Gallinas Valley Sanitary District	0.012	0.017
Marin County (Paradise Cove), Sanitary District No. 5 of	0.012	0.017

Discharger	Average Monthly Effluent Limit (µg/L)	Maximum Daily Effluent Limit (µg/L)
Marin County (Tiburon), Sanitary District No. 5 of	0.012	0.017
Millbrae, City of	0.012	0.017
Mt. View Sanitary District	0.00039	0.00049
Napa Sanitation District	0.012	0.017
Novato Sanitary District	0.012	0.017
Palo Alto, City of	0.00039	0.00049
Petaluma, City of	0.012	0.017
Pinole, City of	0.012	0.017
Rodeo Sanitary District	0.012	0.017
Saint Helena, City of	0.012	0.017
San Francisco (San Francisco International Airport), City and County of	0.012	0.017
San Francisco (Southeast Plant), City and County of	0.012	0.017
San Jose and Santa Clara, Cities of	0.00039	0.00049
San Mateo, City of	0.012	0.017
Sausalito-Marin City Sanitary District	0.012	0.017
Sewerage Agency of Southern Marin	0.012	0.017
Silicon Valley Clean Water	0.012	0.017
Sonoma Valley County Sanitary District	0.012	0.017
South San Francisco and San Bruno, Cities of	0.012	0.017
Sunnyvale, City of	0.00039	0.00049
U.S. Department of Navy (Treasure Island)	0.012	0.017
Vallejo Flood and Wastewater District	0.012	0.017
West County Agency; West County Wastewater District; City of Richmond; and Richmond Municipal Sewer District No. 1	0.012	0.017
Yountville, Town of	0.012	0.017

Unit Abbreviation:

µg/L = micrograms per liter

B. Industrial Discharger Effluent Limitations. Industrial Dischargers shall comply with the following mass and concentration effluent limitations at discharge points and monitoring locations specified in Attachment E.

Table 5A. Mercury Effluent Limitations for Industrial Dischargers

Discharger	Average Annual Effluent Limit (kg/yr)[1]	Average Monthly Effluent Limit (µg/L)	Maximum Daily Effluent Limit (µg/L)
Non-Petroleum Refineries			
C&H Sugar and Crockett Community Services District, Crockett Sanitary Department	0.045	0.079	0.12
Crockett Cogeneration, LP	0.0047	0.079	0.12
Eco Services Operations LLC	0.011	0.079	0.12

GenOn Delta, LLC	0.0078	0.079	0.12
USS-Posco Industries	0.045	0.079	0.12
Petroleum Refineries			
Chevron Products Company	0.34	0.079	0.12
Phillips 66	0.13	0.079	0.12
Shell Oil Products US and Equilon Enterprises LLC	0.22	0.079	0.12
Tesoro Refining & Marketing Co.	0.11	0.079	0.12
Valero Refining Company	0.08	0.079	0.12
Aggregate Mass Emission Limit (kg/yr)[2]	**1.0**	**Not Applicable**	**Not Applicable**

Unit Abbreviations:

kg/yr = kilograms per year
µg/L = micrograms per liter

Footnotes:

[1] Compliance with the Average Annual Effluent Limitations is determined annually for each Industrial Discharger each calendar year and is attained if the sum of all individual Industrial Dischargers' mercury mass emissions, calculated as described below, is not greater than the Aggregate Mass Emission Limit of 1.0 kg/yr. If the sum of all individual Industrial Dischargers' mercury mass emissions is greater than 1.0 kg/yr, the Industrial Dischargers whose mercury mass emissions exceed their individual limitations in Table 5A shall be deemed to be in violation of their mercury mass limitations. For compliance determination, mass emissions shall be determined as defined below:

a. The total annual aggregate mass emission shall be the sum of the individual annual mass emissions from each Industrial Discharger. The sum shall be rounded to the nearest tenth of a kilogram for comparison with the 1.0 kg/yr limit.

b. The annual average mass emission for each Discharger shall be computed for the period January 1 through December 31, annually.

c. The annual average mass emission for each Discharger listed in Table 5A above shall be the sum of monthly emissions on a calendar year basis and computed as follows:

$$Annual\ Mass\ Emission, kg/year = \sum \left(Monthly\ Mass\ Emission\ Rates, kg/month \right)$$

or, for Dischargers with less frequent mercury monitoring than monthly, the Annual Mass Emission shall be computed using the arithmetic average of available monthly mass emissions as follows:

$$Annual\ Mass\ Emission,\ kg\ /\ year = \left(\frac{\sum \quad Monthly\ Mass\ Emission, kg\ /\ month}{Number\ of\ \ Monthly\ Mass\ Emissions\ Calculated} \right) * 12\ months\ /\ year$$

where:

$$Monthly\ Mass\ Emission, kg\ /\ month = \left(\frac{0.003785}{N} \right) * \left(\sum_{i=1}^{N} Q_i C_i \right) * 30.5 = \frac{0.1154425}{N} * \left(\sum_{i=1}^{N} Q_i C_i \right)$$

and where:

C_i = mercury concentration of each individual sample, µg/L
Q_i = Discharger flow rate on date of sample, millions of gallons per day (MGD)
N = number of samples collected during the month
0.003785 = conversion factor to convert (µg/L)*(MGD) into kg/day
30.5 = number of days in a standard month
0.1154425 = product of (conversion factor)*(number of standard days per month)

For intermittent Dischargers (Dischargers that do not discharge every day in a calendar month, or that have no discharge for an entire month [Qi = 0]), Q_i shall be computed as follows:

$$Q_i = \left(\frac{\sum_{d=1}^{D} Q_d}{30.5} \right)$$

where:

Q_d = total flow for the day when discharge occurred, million gallons
D = total number of days where discharge occurred in a month
30.5 = number of days in a standard month

d. For an Industrial Discharger that uses treated recycled wastewater for industrial supply from a Municipal Discharger named in this Order, the Industrial Discharger shall subtract from its Monthly Mass Emission in c, above, an adjustment for the recycled water used and discharged through its discharge point as provided in Provision VI.C.5 of this Order. The Industrial Discharger shall report this effluent discharge adjustment mass to the Municipal Discharger that provided the recycled wastewater within 15 days following the end of the calendar month for which an adjustment is applied and shall report the adjustment in each Self-Monitoring Report and in its Annual Report.

[2] Total differs slightly from the column sum due to rounding to the nearest kilogram.

Table 5B. PCBs Effluent Limitations for Industrial Dischargers

Discharger	Average Monthly Effluent Limit (µg/L)	Maximum Daily Effluent Limit (µg/L)
Non-Petroleum Refineries)		
C&H Sugar and Crockett Community Services District, Crockett Sanitary Department	0.012	0.018
Eco Services Operations LLC	0.012	0.018
USS-Posco Industries	0.012	0.018
Petroleum Refineries		
Chevron Products Company	0.00095	0.0015
Phillips 66	0.00095	0.0015
Shell Oil Products US and Equilon Enterprises LLC	0.00095	0.0015
Tesoro Refining & Marketing Co.	0.00095	0.0015
Valero Refining Company	0.00095	0.0015

Unit Abbreviation:

µg/L = micrograms per liter

V. RECEIVING WATER LIMITATIONS

This Order does not establish additional receiving water limitations.

VI. PROVISIONS

A. Standard Provisions

Dischargers shall comply with the Federal and Regional Standard Provisions included in Attachments D and G, as amended, of their individual NPDES permits listed in Attachment B of this Order.

B. Monitoring and Reporting

Dischargers shall comply with the MRP (Attachment E) and future revisions thereto and applicable sampling and reporting requirements in Attachments D and G, as amended, of their individual NPDES permits listed in Attachment B of this Order.

C. Special Provisions

1. Reopener Provisions

The Regional Water Board may modify or reopen this Order prior to its expiration date if there is modification of the San Francisco Bay Mercury or PCBs TMDL implementation provisions.

2. Triggers for Additional Mercury Control

a. Each individual Discharger shall comply with the tasks specified in Provision VI.C.2.c of this Order if its discharge exceeds any of the applicable mercury triggers described in Tables 6 and 7.

Table 6. Mercury Triggers for Municipal Dischargers

Type of Trigger	Average Monthly	Maximum Daily
Concentration of Mercury in Discharge for Secondary Treatment Plants	0.041 µg/L	0.065 µg/L
Concentration of Mercury in Discharge for Advanced Secondary Treatment Plants	0.011 µg/L	0.021 µg/L
Mass Emission of Mercury in Discharge	Individual annual mass emission limit, as depicted in Table 4A, above, and computed as a 12-month running average, as shown in Provision VI.C.2.b, below.	

Unit Abbreviation:
µg/L = micrograms per liter

Table 7. Mercury Triggers for Industrial Dischargers

Type of Trigger	Average Monthly	Maximum Daily
Concentration of Mercury in Discharge	0.037 µg/L	0.062 µg/L
Mass Emission of Mercury in Discharge	Individual annual mass emission limit, as depicted in Table 5A, above, and computed as a 12-month running average, as shown in Provision VI.C.2.b, below.	

Unit Abbreviation:
µg/L = micrograms per liter

b. The running 12-month average mercury mass emission shall be calculated monthly for each calendar month as follows:

$$(\textit{12-month running average, kg}) = (\textit{current mass emission, kg}) + \sum (\textit{Previous 11 months' mass emissions, kg})$$

where the current mass emission is the monthly mass emission for the current calendar month computed as shown in Effluent Limitations and Discharge Specifications IV.A, footnote c above.

c. Each Discharger that exceeds any of the applicable triggers for mercury listed in Table 6 or 7, above, shall comply with the following action requirements:

Table 8. Action Plan Required in Response to Mercury Trigger Exceedance

Task	Deadline
i. ***Accelerated Sampling.*** As soon as the Discharger becomes aware of an exceedance of a mercury trigger, re-sample within 48 hours and commence at minimum weekly sampling for a total of at least 6 new samples. If all 6 new samples show mercury levels below the triggers, return to routine sampling. If	See deadlines in task description.

Task	Deadline
during the accelerated sampling (1) any of the new samples are above the maximum daily trigger, or (2) the monthly average of the new samples is above the monthly trigger, or (3) the 12-month running average mass is above the mass trigger, then proceed with an action plan for mercury reduction and continue sampling monthly until the observed mercury discharge is below the triggers for 3 consecutive months, at which point the Discharger shall complete the reporting of this exceedance as required by tasks ii and iv, below, and return to routine monitoring, and discontinue efforts under task iii, below.	
ii. ***Trigger Exceedance Reporting.*** Report to the Regional Water Board any exceedance of mercury triggers in the cover letter of Self-Monitoring Report and the status of plans and actions to accelerate monitoring and/or develop and implement an action plan for mercury reduction.	In Self-Monitoring Report due 30 days after end of monitoring period
iii. ***Action Plan for Mercury Reduction*****.** Develop, submit, and implement an Action Plan that (1) evaluates the cause[1] of trigger exceedances, (2) evaluates the effectiveness of existing pollution prevention or pretreatment programs and methods for preventing future exceedances, (3) evaluates the feasibility and effectiveness of technology enhancements to improve treatment plant performance, and (4) evaluates other measures for preventing future exceedances. In addition, identify in the Action Plan mercury reduction measures to be implemented, along with an implementation schedule for those measures, to correct current and prevent future trigger exceedances.	Within 130 days of initial trigger exceedance
iv. ***Annual Reporting*****.** Provide a status of its mercury reduction efforts in the annual Self-Monitoring Report. Additionally, as causes and corrective actions are identified, the Discharger shall amend or supplement its Action Plan as appropriate. Such changes shall be reported to the Regional Water Board in the Discharger's Annual Self-Monitoring Report.	February 1 of each year until Discharger demonstrates compliance with trigger for continuous 3-month period of sampling

Footnote:

[1] Possible causes of exceedances include (but are not limited to) changes in reclamation; increases in the number of sewer connections; increases in infiltration and inflow (I/I); changes in the type or number of industrial, commercial, or residential sources; changes in the raw material used in manufacturing processes; changes in treatment system operation; or factors beyond the Discharger's control, such as a natural disaster, vandalism, illegal dumping, or extreme flood event.

3. Mercury and PCBs Source Control Programs

Each Discharger shall evaluate whether there are controllable sources of mercury or PCBs to its wastewater system (e.g., PCBs-containing industrial equipment for PCBs, discharges from amalgam-generating dental practices for mercury). The Discharger shall continue to implement and look for opportunities to improve existing measures to control such sources. Each Discharger shall submit the results of this evaluation, including any proposed control actions and implementation schedules, in its annual pollution prevention reports required by its individual NPDES permit.

4. Risk Reduction Programs

Each Discharger shall continue to implement and participate in programs to reduce mercury and PCBs-related risks to humans from consumption of San Francisco Bay and Sacramento-San Joaquin River Delta fish. This requirement may be satisfied by a combination of related efforts through the Regional Monitoring Program or other similar collaborative efforts. Each Discharger shall describe the progress of its efforts in its Annual Self-Monitoring Report. Alternatively, the Bay Area Clean Water Agencies (BACWA) may

fulfill the annual reporting requirement by providing a summary of annual risk reduction program efforts for agencies that choose to participate through BACWA.

5. Mercury and PCBs Discharge Adjustments for Recycled Wastewater Use by Industrial Dischargers

When an Industrial Discharger listed in Table 1B uses recycled wastewater from a Municipal Discharger listed in Table 1A, the Industrial Discharger may, at its option, apply a discharge adjustment (hereinafter Mercury or PCBs Adjustment) to its mercury or PCBs discharge concentration or mercury mass emission to be subtracted from the final discharge concentration or mass emission when determining compliance with its concentration and mass limits specified in Tables 5A and 5B. The Mercury or PCBs Adjustment shall be based on measured influent mercury and PCBs levels from the recycled wastewater in accordance with the following:

a. Monitoring Frequencies. The Industrial Discharger shall sample and analyze the influent recycled wastewater and the effluent discharge at least monthly for mercury and quarterly for PCBs. Influent sampling shall include measurement of daily flow volume for the entire duration that the Mercury or PCBs Adjustment is applied. Influent sampling shall occur at an appropriate influent monitoring location as identified in the Discharger's individual permit.

b. Time Intervals between Influent and Effluent Sampling. The Industrial Discharger shall determine the time interval (i.e., lag time) between sampling a given constituent of concern in the influent recycled water and sampling the same water for the constituent when it appears in the final effluent. The basis for this determination shall be included in any calculation of a Mercury or PCBs Adjustment.

c. Adjustment Calculation Procedure

i. Concentration Adjustment. The Mercury or PCBs Adjustment for concentration shall be calculated as follows:

$$(C_i - C_p) \times Q_t \div Q_y$$

where

C_i = Recycled water influent mercury or PCBs concentration, µg/L
C_p =Potable water influent mercury or PCBs concentration, µg/L
Q_t = Total influent recycled water flow volume corresponding to the appropriate monitoring period (e.g., monthly flow volume for mercury, quarterly flow volume for PCBs), million gallons
Q_y = Total effluent flow volume corresponding to the appropriate monitoring period and lag time (e.g.,Y days) after influent is sampled, million gallons

Example: Mercury is monitored monthly. The lag time is Y days.

Step 1: {(influent concentration of mercury in recycled wastewater, C_{2i}) – (influent concentration of mercury in potable water, C_{1i})} x (total influent volume of

recycled wastewater for the month, Q_t) = (influent mass of mercury from recycled wastewater)

Step 2: (influent mass) ÷ (total effluent discharge volume for the 30-day period, Y days after influent sampled, Q_y) = (Mercury Adjustment to be subtracted from concentration of mercury in the discharge, valid for that month)

ii. Mass Adjustment. The Mercury or PCBs Adjustment for mass shall be calculated as follows:

$$(C_i - C_p) \times Q_t \div D_t$$

where

C_i = Recycled water influent mercury or PCBs concentration, µg/L
C_p = Potable water influent mercury or PCBs concentration, µg/L
Q_t = Total influent recycled water flow volume corresponding to the appropriate monitoring period (e.g., monthly [30.5 days] flow volume for mercury, quarterly [90 days] flow volume for PCBs), million gallons
D_t = Total number of days in the appropriate monitoring period

Example: Mercury is monitored monthly. The lag time is Y days.

Step 1: {(influent concentration of mercury in recycled wastewater, C_{2i}) – (influent concentration of mercury in potable water, C_{1i})} x (total influent volume of recycled wastewater for the month, Q_t) = (influent mass of mercury from recycled wastewater)

Step 2: (influent mass) ÷ (30.5, the number of days in a standard month, D_t) = (Mercury Adjustment to be subtracted from monthly mass emission, valid for that month)

d. Effluent Limit Exceedance. If an Industrial Discharger opts to apply a Mass Adjustment, the Regional Water Board shall transfer that adjustment to the mass emission for the corresponding discharge interval from the Municipal Discharger that is the producer and source of the recycled wastewater. If this reverse adjustment results in an adjusted mass discharge level above both of the following criteria, then that Municipal Discharger is in violation of its Annual Average Effluent Limit and is subject to Regional Water Board enforcement:

i. Individual Mass Adjustment. The sum of the adjusted mass discharge levels from the Industrial Discharger and the Municipal Discharger exceeds the sum of the individual Average Annual Effluent Limits for these two Dischargers; and

ii. Aggregate Mass Adjustment. The adjusted mass discharge levels from the Municipal Discharger results in an aggregate mass emission from all Municipal Dischargers that exceeds the Aggregate Mass Emission Limit for Municipal Dischargers.

6. PCBs Discharge Adjustment for Urban Stormwater Treatment by Municipal Dischargers

When a Municipal Discharger listed in Table 1A accepts and treats urban runoff that is diverted from municipal separate storm sewer systems to all or parts of its wastewater treatment facility, the Municipal Discharger may, at its option, apply an adjustment (hereinafter Runoff Adjustment) to its PCBs discharge concentration when determining compliance with its concentration limits specified in Table 4B, provided that the total mass used in Runoff Adjustments from all Municipal Dischargers does not exceed 1.0 kg/year. The Runoff Adjustment shall be based on measured influent PCBs levels from urban runoff in accordance with the following:

a. Representative Samples. The Municipal Discharger shall have data from a representative sample or samples of the urban runoff targeted for diversion. Separate sampling shall be conducted to characterize dry weather diversions and wet weather diversions. The Discharger shall measure daily flow volumes for the entire duration that the Runoff Adjustment is to be applied. The Discharger shall measure these flows at an appropriate influent monitoring location as identified in the Discharger's individual permit and shall categorize each diversion as a dry weather diversion or a wet weather diversion.

b. Adjustment Calculation Procedure. The PCBs Runoff Adjustment shall be calculated as follows:

$$[(C_{di} \times Q_{dr}) + (C_{wi} \times Q_{wr})] \div Q_t$$

where

C_{di} = Dry weather urban runoff influent PCBs concentration, µg/L
Q_{dr} = Total dry weather influent urban runoff flow volume corresponding to the appropriate monitoring period (e.g., quarterly [90 days] or semi-annual [180 days] flow volume), million gallons
C_{wi} = Wet weather urban runoff influent PCBs concentration, µg/L
Q_{wr} = Total wet weather influent urban runoff flow volume corresponding to the appropriate monitoring period (e.g., quarterly [90 days] or semi-annual [180 days] flow volume), million gallons
Q_t = Total effluent flow volume corresponding to the appropriate monitoring period, million gallons

Example: PCBs is monitored quarterly.

Step 1: {(influent urban runoff concentration of PCBs in dry weather, C_{di}) x (total influent urban runoff volume of dry weather diversion for the quarter, Q_{dr}) + (influent urban runoff concentration of PCBs in wet weather, C_{wi}) x (total influent urban runoff volume of wet weather diversion for the quarter, Q_{wr})} = (influent mass of PCBs from urban runoff)

Step 2: (influent mass) ÷ (total effluent discharge volume for the 90-day period, Q_t) = (Runoff Adjustment to be subtracted from the concentration of PCBs, valid for that quarter)

ATTACHMENT A – DEFINITIONS

Arithmetic Mean (μ)
Also called the average, the sum of measured values divided by the number of samples. For ambient water concentrations, the arithmetic mean is calculated as follows:

Arithmetic mean = $\mu = \Sigma x / n$ where: Σx is the sum of the measured ambient water concentrations, and n is the number of samples.

Average Monthly Effluent Limitation (AMEL)
The highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

Average Weekly Effluent Limitation (AWEL)
The highest allowable average of daily discharges over a calendar week (Sunday through Saturday), calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.

Bioaccumulative
Taken up by an organism from its surrounding medium through gill membranes, epithelial tissue, or from food and subsequently concentrated and retained in the body of the organism.

Carcinogenic
Known to cause cancer in living organisms.

Coefficient of Variation
Measure of data variability calculated as the estimated standard deviation divided by the arithmetic mean of the observed values.

Daily Discharge
Either: (1) the total mass of the constituent discharged over the calendar day (12:00 am through 11:59 pm) or any 24-hour period that reasonably represents a calendar day for purposes of sampling (as specified in the permit) for a constituent with limitations expressed in units of mass; or (2) the unweighted arithmetic mean measurement of the constituent over the day for a constituent with limitations expressed in other units of measurement (e.g., concentration).

The daily discharge may be determined by the analytical results of a composite sample taken over the course of one day (a calendar day or other 24-hour period defined as a day) or by the arithmetic mean of analytical results from one or more grab samples taken over the course of the day.

For composite sampling, if 1 day is defined as a 24-hour period other than a calendar day, the analytical result for the 24-hour period is considered the result for the calendar day in which the 24-hour period ends.

Detected, but Not Quantified (DNQ)
Sample result less than the RL, but greater than or equal to the laboratory's MDL. Sample results reported as DNQ are estimated concentrations.

Dilution Credit
Amount of dilution granted to a discharge in the calculation of a water quality-based effluent limitation, based on the allowance of a specified mixing zone. It is calculated from the dilution ratio or determined by conducting a mixing zone study or modeling the discharge and receiving water.

Effluent Concentration Allowance (ECA)
Value derived from the water quality criterion/objective, dilution credit, and ambient background concentration that is used, in conjunction with the CV for the effluent monitoring data, to calculate a long-term average (LTA) discharge concentration. The ECA has the same meaning as wasteload allocation (WLA) as used in U.S. EPA guidance (*Technical Support Document For Water Quality-based Toxics Control*, March 1991, second printing, EPA/505/2-90-001).

Enclosed Bay
Indentation along the coast that encloses an area of oceanic water within a distinct headlands or harbor works. Enclosed bays include all bays where the narrowest distance between the headlands or outermost harbor works is less than 75 percent of the greatest dimension of the enclosed portion of the bay. Enclosed bays include, but are not limited to, Humboldt Bay, Bodega Harbor, Tomales Bay, Drake's Estero, San Francisco Bay, Morro Bay, Los Angeles-Long Beach Harbor, Upper and Lower Newport Bay, Mission Bay, and San Diego Bay. Enclosed bays do not include inland surface waters or ocean waters.

Estimated Chemical Concentration
Concentration that results from the confirmed detection of the substance below the ML value by the analytical method.

Estuaries
Waters, including coastal lagoons, located at the mouths of streams that serve as areas of mixing for fresh and ocean waters. Coastal lagoons and mouths of streams that are temporarily separated from the ocean by sandbars are considered estuaries. Estuarine waters are considered to extend from a bay or the open ocean to a point upstream where there is no significant mixing of fresh water and seawater. Estuarine waters include, but are not limited to, the Sacramento-San Joaquin Delta, as defined in Water Code section 12220, Suisun Bay, Carquinez Strait downstream to the Carquinez Bridge, and appropriate areas of the Smith, Mad, Eel, Noyo, Russian, Klamath, San Diego, and Otay rivers. Estuaries do not include inland surface waters or ocean waters.

Inland Surface Waters
All surface waters of the state that do not include the ocean, enclosed bays, or estuaries.

Instantaneous Maximum Effluent Limitation
Highest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous maximum limitation).

Instantaneous Minimum Effluent Limitation
Lowest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous minimum limitation).

Maximum Daily Effluent Limitation (MDEL)
Highest allowable daily discharge of a pollutant, over a calendar day (or 24-hour period). For pollutants with limitations expressed in units of mass, the daily discharge is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the daily discharge is calculated as the arithmetic mean measurement of the pollutant over the day.

Median
Middle measurement in a set of data. The median of a set of data is found by first arranging the measurements in order of magnitude (either increasing or decreasing order). If the number of measurements (n) is odd, then the median = $X_{(n+1)/2}$. If n is even, then the median = $(X_{n/2} + X_{(n/2)+1})/2$ (i.e., the midpoint between n/2 and n/2+1).

Method Detection Limit (MDL)
Minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero, as defined in in 40 C.F.R. part 136, Attachment B, revised as of July 3, 1999.

Minimum Level (ML)
Concentration at which the entire analytical system gives a recognizable signal and acceptable calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all the method specified sample weights, volumes, and processing steps have been followed.

Mixing Zone
Limited volume of receiving water allocated for mixing with a wastewater discharge where water quality criteria can be exceeded without causing adverse effects to the overall water body.

Not Detected (ND)
Sample results less than the laboratory's MDL.

Persistent Pollutants
Substances for which degradation or decomposition in the environment is nonexistent or very slow.

Pollutant Minimization Program
Program of waste minimization and pollution prevention actions that include, but are not limited to, product substitution, waste stream recycling, alternative waste management methods, and education of the public and businesses. The goal of the Pollutant Minimization Program is to reduce all potential sources of a priority pollutant through pollutant minimization (control) strategies, including pollution prevention measures as appropriate, to maintain the effluent concentration at or below the water quality-based effluent limitation. Pollution prevention measures may be particularly appropriate for persistent bioaccumulative priority pollutants where there is evidence that beneficial uses are being impacted. Cost effectiveness may be considered when establishing the requirements of a Pollutant Minimization Program. The completion and implementation of a Pollution Prevention Plan, if required pursuant to Water Code section 13263.3(d), is considered to fulfill Pollutant Minimization Program requirements.

Pollution Prevention
Any action that causes a net reduction in the use or generation of a hazardous substance or other pollutant that is discharged into water and includes, but is not limited to, input change, operational improvement, production process change, and product reformulation (as defined in Water Code section 13263.3). Pollution prevention does not include actions that merely shift a pollutant in wastewater from one environmental medium to another environmental medium, unless clear environmental benefits of such an approach are identified to the satisfaction of the State Water Board or Regional Water Board.

Reporting Level (RL)
ML (and its associated analytical method) chosen by the Discharger for reporting and compliance determination from the MLs included in this Order, including an additional factor if applicable as discussed herein. The MLs included in this Order correspond to approved analytical methods for reporting a sample result that are selected by the Regional Water Board either from SIP Appendix 4 in accordance with SIP section 2.4.2 or established in accordance with SIP section 2.4.3. The ML is based on the proper application of method-based analytical procedures for sample preparation and the absence of any matrix interferences. Other factors may be applied to the ML depending on the specific sample preparation steps employed. For example, the treatment typically applied in cases where there are matrix-effects is to dilute the sample or sample aliquot by a factor of ten. In such cases, this additional factor must be applied to the ML in the computation of the RL.

Source of Drinking Water
Any water designated as having a municipal or domestic supply (MUN) beneficial use.

Standard Deviation (σ)
Measure of variability calculated as follows:

$$\sigma = (\sum[(x - \mu)^2]/(n - 1))^{0.5}$$

where:

x is the observed value;

μ is the arithmetic mean of the observed values; and

n is the number of samples.

Toxicity Reduction Evaluation (TRE)
Study conducted in a step-wise process designed to identify the causative agents of effluent or ambient toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in toxicity. The first steps of the TRE consist of the collection of data relevant to the toxicity, including additional toxicity testing, and an evaluation of facility operations and maintenance practices, and best management practices. A Toxicity Identification Evaluation (TIE) may be required as part of the TRE, if appropriate. A TIE is a set of procedures to identify the specific chemicals responsible for toxicity. These procedures are performed in three phases (characterization, identification, and confirmation) using aquatic organism toxicity tests.

ATTACHMENT B – INDIVIDUAL NPDES PERMIT AND ORDER NUMBERS

Discharger	NPDES Permit No.	Existing Order No.[1]	Existing Order Adoption Date	Existing Order Expiration Date
Municipal Dischargers				
American Canyon, City of	CA0038768	R2-2017-0008	4/12/2017	5/31/2022
Benicia, City of	CA0038091	R2-2014-0023	6/11/2014	7/31/2019
Burlingame, City of	CA0037788	R2-2013-0015	5/8/2013	6/30/2018
Calistoga, City of	CA0037966	R2-2016-0018	4/13/2016	4/30/2021
Central Contra Costa Sanitary District	CA0037648	R2-2017-0009	4/12/2017	5/31/2022
Central Marin Sanitation Agency	CA0038628	R2-2012-0051	6/13/2012	7/31/2017
Crockett Community Services District, Port Costa Sanitary Dept.	CA0037885	R2-2013-0035	10/9/2013	11/30/2018
Delta Diablo Sanitation District	CA0038547	R2-2014-0030	8/13/2014	9/30/2019
East Bay Dischargers Authority	CA0037869	R2-2017-0016	5/10/2017	6/30/2022
Union S.D. Wet Weather Outfall	CA0038733	R2-2015-0045	11/18/2015	12/31/2020
Union S.D. Hayward Marsh	CA0038636	R2-2011-0058	9/14/2011	10/31/2016
Dublin San Ramon Services District	CA0037613	R2-2017-0017	5/10/2017	6/30/2022
City of Livermore	CA0038008	R2-2017-0018	5/10/2017	6/30/2022
LAVWMA Wet Weather Outfall	CA0038679	R2-2016-0015	4/13/2016	5/31/2021
East Bay Municipal Utility District	CA0037702	R2-2015-0018	5/13/2015	6/30/2020
Fairfield-Suisun Sewer District	CA0038024	R2-2015-0013	3/11/2015	4/30/2020
Las Gallinas Valley Sanitary District	CA0037851	R2-2015-0021	5/13/2015	6/30/2020
Marin County (Paradise Cove), Sanitary District No. 5 of	CA0037427	R2-2016-0042	10/12/2016	11/30/2021
Marin County (Tiburon), Sanitary District No. 5 of	CA0037753	R2-2013-0027	8/14/2013	9/30/2018
Millbrae, City of	CA0037532	R2-2013-0037	12/11/2013	1/31/2019
Mt. View Sanitary District	CA0037770	R2-2016-0023	5/11/2016	6/30/2021
Napa Sanitation District	CA0037575	R2-2016-0035	7/13/2016	8/31/2021
Novato Sanitary District	CA0037958	R2-2015-0034	7/8/2015	8/31/2020
Palo Alto, City of	CA0037834	R2-2014-0024	6/11/2014	7/31/2019
Petaluma, City of	CA0037810	R2-2016-0014	4/13/2016	5/31/2021
Pinole, City of	CA0037796	R2-2012-0059	8/8/2012	9/30/2017
Rodeo Sanitary District	CA0037826	R2-2012-0027	4/11/2012	5/31/2017
Saint Helena, City of	CA0038016	R2-2016-0003	1/13/2016	2/28/2021
San Francisco (San Francisco International Airport), City and County of	CA0038318	R2-2013-0011	5/8/2013	6/30/2018
San Francisco (Southeast Plant), City and County of	CA0037664	R2-2013-0029	8/14/2013	9/30/2018
San Jose and Santa Clara, Cities of	CA0037842	R2-2014-0034	9/10/2014	10/31/2019
San Mateo, City of	CA0037541	R2-2013-0006	3/13/2013	4/30/2018
Sausalito-Marin City Sanitary District	CA0038067	R2-2012-0083	11/14/2012	12/31/2017
Sewerage Agency of Southern Marin	CA0037711	R2-2012-0094	12/12/2012	1/31/2018
Silicon Valley Clean Water	CA0038369	R2-2012-0062	8/8/2012	9/30/2017
Sonoma Valley County Sanitary District	CA0037800	R2-2014-0020	5/14/2014	6/30/2019
South San Francisco and San Bruno, Cities of	CA0038130	R2-2014-0012	4/9/2014	5/31/2019
Sunnyvale, City of	CA0037621	R2-2014-0035	9/10/2014	10/31/2019
U.S. Department of Navy, Treasure Island	CA0110116	R2-2015-0004	1/21/2015	3/31/2020
Vallejo Flood and Wastewater District	CA0037699	R2-2012-0017	2/8/2012	3/31/2017

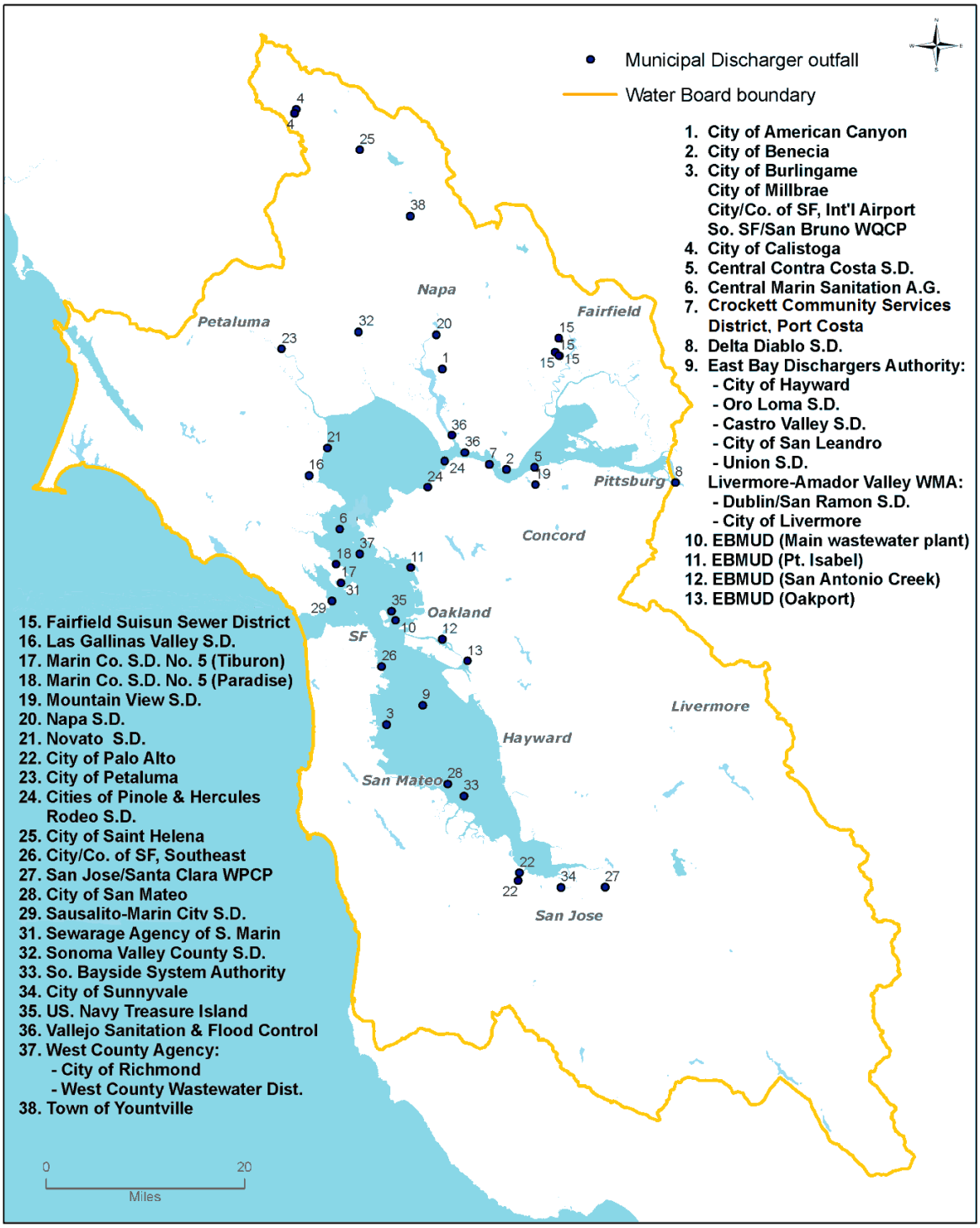
Discharger	NPDES Permit No.	Existing Order No.[1]	Existing Order Adoption Date	Existing Order Expiration Date
Municipal Dischargers				
West County Agency; West County Wastewater District; City of Richmond ; and Richmond Municipal Sewer District No. 1	CA0038539	R2-2013-0016	5/8/2013	6/30/2018
Yountville, Town of	CA0038121	R2-2015-0029	6/10/2015	7/31/2020
Industrial Dischargers (Non-Petroleum Refineries)				
C&H Sugar and Crockett Community Services District, Crockett Sanitary Dept.	CA0005240	R2-2012-0084	11/14/12	12/31/17
Crockett Cogeneration, LP, and Pacific Crockett Energy, Inc.	CA0029904	R2-2016-0022	5/11/2016	6/30/2021
Eco Services Operations LLC	CA0006165	R2-2015-0052	12/16/2015	1/31/2021
GenOn Delta, LLC	CA0004880	R2-2002-0072	6/19/02	5/31/07
USS-Posco Industries	CA0005002	R2-2016-0043	11/9/2016	12/31/2021
Industrial Dischargers (Petroleum Refineries)				
Chevron Products Company	CA0005134	R2-2016-0047	12/14/2016	1/31/2022
Phillips 66	CA0005053	R2-2016-0044	11/9/2016	12/31/2021
Shell Oil Products US and Equilon Enterprises LLC	CA0005789	R2-2012-0052	6/13/2012	7/31/2017
Tesoro Refining & Marketing Co.	CA0004961	R2-2015-0033	7/8/2015	8/31/2020
Valero Refining Company	CA0005550	R2-2015-0037	8/12/2015	9/30/2020

Footnote:

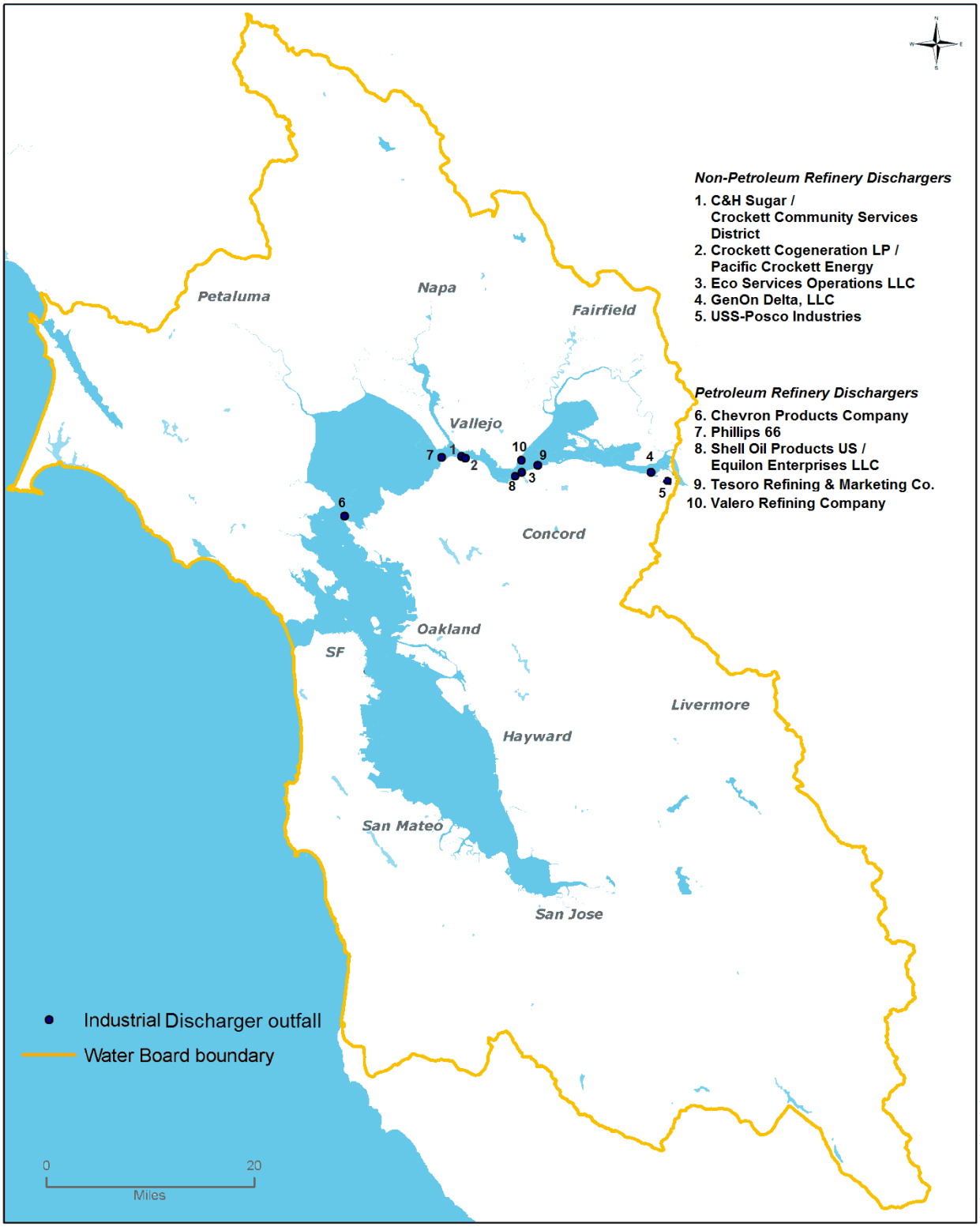
[1] The orders shown are for the primary permit reissuance and do not include permit amendments.

ATTACHMENT C – MAPS OF MUNICIPAL AND INDUSTRIAL DISCHARGERS

Municipal Discharger outfall locations



Industrial Discharge Outfalls



ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

Contents

Tables

ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

This MRP establishes monitoring, reporting, and recordkeeping requirements that implement federal and State laws and regulations.

I. GENERAL MONITORING PROVISIONS

A. Dischargers shall comply with this MRP. The Executive Officer may amend this MRP pursuant to 40 C.F.R. sections 122.62, 122.63, and 124.5. If any discrepancies exist between this MRP and the "Regional Standard Provisions, and Monitoring and Reporting Requirements (Supplement to Attachment D) for NPDES Wastewater Discharge Permits" (Attachment G) in the individual permits listed in Attachment B of this Order, this MRP shall prevail.

B. Sampling is required during the entire year when discharging. Dischargers shall conduct all monitoring in accordance with Attachment D section III, as supplemented by Attachment G, of their individual permits listed in Attachment B of this Order. Equivalent test methods must be more sensitive than those specified in 40 C.F.R. section 136 and must be specified in this permit.

C. For compliance monitoring, analyses shall be conducted using the lowest commercially available and reasonably achievable detection levels. The objective is to provide quantification of constituents sufficient to allow evaluation of observed concentrations with respect to the Minimum Levels given below. All Minimum Levels are expressed as µg/L, equivalent to parts per billion (ppb). According to the SIP, method-specific factors can be applied. In such cases, the additional factor must be applied in the computation of the Reporting Level. Application of such factors will alter the Reporting Level from the Minimum Level for the analysis. Dischargers are to instruct laboratories to establish calibration standards so that the Minimum Level is the lowest calibration standard. At no time is a Discharger to use analytical data derived from extrapolation beyond the lowest point of the calibration curve. Table E-1 below indicates the highest Minimum Level that the Discharger's laboratory may achieve for calibration purposes.

Table E-1. Minimum Levels

Constituent Analysis	Minimum Level	Units
Mercury	0.0005	µg/L
PCB 1016, 1221, 1232, 1242, 1248, 1254, 1260	0.5	µg/L

II. MONITORING LOCATIONS

Dischargers shall establish the following monitoring locations to demonstrate compliance with the effluent limitations, discharge specifications, and other requirements in this Order:

Table E-2. Monitoring Locations

Sampling Location Type	Monitoring Location Name	Monitoring Location Description
Effluent	Individual monitoring locations for discharges of treated wastewater (normally Monitoring Location EFF-001) are specified in the MRPs of Dischargers' individual NPDES permits as listed in Attachment B of this Order.[1]	Individual monitoring location descriptions are provided in the MRPs of Dischargers' individual NPDES permits as listed in Attachment B of this Order.

Footnotes:

[1] For San Francisco International Airport, the monitoring location shall be Monitoring Location EFF-001A for both its sanitary and industrial plants.

For the City of Calistoga, annual monitoring shall alternate each year between Monitoring Locations EFF-001 and EFF-002.

For C&H Sugar Company, Inc., the monitoring location shall be Monitoring Location EFF-002.

For GenOn Delta, LLC, the monitoring locations shall be Monitoring Locations E-001B through E-001I.

III. EFFLUENT MONITORING REQUIREMENTS

The Dischargers listed in Tables 4A and 5A of the Order shall monitor their individual treatment plant effluent for mercury and the Dischargers listed in Tables 4B and 5B of the Order shall monitor their individual treatment plant effluent for PCBs as follows:

Table E-3. Effluent Monitoring

Parameter	Units	Sample Type [1]	Minimum Sampling Frequency [2]
Major Dischargers (see Tables 1A and 1B of the Order)			
Mercury, Total [3]	µg/L	C-24 or Grab [4]	1/Month
PCBs, Total (as Aroclors) [5]	µg/L	Grab	2/Year
PCBs (as congeners) [6]	µg/L	Grab	1/Quarter (for design flows [7] ≥ 50 MGD)
			2/Year (for design flows [7] 5.0 MGD ≤ Q < 50 MGD and Industrial Dischargers)
			1/Year (for design flows [7] 1.0 MGD ≤ Q < 5.0 MGD
Minor Dischargers (see Tables 1A and 1B of the Order)			
Mercury, Total [3],[8]	µg/L	C-24 or Grab [4]	1/Quarter
PCBs, Total (as Aroclors) [5]	µg/L	Grab	1/Year
PCBs (as congeners) [6]	µg/L	Grab	Once

Unit Abbreviations:

µg/L = micrograms per liter
MGD = million gallons per day
Q = flow

Sampling Types and Frequencies:

C-24 = 24-hour Composite
Grab = grab sample
1/Month = once per month

1/Quarter = once per quarter
2/Year = twice per year
1/Year = once per year
Once = once during the Order term

Footnotes:

[1] 24-hour composites may be made up of discrete grab samples collected over a 24-hour period, or may be collected using automatic compositing equipment. If using compositing equipment, the Discharger shall implement all feasible ultra clean techniques to reduce sample contamination (such as using ultra clean Teflon tubing).

[2] Intermittent or seasonal Dischargers shall collect samples during those months for which a discharge occurs.

[3] Dischargers shall use ultra-clean sampling (U.S. EPA Method 1669) and ultra-clean analytical methods (U.S. EPA Method 1631) for total mercury monitoring.

[4] If allowed in the Pretreatment and Biosolids Monitoring Requirements of the Dischargers' individual NPDES permits, grab samples may be collected coincident with composite samples collected for the analysis of other regulated parameters.

[5] Dischargers shall use U.S. EPA Method 608 for Aroclor monitoring. These data will be used to assess compliance with the limits in Tables 4B and 5B of the Order. Non-detected and/or estimated values shall be treated as zeros in the calculation of Total PCBs.

[6] PCBs congeners monitoring is for informational purposes. Dischargers shall use U.S. EPA Proposed Method 1668C and report the results for each of the 40 congeners that contribute to San Francisco Bay's impairment and congeners that co-elute with the 40 congeners (see Fact Sheet Table F-14). For congeners that co-elute with the 40 congeners, Dischargers shall report the sum of these co-eluting congeners. A summation for total PCBs is not required.

[7] The design flows for each facility are included in Fact Sheet Tables F-1A and F-1B.

[8] For Sanitary District No. 5 of Marin County (Paradise Cove) and Crockett Community Services District (Port Costa), the minimum monitoring frequency for total mercury shall be annually.

IV. PCBS CONGENERS SAMPLING REQUIREMENTS (U.S. EPA METHOD 1668C)

A. Sample Collection

Dischargers shall collect samples as 1-liter (L) grab samples in appropriate pre-cleaned amber glass bottles following applicable clean sampling techniques from U.S. EPA Method 1669 (U.S. EPA, 1996). The following procedures shall be used to reduce the likelihood of sample contamination:

- Wear clean, power-free gloves
- Minimize the time the container is open
- Avoid setting the bottle lid down
- Avoid rainwater from dripping into the bottle
- Avoid touching the inside of the bottle or lid

Dischargers shall keep bottles dust-free prior to sample collection. At a minimum, Dischargers shall collect three 1-L grab samples at each monitoring location. One of the grab samples shall be sent to the analytical laboratory and two shall be refrigerated and retained onsite at the facility until the analysis is completed and the data are accepted for reporting to the Regional Water Board. In the event of a quality-control (QC) failure or loss of the first grab sample, Dischargers shall send an extra sample retained onsite to the laboratory to be analyzed and reported.

B. Sample Handling

If residual chlorine is present, Dischargers shall add 80 mg of sodium thiosulfate to each 1-L sample. Samples shall be kept in the dark at less than or equal to 6ºC from the time of collection until receipt at the laboratory. Sample bottles, shipping instructions, chain of custody templates, and billing information shall be provided by the analytical laboratory. If the sample will be

frozen, the Discharger shall allow room for expansion. U.S. EPA Method 1668C allows samples to be held for up to one year prior to extraction if stored in the dark at less than or equal to 6ºC.

C. Analytical Laboratories

All samples shall be analyzed using proposed U.S. EPA Method 1668C (April 2010) to provide consistent concentration information for the 40 PCB congeners and their co-elutions. Any laboratory analyzing and reporting PCBs congeners data shall demonstrate that laboratory background levels do not adversely affect the analytical results by statistically determining and documenting that laboratory background levels found in laboratory method blanks are acceptable. To achieve this, for each congener, the value of two standard deviations above the mean in a minimum of 10 blanks shall be at or below 75 percent of the corresponding method-specified Minimum Level (ML). The sample-specific detection limit (SSDL) of the corresponding congener shall be used as a numerical value in the following equation when the congener is not detected (ND) as specified by the method.

$$MEAN_{MB,\,10} + (2 \times SD_{MB,\,10}) < 0.75 \times ML$$

where:

$MEAN_{MB,\,10}$ = The mean of 10 or more method blanks
$SD_{MB,\,10}$ = Standard deviation of 10 or more method blanks
ML = Corresponding ML for the congener

D. Quality Assurance and Quality Control

Quality assurance and quality control (QA/QC) samples are required in conjunction with samples to verify data quality. With each batch of 20 or fewer samples, the laboratory shall analyze method-required QA/QC samples of method blanks and spike blanks. Matrix spikes may be analyzed based on sample availability.

Method-required batch controls are as follows:

- Method blank – for batch contamination monitoring. If any of the 40 congeners or co-elutes of interest are present in the method blank at greater than 20 pg/L, the batch is invalidated.

- Spike blank – for sample preparation recovery assessment.

- Mid-calibration range standards performed at the start and every 12 hours of instrument calibration thereafter – as calibration verification. Calibration verification shall also be performed at the end of the analysis.

V. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

The Dischargers shall comply with all Standard Provisions (Attachments D and G in the Dischargers' individual NPDES permits) related to monitoring, reporting, and recordkeeping.

B. Individual Reporting in Self-Monitoring Reports (SMRs)

1. **SMR Format.** Dischargers shall electronically submit SMRs using the State Water Board's California Integrated Water Quality System (CIWQS) website (http://www.waterboards.ca.gov/water_issues/programs/ciwqs). The CIWQS website will provide additional information for SMR submittal in the event of a planned service interruption for electronic submittal.

2. **Mercury and PCBs Data**

   a. **Routine SMRs.** Dischargers shall submit mercury and PCBs data collected to comply with this Order in the routine monthly or quarterly SMRs required in Dischargers' individual NPDES permits. This includes data for mercury, total PCBs as Aroclors (using U.S. EPA Method 608), and PCBs as congeners (using U.S. EPA Method 1668C). The PCBs congeners shall include the 40 that contribute to San Francisco Bay water quality impairment plus co-elutes (59 to 66 congeners in total, see Fact Sheet Tables F-9 and F-10), using U.S. EPA Method 1668C.

   For Industrial Dischargers claiming a discharge adjustment for recycled water use pursuant to Provision VI.C.5 of the Order, the amount of adjustment claimed for that month shall be reported monthly to the Municipal Discharger that supplied the recycled water. The reporting from the Industrial Discharger to the Municipal Discharger shall be completed no later than 15 days following the end of the calendar month. The Municipal and Industrial Dischargers shall then include this information in their respective monthly (or quarterly) and annual SMRs.

   Each SMR shall include all new mercury or PCBs monitoring results obtained since the last SMR was submitted. If a Discharger monitors mercury or PCBs more frequently than required by this Order, the Discharger shall include the results of such monitoring in the calculations and reporting for the SMR.

   b. **Annual SMR.** Annual SMRs shall be due February 1 each year, covering the previous calendar year. The annual SMR shall contain a summary of all mercury data. This summary shall include, at a minimum, mercury concentrations for each sample, the corresponding flow, and the annual mercury loading.

3. **Specifications for Submitting SMRs to CIWQS.** Dischargers shall submit analytical mercury, total PCBs as Aroclors (using U.S. EPA Method 608), and PCBs as congeners (using U.S. EPA Method 1668C) results to CIWQS in electronic reporting format by EDF/CDF upload or through manual entry.

   When electronic submittal of data is required and CIWQS does not provide for entry into a tabular format, the Discharger shall electronically submit the data in a tabular format as an attachment. Dischargers shall arrange all reported data in a tabular format and summarize the data to clearly illustrate whether their facility is operating in compliance with the effluent limitations.

4. **Monitoring Periods.** Monitoring periods for all required monitoring shall be as set forth below unless otherwise specified:

Table E-4. Monitoring Periods

Sampling Frequency	Monitoring Period Begins On…	Monitoring Period
1/Month	Order effective date	First day of calendar month through last day of calendar month
1/Quarter	Closest January 1, April 1, July 1, October 1 before or after Order effective date [1]	January 1 through March 31 April 1 through June 30 July 1 through September 30 October 1 through December 31
2/Year	Closest January 1 or July 1 before or after Order effective date [1]	January 1 through June 30 July 1 through December 31
1/Year	Closest January 1 before or after Order effective date [1]	January 1 through December 31
Once	Order effective date	Once during Order term such that result is included with application for permit reissuance

Footnote:

[1] Monitoring performed during the previous order term may be used to satisfy monitoring required by this Order.

5. **RL and MDL Reporting.** Dischargers shall report with each sample result the Reporting Level (RL) and Method Detection Limit (MDL) as determined by the procedure in 40 C.F.R. part 136. Dischargers shall report the results of analytical determinations for the presence of chemical constituents in a sample using the following reporting protocols:

   a. Sample results greater than or equal to the RL shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).

   b. Sample results less than the RL, but greater than or equal to the laboratory's MDL, shall be reported as "Detected, but Not Quantified," or DNQ. The estimated chemical concentration of the sample shall also be reported.

   For purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ. The laboratory may, if such information is available, include numerical estimates of the data quality for the reported result. Numerical estimates of data quality may be percent accuracy (+/- a percentage of the reported value), numerical ranges (low to high), or any other means the laboratory considers appropriate.

   c. Sample results less than the laboratory's MDL shall be reported as "Not Detected", or ND.

6. **PCBs Congeners Reporting.** General requirements for reporting U.S. EPA Method 1668C data are as follows:

   a. Minimum Levels. The ML for each congener shall be published Method MLs (Table 2 of EPA1668C). The laboratory analyzing the samples shall have on file data demonstrating a lower calibration level that is equal to or less than the published Method ML. Laboratories may revise the lower calibration level based on final published values if and when U.S. EPA Method 1668C is fully approved or promulgated.

b. Method Detection Limits. The MDLs reported by the laboratory shall meet the criteria set in U.S. EPA Method 1668C. The laboratory shall demonstrate capability by achieving MDLs below method-specified MDLs. The MDL is based on analysis of low-level replicates of clean matrices (e.g., deionized water). SSDLs for each congener shall be reported when there is a ND result. The SSDL is calculated by using the instrument processing method based on the noise level in the vicinity of the largest peak in sample extracts containing the real matrix.

c. Co-elution. Congeners in a co-elution shall be reported as a combination of the congeners, with the lowest numerically designated congener reported first and separated by a slash (/) from numerically higher designated congeners.

For example, if PCB congeners 020, 021, and 033 are co-eluted, the Discharger shall report the co-elution as PCB 020/021/033.

d. **Qualifiers.** Qualifiers allowed in reporting U.S. EPA 1668C data are as follows:

Table E-5. U.S. EPA Method 1668C Qualifiers in CIWQS

Qualifiers	CIWQS Field	Qualifier Description
ND	Qualifier	The analyte was not detected in the sample at the SSDL.
DNQ	Qualifier	The reported result is an estimate. The concentration is greater than the SSDL but less than the method-specified ML.
M	QA Code	Estimated maximum possible concentration.
D	QA Code	Result obtained from the analysis of a diluted sample.
B	QA Code	Congener is present in the method blank.

e. Method Blank Correction. Results shall be reported without method blank correction.

f. Units. Concentrations shall be reported in picograms per liter (pg/L).

7. Transmittal Letter. Each Discharger shall attach a transmittal letter to its SMR. The transmittal letter shall clearly identify violations of this Order and any trigger exceedances. The Discharger shall also describe any requirement violated or trigger exceeded, discuss corrective actions taken or planned, and propose a time schedule for the corrective actions.

C. Discharge Monitoring Reports (DMRs)

DMRs are U.S. EPA reporting requirements. Dischargers shall electronically certify and submit DMRs together with SMRs using the Electronic Self-Monitoring Reports module eSMR 2.5 or the latest upgraded version. Electronic DMR submittal shall be in addition to electronic SMR submittal. Information about electronic DMR submittal is available at the DMR website at http://www.waterboards.ca.gov/water_issues/programs/discharge_monitoring.

ATTACHMENT F - FACT SHEET

Contents

Tables

ATTACHMENT F – FACT SHEET

This Fact Sheet includes the legal requirements and technical rationale that serve as the basis for the requirements of this Order. As described in section II.B of the Order, the Regional Water Board incorporates this Fact Sheet as findings supporting the issuance of the Order.

I. PERMIT INFORMATION

The following table summarizes administrative information related to the Dischargers' facilities:

Table F-1A. Municipal Facility Information

Discharger	Facility Contact, Title, and Phone	Mailing Address	Effluent Description	Facility Design Flow (MGD)
American Canyon, City of	Stacey Ambrose, Environmental Services Manager (707) 647-4542	151 Mezzetta Court American Canyon, CA 94503 Napa County	Advanced Secondary	2.5
Benicia, City of	Jeff Gregory, Wastewater Treatment Plant Superintendent (707) 746-4790	614 East Fifth Street Benicia, CA 94510 Solano County	Secondary	4.5
Burlingame, City of	Manuel Molina, Project Manager (650) 342-3727	501 Primrose Burlingame, CA 94010 San Mateo County	Secondary	5.5
Calistoga, City of	Mike Kirn Public Works Director (707) 942-2828	414 Washington Street Calistoga, CA 94515 Napa County	Secondary	0.84
Central Contra Costa Sanitary District	Ann K. Sasaki Deputy General Manager (925) 228-9500	5019 Imhoff Place Martinez, CA 94553 Contra Costa County	Secondary	53.8
Central Marin Sanitation Agency	Jason Dow, General Manager (415) 459-1455	1301 Andersen Drive San Rafael, CA 94901 Marin County	Secondary	10
Crockett Community Services District, Port Costa Sanitary Department	James Barnhill, Sanitary Department Manager (510) 787-2992	P.O. Box 578 Crockett, CA 94525 Contra Costa County	Secondary	0.033
Delta Diablo Sanitation District	Gary W. Darling, General Manager (925) 756-1920	2500 Pittsburg-Antioch Highway Antioch, CA 94509 Contra Costa County	Secondary	19.5
East Bay Dischargers Authority	Michael S. Connor, General Manager (510) 278-5910	2651 Grant Avenue San Lorenzo, CA 94580 Alameda County	Secondary	107.8
City of Hayward				
City of San Leandro				
Oro Loma and Castro Valley Sanitary Districts				
Union Sanitary District				
Livermore-Amador Valley Water Management Agency				
Dublin San Ramon Services District				
City of Livermore				

Discharger	Facility Contact, Title, and Phone	Mailing Address	Effluent Description	Facility Design Flow (MGD)
East Bay Municipal Utility District	Chris Dembiczak, Senior Environmental Health & Safety Specialist (510) 287-0509	P.O. Box 24055 Oakland, CA 94623-1055 Alameda County	Secondary	120
Fairfield-Suisun Sewer District	Gregory G. Baatrup, General Manager (707) 428-9162	1010 Chadbourne Road Fairfield, CA 94534 Solano County	Advanced Secondary	17.5
Las Gallinas Valley Sanitary District	Mark Williams, District Manager (415) 472-1734	300 Smith Ranch Road San Rafael, CA 94903 Marin County	Secondary	2.92
Marin County (Paradise Cove), Sanitary District No. 5 of	Tony Rubio Chief Plant Operator (415) 435-1501	P.O. Box 227 Tiburon, CA 94920 Marin County	Secondary	0.04
Marin County (Tiburon), Sanitary District No. 5 of	Tony Rubio Chief Plant Operator (415) 435-1501	2001 Paradise Drive Tiburon, CA 94920 Marin County	Secondary	0.98
Millbrae, City of	Daniel Mount, Superintendent (650) 259-2388	621 Magnolia Avenue Millbrae, CA 94030 San Mateo County	Secondary	3.0
Mt. View Sanitary District	Neal Allen, District Manager (925) 228-5635 ext. 32	P. O. Box 2757 Martinez, CA 94553 Contra Costa County	Advanced Secondary	3.2
Napa Sanitation District	Tim Healy, General Manager (707) 258-6000	P.O. Box 2480 Napa, CA 94558 Napa County	Secondary	15.4
Novato Sanitary District	Sandeep Karkal, Manager-Engineer (415-892-1694	500 Davidson Street Novato, CA 94945 Marin County	Secondary	7.0
Palo Alto, City of	James Allen, Plant Manager (650) 329-2243	2501 Embarcadero Way, Palo Alto, CA 94303 Santa Clara County	Advanced Secondary	39
Petaluma, City of	Matthew Pierce, Operations Supervisor (707) 776-3777	202 N. McDowell Blvd. Petaluma, CA 94954 Sonoma County	Secondary	6.7
Pinole, City of	Ron Tobey, Plant Manager (510) 724-8963	2131 Pear Street, Pinole, CA 94564 Contra Costa County	Secondary	4.06
Rodeo Sanitary District	Steven S. Beall, District Manager (510) 799-2970	800 San Pablo Avenue Rodeo, CA 94572 Contra Costa County	Secondary	1.14
Saint Helena, City of	Steven Palmer, Public Works Director (707) 967-2792	1480 Main Street St. Helena, CA 94574 Napa County	Secondary	0.5
San Francisco (San Francisco International Airport), City and County of	Peter Acton, Director of Facilities (650) 821-5400	P.O. Box 8097 San Francisco, CA 94128 San Mateo County	Secondary	2.2
San Francisco (Southeast Plant), City and County of	Mark A. Harris, Operations Superintendent (415) 920-4923	1155 Market St., 11th Floor San Francisco, CA 94103 San Francisco County	Secondary	85.4

Discharger	Facility Contact, Title, and Phone	Mailing Address	Effluent Description	Facility Design Flow (MGD)
San Jose and Santa Clara, Cities of	James Ervin, Environmental Compliance Officer (408) 945-5124	700 Los Esteros Road San Jose, CA 95134 Santa Clara County	Advanced Secondary	167
San Mateo, City of	Jan Guy, Chief Plant Operator (650) 522-7386	330 West 20th Avenue San Mateo, CA 94403	Secondary	15.7
Sausalito-Marin City Sanitary District	Omar Arias-Montez, General Manager (415) 331-4716	1 East Road Sausalito, CA 94965 Marin County	Secondary	1.8
Sewerage Agency of Southern Marin	Mark Grushayev, General Manager (415) 384-4825	26 Corte Madera Ave. Mill Valley, CA 94941 Marin County	Secondary	3.6
Silicon Valley Clean Water	Daniel Child, General Manager (650) 591-7121	1400 Radio Road Redwood City, CA 94065 San Mateo County	Secondary	29
Sonoma Valley County Sanitation District	Pam Jeane, Assistant General Manager (707) 521-1864	Sonoma County Water Agency 404 Aviation Blvd. Santa Rosa, CA 95403	Secondary	3.0
South San Francisco and San Bruno, Cities of	Brian Schumacker, Plant Superintendent (650) 877-8555	195 Belle Air Road South San Francisco, CA 94080 San Mateo County	Secondary	13
Sunnyvale, City of	Bhavani Yerrapotu WPCP Division Manager (408) 730-7268	Sunnyvale Water Pollution Control Plant P.O. Box 3707 Sunnyvale, CA 94088-3707	Advanced Secondary	29.5
U.S. Department of Navy (Treasure Island)	Patricia A. McFadden Base Operations Manager San Francisco Bay Area (415) 743-4720	1 Avenue of the Palms, Suite 161 San Francisco, CA 94130 San Francisco County	Secondary	2.0
Vallejo Flood and Wastewater District	Melissa Morton District Manager (707) 644-8949	450 Ryder Street Vallejo, CA 94590 Solano County	Secondary	15.5
West County Agency; West County Wastewater District; City of Richmond ; and Richmond Municipal Sewer District No. 1	Brian E. Hill, Water Quality Manager 510-237-6693	2910 Hilltop Drive Richmond, CA 94806 Contra Costa County	Secondary	28.5
Yountville, Town of	Donald Moore Wastewater System Supervisor (707) 944-2988	6550 Yount Street Yountville, CA 94599 Napa County	Secondary	0.55

Table F-1B. Industrial Facility Information

Discharger	Facility Contact, Title, and Phone	Mailing Address	Type of Facility	Facility Design Flow (MGD)
Non-Petroleum Refineries				
C&H Sugar Company, Inc., and Crockett Community Services District, Crockett Sanitary Department	C&H Sugar Company Tanya Akkerman, Environmental Compliance Manager (510) 787-4352 Crockett Sanitary Dept. Dale McDonald, General Manager (510) 787-2992	C&H Sugar Company 830 Loring Avenue Crockett, CA 94525 Contra Costa County Crockett Sanitary Dept. P.O. Box 578 Crockett, CA 94525 Contra Costa County	Sugar Cane Crystalline Industry	1.8
Crockett Cogeneration, LP	Christopher Sargent, Environmental Coordinator (510) 787-4101	550 Loring Avenue Crockett, CA 94525-1232 Contra Costa County	Industrial – Electrical Generation, SIC Code 4931	0.5
Eco Services Operations LLC	Anthony Koo, Senior Environmental Engineer (925) 313-8221	100 Mococo Road Martinez, CA 94553 Contra Costa County	Industrial – Chemical and Allied Products, SIC Code 2891	0.8
GenOn Delta, LLC	Lawrence J. Penn, Plant Operator (925) 427-3583	P.O. Box 192 Pittsburg, CA 94565 Contra Costa County	Electric Power generation	2.2
USS-Posco Industries	Freddy Ripoli, Environmental Health & Safety Group Manager (925) 439-6316	900 Loveridge Road Pittsburg, CA 94565 Contra Costa County	Industrial - SIC Code 3312	28
Petroleum Refineries				
Chevron Products Company	Kory Judd, General Manager (510) 242-4400	841 Chevron Way Richmond, CA 94801 Contra Costa County	Industrial - Petroleum Refining	25
Phillips 66	Donald R. Landeck, Environmental Engineer (510) 245-4618	1380 San Pablo Avenue Rodeo, CA 94572-1354 Contra Costa County	Industrial – Petroleum Refining	10
Shell Oil Products US and Equilon Enterprises LLC	Thomas Rizzo, General Manager (925) 313-3000	3485 Pacheco Blvd Martinez CA 94553 Contra Costa County	Industrial – Petroleum Refining	8.2
Tesoro Refining & Marketing Co.	Peter Carroll, Environmental Engineer (925) 335-3497	150 Solano Way Martinez, CA 94553 Contra Costa County	Industrial - Petroleum Refining	10.4
Valero Refining Company	Kimberly Ronan, Environmental Engineer (707) 745-7990	3400 East Second Street Benicia, CA 94510-1005 Solano County	Industrial - Petroleum Refining	3.7

Table F-2A. Additional Municipal Facility Information

Discharger	Authorized Person to Sign and Submit Reports	Billing Address	Pretreatment Program	Receiving Water Type
American Canyon, City of	Stacey Ambrose, Environmental Services Manager (707) 647-4542	151 Mezzetta Court American Canyon, CA 94503 Napa County	Yes	Estuarine
Benicia, City of	Jeff Gregory, Wastewater Treatment Plant Superintendent (707) 746-4790	614 East Fifth Street Benicia, CA 94510 Solano County	Yes	Estuarine
Burlingame, City of	Manuel Molina, Project Manager (650) 342-3727	501 Primrose Burlingame, CA 94010 San Mateo County	Yes	Marine
Calistoga, City of	Mike Kirn Public Works Director (707) 942-2828	414 Washington Street Calistoga, CA 94515 Napa County	No	Freshwater
Central Contra Costa Sanitary District	Ann K. Sasaki Deputy General Manager (925) 228-9500	5019 Imhoff Place Martinez, CA 94553 Contra Costa County	Yes	Estuarine
Central Marin Sanitation Agency	Jason Dow, General Manager (415) 459-1455	1301 Andersen Drive San Rafael, CA 94901 Marin County	Yes	Estuarine
Crockett Community Services District, Port Costa Sanitary Department	James Barnhill, Sanitary Department Manager (510) 787-2992	P.O. Box 578 Crockett, CA 94525 Contra Costa County	No	Estuarine
Delta Diablo Sanitation District	Gary W. Darling, General Manager (925) 756-1920	2500 Pittsburg-Antioch Highway Antioch, CA 94509 Contra Costa County	Yes	Estuarine
East Bay Dischargers Authority	Michael S. Connor, General Manager (510) 278-5910	2651 Grant Avenue San Lorenzo, CA 94580 Alameda County	Yes	Estuarine
City of Hayward				
City of San Leandro				
Oro Loma and Castro Valley Sanitary Districts				
Union Sanitary District				
Livermore-Amador Valley Water Management Agency				
Dublin San Ramon Services District				
City of Livermore				
East Bay Municipal Utility District	Eileen White, Director of Wastewater (510) 287-1149	P.O. Box 24055, MS#59 Oakland, CA 94623-1055 Alameda County	Yes	Marine
Fairfield-Suisun Sewer District	Brian Hawley, Operations Manager (707) 428-9118	1010 Chadbourne Road Fairfield, CA 94534 Solano County	Yes	Estuarine
Las Gallinas Valley Sanitary District	Mark Williams, District Manager (415) 472-1734	300 Smith Ranch Road San Rafael, CA 94903 Marin County	No	Estuarine
Marin County (Paradise Cove), Sanitary District No. 5 of	Tony Rubio Chief Plant Operator (415) 435-1501	P.O. Box 227 Tiburon, CA 94920 Marin County	No	Marine

Discharger	Authorized Person to Sign and Submit Reports	Billing Address	Pretreatment Program	Receiving Water Type
Marin County (Tiburon), Sanitary District No. 5 of	Tony Rubio Chief Plant Operator (415) 435-1501	2001 Paradise Drive Tiburon, CA 94920 Marin County	No	Marine
Millbrae, City of	Daniel Mount, Superintendent (650) 259-2388	621 Magnolia Avenue Millbrae, CA 94030 San Mateo County	No	Marine
Mt. View Sanitary District	Neal Allen, District Manager (925) 228-5635 ext. 32	P. O. Box 2757 Martinez, CA 94553 Contra Costa County	No	Estuarine
Napa Sanitation District	Tim Healy, General Manager (707) 258-6000	P.O. Box 2480 Napa, CA 94558 Napa County	Yes	Estuarine
Novato Sanitary District	Sandeep Karkal, Manager-Engineer (415-892-1694	500 Davidson Street Novato, CA 94945 Marin County	Yes	Estuarine
Palo Alto, City of	James Allen, Plant Manager (650) 329-2243	2501 Embarcadero Way, Palo Alto, CA 94303 Santa Clara County	Yes	Estuarine
Petaluma, City of	Matthew Pierce, Operations Supervisor (707) 776-3777	202 N. McDowell Blvd. Petaluma, CA 94954 Sonoma County	Yes	Estuarine
Pinole, City of	Ron Tobey, Plant Manager (510) 724-8963	2131 Pear Street, Pinole, CA 94564 Contra Costa County	No	Marine
Rodeo Sanitary District	Steven S. Beall, District Manager (510) 799-2970	800 San Pablo Avenue Rodeo, CA 94572 Contra Costa County	No	Estuarine
Saint Helena, City of	Steven Palmer, Public Works Director (707) 967-2792	1480 Main Street St. Helena, CA 94574 Napa County	No	Freshwater
San Francisco (San Francisco International Airport), City and County of	Peter Acton, Director of Facilities (650) 821-5400	P.O. Box 8097 San Francisco, CA 94128 San Mateo County	Yes	Marine
San Francisco (Southeast Plant), City and County of	Mark A. Harris, Operations Superintendent (415) 920-4923	1155 Market St., 11th Floor San Francisco, CA 94103 San Francisco County	Yes	Marine
San Jose and Santa Clara, Cities of	Kerry Romanow, Director of Environmental Services (408) 535-8550	700 Los Esteros Road San Jose, CA 95134 Santa Clara County	Yes	Estuarine
San Mateo, City of	Jan Guy, Chief Plant Operator (650) 522-7386	330 West 20th Avenue San Mateo, CA 94403	Yes	Marine
Sausalito-Marin City Sanitary District	Omar Arias-Montez, General Manager (415) 331-4716	1 East Road Sausalito, CA 94965 Marin County	No	Marine
Sewerage Agency of Southern Marin	Mark Grushayev, General Manager (415) 384-4825	26 Corte Madera Ave. Mill Valley, CA 94941 Marin County	No	Marine

Discharger	Authorized Person to Sign and Submit Reports	Billing Address	Pretreatment Program	Receiving Water Type
Silicon Valley Clean Water	Daniel Child, General Manager (650) 591-7121	1400 Radio Road Redwood City, CA 94065 San Mateo County	Yes	Marine
Sonoma Valley County Sanitation District	Ryan Kirchner, Operations Coordinator (707) 495-6160	Sonoma County Water Agency 404 Aviation Blvd. Santa Rosa, CA 95403	No	Estuarine
South San Francisco and San Bruno, Cities of	Brian Schumacker, Plant Superintendent (650) 877-8555	195 Belle Air Road South San Francisco, CA 94080 San Mateo County	Yes	Marine
Sunnyvale, City of	Bhavani Yerrapotu WPCP Division Manager (408) 730-7268	Sunnyvale Water Pollution Control Plant P.O. Box 3707 Sunnyvale, CA 94088-3707	Yes	Estuarine
U.S. Department of Navy (Treasure Island)	Patricia A. McFadden Base Operations Manager San Francisco Bay Area (415) 743-4720	1 Avenue of the Palms, Suite 161 San Francisco, CA 94130 San Francisco County	No	Marine
Vallejo Flood and Wastewater District	Melissa Morton District Manager (707) 644-8949	450 Ryder Street Vallejo, CA 94590 Solano County	Yes	Estuarine
West County Agency; West County Wastewater District; City of Richmond ; and Richmond Municipal Sewer District No. 1	Brian E. Hill, Water Quality Manager 510-237-6693	2910 Hilltop Drive Richmond, CA 94806 Contra Costa County	Yes	Estuarine
Yountville, Town of	Donald Moore Wastewater System Supervisor (707) 944-2988	6550 Yount Street Yountville, CA 94599 Napa County	No	Freshwater

Table F-2B. Additional Industrial Facility Information

Discharger	Authorized Person to Sign and Submit Reports	Billing Address	Pretreatment Program	Receiving Water Type
Non-Petroleum Refineries				
C&H Sugar Company, Inc., and Crockett Community Services District, Crockett Sanitary Department	C&H Sugar Company Tanya Akkerman, Environmental Compliance Manager (510) 787-4352 Crockett Sanitary Dept. Dale McDonald, General Manager (510) 787-2992	C&H Sugar Company 830 Loring Avenue Crockett, CA 94525 Contra Costa County Crockett Sanitary Dept. P.O. Box 578 Crockett, CA 94525 Contra Costa County	No	Estuarine
Crockett Cogeneration, LP	Dan Consie, Vice President, Western Region Consolidated Asset Management Services (CAMS) (661) 387-7816	550 Loring Avenue Crockett, CA 94525-1232 Contra Costa County	No	Estuarine
Eco Services Operations LLC	Anthony Koo, Senior Environmental Engineer (925) 313-8221	100 Mococo Road Martinez, CA 94553 Contra Costa County	No	Estuarine
GenOn Delta, LLC	Lawrence J. Penn, Plant Operator (925) 427-3583	P.O. Box 192 Pittsburg, CA 94565 Contra Costa County	No	Estuarine
USS-Posco Industries	Freddy Ripoli, Environmental Health & Safety Group Manager (925) 439-6316	900 Loveridge Road Pittsburg, CA 94565 Contra Costa County	No	Estuarine
Petroleum Refineries				
Chevron Products Company	Kory Judd, General Manager (510) 242-4400	841 Chevron Way Richmond, CA 94801 Contra Costa County	No	Marine
Phillips 66	Mark E. Evans, Refinery Manager (510) 245-4415	1380 San Pablo Avenue Rodeo, CA 94572-1354 Contra Costa County	No	Estuarine
Shell Oil Products US and Equilon Enterprises LLC	Gordon M. Johnson, Manager of Environmental Affairs (925) 313-3705	3485 Pacheco Blvd Martinez CA 94553 Contra Costa County	No	Estuarine
Tesoro Refining & Marketing Co.	Matthew Buell, Environmental Manager (925) 370-3275	150 Solano Way Martinez, CA 94553 Contra Costa County	No	Estuarine
Valero Refining Company	Donald W. Cuffel, Director of Health, Safety, Environmental, and Governmental Affairs (707) 745-7545	3400 East Second Street Benicia, CA 94510-1005 Solano County	No	Estuarine

A. Municipal Dischargers listed in Table 1A and Industrial Dischargers listed in Table 1B (collectively, Dischargers) own and operate their respective wastewater treatment plants and collection systems (collectively, Facilities). Municipal Dischargers provide secondary or advanced secondary treatment of wastewater collected from their service areas, and Industrial Dischargers provide various levels of wastewater treatment depending on their activities. After treatment, both Municipal and Industrial Dischargers discharge to San Francisco Bay and its tributaries. Details of the Municipal and Industrial wastewater treatment processes and discharges are described in the individual NPDES permits listed in Attachment B of this Order.

For the purposes of this Order, references to "discharger" or "permittee" in applicable federal and State laws, regulations, plans, or policies are held to be equivalent to references to the Dischargers herein.

B. The Dischargers are regulated pursuant to NPDES Permit No. CA0038849. The Dischargers were previously subject to Order No. R2-2012-0096 (previous order). Order No. R2-2016-0008 amended Order No. R-2012-0096 to provide for an alternative monitoring program and remains in effect with this Order.

The Dischargers are authorized to discharge subject to waste discharge requirements (WDRs) in this Order at the discharge locations described in Tables 2A and 2B of this Order. Regulations at 40 C.F.R. section 122.46 limit the duration of NPDES permits to a fixed term not to exceed five years. Accordingly, Table 3 of this Order limits the effective period for the discharge authorization. Pursuant to California Code of Regulations, title 23, section 2235.4, the terms and conditions of an expired permit are automatically continued pending reissuance of the permit if the Dischargers comply with all requirements for continuation of expired permits. (40 C.F.R § 122.6(d).)

C. This Order continues to implement the wasteload allocations and implementation requirements of the San Francisco Bay Mercury TMDL (adopted August 9, 2006) and PCBs TMDL (adopted February 13, 2008).

II. FACILITY DESCRIPTION

A. Wastewater Treatment

1. **Locations and Service Areas**. The municipal wastewater treatment plants are located throughout the San Francisco Bay Region. The industrial wastewater treatment plants are located around San Pablo Bay, Carquinez Strait, and Suisun Bay.

2. **Wastewater Treatment.** Municipal wastewater treatment plants provide at least secondary treatment, which includes screening, skimming, settling, and biological treatment. Some plants also provide advanced secondary treatment, which typically removes additional solids, often with sand filtration. Removing additional solids removes additional pollutants, including mercury and PCBs that adhere to particles. Municipal wastewater treatment plants generally remove over 90 percent of the mercury and PCBs in their influent. While the removed mercury and PCBs are not directly discharged to water, some is returned to the environment through landfills, incinerators, or soil amendments. The primary sources of mercury in municipal wastewater are expected to be human waste and medical and dental

facilities. The primary source of PCBs in municipal wastewater is expected to be human waste.

Industrial Dischargers include petroleum refineries, chemical plants, and other large industrial facilities. Their mercury and PCBs loads depend on the types of activities in which they engage. The primary sources of mercury in industrial wastewater are expected to be human waste and industrial activities with materials containing mercury (e.g., refining crude oil). The primary sources of PCBs in industrial wastewater are expected to be human waste and wastewater generated from old industrial equipment that may contain PCBs.

B. Discharge Point and Receiving Waters

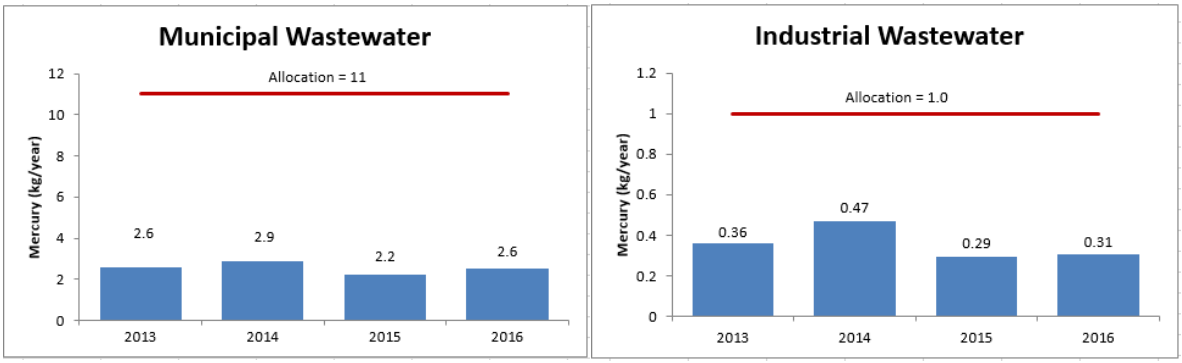
The municipal wastewater treatment plants discharge throughout San Francisco Bay, including Lower South San Francisco Bay, South San Francisco Bay, Central San Francisco Bay, San Pablo Bay, Carquinez Strait, Suisun Bay, and connected tributaries. Most Industrial wastewater treatment plants discharge to San Pablo Bay, Carquinez Strait, and Suisun Bay. Tables 2A and 2B of this Order provide the discharge locations for each facility. Attachment C shows a map of these discharge locations.

C. Previous Requirements

The effluent limitations from the previous order were the same as those in this Order.

D. Compliance Summary

1. **Mercury.** Mercury loads for Municipal and Industrial Dischargers have been well below mass allocations since the previous order became effective in 2013, as shown in the charts below.



   a. **Municipal Dischargers.** In 2015, the municipal load was 2.2 kg/year, the lowest load yet recorded. In 2016, the municipal load was 2.9 kg/year, which is comparable to the performance throughout the previous order term. The average municipal load of the previous order term was 75 percent below the mass allocation of 11 kg/year.

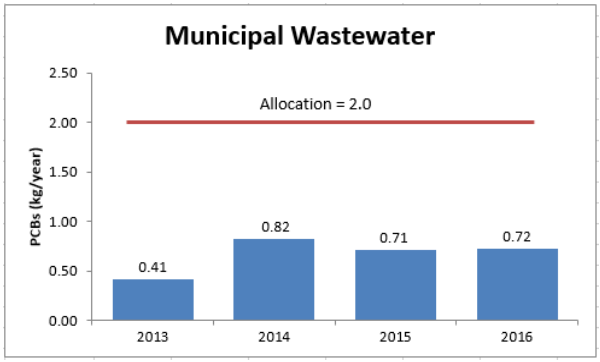
      During the previous order term, the most significant exceedance of mercury effluent limitations occurred from the U.S. Department of Navy Treasure Island Wastewater Treatment Plant, which violated its average weekly effluent limitation three times and its average monthly effluent limitation twice between January and February 2013. The

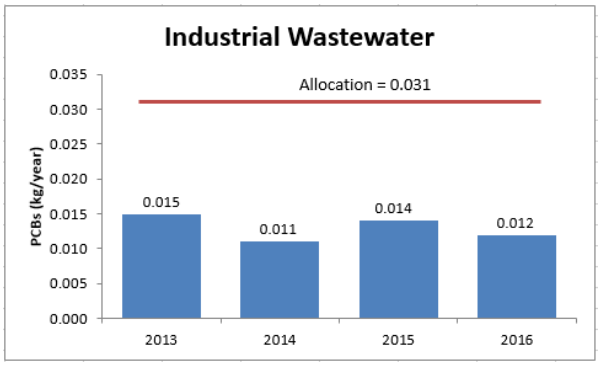
U.S. Department of Navy determined that mercury-contaminated sediment may have been present at its treatment plant and cleaned out sediment from the potential onsite sources (e.g., sumps, junction box). It has not exceeded its mercury limitations or triggers since March 2013.

b. Industrial Dischargers. In 2015, the industrial load was 0.29 kg/year, the lowest load in the previous order term. In 2016, the industrial load was 0.31 kg/year, which is comparable to the performance throughout the previous order term. The average industrial load of the previous order term was 59 percent below the mass allocation of 1.0 kg/year.

During the previous order term, the most significant exceedance of mercury effluent limitations occurred from the Shell Martinez Refinery, which violated its maximum daily and average monthly effluent limitations twice between January and February 2017. Shell Martinez Refinery reported the high mercury concentrations were caused by heavy rains that resulted in poor solids removal. Shell Martinez Refinery reseeded its biotreater with healthier material, increased the frequency of carbon change-outs of granular activated carbon units, and increased the rate of solids removal at one of its treatment ponds.

2. PCBs. PCBs loads for Municipal and Industrial Dischargers have been well below mass allocations since the previous order became effective in 2013, as shown in the charts below.





a. Municipal Dischargers. In 2016, the municipal PCBs load was 0.72 kg/year, which is comparable to the performance throughout the previous order term. The increase in PCBs between 2013 and the remainder of the previous order term could be due to timing of the quarterly samples, analytical variability, or mobilization of solids with legacy PCBs from the collection systems during cleaning. Three of the largest municipal dischargers accounted for about 70 percent of the increase between 2013 and 2014. The average municipal load of the previous order term was 64 percent below the mass allocation of 2.0 kg/year. All Municipal Dischargers complied with their PCBs effluent limitations during the previous order term.

b. Industrial Dischargers. In 2016, the industrial PCBs load was 0.012 kg/year, which is comparable to the performance throughout the previous order term. The average industrial load of the previous order term was 58 percent below the mass allocation of 0.031 kg/year. All Industrial Dischargers complied with their PCBs effluent limitations during the previous order term.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

A. Legal Authorities

This Order serves as WDRs pursuant to California Water Code article 4, chapter 4, division 7 (commencing with § 13260) for discharges to waters of the State. This Order is also issued pursuant to Clean Water Act (CWA) section 402 and implementing regulations adopted by U.S. EPA, and Water Code chapter 5.5, division 7 (commencing with § 13370). It shall serve as an NPDES permit for point sources discharges of mercury and PCBs from the Discharger facilities listed in Attachment B to surface waters.

B. California Environmental Quality Act

Under Water Code section 13389, this action to adopt an NPDES permit is exempt from the provisions of the California Environmental Quality Act (CEQA), Public Resources Code division 13, chapter 3 (commencing with § 21100).

C. State and Federal Regulations, Policies, and Plans

1. **Water Quality Control Plan.** The Regional Water Board adopted the *Water Quality Control Plan for the San Francisco Bay Basin* (Basin Plan), which designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. Requirements in this Order implement the Basin Plan. In addition, this Order implements State Water Board Resolution No. 88-63, which establishes State policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. Beneficial uses applicable to San Francisco Bay and its tributaries are as shown below:

Table F-3. Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Uses
001	San Francisco Bay and its tributaries [1]	Agricultural Supply (AGR) Cold Freshwater Habitat (COLD) Ocean, Commercial, and Sport Fishing (COMM) Estuarine Habitat (EST) Industrial Service Supply (IND) Marine Habitat (MAR) Fish Migration (MIGR) Municipal and Domestic Supply (MUN) Navigation (NAV) Industrial Process Supply (PROC) Preservation of Rare and Endangered Species (RARE) Water Contact Recreation (REC1) Non-Contact Water Recreation (REC2) Shellfish Harvesting (SHELL) Fish Spawning (SPWN) Warm Freshwater Habitat (WARM) Wildlife Habitat (WILD)

Footnote:

[1] Specific beneficial uses that apply to each Discharger are included in the individual NPDES permits listed in Attachment B of this Order.

The Regional Water Board adopted a Basin Plan Amendment on August 9, 2006, that established new water quality objectives for mercury and a San Francisco Bay Mercury TMDL to attain the new objectives in San Francisco Bay and contiguous bay segments. The Regional Water Board's Executive Officer made corrections on May 23, 2007, and the State Water Board approved the Basin Plan Amendment (as corrected) and the water quality objectives on July 17, 2007. The U.S. EPA approved the new water quality objectives on February 12, 2008.

The Regional Water Board also adopted a Basin Plan Amendment on February 13, 2008, that established a San Francisco Bay PCBs TMDL to attain water quality objectives for PCBs in San Francisco Bay and contiguous bay segments. The State Water Board approved the Basin Plan amendment on October 20, 2009, and U.S. EPA approved the amendment on March 29, 2010.

2. **Sediment Quality.** The State Water Board adopted the *Water Quality Control Plan for Enclosed Bays and Estuaries – Part 1, Sediment Quality* on September 16, 2008, and it became effective on August 25, 2009. This plan supersedes other narrative sediment quality objectives, and establishes new sediment quality objectives and related implementation provisions for specifically defined sediments in most bays and estuaries. This Order implements the sediment quality objectives of this plan.

3. **National Toxics Rule (NTR) and California Toxics Rule (CTR).** U.S. EPA adopted the NTR on December 22, 1992, and amended it on May 4, 1995, and November 9, 1999. About 40 criteria in the NTR apply in California. On May 18, 2000, U.S. EPA adopted the CTR. The CTR promulgated new toxics criteria for California and incorporated the previously adopted NTR criteria that applied in the State. U.S. EPA amended the CTR on February 13, 2001. These rules contain federal water quality criteria for priority pollutants, including mercury and PCBs.

4. **State Implementation Policy.** On March 2, 2000, the State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP). The SIP became effective on April 28, 2000, with respect to the priority pollutant criteria U.S. EPA promulgated for California through the NTR and the priority pollutant objectives the Regional Water Board established in the Basin Plan. The SIP became effective on May 18, 2000, with respect to the priority pollutant criteria U.S. EPA promulgated through the CTR. The State Water Board adopted amendments to the SIP on February 24, 2005, that became effective on July 13, 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives, including those mercury and PCBs. Requirements of this Order implement the SIP.

5. **Antidegradation Policy.** Federal regulations at 40 C.F.R. section 131.12 require that state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy through State Water Board Resolution No. 68-16, *Statement of Policy with Respect to Maintaining High Quality of*

Waters in California, which is deemed to incorporate the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings. The Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies. Permitted discharges must be consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and State Water Board Resolution No. 68-16. (See Fact Sheet section IV.D.2.)

6. **Anti-Backsliding Requirements.** CWA sections 402(o) and 303(d)(4) and 40 C.F.R. section 122.44(l) restrict backsliding in NPDES permits. These anti-backsliding provisions require that effluent limitations in a reissued permit be as stringent as those in the previous order, with some exceptions in which limitations may be relaxed. This permit complies with anti-backsliding requirements because the effluent limitations are at least as stringent as the previous order. (See Fact Sheet section IV.D.1.)

7. **Endangered Species Act Requirements.** This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code §§ 2050 to 2097) or the Federal Endangered Species Act (16 U.S.C.A. §§ 1531 to 1544). This Order requires compliance with effluent limits, receiving water limits, and other requirements to protect beneficial uses, including protecting rare, threatened, or endangered species. The Discharger is responsible for meeting all Endangered Species Act requirements.

D. Impaired Waters on CWA 303(d) List

In July 2015, U.S. EPA approved a revised list of impaired waters prepared pursuant to CWA section 303(d), which requires identification of specific water bodies where it is expected that water quality standards will not be met after implementation of technology-based effluent limitations on point sources. Where it has not done so already, the Regional Water Board plans to adopt TMDLs for pollutants on the 303(d) list. TMDLs establish wasteload allocations for point sources and load allocations for non-point sources, and are established to achieve the water quality standards for the impaired waters.

San Francisco Bay is listed as impaired by mercury and PCBs. On February 12, 2008, U.S. EPA approved a TMDL for mercury in San Francisco Bay. On March 29, 2010, U.S. EPA approved a TMDL for PCBs in San Francisco Bay. The Mercury and PCBs TMDLs apply to the discharges covered by this Order and are implemented through this Order.

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

The CWA requires point source dischargers to control the amount of conventional, non-conventional, and toxic pollutants discharged into waters of the United States. The control of pollutants discharged is established through effluent limitations and other requirements in NPDES permits. There are two principal bases for effluent limitations: 40 C.F.R. section 122.44(a) requires that permits include applicable technology-based limitations and standards; and 40 C.F.R. section 122.44(d) requires that permits include water quality-based effluent limitations to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of receiving waters. The individual NPDES permits listed in Attachment B of this Order contain the

applicable technology-based limitations for the discharges covered by this Order. No additional discharge prohibitions beyond those already specified in the Dischargers' individual NPDES permits are necessary to implement the San Francisco Bay Mercury and PCBs TMDLs.

A. Water Quality-Based Effluent Limitations (WQBELs)

1. Scope and Authority

CWA section 301(b) and 40 C.F.R. section 122.44(d) require that permits include limitations more stringent than federal technology-based requirements where necessary to achieve applicable water quality standards. WQBELs are included in this permit to implement the wasteload allocations established through the San Francisco Bay Mercury and PCBs TMDLs.

2. Beneficial Uses and Water Quality Criteria and Objectives

Fact Sheet section III.C.1, above, identifies the beneficial uses of San Francisco Bay and its tributaries. Water quality criteria and objectives to protect these beneficial uses are described below:

a. Mercury. Basin Plan Table 3-3B specifies two mercury water quality objectives that apply to all San Francisco Bay segments, including all marine and estuarine waters contiguous to San Francisco Bay:

i. Protection of Human Health. The mercury water quality objective for protection of human health from fish consumption is 0.2 milligrams (mg) mercury per kilogram (kg) fish tissue (average wet weight concentration measured in the muscle tissue of fish large enough to be consumed by humans).

ii. Protection of Aquatic Organisms and Wildlife. The mercury water quality objective for protection of aquatic organisms and wildlife is 0.3 mg mercury per kg fish (average wet weight concentration measured in whole fish 3 to 5 centimeters (cm) in length.

b. PCBs. Basin Plan section 7.2.3.1 includes a narrative water quality objective that states that controllable water quality factors shall not cause a detrimental increase in toxic substances found in bottom sediments or aquatic life. The PCBs TMDL and implementation plan are designed to resolve PCB impairment in all San Francisco Bay segments. For municipal and industrial wastewater discharges, this means limiting loads to 2.0 kg/year and 0.035 kg/year, respectively.

3. Need for WQBELs (Reasonable Potential Analysis)

The Regional Water Board is including WQBELs for mercury and PCBs in this Order that are consistent with the assumptions and requirements of the San Francisco Bay Mercury and PCBs TMDLs. Based on the water quality monitoring done prior to TMDL adoption, the TMDLs set the wasteload allocations for mercury and PCBs at levels necessary to attain water quality standards. As explained below, the WQBELs imposed through this Order are consistent with the assumptions underlying these TMDLs. Therefore, compliance with the effluent limitations will satisfy the TMDL requirements.

The Regional Water Board has developed WQBELs for mercury and PCBs pursuant to 40 C.F.R. section 122.44(d)(1)(vii), which does not require a reasonable potential analysis. Similarly, SIP section 1.3 recognizes that a reasonable potential analysis is unnecessary if a TMDL has been developed.

4. WQBEL Calculations

a. Mercury. This Order contains mass-based and concentration-based WQBELs:

i. Mass-based WQBELs. The mass-based WQBELs are based on the established aggregate wasteload allocations for Municipal Dischargers and Industrial Dischargers that comprise a portion of the San Francisco Bay Mercury TMDL. For the San Francisco Bay Mercury TMDL, loads are expressed in terms of annual mercury loads because the adverse effects of mercury occur through long-term bioaccumulation. The loads are intended to represent long-term averages and account for long-term variability, including seasonal variability.

Basin Plan Table 7.2.2-3 specifies the San Francisco Bay Mercury TMDL's aggregate mass emission limit and associated individual mass emission limits for Municipal Dischargers as shown below:

Table F-4. Mercury Mass Emission Allocations for Municipal Dischargers

Discharger	NPDES Permit No.	Average Annual Effluent Limit (kg/yr)
American Canyon, City of	CA0038768	0.095
Benicia, City of	CA0038091	0.088
Burlingame, City of	CA0037788	0.089
California Department of Parks and Recreation (Angel Island State Park)	-	0013
Calistoga, City of	CA0037966	0.016
Central Contra Costa Sanitary District	CA0037648	1.3
Central Marin Sanitation Agency	CA0038628	0.11
Crockett Community Services District, Port Costa Sanitary Dept.	CA0037885	0.00072
Delta Diablo Sanitation District	CA0038547	0.19
East Bay Dischargers Authority	CA0037869	2.2
Union S.D. Wet Weather Outfall	CA0038733	
Union S.D. Hayward Marsh	CA0038636	
Dublin San Ramon Services District	CA0037613	
City of Livermore	CA0038008	
LAVWMA Wet Weather Outfall	CA0038679	
East Bay Municipal Utility District	CA0037702	1.5
Fairfield-Suisun Sewer District	CA0038024	0.17
Las Gallinas Valley Sanitary District	CA0037851	0.10
Marin County (Paradise Cove), Sanitary District No. 5 of	CA0037427	0.00055
Marin County (Tiburon), Sanitary District No. 5 of	CA0037753	0.0099
Millbrae, City of	CA0037532	0.052
Mt. View Sanitary District	CA0037770	0.034
Napa Sanitation District	CA0037575	0.17
Novato Sanitary District	CA0037958	0.079

Discharger	NPDES Permit No.	Average Annual Effluent Limit (kg/yr)
Palo Alto, City of	CA0037834	0.31
Petaluma, City of	CA0037810	0.063
Pinole, City of	CA0037796	0.055
Rodeo Sanitary District	CA0037826	0.060
Saint Helena, City of	CA0038016	0.047
San Francisco (San Francisco International Airport), City and County of	CA0038318	0.032
San Francisco (Southeast Plant), City and County of	CA0037664	1.6
San Jose and Santa Clara, Cities of	CA0037842	0.8
San Mateo, City of	CA0037541	0.19
Sausalito-Marin City Sanitary District	CA0038067	0.078
Sewerage Agency of Southern Marin	CA0037711	0.076
Silicon Valley Clean Water	CA0038369	0.32
Sonoma Valley County Sanitary District	CA0037800	0.041
South San Francisco and San Bruno, Cities of	CA0038130	0.18
Sunnyvale, City of	CA0037621	0.12
U.S. Department of Navy, Treasure Island	CA0110116	0.026
Vallejo Flood and Wastewater District	CA0037699	0.34
West County Agency; West County Wastewater District; City of Richmond ; and Richmond Municipal Sewer District No. 1	CA0038539	0.23
Yountville, Town of	CA0038121	0.040
Total Aggregate Mass Emission Limit[1]	-	***11***

Unit Abbreviations:

kg/yr = kilograms per year

Footnote:

[1] Total differs slightly from the column sum due to rounding to the nearest kilogram.

Basin Plan Tables 7.2.2-4 and 7.2.2-5 specify the San Francisco Bay Mercury TMDL's final aggregate mass emission limit and associated individual mass emission limits for Industrial Dischargers as shown in Table F-5 below.

Table F-5. Mercury Mass Emission Allocations for Industrial Dischargers

Discharger	NPDES Permit No.	Average Annual Effluent Limit (kg/yr)
Non-Petroleum Refineries		
C&H Sugar and Crockett Community Services District, Crockett Sanitary Dept.	CA0005240	0.045
Crockett Cogeneration, LP, and Pacific Crockett Energy, Inc.	CA0029904	0.0047
Dow Chemical Company	-	0.041
General Chemical	-	0.21
GWF Power Systems, Site I	-	0.0016
GWF Power Systems, Site V	-	0.0025
Hanson Aggregates, Amador Street	CA0030139	0.000005

Hanson Aggregates, Tidewater Avenue, Oakland	CAA030147	0.000005
Pacific Gas and Electric, East Shell Pond	-	0.00063
Pacific Gas and Electric, Hunters Point Power Plant	-	0.020
Eco Services Operations LLC	CA0006165	0.011
GenOn Delta, LLC	CA0004880	0.0078
San Francisco (San Francisco International Airport Industrial WWTP), City and County of	-	0.051
Southern Energy Delta LLC (Potrero Power Plant)	-	0.0031
U.S. Department of Navy (Point Molate)	-	0.013
USS-Posco Industries	CA0005002	0.045
Total Aggregate Mass Emission Limit[1]	-	***0.4***
Petroleum Refineries		
Chevron Products Company	CA0005134	0.34
Phillips 66	CA0005053	0.13
Shell Oil Products US and Equilon Enterprises LLC	CA0005789	0.22
Tesoro Refining & Marketing Co.	CA0004961	0.11
Valero Refining Company	CA0005550	0.08
Total Aggregate Mass Emission Limit[1]	-	***0.9***

Unit Abbreviations:

kg/yr = kilograms per year

Footnote:

[1] Total differs slightly from the column sum due to rounding.

[2] Wasteload allocations for industrial wastewater discharges do not include mass from once-through cooling water. The Regional Water Board will apply intake credits to once-through cooling water as allowed by law.

The wasteload allocations are based on load estimates computed using available data on effluent mercury concentrations and effluent discharge volumes from 2000 through 2003. At the time of San Francisco Bay Mercury TMDL development, the combined mercury load for all Municipal Dischargers discharging to San Francisco Bay and its tributaries was estimated to be about 17 kg/yr. The combined load for all Industrial Dischargers was estimated to be about 1.3 kg/yr. Together, these wastewater discharges were estimated to account for a load of about 18.3 kg/yr, or about two percent of San Francisco Bay's total mercury load.

The San Francisco Bay Mercury TMDL granted Municipal Dischargers 20 years to ensure aggregate loads do not exceed a limit of 11 kg/yr. However, pursuant to 40 C.F.R. section 122.47, which requires compliance as soon as possible, the previous order imposed the limit of 11 kg/yr because municipal discharges had been well below this limit.

This Order does not contain requirements for California Department of Parks and Recreation (Angel Island State Park), Dow Chemical Company, General Chemical, GWF Sites I and V, Hanson Aggregates (Olin Jones Dredge Spoils Disposal Facility), Pacific Gas and Electric, Southern Energy Delta LLC, and the U.S. Department of

Navy (Point Molate) because these dischargers have ceased discharging from their facilities, and the Regional Water Board has rescinded their NPDES permits. To account for these rescissions, the previous order reduced the aggregate industrial limit from 1.3 to 1.0 kg/yr. This Order retains the reduced aggregate industrial limit.

This Order also does not contain requirements for the Hanson Aggregates Amador Street and Tidewater Avenue facilities covered under NPDES Permit No. CAG982001, which covers aggregate mining, marine sand washing, and sand offloading activities and is consistent with the San Francisco Bay Mercury TMDL. In addition, this Order does not contain requirements for the San Francisco International Airport industrial wastewater treatment plant because it is now regulated as a single facility for both sanitary municipal and industrial activities. Because flows to the San Francisco International Airport's treatment facility are now predominantly municipal, it is appropriate to regulate this facility as a municipal wastewater treatment plant. These facilities comprise a very small portion of the total wastewater mercury load to San Francisco Bay.

In 2016, the Regional Water Board adopted an individual NPDES permit (NPDES Permit No. CA0030228) for Schnitzer Steel Industries, Inc. This Order does not contain requirements for Schnitzer Steel Industries, Inc., because it discharges to the City of Oakland's storm drain, which is covered under the Alameda County Clean Water Program wasteload allocation of 20 kg/yr and implemented through NPDES Permit No. CAS612008, which covers San Francisco Bay Mercury TMDL urban stormwater discharge requirements for regional stormwater discharges.

ii. Concentration-based WQBELs. The concentration-based WQBELs are consistent with the San Francisco Bay Mercury TMDL and State Water Board Resolution No. 2007-0045 approving the TMDL, which states, in part, the following:

> *… any NPDES permit or permits that implement the San Francisco Bay Mercury TMDL will include individual numeric effluent limitations consistent with the assumptions and requirements of waste load allocations for each wastewater discharger, that will be individually-enforceable.*

A primary assumption and requirement of the San Francisco Bay Mercury TMDL is that wastewater dischargers maintain current treatment performance. This assumption is stated in the TMDL itself and its supporting documents, which state the following:

> *The watershed NPDES permit for municipal facilities will put in place a set of triggered actions … intended … to ensure that municipal wastewater facilities maintain their ongoing operation, maintenance, and performance." (p. 75, Staff Report for the TMDL, September 2, 2004)*
>
> *[The TMDL's] conditions are intended … to ensure that industrial wastewater facilities maintain proper operation, maintenance, and performance." (BPA-20, Basin Plan Amendment, August 9, 2006)*

This Order retains the individual concentration-based limitations from the previous order, which are consistent with Municipal and Industrial Discharger performance,

because Dischargers continue to perform be well below their mass allocation. Three separate performance categories were derived using mercury data between 2000 and 2003: municipal secondary treatment, municipal advanced secondary treatment, and industrial treatment performance. The data used to derive these performance-based limitations are from the same dataset used to calculate the San Francisco Bay Mercury TMDL's initial wasteload allocations; therefore, these performance-based limitations are consistent with the TMDL. Appendix F-2 of this Fact Sheet describe the effluent limitation calculations.

Non-petroleum refinery performance-based limitations were determined using performance data from petroleum refineries because the TMDL set performance-based triggers for all Industrial Dischargers using petroleum refinery data.

40 C.F.R. section 122.45(d) requires average monthly and average weekly effluent limitations for Municipal Dischargers, and average monthly and maximum daily effluent limitations for Industrial Dischargers. These limitations are intended to minimize the potential for adverse effects in the immediate vicinity of discharges and to ensure that wastewater facilities maintain proper operation, maintenance, and performance. Individual concentration-based mercury effluent limitations for Municipal and Industrial Dischargers are shown below:

Table F-6. Mercury Concentration-based Effluent Limitations for Municipal Dischargers

Discharger	Average Monthly Effluent Limit (µg/L)	Average Weekly Effluent Limit (µg/L)
American Canyon, City of	0.025	0.027
Benicia, City of	0.066	0.072
Burlingame, City of	0.066	0.072
Calistoga, City of	0.066	0.072
Central Contra Costa Sanitary District	0.066	0.072
Central Marin Sanitation Agency	0.066	0.072
Crockett Community Services District, Port Costa Sanitary Dept.	0.066	0.072
Delta Diablo Sanitation District	0.066	0.072
East Bay Dischargers Authority	0.066	0.072
Union S.D. Wet Weather Outfall		
Union S.D. Hayward Marsh		
Dublin San Ramon Services District		
City of Livermore		
LAVWMA Wet Weather Outfall		
East Bay Municipal Utility District	0.066	0.072
Fairfield-Suisun Sewer District	0.025	0.027
Las Gallinas Valley Sanitary District	0.066	0.072
Marin County (Paradise Cove), Sanitary District No. 5 of	0.066	0.072
Marin County (Tiburon), Sanitary District No. 5 of	0.066	0.072
Millbrae, City of	0.066	0.072
Mt. View Sanitary District	0.025	0.027
Napa Sanitation District	0.066	0.072
Novato Sanitary District	0.066	0.072
Palo Alto, City of	0.025	0.027
Petaluma, City of	0.025	0.027

Discharger	Average Monthly Effluent Limit (µg/L)	Average Weekly Effluent Limit (µg/L)
Pinole, City of	0.066	0.072
Rodeo Sanitary District	0.066	0.072
Saint Helena, City of	0.066	0.072
San Francisco (San Francisco International Airport), City and County of	0.066	0.072
San Francisco (Southeast Plant), City and County of	0.066	0.072
San Jose and Santa Clara, Cities of	0.025	0.027
San Mateo, City of	0.066	0.072
Sausalito-Marin City Sanitary District	0.066	0.072
Sewerage Agency of Southern Marin	0.066	0.072
Silicon Valley Clean Water	0.066	0.072
Sonoma Valley County Sanitary District	0.066	0.072
South San Francisco and San Bruno, Cities of	0.066	0.072
Sunnyvale, City of	0.025	0.027
U.S. Department of Navy, Treasure Island	0.066	0.072
Vallejo Flood and Wastewater District	0.066	0.072
West County Agency; West County Wastewater District; City of Richmond ; and Richmond Municipal Sewer District No. 1	0.066	0.072
Yountville, Town of	0.066	0.072

Unit Abbreviation:

µg/L = micrograms per liter

Table F-7. Mercury Concentration-based Effluent Limitations for Industrial Dischargers

Discharger	Average Monthly Effluent Limit for Mercury (µg/L)	Maximum Daily Effluent Limit for Mercury (µg/L)
Non-Petroleum Refineries		
C&H Sugar and Crockett Community Services District, Crockett Sanitary Department	0.079	0.12
Crockett Cogeneration, LP	0.079	0.12
Eco Services Operations LLC	0.079	0.12
GenOn Delta, LLC	0.079	0.12
USS-Posco Industries	0.079	0.12
Petroleum Refineries		
Chevron Products Company	0.079	0.12
Phillips 66	0.079	0.12
Shell Oil Products US and Equilon Enterprises LLC	0.079	0.12
Tesoro Refining & Marketing Co.	0.079	0.12
Valero Refining Company	0.079	0.12

Unit Abbreviation:

µg/L = micrograms per liter

b. PCBs. Basin Plan section 7.2.3.6 states that NPDES permits shall include performance-based WQBELs consistent with the wasteload allocations of the San Francisco Bay PCBs TMDL. This Order retains the individual concentration-based effluent limitations from the previous order because these concentration limits resulted in mass discharges that complied with the TMDL (see Appendix F-3 for U.S. EPA 1668C data of 66 PCBs congeners used to calculate loads between 2013 and 2016).

Four separate performance categories were derived using PCBs data between 1999 and 2001 (included in Appendix F-4 of this Fact Sheet): municipal secondary treatment, municipal advanced secondary treatment, petroleum refinery, and non-petroleum refinery. The data used to derive these performance-based limitations are from the same dataset used to calculate the San Francisco Bay PCBs TMDL wasteload allocations; therefore, these performance-based limitations are consistent with the TMDL. Calculating limits based on categories of treatment type reduces the likelihood of penalizing good performers and Dischargers that have implemented effective control measures.

40 C.F.R. section 122.45(d) requires, unless impracticable, average monthly and average weekly effluent limitations for Municipal Dischargers, and average monthly and maximum daily effluent limitations for Industrial Dischargers. This Order continues to implement a maximum daily effluent limitation instead of an average weekly effluent limitation for Municipal Dischargers, consistent with the U.S. EPA's Technical Support Document (section 5.2.3), which states, "… in lieu of an AWL [average weekly effluent limitation] for POTWs, EPA recommends establishing an MDL [maximum daily effluent limitation] for toxic pollutants and pollutant parameters in water quality permitting."

Consistent with previous orders, this Order does not establish mass-based limitations. Concentration-based limitations better relate to facility performance because mass-based limitations rely on flows, which are highly influenced by rainfall and thus not entirely within a Discharger's control. Furthermore, the derivation of limitations with longer averaging periods, which would be required to establish mass-based limitations, requires frequent monitoring (e.g., monthly) in order to capture performance variability. Frequent monitoring is not a reasonable or practicable use of resources because the Municipal and Industrial Dischargers are a small source of PCBs to San Francisco Bay (less than seven percent) relative to the high cost of PCBs analyses (approximately $1,000 each).

The performance-based limitations were derived from the 99 percent upper confidence limit (UCL) of the mean concentration for each dataset of the four performance categories. The 99 percent UCL was used on the mean of the datasets because of the high level of uncertainty in the actual mean (or actual performance) from the very small dataset for each discharge category used to establish TMDL allocations (the number of samples were between 6 and 14). The resulting long-term average for each performance category was then multiplied by the appropriate multiplier from the Technical Support Document to calculate the average monthly and maximum daily effluent limitations, as shown below:

Table F-8. PCBs WQBEL Calculations

	Secondary	Advanced Secondary	Petroleum Refinery	Non-Petroleum Refinery
Units	**µg/L**	**µg/L**	**µg/L**	**µg/L**
No. of data points <10 or at least 80% of data reported non-detect? (Y/N)	Y	N	N	Y
Mean of TMDL effluent data points	0.003556	0.00211	0.000272	0.003543
Std Dev of TMDL effluent data points	0.002206	0.000066	0.000199	0.001554
Coefficient of Variation (CV), calculated	0.62	0.31	0.73	0.44
CV, Selected – Final	0.60	0.31	0.73	0.60
99% UCL on the Mean = long term avg.	0.005547	0.00025	0.000402	0.005678
AMEL multiplier95 from U.S. EPA TSD	2.13	1.58	2.37	2.13
MDEL multiplier99 from U.S. EPA TSD	3.11	1.94	3.70	3.11
AMEL	**0.012**	**0.00039**	**0.00095**	**0.012**
MDEL	**0.017**	**0.00049**	**0.0015**	**0.018**

These limitations are based on data for 40 congeners that are representative surrogates for the PCBs causing impairment. These 40 congeners are the same ones monitored in the Regional Monitoring Program (using U.S. EPA Method 1668A) that formed the basis for the impairment determination. Because some other congeners co-elute with these 40 congeners (using U.S. EPA Method 1668C), the concentrations of as many as 66 congeners, if the laboratory uses a SB-Octyl column (shown in Table F-9 below), or as many as 59 congeners, if the laboratory uses a DB-1 column (shown in Table F-10 below), form the basis for the limits. Therefore, it would be reasonable and consistent with the San Francisco Bay PCBs TMDL (if U.S. EPA Proposed Method 1668C is an approved method at the time of the next permit reissuance) that any future compliance with effluent limitations be determined using the same congeners used to derive the limits specified in this Order.

Table F-9. PCB Congeners, Including Co-Elution **with SB-Octyl Column**

PCB 005	PCB 061	PCB 099	PCB 149	PCB 181
PCB 008	PCB 066	PCB 101	PCB 151	PCB 182
PCB 018	PCB 070	PCB 105	PCB 153	PCB 183
PCB 020	PCB 073	PCB 106	PCB 156	PCB 187
PCB 021	PCB 074	PCB 110	PCB 158	PCB 190
PCB 028	PCB 076	PCB 115	PCB 160	PCB 194
PCB 031	PCB 080	PCB 116	PCB 163	PCB 195
PCB 033	PCB 086	PCB 118	PCB 164	PCB 196
PCB 043	PCB 087	PCB 127	PCB 168	PCB 201
PCB 044	PCB 089	PCB 128	PCB 169	PCB 203
PCB 049	PCB 090	PCB 132	PCB 170	
PCB 052	PCB 093	PCB 138	PCB 174	
PCB 056	PCB 095	PCB 139	PCB 177	
PCB 060	PCB 097	PCB 141	PCB 180	

Table F-10. PCB Congeners, Including Co-Elution **with DB-1 Column**

PCB 005	PCB 061	PCB 110	PCB 160	PCB 196
PCB 008	PCB 066	PCB 117	PCB 161	PCB 201
PCB 018	PCB 069	PCB 118	PCB 162	PCB 203
PCB 020	PCB 070	PCB 125	PCB 163	
PCB 021	PCB 074	PCB 128	PCB 164	
PCB 028	PCB 076	PCB 132	PCB 170	
PCB 031	PCB 087	PCB 138	PCB 174	
PCB 033	PCB 090	PCB 139	PCB 177	
PCB 043	PCB 095	PCB 141	PCB 180	
PCB 044	PCB 097	PCB 149	PCB 182	
PCB 049	PCB 099	PCB 151	PCB 183	
PCB 052	PCB 101	PCB 153	PCB 187	
PCB 056	PCB 105	PCB 156	PCB 194	
PCB 060	PCB 106	PCB 158	PCB 195	

B. Discharge Requirement Considerations

1. **Anti-backsliding.** This Order complies with the anti-backsliding provisions of CWA sections 402(o) and 303(d)(4) and 40 C.F.R. section 122.44(l), which generally require effluent limitations in a reissued permit to be as stringent as those in the previous permit. The requirements of this Order are at least as stringent as those in the previous order.

2. **Antidegradation.** This Order complies with the antidegradation provisions of 40 C.F.R. section 131.12 and State Water Board Resolution No. 68-16. It continues the status quo with respect to the level of discharge authorized in the previous order, which was adopted in accordance with antidegradation policies and thus serves as the baseline by which to measure whether degradation will occur. This Order does not allow for a reduced level of treatment or an increase in effluent limitations relative to those in the previous order.

3. **Stringency of Requirements for Mercury and PCBs.** This Order contains WQBELs for mercury and PCBs that are no more stringent than required to implement CWA requirements. The mercury and PCBs WQBELs implement San Francisco Bay Mercury and PCBs TMDL wasteload allocations. Compliance with the WQBELs will facilitate San Francisco Bay's attainment of the mercury and PCBs water quality objectives necessary to protect beneficial uses.

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

No additional receiving water limits beyond those already specified in the Dischargers' individual NPDES permits are necessary to implement the San Francisco Bay Mercury and PCBs TMDLs.

VI. RATIONALE FOR PROVISIONS

A. Standard Provisions

Attachment D of each individual NPDES permit contains standard provisions that apply to all NPDES permits in accordance with 40 C.F.R. section 122.41 and additional conditions applicable to specific categories of permits in accordance with 40 C.F.R. section 122.42. Dischargers must comply with these provisions.

In accordance with 40 C.F.R. section 123.25(a)(12), states may omit or modify conditions to impose more stringent requirements. Attachment G of each individual NPDES permit contains contain sampling and reporting requirements for mercury and PCBs and additional standard provisions that supplement the federal standard provisions in Attachment D. This Order omits the federal conditions that address enforcement authority specified in 40 C.F.R. sections 122.41(j)(5) and (k)(2) because the State's enforcement authority under the Water Code is more stringent. In lieu of these conditions, this Order incorporates Water Code section 13387(e) by reference.

B. Monitoring and Reporting

CWA section 308 and 40 C.F.R. sections 122.41(h), 122.41(j)-(l), 122.44(i), and 122.48 require that NPDES permits specify monitoring and reporting requirements. Water Code sections 13267 and 13383 also authorize the Regional Water Board to establish monitoring, inspection, entry, reporting, and recordkeeping requirements. The MRP establishes monitoring, reporting, and recordkeeping requirements that implement federal and State requirements. For more background regarding these requirements, see Fact Sheet section VII. Regional Water Board Order No. R2-2016-0008 allows the Discharger to opt for certain alternate monitoring requirements.

C. Special Provisions

1. Reopener Provisions

The reopener provision is needed to allow changes or modifications if the Mercury or PCBs TMDL is revised.

2. Triggers for Additional Mercury Control

Mass and concentration-based triggers were developed to allow for early actions in the event that a Discharger observes an increasing trend in mercury discharge. The purpose of the triggers is to identify potential new mercury sources and reduce them to ensure that wasteload allocations continue to be achieved.

Consistent with the San Francisco Bay Mercury TMDL, mass triggers for Municipal and Industrial Dischargers are equivalent to the individual mass-based limitations stated in this Order, with the exception that compliance with the mass-based limitations is determined monthly, instead of annually, using a rolling 12-month average. This is necessary to capture

any mercury load increase in a timely manner, and allow development and implementation of reduction measures that may avoid effluent limit violations.

For concentration-based triggers, there are two broad categories of municipal facilities: (1) those that provide secondary treatment, and (2) those that provide advanced secondary treatment. Facilities providing advanced treatment have better performance, hence lower effluent concentrations than those providing secondary treatment. Therefore, the triggers for advanced facilities are lower than those for secondary treatment facilities.

Consistent with the TMDL implementation plan, the proposed effluent mercury concentration triggers for municipal secondary treatment facilities are a daily maximum of 0.065 µg/l total mercury (derived from the 99th percentile concentration of effluent data collected from January 2000 to September 2002) and a monthly average of 0.041 µg/l total mercury (derived from the 95th percentile concentration of effluent data collected from January 2000 to September 2002). For facilities providing advanced treatment, the proposed concentration triggers are a daily maximum of 0.021 µg/l total mercury (the 99th percentile concentration) and a monthly average of 0.011 µg/l total mercury (the 95th percentile concentration).

Consistent with the TMDL implementation plan, the proposed effluent triggers for Industrial Dischargers are a daily maximum of 0.062 µg/l total mercury (derived from the 99th percentile concentration of petroleum-refinery effluent data collected from January 2000 to September 2002) and a monthly average of 0.037 µg/l total mercury (derived from the 95th percentile concentration of petroleum-refinery effluent data collected from January 2000 to September 2002).

Consistent with the TMDL, if a Discharger exceeds either its mass or concentration trigger, this Order requires the Discharger to report the exceedance in its Self-Monitoring Report and include the following:

a. Evaluation of the cause of the trigger exceedance

b. Evaluation of the effectiveness of existing pollution prevention or pretreatment programs and methods for preventing future exceedances;

c. Evaluation of the feasibility and effectiveness of technology enhancements to improve plant performance.

This Order allows 130 days to provide this report, which allows for 30 days for standard laboratory turnaround on ultra-clean samples, plus 40 days for accelerated monitoring to verify and better characterize trigger exceedances, and finally the 60-day timeframe from the TMDL implementation plan to submit the report. The Regional Water Board may pursue enforcement against Dischargers that do not respond to trigger exceedances or do not implement actions to correct and prevent trigger exceedances. Determination of appropriate actions will be based on an updated assessment of source control measures and wastewater treatment technologies applicable for the term of each issued or reissued permit.

The TMDL implementation plan requires the permit to specify that a trigger exceedance cause a Discharger to take corrective actions. The TMDL implementation plan explains that one of the concepts behind requiring triggered actions is to ensure that wastewater dischargers continue ongoing operation, maintenance, and performance of their treatment facilities. This Order is consistent with the TMDL because it allows accelerated monitoring to determine if ongoing performance is maintained before corrective measures must be taken. Accelerated weekly monitoring for at least six events spanning over two months is sufficient to provide reasonable and convincing weight of evidence that the first trigger exceedance was either an anomaly or reflected a spurious source and can be disregarded. The additional samples would also help to characterize the duration and magnitude of the exceedance, and help with development of the action plan if one is necessary.

See Appendix F-1 for an example of actions required in response to initial trigger exceedances.

3. Mercury and PCBs Source Control Programs

The San Francisco Bay Mercury and PCBs TMDLs both require that Municipal and Industrial Dischargers develop and implement programs to identify and control manageable sources of mercury and PCBs. Therefore, this Order requires Dischargers to implement source control programs to reduce mercury and PCBs loads to their respective treatment plants.

4. Risk Reduction Programs

The San Francisco Bay Mercury and PCBs TMDLs require Municipal and Industrial Dischargers to develop and implement effective programs to reduce mercury-related and PCBs-related risks to human health and aquatic organisms and wildlife, and to quantify risk reductions resulting from these activities. This Order requires Dischargers to implement these measures to reduce mercury and PCB-related risks.

In coordination with this effort, the Regional Water Board will work with different health agencies and Dischargers that pursue risk management as part of their mercury and PCB-related programs. For an effective and efficient regional program, this Order allows for third parties to conduct these programs if Dischargers provide funding for this purpose.

5. Mercury and PCBs Discharge Adjustments for Recycled Wastewater Use by Industrial Dischargers

The Regional Water Board encourages water recycling pursuant to California Water Code sections 13510 through 13512. Recycled wastewater can preserve potable water supply sources. Consistent with Basin Plan section 4.6.1.1, the Mercury or PCBs Adjustment provided in this Order accounts for recycled water that is produced by Municipal Dischargers and used by Industrial Dischargers in industrial processes.

The Mercury or PCBs Adjustments only apply if the mercury or PCBs in the recycled wastewater is discharged through an Industrial Discharger’s outfall. The Mercury or PCBs

Adjustments are calculated based on mass balance principles and will not result in any net increase in mercury or PCBs loads to San Francisco Bay.

The Mass Adjustment is subtracted from the actual mass discharge of one Industrial Discharger and is then added to the actual mass discharge of the Municipal Discharger who supplied the recycled wastewater who would have otherwise discharged that mercury or PCBs through its municipal treatment plant outfall. Local impacts from this shifting in load would be minimal because the municipal or industrial discharge would be discharged to the same receiving water body; the cost of water transport between facilities that are very far apart would make such a reuse project infeasible.

A Concentration Adjustment is provided because a typical reuse project for an industrial facility involves using the recycled water in cooling towers or boilers where the concentration of mercury or PCBs increases through evaporative losses. The blowdown would eventually go to the Industrial Discharger's sewer and potentially elevate its discharge concentration. Since the concentration limit is based on past performance, future recycled wastewater use could affect the Industrial Discharger's compliance with the performance limitation. Unlike the Mass Adjustment, it is inappropriate to add the Concentration Adjustment to the supplying Municipal Discharger because an increase in concentration that occurs at the industrial facility does not affect the Municipal Discharger's performance.

6. PCBs Discharge Adjustment for Urban Stormwater Treatment by Municipal Dischargers

The Regional Water Board recognizes that routing urban runoff through municipal wastewater treatment facilities may be an efficient means of reducing PCBs and other particle-associated contaminant loads to the San Francisco Bay. For this reason, the San Francisco Bay PCBs TMDL includes a reserve allocation of 1.0 kg/year for municipal wastewater treatment plants to treat urban runoff (specified in Basin Plan Table 7.2.3-2). This provision provides a mechanism for Municipal Dischargers to receive a credit for treating urban runoff that would otherwise be discharged directly to San Francisco Bay.

Adjustments are calculated based on mass balance principles and will not result in any net increase in PCBs loadings to San Francisco Bay. Unlike the use of recycled water, urban runoff diversions will occur intermittently, most likely over a period of hours. For this reason, it is impossible to coordinate influent and effluent sampling with the precision applied for recycled water adjustments. Additionally, the concentrations of PCBs in urban runoff are expected to be much more variable than those found in recycled water. East Bay Municipal Utility District's study, Characterization of Stormwater Flows, Diversion of Dry Weather and First Flush Flows to a Publicly-Owned Treatment Works (July 2010) found the concentrations of PCBs in dry weather runoff to be almost an order of magnitude lower than those found in wet weather. As such, when determining credits for urban runoff diversions, this Order groups them into two categories: (1) dry weather diversions and (2) wet weather diversions.

During this Order term, the Municipal Discharger may use the entire influent PCBs mass for the concentration adjustment described in Provision VI.C.6.

VII. RATIONALE FOR MONITORING AND REPORTING PROGRAM (MRP)

Attachment E contains the MRP for this Order. It specifies monitoring locations, mercury and PCBs monitoring frequencies, and reporting requirements. The following provides the rationale for these requirements.

Basin Plan sections 7.2.2.6 and 7.2.3.6 require Dischargers to monitor and report mercury and PCBs discharge loads. Effluent monitoring is also necessary to capture any increases in loading and develop and implement reduction measures in advance of an effluent limitation exceedance.

This Order reduces the monitoring frequencies for PCBs congeners. An analysis of PCBs congeners data from the previous order term confirmed that a reduction in monitoring frequencies to the frequencies defined in the MRP of this Order would not significantly change the characterization of PCBs in San Francisco Bay. Dischargers with a design flow greater than 50 MGD retained PCBs congeners monitoring frequencies because they comprise the majority of the total PCBs load for Municipal Dischargers. The monitoring frequencies specified in the MRP depend on each Discharger's contribution of mercury and PCBs, and its resources to conduct the monitoring. Those with larger flows are required to monitor more frequently.

Compliance with effluent limitations must be determined using an approved method under 40 C.F.R. Part 136. For PCBs, this is U.S. EPA Method 608, used to monitor PCBs Aroclors. Consistent with the San Francisco Bay PCBs TMDL, this Order also requires each Discharger to monitor and report PCBs congeners using the proposed U.S. EPA Method 1668C, which can quantify PCBs that are present at lower levels than U.S. EPA Method 608. The Regional Water Board will use U.S. EPA Method 1668C data to verify assumptions and evaluate the need to further refine wasteload allocations in the TMDL.

VIII. PUBLIC PARTICIPATION

The Regional Water Board considered the issuance of WDRs that will serve as an NPDES permit for point source discharges of mercury and PCBs from Municipal and Industrial Dischargers. As a step in the WDR adoption process, Regional Water Board staff developed tentative WDRs and encouraged public participation in the WDR adoption process.

A. Notification of Interested Parties. The Regional Water Board notified the Dischargers and interested agencies and persons of its intent to prescribe WDRs for the discharges and provided an opportunity to submit written comments and recommendations. Notification was provided through the *Oakland Tribune*. The public had access to the agenda and any changes in dates and locations through the Regional Water Board's website at http://www.waterboards.ca.gov/sanfranciscobay.

B. Written Comments. Interested persons were invited to submit written comments concerning the tentative WDRs as explained through the notification process. Comments were to be submitted either in person or by mail to the Executive Officer at the Regional Water Board at 1515 Clay Street, Suite 1400, Oakland, California 94612, to the attention of James Parrish.

For full staff response and Regional Water Board consideration, the written comments were due at the Regional Water Board office by 5:00 p.m on **October 13, 2017.**

C. Public Hearing. The Regional Water Board held a public hearing on the tentative WDRs during its regular meeting at the following date and time, and at the following location:

Date: **November 8, 2017**
Time: 9:00 am
Location: Elihu Harris State Office Building
1515 Clay Street, 1st Floor Auditorium
Oakland, CA 94612

Contact: James Parrish, (510) 622-2381, James.Parrish@waterboards.ca.gov.

Interested persons were invited to attend. At the public hearing, the Regional Water Board heard testimony pertinent to the discharge, WDRs, and permit. For accuracy of the record, important testimony was requested to be in writing.

Dates and venues change. The Regional Water Board web address is http://www.waterboards.ca.gov/sanfranciscobay, where one could access the current agenda for changes in dates and locations.

D. Reconsideration of Waste Discharge Requirements. Any aggrieved person may petition the State Water Board to review the Regional Water Board decision regarding the final WDRs. The State Water Board must receive the petition at the following address within 30 calendar days of the Regional Water Board action:

State Water Resources Control Board
Office of Chief Counsel
P.O. Box 100, 1001 I Street
Sacramento, CA 95812-0100

For instructions on how to file a petition for review, see http://www.waterboards.ca.gov/public_notices/petitions/water_quality/wqpetition_instr.shtml.

E. Information and Copying. The San Francisco Bay Mercury and PCBs TMDLs, tentative order, related supporting documents, and comments received are on file and may be inspected at the address above at any time between 9:00 a.m. and 5:00 p.m., Monday through Friday. Copying of documents may be arranged by calling (510) 622-2300.

F. Register of Interested Persons. Any person interested in being placed on the mailing list for information regarding the WDRs and NPDES permit should contact the Regional Water Board, reference the Facility, and provide a name, address, and phone number.

G. Additional Information. Requests for additional information or questions regarding this Order should be directed to James Parrish, at (510) 622-2381, or James.Parrish@waterboards.ca.gov.

APPENDIX F-1
WHEN REQUIRED ACTIONS ARE TRIGGERED

Discharger X is subject to the following triggers:

Average Monthly Trigger = 0.041 µg/L
Maximum Daily Trigger = 0.065 µg/L
12-month Mass Emission Trigger = 0.91 kg/yr

A sample was collected on May 4th is 0.046 µg/L, with the results received on May 30th by Discharger X from its contract laboratory.

Discharger Action 1: Initiate accelerated monitoring (weekly or more frequent) as soon as practical (within 48 hours) after receipt of sample result above trigger (0.046 µg/L is above the monthly trigger of 0.041 µg/L).

Discharger Action 2: Report this exceedance in its cover sheet for the May self-monitoring report (due June 30th), and continue to report mercury data on the cover sheet until successful completion.

Discharger Action 3: Continue accelerated monitoring until not less than a total of 6 new samples have been collected.

Discharger X's accelerated samples reveal the following results:

Sample Date	Sample Result, µg/L	12-month mass, kg/yr
(May 4)	**(0.046)**	0.80
June 1	0.031	0.79
June 5	0.059	0.82
June 14	0.023	0.81
June 18	0.055	0.82
June 30	0.040	0.82
July 5	0.029	0.81

Discharger Action 4: Initiate, no later than July 5, development of Action Plan for Mercury Reduction.
Note: Despite the fact that the one sample for July is below all three triggers, the average of the samples in June is above the monthly average trigger.

Discharger Action 5: Discharger X may shift to monthly monitoring after collection of the 6th accelerated sample.

Additional monitoring results:

Sample Date	Sample Result, µg/L	12-month mass, kg/yr
August 11	0.027	0.80
September 14	0.042	0.78
October 5	0.042	0.075
October 7	ND (<0.0005)	
November 5	0.035	0.81
December 10	0.022	**0.93**
January 5	0.018	**0.94**
February 14	0.028	0.85

March 25	0.010	0.81
April 7	0.023	0.75

Discharger Action 6: Submit and implement Action Plan for Mercury Reduction (due 130 days after May 30).

Note: Despite the July and August samples being below both concentration triggers, three consecutive months below **all** triggers are necessary before the Action Plan activities are no longer required. The May sample is still above the monthly trigger.

Note: In September, though that sample is above the monthly concentration trigger, accelerated monitoring is not required again because Discharger X has already been triggered into Action Plan mode.

Note: In December, though the concentrations have been below concentration triggers for three consecutive months, Discharger X must continue with the Action Plan because its 12-month running average mass discharge still exceeds the mass trigger.

Discharger Action 7: Report on current mercury reduction efforts in its Annual Self-Monitoring Report due February 1st.

In April, three consecutive months show successful completion of this effort. Discharger X is no longer required to further implement its Action Plan, and may thus return to routine monitoring. Discharger X reports its mercury reduction efforts in its Annual Self-Monitoring Report due the following February.

APPENDIX F-2
CALCULATION OF CONCENTRATION-BASED MERCURY LIMITS

Introduction

To calculate concentration-based mercury limitations that are consistent with the assumptions and requirements of the San Francisco Bay Mercury TMDL, the Regional Water Board analyzed mercury data from 2000 to 2003 and grouped that data into three categories (municipal secondary treatment, municipal advanced secondary treatment involving filtration, and industrial treatment). The statistical analysis used data from 17 secondary treatment plants, 7 advanced secondary treatment plants, and 5 petroleum refineries.

The purpose of pooling mercury data to calculate limitations based on category of treatment and/or processes that are similar was to reduce the likelihood of penalizing Dischargers who have implemented effective control measures and are already performing well, and rewarding other Dischargers who may not have implemented similar measures.

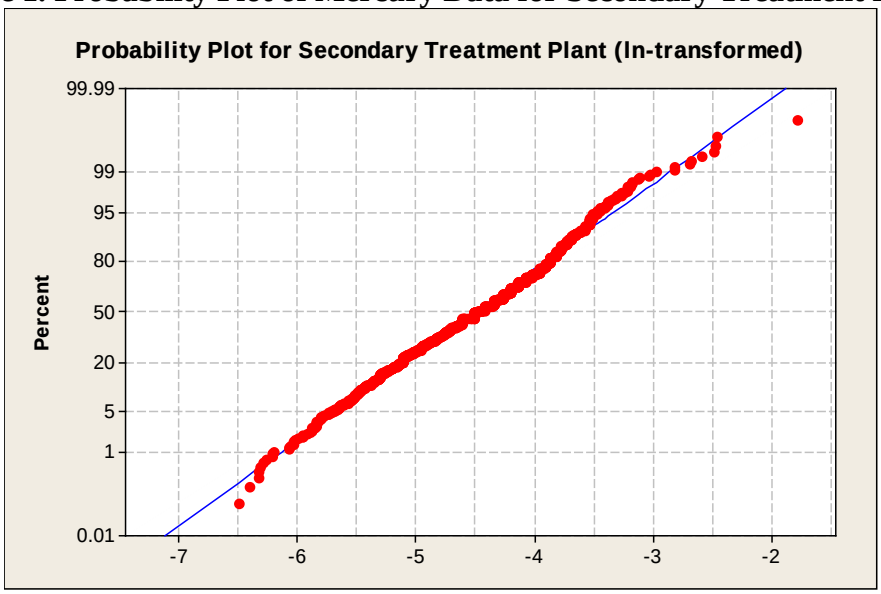
Data Analysis of Municipal Treatment Facilities

Regional Water Board staff analyzed mercury data from all treatment plants that were using the Regional Water Board's electronic reporting system. Mercury data that did not appear to result from ultra-clean sampling because of high detection limits were removed (i.e., EBMUD data from January 2000 through May 2001, and the San Francisco City and County Southeast Plant from October 21, 2003). Additionally, when detection limits were very low (e.g., the practical quantification limit [PQL] equaled 0.5 ng/L and the method detection limit equaled 0.24 ng/L), Regional Water Board staff censored data at the PQL. Finally, the Regional Water Board did not use data from Silicon Valley Clean Water because its treatment plant did not always filter treated wastewater, which made it difficult to categorize the plant as performing secondary or advanced secondary treatment.

Secondary Treatment Plants

The Regional Water Board's analysis of secondary treatment plants indicates that mercury data fit a log-normal distribution since the data closely follow the line of normality, as shown in Figure 1 below:

Figure 1. Probability Plot of Mercury Data for Secondary Treatment Plants



Because natural log-transformed mercury data for secondary treatment plants fit a normal distribution, it was possible to calculate performance-based limits based on select percentiles. For secondary treatment plants (data sample size of 984), the mean and standard deviation in the natural log phase were -4.5212 and 0.7188, respectively. Regional Water Board staff calculated daily, weekly, and monthly mercury limits based on the 99.87th percentile (3 standard deviations above the mean), the 99.57th percentile (2.625 standard deviations above the mean), and the 99.38th percentile (2.5 standard deviations above the mean).

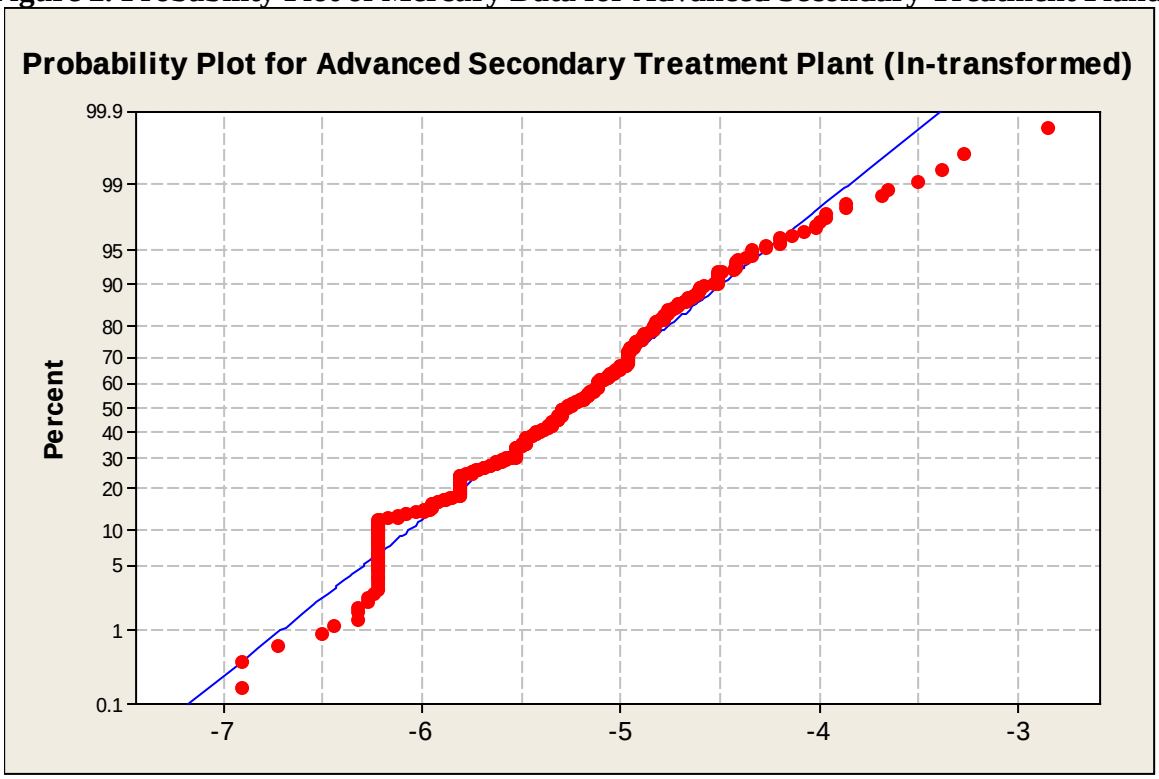
Table 1. Mercury Limits for Secondary Treatment Plants

Percentile	Averaging Period	Mercury Limit (ng/L)
99.87th	Daily	94
99.57th	Weekly	72
99.38th	Monthly	66

Advanced Secondary Treatment Plants

The Regional Water Board's analysis of advanced secondary treatment plants indicates those data also fit a log-normal distribution since the data follow the line of normality, as shown in Figure 2 below:

Figure 2. Probability Plot of Mercury Data for Advanced Secondary Treatment Plants



Because natural log-transformed mercury data for advanced secondary treatment plants fit a normal distribution, it was possible to calculate performance-based limits based on select percentiles. For advanced secondary treatment plants (data sample size of 434), the mean and standard deviation in the natural log phase were -5.3457 and 0.6664, respectively. Regional Water Board staff calculated daily, weekly, and monthly mercury limits based on the 99.87th percentile, the 99.57th percentile, and the 99.38th percentile.

Table 2. Mercury Limits for Advanced Secondary Treatment Plants

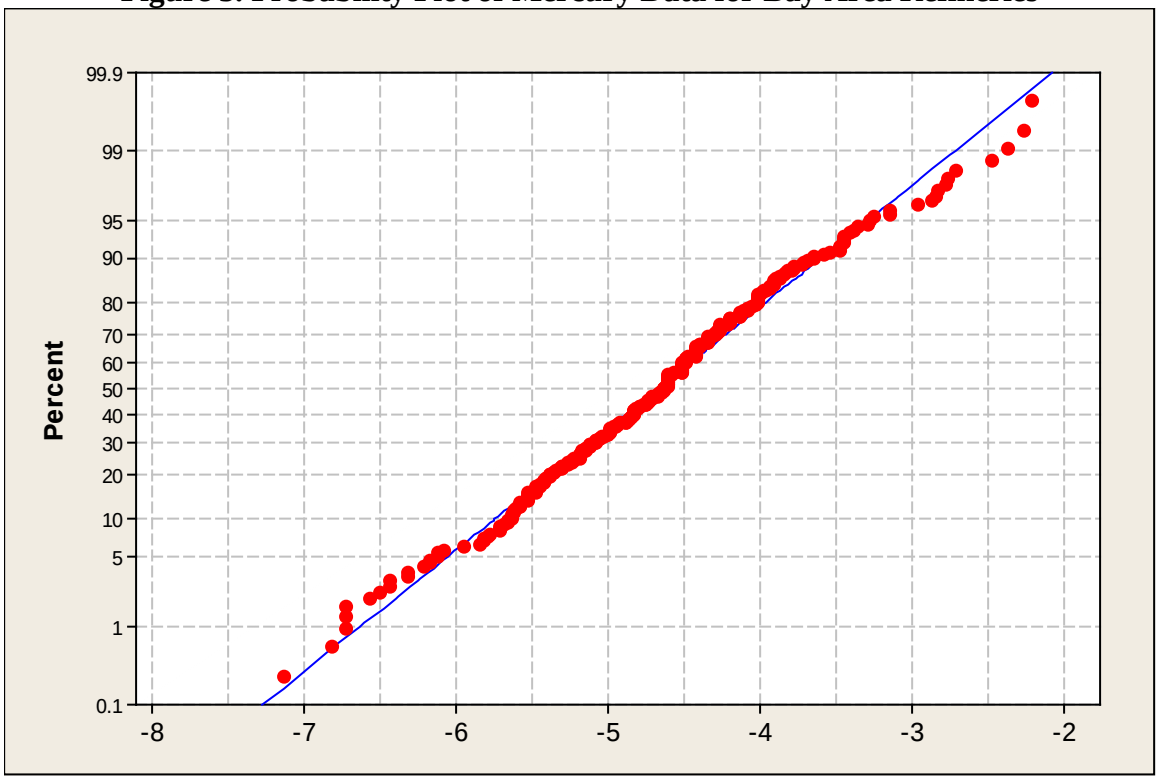
Percentile	Averaging Period	Mercury Limit (ng/L)
99.87th	Daily	35
99.57th	Weekly	27
99.38th	Monthly	25

Data Analysis of Industrial Treatment Facilities

The Regional Water Board analyzed mercury data from five petroleum refineries that report data to the Water Board's electronic reporting system. Regional Water Board staff determined that a number of data points from three of the refineries (i.e., Chevron, ConocoPhillips, and Shell) were not indicative of treatment plant performance, and therefore, were removed. Additionally, when detection limits were very low, the Regional Water Board censored data at the PQL.

The Regional Water Board's analysis of five Bay Area refineries indicated that mercury data fit a log-normal distribution since the data closely follow the line of normality, as shown in Figure 3 below:

Figure 3. Probability Plot of Mercury Data for Bay Area Refineries



Because natural log-transformed mercury data fit a normal distribution, it was possible to calculate performance-based limits based on select percentiles. For refineries (data sample size of 296), the mean and standard deviation in the natural log phase were -4.7000 and 0.8654, respectively. Regional Water Board staff calculated daily, weekly, and monthly mercury limits based on the 99.87th percentile (3 standard deviations above the mean), the 99.57th percentile (2.625 standard deviations above the mean), and the 99.38th percentile (2.5 standard deviations above the mean).

Table 3. Mercury Limits for Industries Using Petroleum Refinery Performance

Percentile	Averaging Period	Mercury Limit (ng/L)
99.87th	Daily	122
99.57th	Weekly	88
99.38th	Monthly	79

APPENDIX F-3
SUMMARY OF PCBs LOADS

Table 1. PCBs Loads from Municipal Dischargers (Secondary Treatment)

Discharger	PCBs Loads (kg/yr) Normalized			
	Year			
	2013	2014	2015	2016
Benicia	0.001027366	0.000702512	0.001330807	0.001729332
Benicia	0.000361876	0.001375673	0.000691841	0.000834243
Burlingame	0.00130887	0.000888176	0.000736908	0
Burlingame	0.001422589	0.0010376	0.000834373	0.000655316
Burlingame	0.001675026	0.000914767	0.001560205	0.000426249
Burlingame	0.000504476	0.001043412	0.001156979	0.000476454
Calistoga	0	6.29016E-05	5.50621E-05	7.66743E-05
CCCSD	0.025095234	0.006116432	0.013747729	0.008623899
CCCSD	0.003264302	0.005624446	0.018697144	0.011315563
CCCSD	0.007228911	0.017594892	0.00797204	0.009579598
CCCSD	0.005032644	0.011936161	0.011321103	0.010361204
CCCSD	-	0.012157971	-	-
Central Marin	0.000756037	0.004998032	0.003114993	0.003365655
Central Marin	0.000943599	0.001978248	0.002112238	0.002093666
Central Marin	0.001152937	0.002498263	0.003452139	0.001961261
Central Marin	0.001224986	0.002963676	0.002842755	0.00240807
Delta Diablo	0.000942957	0.002947538	0.002737323	0.002280301
Delta Diablo	0.000779033	0.002095981	0.002335431	0.002723372
Delta Diablo	0.0006008	0.001712705	0.003653966	0.001881737
Delta Diablo	0.00079602	0.002938497	0.002095972	0.003134687
EBDA	0.014436013	0.02736045	0.029149428	0.038618654
EBDA	0.006465304	0.029425402	0.047366545	0.02194252
EBDA	0.011573873	0.041672703	0.023974444	0.031044006
EBDA	0.021440442	0.074240246	0.038079977	0.038907642
EBMUD	0.021144144	0.039301374	0.040613268	0.034658698
EBMUD	0.015332442	0.052093417	0.038458924	0.016606272
EBMUD	0.024145186	0.024682848	0.027393817	0.030472948
EBMUD	0.029025869	0.065442361	0.04044419	0.031946445
Las Gallinas	0.003546046	0.003804885	0.003110253	0.004953674
Las Gallinas	-	0.003239256	0.001178193	0.002048252
Millbrae	0.001520444	0.002647206	0.00154215	0.001174746
Millbrae	0.00209798	0.000939631	0.000980862	0.000539392
Napa	0.000679109	0.001060108	0.001661206	0.000525912
Napa	0	0.003697313	0.001400147	4.04505E-05
Napa	0.000542489	0.00187091	0.001107936	0.00040638
Novato	0.00033085	0.003548261	0.003399076	0.003348265
Novato	0.000477889	0.001653349	0.00248184	0.00104419

Novato	0.000523464	0.000922565	0.001123615	0.002141501
Petaluma	1.95813E-05	0.001564884	0.000206902	0.000166016
Petaluma	1.63824E-05	0.00040099	4.94945E-05	1.01493E-05
Petaluma	4.56325E-05	0.000418103	2.92188E-05	4.48137E-05
Pinole	0.001856034	0.001040543	0.000598382	0.000595688
Pinole	0.000724087	0.000899116	0.000587417	0.00097685
Rodeo	0.000162977	0.000152026	0.000161064	0.001340938
Rodeo	0.00015571	0.000946098	-	-
San Mateo	0.002015566	0.003454585	0.006283256	0.003094478
San Mateo	0.001610267	0.005098295	0.007244187	0.005104726
San Mateo	0.004401604	0.008940223	0.005703687	0.005456581
San Mateo	0.001533621	0.005745627	0.005194759	0.005324376
SASM	0.004598506	0.004239067	0.003155624	0.003602825
SASM	0.002120129	0.003810661	0.001941614	0.003425009
Sausalito-Marin	0.001869741	0.003155468	0.001941475	-
Sausalito-Marin	0.002131512	0.002195343	0.001243779	0.003605147
SD #5 - Paradise Cove	1.68706E-05	4.83457E-05	3.11404E-05	0.000309092
SD #5 - Tiburon	0.000216382	0.000632623	0.000697987	0.002652883
SD #5 - Tiburon	0.00020725	0.000529257	-	-
SF Southeast	0.014440261	0.016051745	0.026723587	0.017280144
SF Southeast	0.013196184	0.027851261	0.020763159	0.04175091
SF Southeast	0.016433838	0.035862344	0.014595356	0.041059742
SF Southeast	0.016014992	0.052611259	0.061609612	0.030861908
SFO Airport	0.000254427	0.001230514	0.000572453	0.000675278
SFO Airport	0.000249322	0.001034041	0.000581651	0.00125239
Silicon Valley Clean Water	0.007886899	0.00182581	0.004316189	0.026428526
Silicon Valley Clean Water	0.002780926	0.003606276	0.002235643	0.002665677
Silicon Valley Clean Water	0.002660565	0.002797678	0.004337324	0.01346841
Silicon Valley Clean Water	0.002518986	0.008893033	0.004323485	0.013385183
Sonoma Valley County SD	0.000240769	5.29543E-05	4.24765E-05	2.20148E-06
Sonoma Valley County SD	6.61511E-05	0.000221437	7.29421E-05	0.000580791
South SF and San Bruno	0.003048769	0.002131267	0.001674849	0.001597152
South SF and San Bruno	0.001769671	0.002469812	0.001199606	0.000926471
South SF and San Bruno	0.00496287	0.001494728	0.001109731	0.002337297
South SF and San Bruno	0.005457058	0.002179173	0.001329856	0.001733714
Treasure Island	0.001747733	0.004870548	0.004315642	0.002300291
Treasure Island	0.004249545	0.00406025	0.002893406	0.006282947
Vallejo	0.001716043	0.005148906	0.008790509	0.02676705
Vallejo	0.002755984	0.00640477	0.006212837	0.00639365
Vallejo	0.00192151	0.00722804	0.007025443	0.005516793
Vallejo	0.004372058	0.006308582	0.006572656	0.00664987
West County Agency	0.002229805	0.019487494	0.004256061	0.002960736
West County Agency	0.002478752	0.003803865	0.000569599	0.003804654
West County Agency	0.003510146	0.001874279	0.003403962	0.003694124

West County Agency	0.002888309	0.003053117	0.002981216	0.018929139
Yountville	0.000428631	6.02942E-05	3.42156E-05	6.00723E-05
Total	**0.351381261**	**0.7250749**	**0.61152833**	**0.639421925**

Table 2. PCBs Loads from Municipal Dischargers (Advanced Secondary Treatment)

Discharger	PCBs Loads (kg/yr) Normalized			
	Year			
	2013	2014	2015	2016
American Canyon	1.2443E-05	2.19831E-05	3.10612E-05	2.12206E-05
American Canyon	3.85216E-05	2.98458E-05	2.23113E-05	5.76749E-06
Fairfield	6.40732E-05	0.000124309	0.004808032	0.003827038
Fairfield	0.002464056	0.003985308	2.23113E-05	0.000525541
Fairfield	0.000444199	0.002023944	0.004808032	0.003827038
Fairfield	0.002387212	0.00244248	0.003454068	0.000525541
Mt. View	0.000380578	0.000431779	0.000251154	0.000444951
Mt. View	0.00051271	0.000644994	0.00039511	0.000551976
Palo Alto	0.001500471	0.011737367	0.003781006	0.010828444
Palo Alto	0.002212234	0.004885093	0.008983983	0.005599664
Palo Alto	0.00121759	0.004168968	0.008707744	0.007144422
Palo Alto	0.001908616	0.009915734	0.007325264	0.006102645
San Jose	0.012930405	0.006865736	0.007628329	0.006405388
San Jose	0.005241254	0.011837227	0.006466247	0.006778259
San Jose	0.005114915	0.005955494	0.004720837	0.006053584
San Jose	0.004747444	0.010491396	0.005558841	0.006191107
Sunnyvale	0.010757959	0.006953892	0.019647826	0.007845579
Sunnyvale	0.001445272	0.00192814	0.001944189	0.001934008
Sunnyvale	0.003550054	0.005343286	0.002960746	0.000362331
Sunnyvale	0.005139162	0.002722424	0.005309606	0.003968065
Total	**0.062069169**	**0.092509399**	**0.096826697**	**0.078942567**

Table 3. PCBs Loads from Petroleum Refineries

Discharger	PCBs Loads (kg/yr) Normalized			
	Year			
	2013	2014	2015	2016
Chevron	0.002441221	0.001204925	0.001048217	0.001415608
Chevron	0.004242096	0.002501528	0.00092711	0.000675529
Chevron	0.002122772	0.001217467	0.000393442	0.000427429
Chevron	0.001157919	0.000595771	0.000592657	0.000451338
Phillips 66	4.76663E-06	0.000821772	0.00206903	0.002063512
Phillips 67	0	0.000672565	0.002020933	3.21561E-05
Phillips 68	1.55848E-05	0	0.001062993	0
Phillips 69	2.52666E-05	0	0.000810313	0
Shell	0.000286148	0.000209112	6.67773E-05	0.001512766
Shell	0.000162484	0.000229259	3.5482E-05	8.988E-05

Shell	5.1977E-05	0.00035582	7.10011E-05	4.81461E-05
Shell	3.11282E-05	6.84687E-05	9.6932E-05	0
Shell	-	-	2.50889E-05	-
Tesoro	0	0.000108397	6.02659E-05	6.545E-06
Tesoro	0.000102595	0.000106865	3.02851E-05	1.26933E-05
Tesoro	5.16372E-05	9.58012E-05	4.37745E-05	5.17775E-05
Tesoro	0.000141868	9.19044E-06	4.31566E-05	4.19221E-05
Valero	0	1.0391E-05	1.38142E-05	0
Valero	0	-	0.000250494	3.46442E-05
Valero	-	-	5.9889E-06	0
Total	**0.010837463**	**0.008207332**	**0.009667756**	**0.006863947**

Table 4. PCBs Loads from Non-Petroleum Refineries

Discharger	PCBs Loads (kg/yr) Normalized			
	Year			
	2013	2014	2015	2016
C&H Sugar	0.001244311	0.00059048	0.0001625	0.005711281
C&H Sugar	-	6.17967E-05	0.000140038	0.009294554
Crockett Cogen	0.000337716	0.000158455	0.000233529	4.46202E-06
Eco Services	1.53568E-05	2.77183E-05	3.32238E-05	4.1714E-05
Eco Services	1.10109E-05	8.55755E-06	3.61856E-05	4.92778E-05
USS Posco	0.000486777	0.000889019	0.001916503	0.002750828
USS Posco	0.001056105	0.000418653	0.000350865	0.000705606
USS Posco	0.000828925	0.00092713	0.000427598	0.000135538
USS Posco	0.000438991	0.000163214	0.001278389	0.00079062
Total	**0.004419192**	**0.003245024**	**0.004578832**	**0.019483881**

APPENDIX F-4
DATA SUPPORTING PERFORMANCE-BASED PCBs LIMITATIONS

Discharge Category – PCBs Data (µg/L)			
Advanced Secondary	Secondary	Petroleum Refinery	Non-Petroleum Refinery
0.000250	0.0079	0.000650	0.000860
0.000310	0.0011	0.000570	0.003700
0.000190	0.0047	0.000170	0.005600
0.000200	0.0022	0.000380	0.004300
0.000310	0.0057	0.000280	0.003400
0.000170	0.0014	0.000150	0.003400
0.000190	0.0037	0.000110	
0.000130	0.0027	0.000150	
0.000320	0.0026	0.000170	
0.000170		0.000085	
0.000120			
0.000240			
0.000190			
0.000160			