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TENTATIVE ORDER NO. R9-2017-0007
NPDES NO. CA0107409

WASTE DISCHARGE REQUIREMENTS AND NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT FOR THE CITY OF SAN DIEGO E.W. BLOM POINT LOMA WASTEWATER TREATMENT PLANT DISCHARGE TO THE PACIFIC OCEAN THROUGH THE POINT LOMA OCEAN OUTFALL

The following Discharger is subject to waste discharge requirements (WDRs) set forth in this Order/Permit:

Table 1. Discharger Information

Discharger	City of San Diego
Name of Facility	E.W. Blom Point Loma Wastewater Treatment Plant
Facility Address	1902 Gatchell Road
	San Diego, CA 92106
	San Diego County
The California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) and the U.S. Environmental Protection Agency (USEPA), Region IX and the have classified this discharge as a major discharge.	

Table 2. Discharge Location

Discharge Point	Effluent Description	Discharge Point Latitude (North)	Discharge Point Longitude (West)	Receiving Water
001	**Advanced primary treated wastewater**	**32º 39’ 55” N**	**117º 19’ 25” W**	Pacific Ocean

Table 3. Administrative Information for State Order

This Order was adopted by the San Diego Water Board on:	**To Be Determined**
This Order shall become effective on:	**To Be Determined**
This Order shall expire on:	**To Be Determined**
The Discharger shall file a Report of Waste Discharge as an application for reissuance of WDRs in accordance with title 23, California Code of Regulations (CCR), no later than:	**180 days prior to the Order expiration date**

I, David W. Gibson, 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 Diego Region, on August 10, 2016.

Tentative
David W. Gibson, Executive Officer

Table 4. Administrative Information for Federal Permit

This Permit was issued by the USEPA, Region IX on:	**To Be Determined**
This Permit shall become effective on:	**To Be Determined**
This Permit shall expire on:	**To Be Determined**
The Discharger shall file a new application for reissuance of a NPDES permit in accordance with title 40 of the Code of Federal Regulations (40 CFR) section 122.21(d), no later than:	**180 days prior to the Permit expiration date**

I, Tomás Torres, Water Division Director, do hereby certify that this Permit with all attachments is a full, true, and correct copy of the NPDES Permit issued by the U.S. Environmental Protection Agency, Region IX, on August 10, 2016.

Tentative
Tomás Torres, Water Division Director

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I. FACILITY INFORMATION

General information about the E.W. Blom Point Loma Wastewater Treatment Plant (Facility) is summarized in Table 1. More detailed information describing the Facility, Pump Station No. 2, Metro Biosolids Center (MBC), the Point Loma Ocean Outfall (PLOO), and other associated infrastructure (collectively referred to as Facilities) is contained in sections I and II of the Fact Sheet (Attachment F). Section I of the Fact Sheet also includes information regarding the City of San Diego's (Discharger's) Order/Permit application.

II. FINDINGS

The San Diego Water Board and the USEPA, Region IX, finds:

A. **Legal Authorities.** This Order/Permit is issued pursuant to federal Clean Water Act (CWA) section 402 and implementing regulations adopted by the USEPA and chapter 5.5, division 7 of the California Water Code (Water Code) (commencing with section 13370). This Order/Permit shall serve as a jointly-issued State and federal National Pollutant Discharge Elimination System (NPDES) permit authorizing the Discharger to discharge into waters of the U.S. at the discharge location described in Table 2 subject to the WDRs in this Order/Permit. This Order/Permit also serves as WDRs pursuant to article 4, chapter 4, division 7 of the Water Code (commencing with section 13260). Although Discharge Point No. 001 is beyond the limit of State-regulated ocean waters, effluent plume migration into State waters warrants joint regulation of the discharge by the San Diego Water Board and USEPA, Region IX.

B. **Background and Rationale for Requirements.** The San Diego Water Board and USEPA, Region IX developed the requirements in this Order/Permit based on information submitted as part of the application, through monitoring and reporting programs, and other available information. The Fact Sheet (Attachment F), which contains background information and rationale for the requirements in this Order/Permit, is hereby incorporated into and constitutes Findings for this Order/Permit. Attachments A through E, G, and H are also incorporated into this Order/Permit.

C. **Provisions and Requirements Implementing State Law.** The provisions/requirements in subsections VI.A.2.a-d, VI.C.1.b, and VI.C.1.c are included to implement State law only. These provisions/requirements are not required or authorized under the federal CWA; consequently, violations of these provisions/requirements are not subject to the enforcement remedies that are available for NPDES violations.

D. **CWA Section 301(h) Tentative Decision.** USEPA, Region IX has drafted a CWA section 301(h) Tentative Decision Document (TDD) evaluating the Discharger's proposed improved discharge and effluent limitations for total suspended solids (TSS) and biochemical oxygen demand (5-day @ 20 degrees Celsius (°C)) (BOD_5), the 301(h)-variance-based effluent flow rate of 205 million gallons per day (MGD) (average annual daily flow), and effluent concentrations between the years 2009 and 2014 for TSS and BOD_5, as provided in the updated January 2015 301(h) application. The 2016 TDD concludes that the Discharger's 301(h) application satisfies CWA sections 301(h) and 301(j)(5). Based on this information, it is the USEPA, Region IX Regional Administrator's tentative decision to grant the Discharger's variance request for TSS and BOD_5, in accordance with this tentative decision and the 1984 301(h) Memorandum of Understanding between the State of California and USEPA; the San Diego Water Board and USEPA, Region IX have jointly proposed issuance of a draft 301(h)-modified permit incorporating both federal NPDES requirements and State WDRs. The final permit will be issued without prejudice to the rights of any party to address the legal issue of the applicability of CWA section 1311(j)(5) to the Discharger's future NPDES permits for its discharges from the Facility.

E. **Permit Renewal Contingency.** The Discharger's Order/Permit renewal of the variance from federal secondary treatment standards, pursuant to CWA sections 301(h) and (j)(5), is contingent upon:

1. Determination by the California Coastal Commission that the proposed discharge is consistent with the Coastal Zone Management Act of 1972, as amended (16 U.S. Code (U.S.C.) section 1451 et seq.);
2. Determination by the U.S. Fish and Wildlife Service and the National Oceanic and Atmospheric Administration's (NOAA's) National Marine Fisheries Service that the proposed discharge is consistent with the federal Endangered Species Act of 1973, as amended (16 U.S.C. section 1531 et seq.);
3. Determination by the NOAA National Marine Fisheries Service that the proposed discharge is consistent with the Magnuson-Stevens Fishery Conservation and Management Act, as amended (16 U.S.C. section 1801 et seq.);
4. Determination by the San Diego Water Board that the discharge will not result in additional treatment pollution control, or other requirement, on any other point or nonpoint sources (40 CFR section 125.64);
5. Certification and concurrence by the San Diego Water Board that the discharge will comply with water quality standards for the pollutants for which the 301(h) variance is requested (40 CFR section 125.61) (i.e., TSS and BOD_5). The joint issuance of a NPDES permit, which incorporates both the 301(h) variance and State WDRs, will serve as the San Diego Water Board's concurrence; and
6. Final decision by the USEPA, Region IX Regional Administrator regarding the Discharger's CWA section 301(h) variance request.

F. **Executive Officer Delegation of Authority.** The San Diego Water Board by prior resolution has delegated all matters that may legally be delegated to its Executive Officer to act on its behalf pursuant to Water Code section 13223. Therefore, the Executive Officer is authorized to act on the San Diego Water Board's behalf on any matter within this Order/Permit unless such delegation is unlawful under Water Code section 13223 or this Order/Permit explicitly states otherwise.

G. **Notification of Interested Parties.** The San Diego Water Board and USEPA, Region IX have notified the Discharger and interested agencies and persons of their intent to jointly issue a federal NPDES permit that incorporates State WDRs for the discharge and have provided them with an opportunity to submit written comments and recommendations. The San Diego Water Board and USEPA, Region IX have also provided an opportunity for the Discharger and interested agencies and persons to submit oral comments and recommendations at a joint public hearing. Details of the notification are provided in the Fact Sheet (Attachment F).

H. **Consideration of Public Comment.** The San Diego Water Board and USEPA, Region IX, at a joint public hearing, heard and considered all comments pertaining to the discharge. Details of the public hearing conducted by the San Diego Water Board and USEPA, Region IX are provided in the Fact Sheet (Attachment F).

THEREFORE, IT IS HEREBY ORDERED, that this Order/Permit supersedes Order No. R9-2009-0001 except for enforcement purposes, and, in order to meet the provisions contained in division 7 of the Water Code (commencing with section 13000) and regulations adopted thereunder, and the provisions of the CWA and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order/Permit. The Discharger is hereby authorized to discharge subject to WDRs in this Order/Permit at the discharge location described in Table 2 to the Pacific Ocean off the coast of San Diego. If any part of this Order/Permit is subject to a temporary stay of enforcement, unless otherwise specified in the order granting stay, the Discharger shall comply with the analogous portions of Order No. R9-2009-0001. This action in no way prevents the San Diego Water Board and/or USEPA, Region IX from taking enforcement action for past violations of Order No. R9-2009-0001.

Any discharges not expressly authorized in this Order/Permit cannot become authorized or shielded from liability under CWA section 402(k) by disclosure to USEPA, State, or local authorities after issuance of this Order/Permit via any means, including during an inspection.

III. DISCHARGE PROHIBITIONS

A. The discharge of waste from the Facilities to a location other than Discharge Point No. 001, unless specifically regulated by this Order/Permit or separate WDRs, is prohibited.

B. The Discharger must comply with Discharge Prohibitions contained in the *Water Quality Control Plan, Ocean Waters of California, California Ocean Plan* (Ocean Plan). All such prohibitions are incorporated into this Order/Permit as if fully set forth herein and summarized in Attachment G, as a condition of this Order/Permit.

C. The Discharger must comply with Discharge Prohibitions contained in chapter 4 of the *Water Quality Control Plan for the San Diego Basin* (Basin Plan). All such prohibitions are incorporated into this Order/Permit as if fully set forth herein and summarized in Attachment G, as a condition of this Order/Permit.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations and Performance Goals – Discharge Point No. 001

1. Effluent Limitations – Discharge Point No. 001

The Discharger shall maintain compliance with the following effluent limitations at Discharge Point No. 001, with compliance measured at Monitoring Location EFF-001 as described in the Monitoring and Reporting Program (MRP, Attachment E):

Table 5. Effluent Limitations, Discharge Point No. 001[1]

Parameter	Units	Effluent Limitations[2,3]						
		Average Annual	Average Monthly	Average Weekly	Maximum Daily	Instantaneous		Six-month Median
						Minimum	Maximum	
Flow	MGD	--	240	--	--	--	--	--
TSS	milligram per liter (mg/L)	--	60[4]	--	--	--	--	--
	Facility percent removal	--	75[4]	--	--	--	--	--
	System-wide percent removal	--	≥80[5]	--	--	--	--	--
	metric ton per year (mt/yr)	12,000[6]	--	--	--	--	--	--
		11,999[7]	--	--	--	--	--	--
BOD_5	System-wide percent removal	≥58[5]	--	--	--	--	--	--
Oil and Grease	mg/L	--	25	40	--	--	75	--
	pounds per day (lbs/day)	--	42,743	68,388	--	--	128,228	--
Settleable Solids	milliliter per liter (ml/L)	--	1.0	1.5	--	--	3.0	--
Turbidity	nephelometric turbidity unit (NTU)	--	75	100	--	--	225	--
pH	standard units	--	--	--	--	6.0	9.0	--
BASED ON OCEAN PLAN OBJECTIVES FOR PROTECTION OF MARINE AQUATIC LIFE								
Total Residual Chlorine	microgram per liter (µg/L)	--	--	--	1.6E+03	--	1.2E+04	4.1E+02
	lbs/day	--	--	--	2.7E+03	--	2.1E+04	7.0E+02
Chronic Toxicity (Test of Significant Toxicity)[8,9]	"Pass" / "Fail"	--	--	--	"Pass"	--	--	--
BASED ON OCEAN PLAN OBJECTIVES FOR PROTECTION OF HUMAN HEALTH – CARCINOGENS								
Aldrin	µg/L	--	4.5E-03	--	--	--	--	--
	lbs/day	--	7.7E-03	--	--	--	--	--
Tetrachloro-dibenzo-dioxin (TCDD) Equivalents	µg/L	--	8.0E-07	--	--	--	--	--
	lbs/day	--	1.4E-06	--	--	--	--	--

1. See Attachment A for definitions of abbreviations and a glossary of common terms used in this Order/Permit.
2. The mass emission rate (MER) limitation, in lbs/day, was calculated based on the following equation: MER (lbs/day) = 8.34 x Q x C, where Q is the 301(h)-variance-based flow of 205 MGD and C is the concentration (in mg/L). The 301(h)-variance-based flow rate of 205 MGD was taken from the 1995 301(h) application and carried over from Orders Nos. 95-106, R9-2002-0025, and R9-2009-0001 (see section II.C of the Fact Sheet (Attachment F) for more info).
3. Scientific "E" notation is used to express certain values. In scientific "E" notation, the number following the "E" indicates the position of the decimal point in the value. Negative numbers after the "E" indicate that the value is less than 1, and positive numbers after the "E" indicate that the value is greater than 1. In this notation a value of 6.1E-02 represents 6.1×10^{-2} or 0.061, 6.1E+02 represents 6.1×10^{2} or 610, and 6.1E+00 represents 6.1×10^{0} or 6.1.

4. The Dischargers shall, as an average monthly, remove 75% of suspended solids from the influent stream before discharging wastewaters to the ocean, except that the effluent limitation to be met shall not be lower than 60 mg/l. This effluent limitation was derived from the Ocean Plan, Table 2.
5. The average monthly system-wide percent removal was derived from CWA sections 301(h) and (j)(5). Percent removal shall be calculated on a system-wide basis, as provided in section VII.G of this Order/Permit. Section VII.G of this Order/Permit is carried over from Orders Nos. R9-2002-0025 and R9-2009-0001.
6. To be achieved on the effective date of this Order/Permit through the end of the fourth year of this Order/Permit. Mass emission limits for TSS apply only to discharges from publicly-owned treatment works (POTWs) owned and operated by the Discharger and the Discharger's wastewater generated in the San Diego Metropolitan Sewerage System (Metro System) service area, excluding TSS contributions from Metro System flows treated in the City of Escondido and South Bay WRP flows discharged to the South Bay Ocean Outfall. If the Discharger is requested to accept wastewater originating in Tijuana, Mexico, treated or untreated, such acceptance would be contingent upon an agreement acceptable to the USEPA, Region IX, San Diego Water Board and Discharger. The TSS contribution from that flow would not be counted toward Discharger's mass emission limit(s).
7. To be achieved by the beginning of the fifth year of this Order/Permit. Mass emission limits for TSS apply only to discharges from POTWs owned and operated by the Discharger and the Discharger's wastewater generated in the Metro System service area, excluding TSS contributions from Metro System flows treated in the City of Escondido and South Bay WRP flows discharged to the South Bay Ocean Outfall. If the Discharger is requested to accept wastewater originating in Tijuana, Mexico, treated or untreated, such acceptance would be contingent upon an agreement acceptable to the USEPA, Region IX, San Diego Water Board and Discharger. The TSS contribution from that flow would not be counted toward Discharger's mass emission limit(s).
8. As specified in section VII.M of this Order/Permit and section III.C of the MRP (Attachment E).
9. The Chronic Toxicity final effluent limitation is protective of both the numeric acute and chronic toxicity 2015 Ocean Plan water quality objectives. The final effluent limitation will be implemented using *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms* (EPA/600/R-95/136, 1995), current USEPA guidance in the *National Pollutant Discharge Elimination System Test of Significant Toxicity implementation Document* (EPA 833-R-10-003, June 2010) (https://www3.epa.gov/npdes/pubs/wet_final_tst_implementation2010.pdf) and EPA Regions 8, 9, and 10, Toxicity Training Tool (January 2010).

2. Performance Goals – Discharge Point No. 001

Parameters that do not have reasonable potential to cause or contribute to an exceedance of water quality objectives, or for which reasonable potential to cause or contribute to an exceedance of water quality objectives cannot be determined, are referred to as performance goal parameters and are assigned the performance goals listed in Table 6 below. Performance goal parameters shall be monitored at Monitoring Location EFF-001 as described in the MRP (Attachment E). The San Diego Water Board and USEPA, Region IX will use the results for informational purposes only, not compliance determinations. The performance goals in Table 6 below are not water quality-based effluent limitations (WQBELs) and are not enforceable, as such.

Table 6. Performance Goals, Discharge Point No. 001[1]

Parameter	Units	Performance Goals[2,3]			
		Six-month Median	Maximum Daily	Instantaneous Maximum	Average Monthly
BASED ON OCEAN PLAN OBJECTIVES FOR PROTECTION OF MARINE AQUATIC LIFE					
Arsenic, Total Recoverable	µg/L	1.0E+03	5.9E+03	1.6E+04	--
	lbs/day	1.8E+03	1.0E+04	2.7E+04	--
Cadmium, Total Recoverable	µg/L	2.1E+02	8.2E+02	2.1E+03	--
	lbs/day	3.5E+02	1.4E+03	3.5E+03	--
Chromium (VI), Total Recoverable[4]	µg/L	4.1E+02	1.6E+03	4.1E+03	--
	lbs/day	7.0E+02	2.8E+03	7.0E+03	--
Copper, Total Recoverable	µg/L	2.1E+02	2.1E+03	5.7E+03	--
	lbs/day	3.5E+02	3.5E+03	9.8E+03	--
Lead, Total Recoverable	µg/L	4.1E+02	1.6E+03	4.1E+03	--
	lbs/day	7.0E+02	2.8E+03	7.0E+03	--
Mercury, Total Recoverable[5]	µg/L	8.1E+00	3.3E+01	8.2E+01	--
	lbs/day	1.4E+01	5.6E+01	1.4E+02	--
Nickel, Total Recoverable	µg/L	1.0E+03	4.1E+03	1.0E+04	--
	lbs/day	1.8E+03	7.0E+03	1.8E+04	--
Selenium, Total Recoverable	µg/L	3.1E+03	1.2E+04	3.1E+04	--
	lbs/day	5.3E+03	2.1E+04	5.3E+04	--
Silver, Total Recoverable	µg/L	1.1E+02	5.4E+02	1.4E+03	--
	lbs/day	1.9E+02	9.3E+02	2.4E+03	--
Zinc, Total Recoverable	µg/L	2.5E+03	1.5E+04	3.9E+04	--
	lbs/day	4.2E+03	2.5E+04	6.7E+04	--
Cyanide, Total[6]	µg/L	2.1E+02	8.2E+02	2.1E+03	--
	lbs/day	3.5E+02	1.4E+03	3.5E+03	--
Ammonia (as N)	µg/L	1.2E+05	4.9E+05	1.2E+06	--
	lbs/day	2.1E+05	8.4E+05	2.1E+06	--
Phenolic Compounds (Non-Chlorinated)	µg/L	6.2E+03	2.5E+04	6.2E+04	--
	lbs/day	1.1E+04	4.2E+04	1.1E+05	--
Chlorinated Phenolics	µg/L	2.1E+02	8.2E+02	2.1E+03	--
	lbs/day	3.5E+02	1.4E+03	3.5E+03	--
Endosulfan	µg/L	1.8E+00	3.7E+00	5.5E+00	--
	lbs/day	3.2E+00	6.3E+00	9.5E+00	--
Endrin	µg/L	4.1E-01	8.2E-01	1.2E+00	--
	lbs/day	7.0E-01	1.4E+00	2.1E+00	--
Hexachlorocyclohexane (HCH)	µg/L	8.2E-01	1.6E+00	2.5E+00	--
	lbs/day	1.4E+00	2.8E+00	4.2E+00	--
Radioactivity	pico-curies per liter (pCi/L)	Not to exceed limits specified in title 17, division 1, chapter 5, subchapter 4, group 3, article 3, section 30253 of the CCRs, Reference to section 30253 is prospective, including future changes to any incorporated provisions of federal law, as the changes take effect.			

Parameter	Units	Performance Goals[2,3]			
		Six-month Median	Maximum Daily	Instantaneous Maximum	Average Monthly
BASED ON OCEAN PLAN OBJECTIVES FOR PROTECTION OF HUMAN HEALTH – NONCARCINOGENS					
Acrolein	µg/L	--	--	--	4.5E+04
	lbs/day	--	--	--	7.7E+04
Antimony, Total Recoverable	µg/L	--	--	--	2.5E+05
	lbs/day	--	--	--	4.2E+05
Bis(2-chloroethoxy) Methane	µg/L	--	--	--	9.0E+02
	lbs/day	--	--	--	1.5E+03
Bis(2-chloroisopropyl) Ether	µg/L	--	--	--	2.5E+05
	lbs/day	--	--	--	4.2E+05
Chlorobenzene	µg/L	--	--	--	1.2E+05
	lbs/day	--	--	--	2.0E+05
Chromium (III), Total Recoverable[4]	µg/L	--	--	--	3.9E+07
	lbs/day	--	--	--	6.7E+07
Di-n-butyl Phthalate	µg/L	--	--	--	7.2E+05
	lbs/day	--	--	--	1.2E+06
Dichlorobenzenes	µg/L	--	--	--	1.0E+06
	lbs/day	--	--	--	1.8E+06
Diethyl Phthalate	µg/L	--	--	--	6.8E+06
	lbs/day	--	--	--	1.2E+07
Dimethyl Phthalate	µg/L	--	--	--	1.7E+08
	lbs/day	--	--	--	2.9E+08
4,6-dinitro-2-methylphenol	µg/L	--	--	--	4.5E+04
	lbs/day	--	--	--	7.7E+04
2,4-dinitrophenol	µg/L	--	--	--	8.2E+02
	lbs/day	--	--	--	1.4E+03
Ethylbenzene	µg/L	--	--	--	8.4E+05
	lbs/day	--	--	--	1.4E+06
Fluoranthene	µg/L	--	--	--	3.1E+03
	lbs/day	--	--	--	5.3E+03
Hexachlorocyclopentadiene	µg/L	--	--	--	1.2E+04
	lbs/day	--	--	--	2.0E+04
Nitrobenzene	µg/L	--	--	--	1.0E+03
	lbs/day	--	--	--	1.7E+03
Thallium, Total Recoverable	µg/L	--	--	--	4.1E+02
	lbs/day	--	--	--	7.0E+02
Toluene	µg/L	--	--	--	1.7E+07
	lbs/day	--	--	--	3.0E+07
Tributyltin	µg/L	--	--	--	2.9E-01
	lbs/day	--	--	--	4.9E-01
1,1,1-trichloroethane	µg/L	--	--	--	1.1E+08
	lbs/day	--	--	--	1.9E+08

Parameter	Units	Performance Goals[2,3]			
		Six-month Median	Maximum Daily	Instantaneous Maximum	Average Monthly
BASED ON OCEAN PLAN OBJECTIVES FOR PROTECTION OF HUMAN HEALTH – CARCINOGENS					
Acrylonitrile	µg/L	--	--	--	2.1E+01
	lbs/day	--	--	--	3.5E+01
Benzene	µg/L	--	--	--	1.2E+03
	lbs/day	--	--	--	2.1E+03
Benzidine	µg/L	--	--	--	1.4E-02
	lbs/day	--	--	--	2.4E-02
Beryllium, Total Recoverable	µg/L	--	--	--	6.8E+00
	lbs/day	--	--	--	1.2E+01
Bis(2-chloroethyl) Ether	µg/L	--	--	--	9.2E+00
	lbs/day	--	--	--	1.6E+01
Bis(2-ethlyhexyl) Phthalate	µg/L	--	--	--	7.2E+02
	lbs/day	--	--	--	1.2E+03
Carbon Tetrachloride	µg/L	--	--	--	1.8E+02
	lbs/day	--	--	--	3.2E+02
Chlordane	µg/L	--	--	--	4.7E-03
	lbs/day	--	--	--	8.1E-03
Chlorodibromomethane	µg/L	--	--	--	1.8E+03
	lbs/day	--	--	--	3.0E+03
Chloroform	µg/L	--	--	--	2.7E+04
	lbs/day	--	--	--	4.6E+04
Dichlorodiphenyltrichloro-ethane (DDT)	µg/L	--	--	--	3.5E-02
	lbs/day	--	--	--	6.0E-02
1,4-dichlorobenzene	µg/L	--	--	--	3.7E+03
	lbs/day	--	--	--	6.3E+03
3,3'-dichlorobenzidine	µg/L	--	--	--	1.7E+00
	lbs/day	--	--	--	2.8E+00
1,2-dichloroethane	µg/L	--	--	--	5.7E+03
	lbs/day	--	--	--	9.8E+03
1,1-dichloroethylene	µg/L	--	--	--	1.8E+02
	lbs/day	--	--	--	3.2E+02
Dichlorobromomethane	µg/L	--	--	--	1.3E+03
	lbs/day	--	--	--	2.2E+03
Dichloromethane	µg/L	--	--	--	9.2E+04
	lbs/day	--	--	--	1.6E+05
1,3-dichloropropene	µg/L	--	--	--	1.8E+03
	lbs/day	--	--	--	3.1E+03
Dieldrin	µg/L	--	--	--	8.2E-03
	lbs/day	--	--	--	1.4E-02
2,4-dinitrotoluene	µg/L	--	--	--	5.3E+02
	lbs/day	--	--	--	9.1E+02

Parameter	Units	Performance Goals[2,3]			
		Six-month Median	Maximum Daily	Instantaneous Maximum	Average Monthly
1,2-diphenylhydrazine	µg/L	--	--	--	3.3E+01
	lbs/day	--	--	--	5.6E+01
Halomethanes	µg/L	--	--	--	2.7E+04
	lbs/day	--	--	--	4.6E+04
Heptachlor	µg/L	--	--	--	1.0E-02
	lbs/day	--	--	--	1.8E-02
Heptachlor Epoxide	µg/L	--	--	--	4.1E-03
	lbs/day	--	--	--	7.0E-03
Hexachlorobenzene	µg/L	--	--	--	4.3E-02
	lbs/day	--	--	--	7.4E-02
Hexachlorobutadiene	µg/L	--	--	--	2.9E+03
	lbs/day	--	--	--	4.9E+03
Hexachloroethane	µg/L	--	--	--	5.1E+02
	lbs/day	--	--	--	8.8E+02
Isophorone	µg/L	--	--	--	1.5E+05
	lbs/day	--	--	--	2.6E+05
N-nitrosodimethylamine	µg/L	--	--	--	1.5E+03
	lbs/day	--	--	--	2.6E+03
N-nitrosodi-N-propylamine	µg/L	--	--	--	7.8E+01
	lbs/day	--	--	--	1.3E+02
N-nitrosodiphenylamine	µg/L	--	--	--	5.1E+02
	lbs/day	--	--	--	8.8E+02
Polynuclear Aromatic Hydrocarbons (PAHs)	µg/L	--	--	--	1.8E+00
	lbs/day	--	--	--	3.1E+00
Polychlorinated Biphenyls (PCBs)	µg/L	--	--	--	3.9E-03
	lbs/day	--	--	--	6.7E-03
1,1,2,2-tetrachloroethane	µg/L	--	--	--	4.7E+02
	lbs/day	--	--	--	8.1E+02
Tetrachloroethylene	µg/L	--	--	--	4.1E+02
	lbs/day	--	--	--	7.0E+02
Toxaphene	µg/L	--	--	--	4.3E-02
	lbs/day	--	--	--	7.4E-02
Trichloroethylene	µg/L	--	--	--	5.5E+03
	lbs/day	--	--	--	9.5E+03
1,1,2-trichloroethane	µg/L	--	--	--	1.9E+03
	lbs/day	--	--	--	3.3E+03
2,4,6-trichlorophenol	µg/L	--	--	--	5.9E+01
	lbs/day	--	--	--	1.0E+02
Vinyl Chloride	µg/L	--	--	--	7.4E+03
	lbs/day	--	--	--	1.3E+04

1. See Attachment A for definitions of abbreviations and a glossary of common terms used in this Order/Permit.

2. The MER limitation, in lbs/day, was calculated based on the following equation: MER (lbs/day) = 8.34 x Q x C, where Q is the 301(h)-variance-based flow of 205 MGD and C is the concentration (in mg/L). The 301(h)-variance-based flow rate of 205 MGD was taken from the 1995 301(h) application and carried over from Orders Nos. 95-106, R9-2002-0025, and R9-2009-0001 (see section II.C of the Fact Sheet (Attachment F) for more info).
3. Scientific "E" notation is used to express certain values. In scientific "E" notation, the number following the "E" indicates that position of the decimal point in the value. Negative numbers after the "E" indicate that the value is less than 1, and positive numbers after the "E" indicate that the value is greater than 1. In this notation a value of 6.1E-02 represents 6.1×10^{-2} or 0.061, 6.1E+02 represents 6.1×10^{2} or 610, and 6.1E+00 represents 6.1×10^{0} or 6.1.
4. Discharger may, at its option, meet this performance goal as a total chromium performance goal.
5. USEPA Method 1631E, with a quantitation level of 0.5 nanogram per liter (ng/L), shall be used to analyze total mercury.
6. If the Discharger can demonstrate to the satisfaction of the San Diego Water Board (subject to USEPA approval) that an analytical method is available to reliably distinguish between strongly and weakly complexed cyanide, effluent limitations for cyanide may be met by (or performance goals may be evaluated with) the combined measurement of free cyanide, simple alkali metals cyanides, and weakly complexed organometallic cyanide complexes. In order for the analytical method to be acceptable, the recovery of free cyanide from metal complexes must be comparable to that achieved by the approved method in 40 CFR part 136, as amended.

3. USEPA Toxics Mass Emission Performance Goals

The annual mass emission performance goals for toxic and carcinogenic parameters in Table 7 below apply to the undiluted effluent from the Facility discharged to the PLOO. The annual mass emission performance goals are not WQBELs and are not enforceable as such. The annual mass emission performance goals may be re-evaluated and modified during this Order/Permit term, or this Order/Permit may be modified to incorporate WQBELs for the parameters in Table 7, in accordance with the requirements set forth at 40 CFR sections 122.62 and 124.5. Performance goal parameters shall be monitored at Monitoring Location EFF-001 as described in the MRP (Attachment E). The San Diego Water Board and USEPA, Region IX will use the monitoring results for informational purposes only, not compliance determinations.

Table 7. Annual Mass Emissions Performance Goals[1]

Effluent Constituent	Units	Annual Mass Emission
Arsenic, Total Recoverable	mt/yr	0.88
Cadmium, Total Recoverable	mt/yr	1.4
Chromium (VI), Total Recoverable[2]	mt/yr	14.2
Copper, Total Recoverable	mt/yr	26
Lead, Total Recoverable	mt/yr	14.2
Mercury, Total Recoverable[3]	mt/yr	0.19
Nickel, Total Recoverable	mt/yr	11.3
Selenium, Total Recoverable	mt/yr	0.44
Silver, Total Recoverable	mt/yr	2.8
Zinc, Total Recoverable	mt/yr	18.3
Cyanide, Total[4]	mt/yr	1.57
Ammonia (as N)	mt/yr	8,018
Phenolic Compounds (Non-Chlorinated)	mt/yr	2.57
Chlorinated Phenolics	mt/yr	1.73
Endosulfan	mt/yr	0.006
Endrin	mt/yr	0.008
HCH	mt/yr	0.025
Acrolein	mt/yr	17.6

Effluent Constituent	Units	Annual Mass Emission
Antimony, Total Recoverable	mt/yr	56.6
Bis(2-chloroethoxy) Methane	mt/yr	1.5
Bis(2-chloroisopropyl) Ether	mt/yr	1.61
Chlorobenzene	mt/yr	1.7
Di-n-butyl Phthalate	mt/yr	1.33
Dichlorobenzenes	mt/yr	2.8
Diethyl Phthalate	mt/yr	6.23
4,6-dinitro-2-methylphenol	mt/yr	6.8
2,4-dinitrophenol	mt/yr	11.9
Ethylbenzene	mt/yr	2.04
Fluoranthene	mt/yr	0.62
Nitrobenzene	mt/yr	2.07
Thallium	mt/yr	36.8
Toluene	mt/yr	3.31
Tributyltin	mt/yr	0.001
1,1,1-trichloroethane	mt/yr	2.51
Acrylonitrile	mt/yr	5.95
Aldrin	mt/yr	0.006
Benzene	mt/yr	1.25
Benzidine	mt/yr	12.5
Beryllium, Total Recoverable	mt/yr	1.42
Bis(2-chloroethyl) Ether	mt/yr	1.61
Bis(2-ethylhexyl) Phthalate	mt/yr	2.89
Carbon Tetrachloride	mt/yr	0.79
Heptachlor Epoxide	mt/yr	0.024
Hexachlorobenzene	mt/yr	0.54
Hexachlorobutadiene	mt/yr	0.54
Hexachloroethane	mt/yr	1.13
Isophorone	mt/yr	0.71
N-nitrosodimethylamine	mt/yr	0.76
N-nitrosodiphenylamine	mt/yr	1.47
PAHs	mt/yr	15.45
PCBs	mt/yr	0.275
1,1,2,2-tetrachloroethane	mt/yr	1.95
Tetrachloroethylene (Tetrachloroethene)	mt/yr	4
Toxaphene	mt/yr	0.068
Trichloroethylene (Trichloroethene)	mt/yr	1.56
1,1,2-trichloroethane	mt/yr	1.42
2,4,6-trichlorophenol	mt/yr	0.960
Vinyl Chloride	mt/yr	0.40

1. See Attachment A for definitions of abbreviations and a glossary of common terms used in this Order/Permit.
2. Discharger may, at its option, meet this annual mass emission performance as a total chromium annual mass emission performance.
3. USEPA Method 1631E, with a quantitation level of 0.5 ng/L, shall be used to analyze total mercury.

[4] If the Discharger can demonstrate to the satisfaction of the San Diego Water Board (subject to USEPA approval) that an analytical method is available to reliably distinguish between strongly and weakly complexed cyanide, effluent limitations for cyanide may be met by (or performance goals may be evaluated with) the combined measurement of free cyanide, simple alkali metals cyanides, and weakly complexed organometallic cyanide complexes. In order for the analytical method to be acceptable, the recovery of free cyanide from metal complexes must be comparable to that achieved by the approved method in 40 CFR part 136, as amended.

4. Interim Effluent Limitations – Not Applicable

B. Discharge Specifications

1. Waste discharged to the ocean must be essentially free of:
   a. Material that is floatable or will become floatable upon discharge;
   b. Settleable material or substances that may form sediments which will degrade benthic communities or other aquatic life;
   c. Substances which will accumulate to toxic levels in marine waters, sediments, or biota;
   d. Substances that significantly decrease the natural light to benthic communities and other marine life; and
   e. Materials that result in aesthetically undesirable discoloration of the ocean surface.
2. Waste effluents shall be discharged in a manner which provides sufficient initial dilution to minimize the concentrations of substances not removed in the treatment.
3. Location of waste discharges must be determined after a detailed assessment of the oceanographic characteristics and current patterns to assure that:
   a. Pathogenic organisms and viruses are not present in areas where shellfish are harvested for human consumption or in areas used for swimming or other body-contact sports;
   b. Natural water quality conditions are not altered in areas designated as being of special biological significance or areas that existing marine laboratories use as a source of seawater; and
   c. Maximum protection is provided to the marine environment.
4. Waste that contains pathogenic organisms or viruses should be discharged a sufficient distance from shellfishing and water-contact sports areas to maintain applicable bacterial standards without disinfection. Where conditions are such that an adequate distance cannot be attained, reliable disinfection in conjunction with a reasonable separation of the discharge point from the area of use must be provided. Disinfection procedures that do not increase effluent toxicity and that constitute the least environmental and human hazard should be used.

C. Land Discharge Specifications – Not Applicable

D. Recycling Specifications – Not Applicable

V. RECEIVING WATER LIMITATIONS

A. Surface Water Limitation

The receiving water limitations set forth below for ocean waters are based on water quality objectives contained in the Basin Plan and Ocean Plan and are a required part of this Order/Permit. The discharge of waste shall not cause or contribute to violation of these limitations in the Pacific Ocean. Compliance with these limitations shall be determined from samples collected at stations representative of the area outside of the zone of initial dilution (ZID).

1. Bacterial Characteristics within State Waters

   a. Within a zone bounded by the shoreline and a distance of three nautical miles from the shoreline, including all kelp beds, the following bacterial objectives shall be maintained throughout the water column. The ZID for the ocean outfall is excluded.

      i. 30-day Geometric Mean – The following standards are based on the geometric mean of the five most recent samples from each site:

         (a) Total coliform density (colony forming units, CFU) shall not exceed 1,000 per 100 milliliter (ml);

         (b) Fecal coliform density (CFU) shall not exceed 200 per 100 ml; and

         (c) Enterococcus density (CFU) shall not exceed 35 per 100 ml.

      ii. Single Sample Maximum:

         (a) Total coliform density (CFU) shall not exceed 10,000 per 100 ml;

         (b) Fecal coliform density (CFU) shall not exceed 400 per 100 ml;

         (c) Enterococcus density (CFU) shall not exceed 104 per 100 ml; and

         (d) Total coliform density (CFU) shall not exceed 1,000 per 100 ml when the fecal coliform/total coliform ratio exceeds 0.1.

   b. The ZID of any wastewater outfall shall be excluded from designation as kelp beds for purposes of bacterial standards. Adventitious assemblages of kelp plants on waste discharge structures (e.g., outfall pipes and diffusers) do not constitute kelp beds for purposes of bacterial standards.

   c. At all areas where shellfish may be harvested for human consumption, as determined by the San Diego Water Board, the median total coliform density (CFU) shall not exceed 70 per 100 ml throughout the water column, and not more than 10 percent of the samples shall exceed 230 per 100 ml.

2. Bacterial Characteristics for waters beyond State Waters

   Ocean waters beyond the outer limit of the territorial sea shall not exceed the following CWA section 304(a)(1) criteria for enterococcus density (CFU) beyond the ZID in areas where primary contact recreation, as defined in USEPA guidance, occurs. USEPA describes the "primary contact recreation" use as protective when the potential for ingestion of, or immersion in, water is likely. Activities usually include swimming, water-skiing, skin-diving, surfing, and other activities likely to result in immersion. (Water Quality Standards Handbook, EPA- 823-B-94-005a, 1994, p. 2-2, available at https://www.epa.gov/wqs-tech/water-quality-standards-handbook)

a. 30-day Geometric Mean – The following standard is based on the geometric mean:

Enterococcus density (CFU) shall not exceed 35 per 100 ml.

The geometric mean values should be calculated based on a statistically sufficient number of samples (generally not less than five samples equally spaced over a 30-day period). If any of the single sample limitations are exceeded, the San Diego Water Board and/or USEPA, Region IX may require repeat sampling on a daily basis until the sample falls below the single sample limitation in order to determine the persistence of the exceedance. When repeat sampling is required because of an exceedance of any one single sample limitation, values from all samples collected during that 30-day period will be used to calculate the geometric mean.

b. Single Sample Maximum:

i. Enterococcus density (CFU) shall not exceed 104 per 100 ml for designated bathing beach;

ii. Enterococcus density (CFU) shall not exceed 158 per 100 ml for moderate use;

iii. Enterococcus density (CFU) shall not exceed 276 per 100 ml for light use; and

iv. Enterococcus density (CFU) shall not exceed 501 per 100 ml for infrequent use.

3. Physical Characteristics

a. Floating particulates and grease and oils shall not be visible.

b. The discharge of waste shall not cause aesthetically undesirable discoloration of the ocean surface.

c. Natural light shall not be significantly reduced at any point outside the ZID as a result of the discharge of waste.

d. The rate of deposition of inert solids and the characteristics of inert solids in the ocean sediments shall not be changed such that benthic communities are degraded.

4. Chemical Characteristics

a. The dissolved oxygen concentration shall not at any time be depressed more than 10 percent from that which occurs naturally, as the result of the discharge of oxygen demanding waste materials.

b. The pH shall not be changed at any time more than 0.2 standard units from that which occurs naturally.

c. The dissolved sulfide concentration of waters in and near sediments shall not be significantly increased above that present under natural conditions.

d. The concentration of substances set forth in Chapter II, Table 1 of the Ocean Plan, shall not be increased in marine sediments to levels that would degrade indigenous biota.

e. The concentration of organic materials in marine sediments shall not be increased to levels that would degrade marine life.

f. Nutrient materials shall not cause objectionable aquatic growths or degrade indigenous biota.

g. Numerical water quality objectives established in Chapter II, Table 1 of the Ocean Plan apply to all discharges within the jurisdiction of the Ocean Plan. Unless otherwise specified, all metal concentrations are expressed as total recoverable concentrations.

5. Biological Characteristics

a. Marine communities, including vertebrate, invertebrate, and plant species, shall not be degraded.

b. The natural taste, odor, color of fish, shellfish, or other marine resources used for human consumption shall not be altered.

c. The concentration of organic materials in fish, shellfish, or other marine resources used for human consumption shall not bioaccumulate to levels that are harmful to human health.

6. Radioactivity

Discharge of radioactive waste shall not degrade marine life.

B. Groundwater Limitations – Not Applicable

VI. PROVISIONS

A. Standard Provisions

1. The Discharger shall comply with all Standard Provisions included in Attachment D.

2. The Discharger shall comply with the following provisions. In the event that there is any conflict, duplication, or overlap between provisions specified by this Order/Permit, the more stringent provision shall apply.

a. The Facilities shall be supervised and operated by persons possessing certificates of appropriate grade pursuant to title 23, division 3, chapter 26 of the CCR. The Facilities shall be provided with a sufficient number of qualified personnel to operate the Facilities effectively so as to achieve the required level of treatment at all times.

b. All proposed new treatment facilities and expansions of existing treatment facilities shall be completely constructed and operable prior to initiation of the discharge from the new or expanded facilities. The Discharger shall submit a certification report for each new treatment facility, expansion of an existing treatment facility, and design capacity re-ratings, prepared by the design engineer. For design capacity re-ratings, the certification report shall be prepared by the engineer who evaluated the treatment facility design capacity. The signature and engineering license number of the engineer preparing the certification report shall be affixed to the report. If reasonable, the certification report shall be submitted prior to beginning construction of new treatment facilities or expansions of existing treatment facilities.

i. The certification report shall:

(a) Identify the design capacity of the treatment facility, including the daily and 30-day design capacity;

(b) Certify the adequacy of each component of the treatment facility; and

(c) Contain a requirement-by-requirement analysis, based on acceptable engineering practices, of the process and physical design of the facility to ensure compliance with this Order/Permit.

ii. The Discharger shall not initiate a discharge from an existing treatment facility at a daily flow rate in excess of its previously approved design capacity until:

(a) The certification report is received by the San Diego Water Board;

(b) The San Diego Water Board has received written notification of completion of construction (new treatment facilities and expansions only);

(c) An inspection of the facility has been made by the San Diego Water Board or its designated representatives (new treatment facilities and expansions only); and

(d) The San Diego Water Board, in consultation with USEPA, Region IX, has provided the Discharger with written authorization to discharge at a daily flow rate in excess of its previously approved design capacity.

c. The Facilities shall be protected against 100-year storm event as defined by the San Diego County Flood Control District (FCD).

d. The Facilities shall be protected against erosion, overland runoff, and other impacts resulting from a 100-year, 24-hour storm event as defined by the San Diego FCD.

e. The Facilities shall be protected against regional impacts due to climate change (e.g. sea level rise and floods).

f. The expiration date of this Order/Permit is contained in Tables 3 and 4 of this Order/Permit. After the expiration date, the terms and conditions of this Order/Permit are automatically continued pending issuance of a new permit, provided that all requirements of USEPA's NPDES regulations at 40 CFR section 122.6 and the State's regulations at title 23, division 3, chapter 9, article 3, section 2235.4 of the CCR regarding the continuation of expired permits and WDRs are met.

g. A copy of this Order/Permit shall be posted at a prominent location and shall be available to site personnel, San Diego Water Board, State Water Resources Control Board (State Water Board), and USEPA or their authorized representative at all times.

3. The Discharger shall comply with the following USEPA, Region IX standard conditions:

a. The following condition has been established to enforce applicable requirements of the Resource Conservation and Recovery Act (RCRA). POTWs may not receive hazardous waste by truck, rail, or dedicated pipe except as provided under 40 CFR part 270. Hazardous wastes are defined at 40 CFR part 261 and include any mixture containing any waste listed under 40 CFR sections 261.31 through 261.33. The Domestic Sewage Exclusion (40 CFR section 261.4) applies only to wastes mixed with domestic sewage in a sewer leading to a POTW and not to mixtures of hazardous wastes and sewage or septage delivered to the treatment plant by truck.

b. **Transfers by Modification:** Except as provided in 40 CFR section 122.61(b), this Order/Permit may be transferred by the Discharger to a new owner or operator only if this Order/Permit has been modified or revoked and reissued (under 40 CFR section 122.62(b)(2)), or a minor modification made (under 40 CFR section 122.63(d)), to identify the new permittee and incorporate such other requirements as may be necessary under the CWA. (40 CFR section 122.61(a).)

c. **Automatic Transfers:** As an alternative to transfers under 40 CFR section 122.61(b)(1), this Order/Permit may be automatically transferred to a new permittee if: the Discharger notifies the USEPA, Region IX Water Division Director and San Diego Water Board at least 30 days in advance of the proposed transfer date; the notice includes a written agreement between the Discharger and new permittee containing a specific date for transfer of permit responsibility, coverage, and liability between them; and the USEPA, Region IX Water Division Director and San Diego Water Board does not notify the Discharger and the proposed new permittee of their intent to modify or revoke and reissue this Order/Permit. A modification under this paragraph may also be a minor modification under 40 CFR section 122.63. If this notice is not received, the transfer is effective on the date specified in the written agreement between the Discharger and the new permittee. (40 CFR section 122.61(b).)

d. **Minor Modification of Permits:** Upon the consent of the Discharger, the USEPA, Region IX Water Division Director and San Diego Water Board may modify this Order/Permit to make the corrections or allowances for changes in the permitted activity listed under 40 CFR sections 122.63(a) through (g), without following the procedures of 40 CFR part 124. Any permit modification not processed as a minor modification under 40 CFR section 122.63 must be made for cause and with 40 CFR part 124 draft permit and public notice as required in 40 CFR section 122.62. (40 CFR section 122.63.)

e. **Termination of Permits:** The causes for terminating a permit during its term, or for denying a permit renewal application are found at 40 CFR sections 122.64(a)(1) through (4). (40 CFR section 122.64.)

f. **Availability of Reports:** Except for data determined to be confidential under 40 CFR part 2, all reports prepared in accordance with the terms of this Order/Permit shall be available for public inspection at the offices of the San Diego Water Board and USEPA, Region IX. As required by the CWA, permit applications, permits, and effluent data shall not be considered confidential. (Pursuant to CWA section 308.)

g. **Removed Substances:** Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters shall be disposed of in a manner such as to prevent any pollutant from such materials from entering navigable waters. (Pursuant to CWA section 301.)

h. **Severability:** The provisions of this Order/Permit are severable, and if any provision of this Order/Permit or the application of any provision of this Order/Permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this Order/Permit shall not be affected thereby. (Pursuant to CWA section 512.)

i. **Civil and Criminal Liability:** Except as provided in standard conditions on Bypass and Upset, nothing in this Order/Permit shall be construed to relieve the Discharger from civil or criminal penalties for noncompliance. (Pursuant to CWA section 309.)

j. **Oil and Hazardous Substances Liability:** Nothing in this Order/Permit shall be construed to preclude the institution of any legal action or relieve the Discharger from any responsibilities, liabilities, or penalties to which the Discharger is or may be subject under CWA section 311.

k. **State or Tribal Law:** Nothing in this Order/Permit shall be construed to preclude the institution of any legal action or relive the operator from any responsibilities, liabilities, or penalties established pursuant to any applicable State or Tribal law or regulation under authority preserved by CWA section 510.

l. **No Shield Clause:** Any discharges not expressly authorized in this Order/Permit cannot become authorized or shielded from liability under CWA section 402(k) by disclosure to USEPA, San Diego Water Board, State Water Board, or local authorities after issuance of this Order/Permit by any means, including during an inspection.

B. Monitoring and Reporting Program (MRP) Requirements

1. The Discharger shall comply with the MRP and future revisions thereto, in Attachment E.
2. Notifications required to be provided under this Order/Permit to the San Diego Water Board shall be made to:

   E-mail – sandiego@waterboards.ca.gov

   Telephone – (619) 516-1990
   Facsimile – (619) 516-1994

C. Special Provisions

1. Reopener Provisions

a. This Order/Permit may be reopened for modification to include an effluent limitation if monitoring establishes that the discharge causes, has the reasonable potential to cause, or contributes to an excursion above a performance goal(s) set forth in section IV.A.2, Table 6, of this Order/Permit or as otherwise described in Table 1 of the Ocean Plan. (40 CFR section 122.44(d)(1))

b. This Order/Permit may be reopened for modification of the monitoring and reporting requirements and/or special studies requirements, at the discretion of the San Diego Water Board and USEPA, Region IX. Such modification(s) may include, but is (are) not limited to, revision(s) (i) to implement recommendations from Southern California Coastal Water Research Project (SCCWRP); (ii) to develop, refine, implement, and/or coordinate a regional monitoring program; (iii) to develop and implement improved monitoring and assessment programs in keeping with San Diego Water Board Resolution No. R9-2012-0069, *Resolution in Support of a Regional Monitoring Framework*; and/or (iv) to add provisions to require the Discharger to evaluate and provide information on cost and values of the MRP (Attachment E).

c. This Order/Permit may be modified, revoked and reissued, or terminated for cause in accordance with the provisions of 40 CFR parts 122, 124, and 125 at any time prior to its expiration under any of the following circumstances:

   i. Violation of any terms or conditions of this Order/Permit. (Water Code section 13381(a));

   ii. Obtaining this Order/Permit by misrepresentation or failure to disclose fully all relevant facts. (Water Code section 13381(b)); and

   iii. A change in any condition that requires either a temporary or permanent reduction or elimination of the permitted discharge. (Water Code section 13381(c)).

d. The filing of a request by the Discharger for modifications, revocation and reissuance, or termination of this Order/Permit does not stay any condition of this Order/Permit. Notification by the Discharger of planned operational or facility changes or anticipated noncompliance with this Order/Permit does not stay any condition of this Order/Permit. (40 CFR section 122.41(f))

e. If any applicable toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under CWA section 307(a) for a toxic pollutant and that standard or prohibition is more stringent than any limitation on the pollutant in this Order/Permit, the San Diego Water Board and USEPA, Region IX may institute proceedings under these regulations to modify or revoke and reissue this Order/Permit to conform to the toxic effluent standard or prohibition. (40 CFR section 122.4(b)(1))

f. This Order/Permit may be reopened and modified, in accordance with the provisions set forth in 40 CFR parts 122 and 124.

g. This Order/Permit may be reopened and modified to revise effluent limitations as a result of future Basin Plan Amendments, or the adoption of a total maximum daily load (TMDL) for the receiving water. (40 CFR section 122.62(a)(2))

h. This Order/Permit may be reopened upon submission by the Discharger of adequate information, as determined by the San Diego Water Board and USEPA, Region IX, to provide for dilution credits or a mixing zone, as may be appropriate. (40 CFR section 122.62(a)(2))

i. This Order/Permit may also be reopened and modified, revoked and reissued, or terminated in accordance with the provisions of 40 CFR sections 122.44, 122.62 to 122.64, and 125.62. Causes for taking such actions include, but are not limited to, failure to comply with any condition of this Order/Permit, and endangerment to human health or the environment resulting from the permitted activity.

j. The mass emission performance goals, contained in section IV.A.3 of this Order/Permit, may be re-evaluated and modified during this Order/Permit term, or this Order/Permit may be modified to incorporate WQBELs, in accordance with the requirements set forth at 40 CFR sections 122.62 and 124.5.

2. Special Studies, Technical Reports and Additional Monitoring Requirements

a. **Spill Prevention and Response Plans**

i. For purposes of section VI.C.2 of this Order/Permit, a spill is a discharge that occurs at or downstream of the Facility headworks, including MBC and PLOO, in violation of Discharge Prohibition III.A of this Order/Permit. A spill may include a discharge of treated or untreated wastewater, or material other than treated or untreated wastewater that cause, may cause, or are caused by significant operational failure, and/or endangers or may endanger human health or the environment. The term “spill” as used in section VI.C.2 of this Order/Permit does not include sanitary sewer overflows from the sewage collection system, including Pump Station No. 2, that are covered under separate WDRs (see section VI.C.5.e of this Order/Permit for more information).

ii. Within 120 days after the effective date of this Order/Permit, the Discharger shall develop and maintain a Spill Prevention Plan (SPP) and Spill Response Plan (SRP) for the Facility, MBC, and PLOO in an up-to-date condition and

shall amend the SPP/SRP whenever there is a change (e.g., in the design, construction, operation, or maintenance of the Facility, MBC, and PLOO) which materially affects the potential for spills and the response required for each potential spill. The Discharger shall review and amend the SPP/SRP as appropriate after each spill from the Facility, MBC, and/or PLOO. The SPP/SRP and any amendments thereto shall be subject to the approval of the San Diego Water Board and USEPA, Region IX and shall be modified as directed by the San Diego Water Board and USEPA, Region IX. The Discharger shall submit the SPP/SRP and any amendments thereto to the San Diego Water Board and/or USEPA, Region IX upon request of the San Diego Water Board and/or USEPA, Region IX. The Discharger shall ensure that the up-to-date SPP/SRP is readily available to its personnel at all times and that its personnel are familiar with it.

b. **Spill Reporting Requirements**

The Discharger shall report spills, as defined in section VI.C.2.a.i above, in accordance with the following procedures.

i. If a spill results in a discharge of treated or untreated wastewater that is equal to or exceeds 1,000 gallons, and/or results in a discharge to a drainage channel and/or surface water; or results in a discharge to a storm drain that was not fully captured and returned to the Facility, the Discharger shall:

(a) Report the spill to the San Diego Water Board by email at SanDiego@waterboards.ca.gov within 24 hours from the time the Discharger becomes aware of the spill. If email communication is not possible, report the spill by telephone (619-516-1990) within 24 hours from the time the Discharger becomes aware of the spill. The report shall include a description of the spill and its cause; the spill material; the duration of the spill including exact dates and times; the estimated spill volume and its destination; if the spill has not been terminated, the anticipated time it is expected to continue; and steps taken or planned to reduce and or eliminate the spill.

(b) Submit a written report by email at SanDiego@waterboards.ca.gov, as well as any additional pertinent information, to the San Diego Water Board no later than five days from the time the Discharger becomes aware of the spill. The written report must be signed and certified as required by section V of the Standards Provisions (Attachment D).

The San Diego Water Board may waive the above-required written report under this provision on a case-by-case basis if the email or oral report has been received within 24 hours.

ii. If a spill results in a discharge of treated or untreated wastewater less than 1,000 gallons and the discharge does not reach a drainage channel or surface waters, or results in a discharge to a storm drain that was fully captured and returned to the Facility, the Discharger is not required to notify the San Diego Water Board within 24 hours, or provide a 5-day written report.

iii. For spills of material other than treated or untreated wastewater that cause, may cause, or are caused by significant operational failure, and/or endangers or may endanger human health or the environment, the Discharger shall notify the San Diego Water Board by email at SanDiego@waterboards.ca.gov within 24 hours from the time the Discharger becomes aware of the spill. If email communication is not possible, report the spill by telephone (619-516-1990) within 24 hours from the time the Discharger becomes aware of the spill. The report shall include a description of the spill and its cause; the spill material; the duration of the spill including exact dates and times; the estimated spill volume and its destination; if the spill has not been terminated, the anticipated time it is expected to continue; and steps taken or planned to reduce and or eliminate the spill.

Submit a written report by email at SanDiego@waterboards.ca.gov, as well as any additional pertinent information, to the San Diego Water Board no later than five days from the time the Discharger becomes aware of the spill. The written report must be signed and certified as required by section V of the Standards Provisions (Attachment D).

The San Diego Water Board may waive the above-required written report under this provision on a case-by-case basis if the email or oral report has been received within 24 hours.

iv. For all spills, the Discharger shall include a detailed summary of spills in the monthly Self-Monitoring Report (SMR) for the month in which the spill occurred. If no spills occurred during the calendar month, the Discharger shall report no spills in the monthly SMR for that calendar month.

v. The spill reporting requirements contained in this Order/Permit do not relieve the Discharger of responsibilities to report spills to other agencies, such as the California Office of Emergency Services and the County of San Diego Department of Environmental Health Services.

3. Best Management Practices and Pollution Prevention

Pollutant Minimization Program (PMP) - Reporting protocols in the MRP (Attachment E) describe sample results that are to be reported as Detected, But Not Quantified (DNQ) or Not Detected (ND). Definitions for a reported Minimum Level (ML) and Method Detection Limit (MDL) are provided in the Ocean Plan and in the Abbreviation and Definitions (Attachment A). These reporting protocols and definitions are used in determining the need to conduct a PMP, as follows:

a. The Discharger shall develop and conduct a PMP as further described below when there is evidence (e.g., sample results reported as DNQ when the effluent limitation is less than the MDL, sample results from analytical methods more sensitive than those methods required by this Order/Permit, presence of whole effluent toxicity, health advisories for fish consumption, results of benthic or aquatic organism tissue sampling) that a pollutant is present in the effluent above an effluent limitation and either:

i. The concentration of the pollutant is reported as DNQ and the effluent limitation is less than the reported ML; or

ii. The concentration of the pollutant is reported as ND and the effluent limitation is less than the MDL.

The goal of the PMP shall be to reduce all potential sources of a pollutant through pollutant minimization (control) strategies, including pollution prevention measures as appropriate, to maintain the effluent concentration at or below the effluent limitation. Pollution prevention measures may be particularly appropriate for persistent bioaccumulative priority pollutants where there is evidence that beneficial uses are being impacted. The San Diego Water Board and USEPA, Region IX may consider cost-effectiveness when establishing the requirements of a PMP. The completion and implementation of a Pollution Prevention Plan, if required pursuant to Water Code section 13263.3(d), shall be considered to fulfill the PMP requirements.

b. The PMP shall include, but not be limited to, the following actions and submittals acceptable to the San Diego Water Board and USEPA, Region IX:

   i. An annual review and semi-annual monitoring of potential sources of the reportable pollutant(s), which may include fish tissue monitoring and other bio-uptake sampling;

   ii. Quarterly monitoring for the reportable pollutant(s) in the influent to the wastewater treatment system;

   iii. Submittal of a control strategy designed to proceed toward the goal of maintaining concentrations of the reportable pollutant(s) in the effluent at or below the effluent limitation;

   iv. Implementation of appropriate cost-effective control measures for the reportable pollutant(s), consistent with the control strategy; and

   v. An annual status report that shall be sent to the San Diego Water Board and USEPA, Region IX including:

      (a) All PMP monitoring results for the previous year;

      (b) A list of potential sources of the reportable pollutant(s);

      (c) A summary of all actions undertaken pursuant to the control strategy; and

      (d) A description of actions to be taken in the following year.

4. Construction, Operation and Maintenance Specifications

a. The Discharger shall maintain in good working order a sufficient alternate power source for operating the Facilities. All equipment shall be located to minimize failure due to moisture, liquid spray, flooding, sea level rise, and other physical phenomena. The alternate power source shall be designed to permit inspection and maintenance and shall provide for periodic testing. If such alternate power source is not in existence, the Discharger shall halt, reduce, or otherwise control all discharges upon the reduction, loss, or failure of the primary source of power.

b. Emergency Power Facilities - The Discharger shall provide standby or emergency power facilities and/or storage capacity or other means so that in the event of plant upset or outage due to power failure or other cause, discharge of raw or inadequately treated sewage does not occur.

5. Special Provisions for Publicly-Owned Treatment Works (POTWs)

a. **Ensuring Adequate Capacity**

The Discharger shall submit a written report to the San Diego Water Board and USEPA, Region IX within 90 days after the monthly average influent flow rate equals or exceeds 75 percent of the design capacity of key Metro System facilities and operations that play a key role in Facility operations and Order/Permit compliance. Metro System facilities and operations include the advanced primary treatment Facility; the Point Loma Ocean Outfall; primary pump stations including, but not limited to, Pump Station No.1 and 2; sludge pipelines and biosolids handling facilities including MBC; and other key devices and systems used in the conveyance, storage, treatment of Metro System wastewater flows. The Discharger's senior administrative officer shall sign a letter in accordance with section V.B. of the Standard Provision (Attachment D) which transmits that report and certifies that the policy-making body is adequately informed of the influent flow rate relative to the design capacity of the Metro System facility or operation. The report shall include the following:

i. Average influent daily flow for the calendar month, the date on which the maximum daily flow occurred, and the rate of that maximum flow;

ii. The Discharger's best estimate of when the average daily influent flow for a calendar month will equal or exceed the design capacity of the Metro System facility or operation; and

iii. The Discharger's intended schedule for studies, design, and other steps showing how flow volumes will be prevented from exceeding existing design capacity or how design capacity will be increased.

b. **Sewage Sludge (Biosolids) Requirements**

i. General Requirements

(a) All biosolids generated by the Discharger during the treatment of wastewater shall be used or disposed of in compliance with applicable portions of: 40 CFR part 503-for biosolids that are land applied, placed on a surface disposal site (dedicated land disposal site, monofill, or sludge-only parcel at a municipal landfill), or incinerated; 40 CFR part 258-for biosolids disposed of in a municipal solid waste landfill (with other materials); and 40 CFR part 257-for all biosolids use and disposal practices not covered under 40 CFR parts 258 or 503.

Requirements for biosolids that are applied for the purpose of enhancing plant growth or for land reclamation are set forth in 40 CFR part 503, subpart B (land application). Requirements for biosolids that are placed on land for the purpose of disposal are set forth in 40 CFR part 503, subpart C (surface disposal).

The Discharger shall ensure that all biosolids produced at the Facilities are used or disposed of in accordance with these rules, whether the Discharger uses or disposes of the biosolids itself, or transfers their biosolids to another party for further treatment, use, or disposal. The Discharger is responsible for informing subsequent preparers, appliers, and disposers of requirements they must meet under these rules.

(b) The Discharger shall take all reasonable steps to prevent or minimize any biosolids use or disposal which has a likelihood of adversely affecting human health or the environment.

(c) No biosolids shall be allowed to enter wetlands or other waters of the U.S.

(d) Biosolids treatment, storage, use, or disposal shall not contaminate groundwater.

(e) Biosolids treatment, storage, use, or disposal shall not create a nuisance condition such as objectionable odors or flies.

(f) The Discharger shall assure that haulers transporting biosolids off-site for treatment, storage, use, or disposal take all necessary measures to keep the biosolids contained. Trucks hauling biosolids that are not classified Class A with respect to pathogens, as defined at 40 CFR section 503.32(a), shall be cleaned as necessary after loading and after unloading, so as to have no biosolids on the exterior of the truck, or wheels. Trucks hauling biosolids that are not Class A shall be tarped. All haulers must have and implement spill clean-up procedures. Trucks hauling biosolids that are not Class A shall not be used for hauling food or feed crops after unloading the biosolids unless the Discharger submits a hauling description, to be approved by USEPA, Region IX, describing how trucks will be thoroughly cleaned prior to adding food or feed.

(g) If biosolids are stored for over two years from the time they are generated, the Discharger must ensure compliance with all requirements for surface disposal under 40 CFR part 503, subpart C, or must submit a written notification to USEPA, Region IX, State Water Board, and San Diego Water Board with the information specified under 40 CFR section 503.20(b), demonstrating the need for longer temporary storage. During storage of any length for non-Class A biosolids, whether on the Facilities' site or off-site, adequate procedures must be taken to restrict access by the public and domestic animals.

(h) Any biosolids treatment, disposal, or storage site shall have facilities adequate to divert surface runoff from adjacent areas, to protect the site boundaries from erosion, and to prevent any conditions that would cause drainage from the materials to escape from the site. Adequate protection is defined as protection from at least a 100-year storm event and the highest tidal stage which may occur.

(i) There shall be adequate screening at the Facility headworks and/or at the biosolids treatment units to ensure that all pieces of metal, plastic, glass, and other inert objects with a diameter greater than 3/8 inches are removed.

ii. Inspection and Entry

The USEPA, San Diego Water Board, State Water Board, or an authorized representative thereof, upon the presentation of credentials, shall be allowed by the Discharger directly, or through contractual arrangements with their biosolids management contractors, to:

(a) Enter upon all premises where biosolids produced by the Discharger are treated, stored, used, or disposed of, by either the Discharger or another

party to whom the Discharger transfers biosolids for further treatment, storage, use, or disposal;

(b) Have access to and copy any records that must be kept by either the Discharger or another party to whom the Discharger transfers biosolids for further treatment, storage, use, or disposal, under the conditions of this Order/Permit or 40 CFR part 503; and

(c) Inspect any facilities, equipment (including monitoring and control equipment), practices, or operations used in biosolids treatment, storage, use, or disposal by either the Discharger or another party to whom the Discharger transfers biosolids for further treatment, storage, use, or disposal.

iii. Monitoring

(a) Biosolids shall be monitored for the following constituents, at the frequency stipulated in Table 1 of 40 CFR section 503.16:

- arsenic,
- cadmium,
- chromium,
- copper,
- lead,
- mercury,
- molybdenum,
- nickel,
- selenium,
- zinc,
- organic nitrogen,
- ammonia nitrogen, and
- total solids.

If biosolids are removed for use or disposal on a routine basis, sampling should be scheduled at regular intervals throughout the year. If biosolids are stored for an extended period prior to use or disposal, sampling may occur at regular intervals, or samples of the accumulated stockpile may be collected prior to use or disposal, corresponding to the tons accumulated in the stockpile over that period.

Monitoring shall be conducted using the methods in *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods* (SW-846), or as otherwise required under 40 CFR section 503.8(b). All results must be reported on a 100% dry weight basis and records of all analyses must state on each page of the analytical results whether the reported results are expressed on an "as-is" or a "100% dry weight" basis.

(b) The Discharger shall sample biosolids twice per year for the pollutants listed under CWA section 307(a), using best practicable detection limits. As required under section VI.C.5.b.viii.(b), these results shall be included in the annual biosolids report.

iv. Pathogen and Vector Control

(a) Prior to land application, the permittee shall demonstrate that biosolids meet Class A or Class B pathogen reduction levels by one of the methods listed under 40 CFR section 503.32.

(b) Prior to disposal on a surface disposal site, the Discharger shall demonstrate that biosolids meet Class B pathogen reduction levels, or ensure that the site is covered at the end of each operating day. If pathogen reduction is demonstrated using a "Process to Further Reduce Pathogens" or one of the "Processes to Significantly Reduce Pathogens," the Discharger shall maintain daily records of the operating parameters used to achieve this reduction. If pathogen reduction is demonstrated by testing for fecal coliform and/or pathogens, samples must be collected at the frequency specified in Table 1 of 40 CFR section 503.16. If Class B is demonstrated using fecal coliform, at least seven grab samples must be collected during each monitoring period and a geometric mean calculated from these samples. The following holding times between sample collection and analysis shall not be exceeded: fecal coliform-24 hours when cooled to four ℃; Salmonella spp. bacteria-24 hours when cooled to four ℃; enteric viruses-two weeks when frozen; and helminth ova-one month when cooled to four ℃.

(c) For biosolids that are land applied or placed on a surface disposal site, the Discharger shall track and keep records of the operational parameters used to achieve the Vector Attraction Reduction requirements under 40 CFR section 503.33(b).

v. Surface Disposal

If biosolids are placed on a surface disposal site (dedicated land disposal site or monofill), a qualified groundwater scientist shall develop a groundwater monitoring program for the site, or shall certify that the placement of biosolids on the site will not contaminate an aquifer.

vi. Landfill Disposal

Biosolids placed in a municipal landfill shall be tested by the Paint Filter Test (Method 9095) at the frequency specified in Table 1 of 40 CFR section 503.16, or more often if necessary to demonstrate that there are no free liquids.

vii. Notifications

The Discharger, either directly or through contractual arrangements with their biosolids management contractors, shall comply with the following notification requirements.

(a) Notification of Noncompliance

The Discharger shall notify USEPA, Region IX, State Water Board, and San Diego Water Board (for both Discharger and use or disposal site) of any noncompliance with the biosolids within 24 hours, if the noncompliance may endanger health or the environment. For other instances of noncompliance with the biosolids, the Discharger shall notify USEPA, Region IX and the State Water Board of the noncompliance in

writing within five working days of becoming aware of the noncompliance. The Discharger shall require their biosolids management contractors to notify USEPA, Region IX and the State Water Board of any noncompliance within these same time-frames.

(b) Interstate Notification

If biosolids are shipped to another State or Tribal Land, the Discharger shall send 60 days prior notice of the shipment to the permitting authorities in the receiving State or Tribal Land, and the USEPA, Region IX.

(c) Land Application Notification

Prior to using any biosolids from the Facilities (other than composted biosolids) at a new or previously unreported site, the Discharger shall notify USEPA, Region IX, State Water Board, and San Diego Water Board. This notification shall include a description and topographic map of the proposed site(s), names and addresses of the applier and site owner, and a listing of any State or local permits which must be obtained. It shall also include a description of the crops or vegetation to be grown, proposed loading rates, and a determination of agronomic rates.

Within a given monitoring period, if any biosolids do not meet the applicable metals concentration limits specified under 40 CFR section 503.13, then the Discharger (or its contractor) must pre-notify USEPA, Region IX, State Water Board, and San Diego Water Board, and determine the cumulative metals loading at that site to date, as required by 40 CFR section 503.12.

The Discharger shall notify the applier of all subject requirements under 40 CFR part 503, including the requirement for the applier to certify that management practices, site restrictions, and applicable vector attraction reduction requirements have been met. The Discharger shall require the applier to certify at the end of 38 months, following application of Class B biosolids, that harvesting restrictions in effect for up to 38 months have been met.

(d) Surface Disposal Notification

Prior to disposal at a new or previously unreported site, the Discharger shall notify USEPA, Region IX, State Water Board, and San Diego Water Board. The notice shall include a description and topographic map of the proposed site, depth to groundwater, whether the site is lined or unlined, site operator and site owner, and any State or local permits. It shall also describe procedures for ensuring grazing and public access restrictions for three years following site closure. The notice shall include a groundwater monitoring plan or description of why groundwater monitoring is not required.

viii. Reporting

The Discharger shall submit an annual biosolids report to the State Water Board's California Integrated Water Quality System (CIWQS) program website (http://www.waterboards.ca.gov/water_issues/programs/ciwqs/), to the USEPA,

Region IX Biosolids Coordinator, and to the Arizona Department of Environmental Quality Biosolids Program Coordinator by February 19 of each year for the period covering the previous calendar year. The report shall include:

(a) The amount of biosolids generated that year, in dry metric tons, and the amount accumulated from previous years.

(b) Results of all pollutant monitoring required under section VI.C.5.b.iii of this Order/Permit. Results must be reported on a 100% dry weight basis.

(c) Demonstrations of pathogen and vector attraction reduction methods, as required under 40 CFR sections 503.17 and 503.27, and certifications.

(d) Names, mailing addresses, and street addresses of persons who received biosolids for storage, further treatment, disposal in a municipal landfill, or other use or disposal method not covered above, and volumes delivered to each.

(e) The following information must be submitted by the Discharger, unless the Discharger requires its biosolids management contractors to report this information directly to the USEPA, Region IX Biosolids Coordinator:

(1) For land application sites:

- Locations of land application sites (with field names and numbers) used that calendar year, size of each field applied to, applier, and site owner;
- Volumes applied to each field (in wet tons and dry metric tons), nitrogen applied, and calculated plant available nitrogen;
- Crops planted, dates of planting and harvesting;
- For biosolids exceeding 40 CFR section 503.13 Table 3 metals concentrations, the locations of sites where the biosolids were applied and cumulative metals loading at the sites to date;
- Certifications of management practices at 40 CFR section 503.14; and
- Certifications of site restrictions at 40 CFR section 503(b)(5).

(2) For surface disposal sites:

- Locations of sites, site operator and site owner, size of parcel on which biosolids were disposed;
- Results of any required groundwater monitoring;
- Certifications of management practices at 40 CFR section 503.24; and
- For closed sites, the date of site closure and certifications of management practices for three years following site closure.

(f) All reports shall be submitted to:

State Water Board's CIWQS program website
(http://www.waterboards.ca.gov/water_issues/programs/ciwqs/)

Regional Biosolids Coordinator
U.S. Environmental Protection Agency
NPDES Permits Office (WTR 2-3)
75 Hawthorne Street
San Francisco, CA 94105-3901

Biosolids Program Coordinator
Arizona Department of Environmental Quality
Mail Code: 54158-1
1110 West Washington Street
Phoenix, AZ 85007

c. **Requirements for Receipt of Anaerobically Digestible Material**

If the Discharger plans to receive hauled-in anaerobically digestible material for injection into an anaerobic digester, the Discharger shall notify the San Diego Water Board and USEPA, Region IX and develop and implement Standard Operating Procedures (SOPs) for this activity. The SOPs shall be developed prior to receiving hauled-in anaerobically digestible material. The SOPs shall address material handling, including unloading, screening, or other processing prior to anaerobic digestion; transportation; spill prevention; and spill response. In addition, the SOPs shall address avoidance of the introduction of materials that could cause interference, pass-through, or upset of the treatment processes; avoidance of prohibited material; vector control; odor control; operation and maintenance; and the disposition of any solid waste segregated from introduction to the digester. The Discharger shall train its staff on the SOPs and shall maintain records for a minimum of five years for each load received, describing the hauler, waste type, and quantity received. In addition, the Discharger shall maintain records for a minimum of five years for the disposition, location, and quantity of cumulative pre-digestion-segregated solid waste hauled off-site.

d. **Pretreatment Program**

i. The Discharger shall be responsible and liable for the performance of all Control Authority pretreatment requirements contained in 40 CFR part 403, including any subsequent revisions to that part. Where 40 CFR part 403 or subsequent revisions place mandatory actions upon the Discharger, as Control Authority, but do not specify a timetable for completion, the Discharger shall complete the mandatory actions within six months of the issuance date of this Order/Permit, or the effective date of the revisions to 40 CFR part 403, whichever is later. For violations of pretreatment requirements, the Discharger shall be subject to enforcement actions, penalties, fines, and other remedies imposed by the San Diego Water Board and/or USEPA, Region IX, as provided in the CWA and/or the Water Code.

ii. The Discharger shall comply with the urban area pretreatment program requirements under CWA section 301(h) and the implementation requirements at 40 CFR part 125. The Discharger's actions to comply shall include the following:

(a) During each calendar year, maintaining a rate of significant noncompliance (SNC), as defined at 40 CFR section 403.8(f)(2)(vii), for Significant Industrial Users (SIUs) of no more than 15 percent of the total number of SIUs. The 15 percent noncompliance criteria includes only SIUs that are in SNC and which have not received at least a second level formal enforcement action from the Discharger, in accordance with the Enforcement Response Plan[1]. The second level of enforcement is an Administrative Notice and Order.

(b) By July 1 of each year, the Discharger shall submit the annual analysis regarding local limits required under 40 CFR section 125.65(c)(1)(iii) to the State Water Board's CIWQS program website (http://www.waterboards.ca.gov/water_issues/programs/ciwqs/). As a consequence of any new local limits, some SIUs may need time to come into compliance with those limits. In any such cases, the Discharger shall issue a Compliance Findings of Violation and Order which is the first level of formal enforcement in its Enforcement Response Plan. The Order shall contain a schedule for achieving compliance with the new local limits. SIUs receiving such orders will not be included in the 15 percent noncompliance criteria.

iii. The Discharger shall implement and enforce its approved pretreatment program, and all subsequent revisions, which are hereby made enforceable conditions of this Order/Permit. The Discharger shall enforce the requirements promulgated pursuant to CWA sections 307(b), 307(c), 307(d), and 402(b) with timely, appropriate, and effective enforcement actions. The Discharger shall cause all nondomestic users subject to federal categorical standards to achieve compliance no later than the date specified in those requirements, or, in the case of a new nondomestic user, upon commencement of the discharge.

iv. The Discharger shall perform the pretreatment functions required by 40 CFR part 403, including, but not limited to:

(a) Implement the necessary legal authorities as required by 40 CFR section 403.8(f)(1);

(b) Enforce the pretreatment requirements under 40 CFR sections 403.5 and 403.6;

(c) Implement the programmatic functions as required by 40 CFR section 403.8(f)(2); and

(d) Provide the requisite funding and personnel to implement the pretreatment program, as required by 40 CFR section 403.8(f)(3).

[1] The Discharger's Enforcment Response Plan was originally submitted to USEPA, Region IX in August 1993. It was subsequently revised on December 15, 1993 and December 1, 1999 and can be found at https://www.sandiego.gov/sites/default/files/legacy/mwwd/environment/iwcp/pdf/enf_resp_plan.pdf

v. By March 1 of each year, the Discharger shall submit an annual pretreatment report to the USEPA, Region IX by email (R9Pretreatment@epa.gov) and to the San Diego Water Board via the State Water Board's CIWQS program website (http://www.waterboards.ca.gov/water_issues/programs/ciwqs/) and the San Diego County Department of Environmental Health Services, Hazardous Materials Division, describing its pretreatment activities over the previous calendar year. In the event the Discharger is not in compliance with any condition or requirement of this Order/Permit, or any pretreatment compliance inspection/audit requirements, the Discharger shall include the reasons for noncompliance and state how and when it will comply with such conditions and requirements. The annual pretreatment report shall contain, but not be limited to, the following information:

(a) A summary of analytical results from representative flow-proportioned 24-hour composite sampling of the Discharger's influent and effluent for those pollutants USEPA has identified under CWA section 307(a), which are known or suspected to be discharged by nondomestic users. Wastewater sampling and analysis shall be performed in accordance with the minimum frequency of analysis required by the MRP (Attachment E). The Discharger shall also provide influent and effluent monitoring data for non-priority pollutants, which the Discharger believes may be causing or contributing to interference or pass through. The Discharger is not required to sample and analyze for asbestos. Sludge sampling and analysis is addressed elsewhere in section VI.C.5.b.iii this Order/Permit. Wastewater sampling and analysis shall be performed in accordance with 40 CFR part 136.

(b) A discussion of upset, interference, or pass through, if any, at the Discharger's Facilities, which the Discharger knows or suspects were caused by nondomestic users of the POTW system. The discussion shall include the reasons why the incidents occurred, any corrective actions taken, and, if known, the name and address of the responsible nondomestic user(s). The discussion shall also include a review of the applicable local pollutant limitations to determine whether any additional limitations or changes to existing limitations are necessary to prevent pass-through, interference, or noncompliance with sludge disposal requirements.

(c) An updated list of the Discharger's SIUs including their names and addresses, and a list of deletions, additions, and SIU name changes keyed to the previously submitted list. The Discharger shall provide a brief explanation for each change. The list shall identify the SIUs subject to federal categorical standards by specifying which set(s) of standards are applicable to each SIU. The list shall also indicate which SIUs are subject to local limits.

(d) The Discharger shall characterize the compliance status of each SIU by providing a list or table for the following:

(1) Name of SIU;

(2) Category, if subject to categorical standards;

(3) Type of wastewater treatment or control processes in place;

(4) Number of samples taken by SIU during the year;

(5) Number of samples and inspections by Discharger during the year;

(6) For an SIU subject to discharge requirements for total toxic organics, whether all required certifications were provided;

(7) A list of pretreatment standards (categorical or local) violated during the year, or any other violations;

(8) SIUs in SNC as defined at 40 CFR section 403.8(f)(2)(viii), at any time during the year;

(9) A summary of enforcement actions or any other actions taken against SIUs during the year. Describe the type of action, final compliance date, and the amount of fines and/or penalties collected, if any. Describe any proposed actions for bringing SIUs into compliance;

(10) The names of any SIUs required to prepare and/or implement a pollution prevention plan pursuant to CA SB 709 and SB 2165.

(e) A brief description of any programs the Discharger implements to reduce pollutants from nondomestic users not classified as SIUs.

(f) A brief description of any significant changes in operating the pretreatment program which differ from the previous year, including, but not limited to, changes in the program's administrative structure, local limits, monitoring program, legal authority, enforcement policy, funding, and staffing levels.

(g) A summary of the annual pretreatment program budget, including the cost of pretreatment program functions and equipment purchases.

(h) A summary of activities to involve and inform the public of the pretreatment program, including a copy of the newspaper notice, if any, required by 40 CFR section 403.8(f)(2)(vii).

(i) A description of any changes in sludge disposal methods.

(j) A description of the program to quantify, characterize, regulate, and treat flow from low-flow urban runoff diversion systems and "first flush" industrial storm water diversion systems that are routed to the sanitary sewer collection system.

(k) A discussion of any concerns not described elsewhere in the annual pretreatment report.

vi. Non-industrial Source Control Program. In accordance with CWA section 301(h)(7) and 40 CFR section 125.66(d), the Discharger shall continue to develop and implement its non-industrial source control program and public education program. The purpose of these programs is to eliminate the entrance of non-industrial toxic pollutants and pesticides into the POTW. These programs shall be periodically reviewed and addressed in the annual pretreatment report.

e. **Sewage Collection System**

The Discharger is subject to the requirements of, and must comply with *State Water Resources Control Board Order No. 2006-0003-DWQ, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems* (Statewide General SSO Order), including monitoring and reporting requirements as amended by State Water Board Order WQ 2013-0058-EXEC and any subsequent amendment/order. The Discharger is also subject to the requirements of, and must comply with the *California Regional Water Quality Control Board Region 9, San Diego Region, Order R9-2007-0005, Waste Discharge Requirements for Sewage Collection Agencies in the San Diego Region* (Regional General SSO Order), and any subsequent amendment/order.

Regardless of the coverage obtained under Order No. 2006-0003-DWQ or Order No. R9-2007-0005, the Discharger's collection system is part of the treatment system that is subject to this Order/Permit. As such, pursuant to federal regulations, the Discharger must report any noncompliance (40 CFR sections 122.44(1)(6) and (7)), properly operate and maintain its collection system [40 CFR 122.41(e)], and mitigate or prevent any discharge from the collection system in violation of this Order/Permit [40 CFR 122.41(d)].

6. Other Special Provisions – Not Applicable

7. Compliance Schedules

a. **Compliance Schedule for Pure Water San Diego Potable Reuse Tasks.**

As a condition of this CWA section 301(h) waiver, the Discharger has committed to implementing a comprehensive water reuse program called "Pure Water San Diego" (also referred to as Pure Water Program). The Pure Water Program proses to use advanced water purification technology to produce potable water from recycled water and provide a safe, reliable and cost-effective drinking water supply for San Diego area. The Pure Water Program would create 83 MGD of potable reuse water and reduce flows to the Facility, which in turn would reduce wastewater flows and pollutant loads discharged to the ocean. The Pure Water Program consists of the design and construction of new advanced water purification facilities and a new water reclamation plant; upgrades to existing water reclamation and wastewater treatment facilities; and design and construction of new pump stations and pipelines. The constructed facilities would have the ability to produce and deliver purified water to local reservoirs in volumes of at least 15 MGD by 2023, 30 MGD by 2027 and 83 MGD by December 31, 2035. The Pure Water Program is the result of collaboration between the Discharger, Metro Wastewater Joint Powers Authority (JPA)[2], and a diverse array of regional stakeholders.

To ensure that the Discharger continues to move forward with Pure Water San Diego, the Discharger shall complete all compliance tasks set forth in Table 8 below no later than the specified compliance date.

[2] The Metro Wastewater JPA includes the Discharger, City of Chula Vista, City of La Mesa, City of Del Mar, City of El Cajon, City of Lemon Grove, City of Poway, City of Coronado, City of Imperial Beach, City of National City, Padre Dam Municipal Water District, and Otay Water District.

Table 8. Pure Water San Diego Potable Reuse Tasks, 2015-2020

Category	Task	Compliance Date[1]	Task Report Due Date (14 days after the compliance date)
Pure Water San Diego Environmental Review	Issue Notice of Preparation for Program Environmental Impact Report (EIR)	Complete	N/A
	Publish Draft Program EIR for Public Review	Complete	N/A
	Certify Final Program EIR	January 31, 2018	February 14, 2018
Conveyance Pipeline from the North City Water Reclamation Plant (NCWRP)	Issue Notice to Proceed-Final Design of 15 MGD purified water conveyance pipeline from the NCWRP	January 31, 2017	February 14, 2017
	Complete 30% Design Deliverables of 15 MGD purified water conveyance pipeline from NCWRP	May 31, 2018	June 14, 2018
	Complete design of the 15 MGD purified water conveyance pipeline from the NCWRP	October 31, 2019	November 14, 2019
15 MGD Potable Reuse Purification Facility	Issue Notice to Proceed on final design of a 15 MGD Potable Reuse Purification Facility (advanced water treatment facility) for the NCWRP site	May 31, 2017	June 14, 2017
	Complete 30% Design Deliverables for 15 MGD Potable Reuse Purification Facility (advanced water treatment facility) for the NCWRP site	January 31, 2018	February 14, 2018
	Complete 60% Design Deliverables for 15 MGD Potable Reuse Purification Facility (advanced water treatment facility) for the NCWRP site	January 31, 2019	February 14, 2019
	Complete design of 15 MGD Potable Reuse Purification Facility (advanced water treatment facility)	January 31, 2020	February 14, 2020

[1] Facilities planning, including the potential to accelerate the implementation schedule, has been aggressively pursued by the Discharger since the submittal of the Report of Waste Discharge for renewal of the Facility NPDES modified permit. Implementation of Pure Water San Diego faces a unique challenge, well beyond what a normal expansion of the water and wastewater infrastructure would experience. In recognition of this, the enforceable milestones and schedule originally presented by the Discharger remains applicable for use in this Order/Permit, while realizing that the Discharger is using its best efforts to achieve its goals ahead of schedule. Updates on the progress of the implementation of Pure Water San Diego are available at https://www.sandiego.gov/water/purewater/purewatersd, as of September 21, 2016.

b. **Task Report.** The Discharger shall prepare and submit Task Reports to the San Diego Water Board and USEPA, Region IX by the due dates listed in Table 8 above (last column) for each specified task. The Task Reports shall detail compliance or noncompliance with the specified task and compliance date. If noncompliance is being reported, the reasons for such noncompliance shall be stated, and shall include an estimate of the date when the Discharger will be in compliance. Within 14 days of coming into compliance with the specified task, the Discharger shall notify the San Diego Water Board and USEPA, Region IX by letter.

c. **Semiannual Progress Reports.** The Discharger shall prepare and submit Semiannual Progress Reports of efforts taken by the Discharger towards completing the tasks in Table 8 above. The reports shall summarize the following: 1) the progress to date; 2) the activities conducted during those six months; 3) the

activities planned for the next six months; 4) information regarding all delays encountered or anticipated that may affect the future schedule for completion of the tasks required; and 5) a description of all efforts made to mitigate those delays or anticipated delays. Each semiannual progress report shall be received by the San Diego Water Board and USEPA, Region IX by the 14th day of the first month following the reporting period (January 14 and July 14). If the 14th falls on a weekend or holiday, the due date will be the following workday. The first Semiannual Progress Report shall be received by the San Diego Water Board and USEPA, Region IX on the closest January 14 or July 14 following permit effective date (identified in Tables 3 and 4 of this Order/Permit).

d. **Pure Water San Diego Potable Reuse Goals.** Pure Water San Diego potable reuse goals from January 2021 to December 2035 are set forth in Table 9 below. Because the Discharger has committed to implementing the Pure Water San Diego program as a condition of this CWA section 301(h) waiver, the goals that post-date the term of this Order/Permit are included below, with the expectation that details associated with each goal and necessary additional or interim goals will be provided and included in compliance schedules in subsequent Orders/Permits as required tasks, so as to comply with the State and federal compliance schedule policies (State Water Board Resolution No. 2008-0025, *Policy for Compliance Schedules in National Pollutant Discharge Elimination System Permits*, and 40 CFR section 122.47). The Discharger is committed to implementing these goals with the collaboration of the other members of the Metro Wastewater JPA.

Table 9. Potable Reuse Implementation Goals, 2021 -2035[1]

Phase	Goal	Possible Location of Recycled Water/Advanced Purification Treatment Facility[2]	Target Implementation Date[1]
Phase 1	Implement first 15 MGD of purified water treatment Implement cumulative potable reuse capacity: 15 MGD	NCWRP	December 31, 2023
Phase 2	Implement additional 15 MGD purified water treatment Implement cumulative potable reuse capacity: 30 MGD	NCWRP or South Bay Water Reclamation Plant (SBWRP)	December 31, 2027
Phase 3	Implement additional 53 MGD purified water treatment Implement cumulative potable reuse capacity: 83 MGD	Possible locations include Harbor Drive, Camino Del Rio, and/or Mission Gorge	December 31, 2035

1. Facilities planning, including the potential to accelerate the implementation schedule, has been aggressively pursued by the Discharger since the submittal of the Report of Waste Discharge for renewal of the Facility NPDES modified permit. Implementation of Pure Water San Diego faces a unique challenge, well beyond what a normal expansion of the water and wastewater infrastructure would experience. In recognition of this, the enforceable milestones and schedule originally presented by the Discharger remains applicable for use in this Order/Permit, while realizing that the Discharger is using its best efforts to achieve its goals ahead of schedule. Updates on the progress of the implementation of Pure Water San Diego are available at https://www.sandiego.gov/water/purewater/purewatersd, as of September 21, 2016.
2. Locations are subject to change by the Discharger.

VII. COMPLIANCE DETERMINATION

Compliance with the effluent limitations contained in section IV of this Order/Permit will be determined as specified below:

A. Compliance with Average Annual Effluent Limitation (AAEL)

If the average of daily discharges over a 12-month period exceeds the AAEL for a given parameter, this will represent a single violation for the purpose of assessing mandatory minimum penalties under Water Code Section 13385. Because the AAEL is a rolling average calculated once each month, the Discharger will be considered out of compliance for each discharge day of that month for that parameter (e.g., resulting in 31 days of noncompliance in a 31-day month) for discretionary penalties. Each discharge day of the year is determined to be either in compliance or out of compliance for the AAEL only once, during the month in which the day falls. For any one calendar month during which no sample (daily discharge) is taken, no compliance determination can be made for that calendar month and no penalty assessed.

B. Compliance with Average Monthly Effluent Limitation (AMEL)

If the average of daily discharges over a calendar month exceeds the AMEL for a given parameter, an alleged violation will be flagged and the Discharger will be considered out of compliance for each day of that month for that parameter (e.g., resulting in 31 days of noncompliance in a 31-day month). The average of daily discharges over the calendar month that exceeds the AMEL for a parameter will be considered out of compliance for the month only. If only a single sample is taken during the calendar month and the analytical result for that sample exceeds the AMEL, the Discharger will be considered out of compliance for that calendar month. For any one calendar month during which no sample (daily discharge) is taken, no compliance determination can be made for that calendar month.

C. Compliance with Average Weekly Effluent Limitation (AWEL)

If the average of daily discharges over a calendar week (Sunday through Saturday) exceeds the AWEL for a given parameter, an alleged violation will be flagged and the Discharger will be considered out of compliance for each day of that week for that parameter, resulting in seven days of noncompliance. The average of daily discharges over the calendar week that exceeds the AWEL for a parameter will be considered out of compliance for that week only. If only a single sample is taken during the calendar week and the analytical result for that sample exceeds the AWEL, the Discharger will be considered out of compliance for that calendar week. For any one calendar week during which no sample (daily discharge) is taken, no compliance determination can be made for that calendar week.

D. Compliance with Maximum Daily Effluent Limitation (MDEL)

The MDEL shall apply to flow weighted 24-hour composite samples, or grab samples, as specified in the MRP (Attachment E). If a daily discharge exceeds the MDEL for a given parameter, an alleged violation will be flagged and the Discharger will be considered out of compliance for that parameter for that one day only within the reporting period. For any one day during which no sample is taken, no compliance determination can be made for that day.

E. Compliance with Instantaneous Minimum Effluent Limitation

The instantaneous minimum effluent concentration limitation shall apply to grab samples. If the analytical result of a single grab sample is lower than the instantaneous minimum effluent limitation for a parameter, a violation will be flagged and the Discharger will be considered out of compliance for that parameter for that single sample. Noncompliance for each sample will be considered separately (e.g., the results of two grab samples taken within a calendar day

that are both lower than the instantaneous minimum effluent limitation would result in two instances of noncompliance with the instantaneous minimum effluent limitation.)

F. Compliance with Instantaneous Maximum Effluent Limitation

The instantaneous maximum effluent concentration limitation shall apply to grab samples. If the analytical result of a single grab sample is higher than the instantaneous maximum effluent limitation for a parameter, a violation will be flagged and the Discharger will be considered out of compliance for that parameter for that single sample. Noncompliance for each sample will be considered separately (e.g., the results of two grab samples taken within a calendar day that both exceed the instantaneous maximum effluent limitation would result in two instances of noncompliance with the instantaneous maximum effluent limitation.

G. Compliance with Percent Removal Limitation

Compliance with percent removal requirements for average monthly percent removals of TSS and BOD_5 shall be determined separately for each wastewater treatment facility discharging through an outfall. For each wastewater treatment facility, the monthly average percent removal is the average of the calculated daily discharge percent removals only for days on which the constituent concentration is monitored in both the influent and effluent of the wastewater treatment facility at the location specified in the MRP (Attachment E) within a calendar month.

The Facility percent removal of TSS shall be calculated according to the following equation:

$$Daily\ discharge\ \%\ removal\ = \frac{Influent\ Concentration\ -\ Effluent\ Concentration}{Influent\ Concentration} \times 100\%$$

The system-wide percent removals of TSS and BOD_5 shall be calculated using the following equation (mass emissions in metric tons):

$$\%\ removal\ = \frac{(System\ Influents - Return\ Streams) - Outfall\ Discharge}{System\ Influents - Return\ Stream} \times 100\%$$

Where:

System Influents: Facility Influent, NCWRP Influent Pump Station, and NCWRP Influent from Penasquitos Pump Station.

Return Streams: NCWRP Filter Backwash, NCWRP Plant Drain, NCWRP Secondary and Un-disinfected Filtered Effluent Bypass, NCWRP Final Effluent, and MBC Centrate.

H. Compliance with Six-month Median Effluent Limitation

If the median concentration of daily discharges over any 180-day period exceeds the six-month median effluent limitation for a given parameter, an alleged violation will be flagged and the Discharger will be considered out of compliance for each day of that 180-day period for that parameter. The next assessment of compliance will occur after the next sample is taken. If only a single sample is taken during a given 180-day period and the analytical result for that sample exceeds the six-month median effluent limitation, the Discharger will be considered out of compliance for that 180-day period. For any 180-day period during which no sample is taken, no compliance determination can be made for that 180-day period.

I. Mass and Concentration Limitations

Compliance with mass and concentration effluent limitations for the same parameter shall be determined separately with their respective limitations. When the concentration of a parameter in an effluent sample is determined to be ND or DNQ, the corresponding MER determined from that sample concentration shall also be reported as ND or DNQ.

J. Ocean Plan Provisions for Table 1 Parameters

Sufficient sampling and analysis shall be required to determine compliance with the effluent limitations.

1. Compliance with Single-constituent Effluent Limitations

The Discharger shall be deemed out of compliance with an effluent limitation or discharge specification if the concentration of the constituent in the monitoring sample is greater than the effluent limitation or discharge specification and greater than or equal to the ML.

2. Compliance with Effluent Limitations Expressed as a Sum of Several Parameters

The Discharger is out of compliance with an effluent limitation that applies to the sum of a group of chemicals (e.g., PCBs) if the sum of the individual pollutant concentrations is greater than the effluent limitation. Individual pollutants of the group will be considered to have a concentration of zero if the constituent is reported as ND or DNQ.

3. Multiple Sample Data Reduction

The concentration of the pollutant in the effluent may be estimated from the result of a single sample analysis or by a measure of central tendency (arithmetic mean, geometric mean, median, etc.) of multiple sample analyses when all sample results are quantifiable (i.e., greater than or equal to the reported ML). When one or more sample results are reported as ND or DNQ, the central tendency concentration of the pollutant shall be the median (middle) value of the multiple samples. If, in an even number of samples, one or both of the middle values is ND or DNQ, the median will be the lower of the two middle values.

4. Mass Emission Rate (MER)

The MER, in lbs/day, shall be obtained from the following calculation for any calendar day:

$$\text{MER (lbs/day)} = 8.34 \times Q \times C$$

In which Q and C are the flow rate in MGD and the constituent concentration in mg/L, respectively, and 8.34 is a conversion factor (lbs/gallon of water). If a composite sample is taken, then C is the concentration measured in the composite sample and Q is the average flow rate occurring during the period over which the samples are composited.

K. Bacteriological Standards and Analysis

1. The geometric mean used for determining compliance with bacteriological standards is calculated with the following equation:

$$\text{Geometric Mean} = (C1 \times C2 \times \ldots \times Cn)1/n$$

Where n is the number of days samples were collected during the period and C is the density of bacteria (CFU/100 ml) found on each day of sampling.

2. For all bacterial analyses, sample dilutions should be performed so the range of values extends from 2 to 16,000 CFU/100 ml. The detection methods used for each analysis shall be reported with the results of the analysis. Detection methods used for coliforms (total and fecal) shall be those listed in 40 CFR part 136 or any improved method determined by the San Diego Water Board and USEPA, Region IX to be appropriate. Detection methods used for enterococcus shall be those presented in USEPA publication EPA/600/4-85/076, *Test Methods for Escherichia coli and Enterococci in Water by*

Membrane Filter Procedure, listed under 40 CFR part 136, and any other method approved by the San Diego Water Board and USEPA, Region IX.

L. Single Operational Upset (SOU)

A SOU that leads to simultaneous violations or more than one pollutant parameter shall be treated as a single violation, and limits the Discharger's liability in accordance with the following conditions:

1. A SOU is broadly defined as a single unusual event that temporarily disrupts the usually satisfactory operation of a system in such a way that it results in violation of multiple pollutant parameters.
2. The Discharger may assert SOU to limit liability only for those violations which the Discharger submitted notice of the upset as required in section I.H of the Standard Provisions (Attachment D);
3. For purposes outside of Water Code sections 13385(h) and (i), determination of compliance and civil liability (including any more specific definition of SOU), the requirements for the Discharger to assert the SOU limitation of liability, and the manner of counting violations, shall be in accordance with the USEPA Memorandum, *Issuance of Guidance Interpreting Single Operational Upset* (September 27, 1989); and
4. For purposes of Water Code sections 13385(h) and (i), determination of compliance and civil liability (including any more specific definition of SOU), the requirements for the Discharger to assert the SOU limitation of liability, and the manner of counting violations shall be in accordance with Water Code section 13385(f)(2).

M. Chronic Toxicity

The discharge is subject to determination of "Pass" or "Fail" from a chronic toxicity test using the Test of Significant Toxicity (TST) statistical t-test approach described in *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R-10-004, 2010), Appendix A, Figure A-1 and Table A-1, and Appendix B, Table B-1. The null hypothesis (Ho) for the TST statistical approach is:

Mean discharge "in-stream" waste concentration (IWC) response ≤0.75 × Mean control response.

A test result that rejects this null hypothesis is reported as "Pass." A test result that does not reject this null hypothesis is reported as "Fail." This is a t-test (formally Student's t-test), a statistical analysis comparing two sets of replicate observations—in the case of whole effluent toxicity (WET) test, only two test concentrations (i.e., a control and IWC). The purpose of this statistical test is to determine if the means of the two sets of observations are different (i.e., if the IWC or receiving water concentration differs from the control (the test result is "Pass" or "Fail")). The Welch's t-test employed by the TST statistical approach is an adaptation of Student's t-test and is used with two samples having unequal variances.

The MDEL for chronic toxicity is exceeded and a violation will be flagged when a chronic toxicity test, analyzed using the TST statistical approach, results in "Fail.".

The chronic toxicity MDEL is set at the IWC for the discharge (0.49% effluent) and expressed in units of the TST statistical approach ("Pass" or "Fail"). All NPDES effluent compliance monitoring for the chronic toxicity MDEL shall be reported using the IWC effluent concentration and negative control, expressed in units of the TST. The TST hypothesis (Ho) (see above) is statistically analyzed using the IWC and a negative control. Effluent toxicity tests shall be run using *Short-Term Methods for Estimating the Chronic Toxicity of Effluent*

and Receiving Waters to West Coast Marine Estuarine Organisms (EPA/600/R-95/136, 1995). The San Diego Water Board's and USEPA, Region IX's review of reported toxicity test results will include review of concentration-response patterns as appropriate (see section IV.C.5 of the Fact Sheet (Attachment F)). As described in the laboratory audit directives to the San Jose Creek Water Quality Laboratory from the State Water Board dated August 07, 2014, and from USEPA dated December 24, 2013, the Percent Minimum Significant Difference (PMSD) criteria only apply to compliance reporting for the no-observed-effect-concentration (NOEC) and the sublethal statistical endpoints of the NOEC, and therefore are not used to interpret TST results. SOPs used by the toxicity testing laboratory to identify and report valid, invalid, anomalous, or inconclusive effluent (and receiving water) toxicity test measurement results from the TST statistical approach, including those that incorporate a consideration of concentration-response patterns, must be submitted to the San Diego Water Board and USEPA, Region IX (40 CFR section 122.41(h)). The San Diego Water Board and USEPA, Region IX will make a final determination as to whether a toxicity test result is valid, and may consult with the Discharger, USEPA, Region IX, the State Water Board's Quality Assurance Officer, or the State Water Board, Division of Drinking Water (DDW) Environmental Laboratory Accreditation Program (ELAP) as needed.

ATTACHMENT A – ABBREVIATIONS AND DEFINITIONS

Part 1. – Abbreviations

Abbreviation	Definition
40 CFR	Title 40 of the Code of Federal Regulations
AAEL	Average Annual Effluent Limitation
AMEL	Average Monthly Effluent Limitation
AWEL	Average Weekly Effluent Limitation
ASBS	Areas of Special Biological Significance
AUV	Autonomous Underwater Vehicle
Basin Plan	Water Quality Control Plan for the San Diego Basin
BOD_5	Biochemical Oxygen Demand (5-Day @ 20℃)
℃	Degrees Celsius
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CFU	Colony Forming Units
CIWQS	California Integrated Water Quality System
cm^3	Centimeter Cubed
COD	Chemical Oxygen Demand
CSO	Combined Sewer Overflow
CWA	Clean Water Act
DDT	Dichlorodiphenyltrichloroethane
DDW	State Water Board, Division of Drinking Water
Discharger	City of San Diego
DMR	Discharge Monitoring Report
DNQ	Detected, But Not Quantified
EC25	Effects Concentration at 25 Percent
EIR	Environmental Impact Report
ELAP	Environmental Laboratory Accreditation Program
EMAP	Environmental Monitoring and Assessment Program
eSMR	Electronic Self-Monitoring Reports
Facilities	E.W. Blom Point Loma Wastewater Treatment Plant, Pump Station No. 2, Metro Biosolids Center (MBC), Point Loma Ocean Outfall (PLOO), and Other Associated Infrastructure
Facility	E.W. Blom Point Loma Wastewater Treatment Plant
FCD	Flood Control District
F/M	Food-To-Microorganism
GPS	Global Positioning System
HCH	Hexachlorocyclohexane
Ho	Hypothesis
IU	Industrial User
IWC	“In-Stream” Waste Concentration
IWS	Industrial Waste Survey
JPA	Joint Powers Authority
lbs/day	Pounds per Day
LC	Lethal Concentration

Abbreviation	Definition
LC 50	Percent Waste Giving 50 Percent Survival of Test Organisms
MBC	Metro Biosolids Center
MCRT	Mean Cell Residence Time
MDEL	Maximum Daily Effluent Limitation
MDL	Method Detection Limit
MER	Mass Emission Rate
Metro System	San Diego Metropolitan Sewerage System
mg/kg	Milligram per Kilogram
mg/L	Milligram per Liter
MGD	Million Gallons per Day
ML	Minimum Level
ml	Milliliter
ml/L	Milliliter per Liter
MLSS	Mixed Liquor Suspended Solids
mmhos/cm	Millimhos per Centimeter
MRP	Monitoring and Reporting Program
mt/yr	Metric ton per Year
NCWRP	North City Water Reclamation Plant
ND	Not Detected
ng/L	Nanogram per Liter
NOAA's	National Oceanic and Atmospheric Administration's
NOEC	No-Observed-Effect-Concentration
NOEL	No Observed Effect Level
NPDES	National Pollutant Discharge Elimination System
NTU	Nephelometric Turbidity Unit
Ocean Plan	*California Ocean Plan, Water Quality Control Plan Ocean Waters of California*
PAHs	Polynuclear Aromatic Hydrocarbons
PCBs	Polychlorinated Biphenyls
pCi/L	Picocuries per Liter
pg/L	Picograms per Liter
PLOO	Point Loma Ocean Outfall
PMP	Pollutant Minimization Program
Plume Study	Peter Rogowski et al., *Final Report Point Loma Ocean Outfall Plume Behavior Study*, dated September 14, 2012, prepared by the University of California San Diego, Scripps Institution of Oceanography.
PMSD	Percent Minimum Significant Difference
POTWs	Publicly-Owned Treatment Works
ppm	Parts per Million
ppt	Parts per Thousand
QA	Quality Assurance
QC	Quality Control
REC-1	Contact Water Recreation
RCRA	Resource Conservation and Recovery Act
Regional General SSO Order	California Regional Water Quality Control Board Region 9, San Diego Region Order No. R9-2007-0005, *Waste Discharge Requirements for Sewage Collection Agencies in the San Diego Region*

Abbreviation	Definition
RL	Reporting Level
ROWD	Report of Waste Discharge
RPA	Reasonable Potential Analysis
San Diego Water Board	California Regional Water Quality Control Board, San Diego Region
SBOO	South Bay Ocean Outfall
SBWRP	South Bay Water Reclamation Plant
SCCWRP	Southern California Coastal Waters Research Project
Sediment Toxicity Plan	*Sediment Toxicity Monitoring Plan for the South Bay Ocean Outfall and Point Loma Ocean Outfall Monitoring Regions, San Diego, California*, *Submitted by City of San Diego Public Utilities Department Environmental Monitoring & Technical Services Division, August 28, 2015*
SIC	Standard Industrial Classification
SIUs	Significant Industrial Users
SMR	Self-Monitoring Report
SNC	Significant Noncompliance
SOPs	Standard Operating Procedures
SOU	Single Operational Upset
SPP	Spill Prevention Plan
SRP	Spill Response Plan
SS	Suspended Solids
SSMPs	Sanitary Sewer Management Plans
State Water Board	State Water Resources Control Board
Statewide General SSO Order	State Water Resources Control Board Order No. 2006-0003-DWQ, *Statewide General Waste Discharge Requirements for Sanitary Sewer Systems*
TAC	Test Acceptability Criteria
TBELs	Technology-Based Effluent Limitations
TCDD	Tetrachlorodibenzodioxin
TCLP	Toxicity Characteristic Leaching Procedure
TDD	Tentative Decision Document
TDS	Total Dissolved Solids
TIE	Toxicity Identification Evaluation
TMDL	Total Maximum Daily Load
TRE	Toxicity Reduction Evaluation
TSD	Technical Support Document
TSS	Total Suspended Solids
TST	Test Of Significant Toxicity
TUc	Toxic Units Chronic
U.S.C.	United States Code
µg	Microgram
µg/kg	Microgram per Kilogram
µg/L	Microgram per Liter
µm	Micrometer
UM3	USEPA Modeling Application Visual Plumes
USEPA	United Stated Environmental Protection Agency
U.S.	United States
USIBWC	U.S. Section of the International Boundary and Water Commission

Abbreviation	Definition
Water Code	California Water Code
WDRs	Waste Discharge Requirements
WET	Whole Effluent Toxicity
WQBELs	Water Quality-Based Effluent Limitations
WRP	Water Reclamation Plant
ZID	Zone of Initial Dilution

Part 2. – Glossary of Common Terms

30-day average
The arithmetic mean of pollutant parameter values of samples collected in a period of 30 consecutive days.

Acute Toxicity
The ability of a substance to cause severe biological harm or death soon after a single exposure or dose. The term acute toxicity also encompasses any poisonous effect resulting from a single short-term exposure to a toxic substance.

Anaerobically Digestible Material
Inedible kitchen grease as defined in section 19216 of the Food and Agricultural Code and food material as defined in title 14,division 7, chapter 3.1, article 1, section 17582(a)(20) of the CCR.

Areas of Special Biological Significance (ASBS)
Those areas designated by the State Water Board as ocean areas requiring protection of species or biological communities to the extent that alteration of natural water quality is undesirable. All ASBS are also classified as a subset of State water quality protection areas.

Average Annual Effluent Limitation (AAEL)
The highest allowable average of daily discharges over a 12-month period, calculated as the sum of all daily discharges measured during a 12-month period divided by the number of daily discharges measured during that 12-month period.

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.

Biosolids
Nutrient-rich organic materials resulting from the treatment of sewage sludge. When treated and processed, sewage sludge becomes biosolids which can be safely recycled and applied as fertilizer to sustainably improve and maintain productive soils and stimulate plant growth.

Bypass
The intentional diversion of waste streams from any portion of a treatment facility. (40 CFR section 122.41(m)(1)(i).)

Chlordane
The sum of chlordane-alpha, chlordane-gamma, chlordene-alpha, chlordene-gamma, nonachlor-alpha, nonachlor-gamma, and oxychlordane.

Chronic Toxicity
The capacity of a substance to cause long-term poisonous health effects in humans, animals, fish, and other organisms. This parameter shall be used to measure the acceptability of waters for supporting a healthy marine biota until improved methods are developed to evaluate biological response. The Ocean Plan determines chronic toxicity through the use of the following equations.

a. Chronic Toxicity (TUc) (effluent limitations expressed in TUc in the previous Orders, including Order No. R9-2009-0001)

   Expressed as Toxic Units Chronic (TUc)

$$TUc = \frac{100}{NOEL}$$

   No Observed Effect Level (NOEL)

   The NOEL is expressed as the maximum percent effluent or receiving water that causes no observable effect on a test organism, as determined by the result of a critical life stage toxicity test listed in Ocean Plan Appendix II.

b. "Pass" or "Fail" and "Percent Effect" (effluent limitations for this Order)

   The discharge is subject to determination of "Pass" or "Fail" and "Percent Effect" from a chronic toxicity test using the Test of Significant Toxicity (TST) statistical t-test approach described in *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R-10-004, 2010), Appendix A, Figure A-1 and Table A-1, and Appendix B, Table B-1. The null hypothesis (Ho) for the TST statistical approach is:

   Mean discharge "in-stream" waste concentration (IWC) response ≤0.75 × Mean control response.

Chlorinated phenolic compounds
The sum of 4-chloro-3-methylphenol, 2-chlorophenol, pentachlorophenol, 2,4,5-trichlorophenol, and 2,4,6-trichlorophenol.

Daily Discharge
Daily Discharge is defined as 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.

A composite sample is defined as a combination of at least eight sample aliquots of at least 100 ml, collected at periodic intervals during the operating hours of a. facility over a 24-hour period. For volatile pollutants, aliquots must be combined in the laboratory immediately before analysis. The composite must be flow proportional; either the time interval between each aliquot or the volume of each aliquot must be proportional to either the stream flow at the time of sampling or the total stream flow since the collection of the previous aliquot. Aliquots may be collected manually or automatically. The 100 ml

minimum volume of an aliquot does not apply to automatic self-purging samplers. If one day is defined as a 24-hour period other than a calendar day, the analytical result for the 24-hour period will be considered as the result for the calendar day in which the 24-hour period ends.

A grab sample is an individual sample of at least 100 ml collected over a period not exceeding 15 minutes that is representative of conditions at the time the sample is collected.

Degrade
Degradation shall be determined by comparison of the waste field and reference site(s) for characteristic species diversity, population density, contamination, growth anomalies, debility, or supplanting of normal species by undesirable plant and animal species. Degradation occurs if there are significant differences in any of three major biotic groups, namely, demersal fish, benthic invertebrates, or attached algae. Other groups may be evaluated where benthic species are not affected, or are not the only ones affected.

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

Dichlorobenzenes
Shall mean the sum of 1,2- and 1,3-dichlorobenzene.

Dichlorodiphenyltrichloroethane (DDT)
Shall mean the sum of 4,4'DDT, 2,4'DDT, 4,4'DDE, 2,4'DDE, 4,4'DDD, and 2,4'DDD.

Dredged Material
Any material excavated or dredged from the navigable waters of the U.S., including material otherwise referred to as "spoil."

Dry Weather
Weather is considered dry if the preceding 72 hours have been without precipitation greater than 0.1 inch (>0.1 inch).

Enclosed Bays
Indentations along the coast that enclose an area of oceanic water within distinct headlands or harbor works. Enclosed bays include all bays where the narrowest distance between headlands or outermost harbor works is less than 75 percent of the greatest dimension of the enclosed portion of the bay. This definition includes but is not limited to: Humboldt Bay, Bodega Harbor, Tomales Bay, Drakes Estero, San Francisco Bay, Morro Bay, Los Angeles Harbor, Upper and Lower Newport Bay, Mission Bay, and San Diego Bay.

Endosulfan
The sum of endosulfan-alpha and -beta and endosulfan sulfate.

Estuaries and Coastal Lagoons
Estuaries and Coastal Lagoons are waters at the mouths of streams that serve as mixing zones for fresh and ocean waters during a major portion of the year. Mouths of streams that are temporarily separated from the ocean by sandbars shall be considered as estuaries. Estuarine waters will generally be considered to extend from a bay or the open ocean to the upstream limit of tidal action but may be considered to extend seaward if significant mixing of fresh and salt water occurs in the open coastal waters. The waters described by this definition include but are not limited to the Sacramento-San Joaquin Delta as defined by Section 12220 of the Water Code, Suisun Bay, Carquinez Strait

downstream to Carquinez Bridge, and appropriate areas of the Smith, Klamath, Mad, Eel, Noyo, and Russian Rivers.

Facility
E.W. Blom Point Loma Wastewater Treatment Plant.

Facilities
E.W. Blom Point Loma Wastewater Treatment Plant (Facility), Pump Station No. 2, Metro Biosolids Center (MBC), Point Loma Ocean Outfall (PLOO), and other associated infrastructure.

Halomethanes
The mean the sum of bromoform, bromomethane (methyl bromide) and chloromethane (methyl chloride).

HCH
The mean the sum of the alpha, beta, gamma (lindane) and delta isomers of hexachlorocyclohexane.

Initial Dilution
The process that results in the rapid and irreversible turbulent mixing of wastewater with ocean water around the point of discharge.

For a submerged buoyant discharge, characteristic of most municipal and industrial wastes that are released from the submarine outfalls, the momentum of the discharge and its initial buoyancy act together to produce turbulent mixing. Initial dilution in this case is completed when the diluting wastewater ceases to rise in the water column and first begins to spread horizontally.

For shallow water submerged discharges, surface discharges, and non-buoyant discharges, characteristic of cooling water wastes and some individual discharges, turbulent mixing results primarily from the momentum of discharge. Initial dilution, in these cases, is considered to be completed when the momentum induced velocity of the discharge ceases to produce significant mixing of the waste, or the diluting plume reaches a fixed distance from the discharge to be specified by the San Diego Water Board, whichever results in the lower estimate for initial dilution.

Instantaneous Maximum Effluent Limitation
The 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
The 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).

"In-stream" Waste Concentration (IWC)
The concentration of a toxicant of effluent in the receiving water after mixing (the inverse of the dilution factor). A discharge of 100% effluent will be considered the IWC whenever mixing zones or dilution credits are not authorized by the applicable Water Board.

Interference
A discharge which, alone or in conjunction with a discharge or discharges from other sources, both:

(1) Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal; and

(2) Therefore is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent State or local regulations): Section 405 of the CWA, the Solid Waste Disposal Act (SWDA) (including title II, more commonly referred to as the Resource Conservation and Recovery Act (RCRA), and including State regulations contained in any State sludge management plan prepared pursuant to subtitle D of the SWDA), the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act.

Kelp Beds
For purposes of the bacteriological standards of the Ocean Plan, are significant aggregations of marine algae of the genera Macrocystis and Nereocystis. Kelp beds include the total foliage canopy of Macrocystis and Nereocystis plants throughout the water column.

Litter
Encompasses all improperly discarded waste material including, but not limited to, convenience food, beverage, and other product packages, or containers constructed of steel, aluminum, glass, paper, plastic, and other natural and synthetic materials, thrown or deposited on the lands and waters of the State.

Mariculture
The culture of plants and animals in marine waters independent of any pollution source.

Material
(a) In common usage: (1) the substance or substances of which a thing is made or composed (2) substantial; (b) For purposes of the Ocean Plan relating to waste disposal, dredging and the disposal of dredged material and fill, material means matter of any kind or description which is subject to regulation as waste, or any material dredged from the navigable waters of the U.S. See also, dredged material.

Maximum Daily Effluent Limitation (MDEL)
The highest allowable daily discharge of a pollutant.

Method Detection Limit (MDL)
The 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 40 CFR part 136, Attachment B.

Minimum Level (ML)
The concentration at which the entire analytical system must give 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.

Natural Light
Reduction of natural light may be determined by the San Diego Water Board by measurement of light transmissivity or total irradiance, or both, according to the monitoring needs of the San Diego Water Board.

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

Ocean Waters
The territorial marine waters of the State as defined by California law to the extent these waters are outside of enclosed bays, estuaries, and coastal lagoons. If a discharge outside the territorial waters of the State could affect the quality of the waters of the State, the discharge may be regulated to assure no violation of the Ocean Plan will occur in ocean waters.

Pass Through
A discharge which exits the POTW into waters of the U.S. in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation).

Percent Removal
A percentage expression of the removal efficiency across a treatment plant for a given pollutant parameter, as determined from the average values of the raw wastewater influent pollutant concentrations to the facility and the average values of the effluent pollutant concentrations for a given time period.

Pollutant Minimization Program (PMP)
PMP means 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 PMP shall be to reduce all potential sources of a pollutant through pollutant minimization (control) strategies, including pollution prevention measures as appropriate, in order to maintain the effluent concentration at or below the effluent limitation. Pollution prevention measures may be particularly appropriate for persistent bioaccumulative priority pollutants where there is evidence that beneficial uses are being impacted. The San Diego Water Board may consider cost effectiveness when establishing the requirements of a PMP. The completion and implementation of a Pollution Prevention Plan, if required pursuant to California Water Code section 13263.3(d), shall be considered to fulfill the PMP requirements in Ocean Plan section III.C.9.

Polychlorinated Biphenyls (PCBs)
The sum of chlorinated biphenyls whose analytical characteristics resemble those of Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254 and Aroclor-1260.

Polynuclear Aromatic Hydrocarbons (PAHs)
The sum of acenaphthylene, anthracene, 1,2-benzanthracene, 3,4-benzofluoranthene, benzo[k]fluoranthene, 1,12-benzoperylene, benzo[a]pyrene, chrysene, dibenzo[ah]anthracene, fluorene, indeno[1,2,3-cd]pyrene, phenanthrene and pyrene.

Phenolic Compounds (non-chlorinated)
The sum of 2,4-dimethylphenol, 4,6-Dinitro-2-methylphenol, 2,3-dinitrophenol, 2-methylphenol, 4-methylphenol, 2-nitropheneol, 4-nitrophenol, and phenol.

Reported Minimum Level (also known as the Reporting Level or RL)
The reported ML (also known as the Reporting Level or RL) is the ML (and its associated analytical method) chosen by the Discharger for reporting and compliance determination from the MLs included in this Order/Permit, including an additional factor if applicable as discussed herein. The MLs included in this Order/Permit correspond to approved analytical methods for reporting a sample result that are selected by the San Diego Water Board either from Appendix II of the Ocean Plan in accordance with section III.C.5.a of the Ocean Plan or established in accordance with section III.C.5.b of the Ocean Plan. 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 reported ML.

Severe Property Damage
Substantial physical damage to property, damage to the treatment facilities, which causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. (40 CFR section 122.41(m)(1)(ii))

Shellfish
Organisms identified by the California Department of Health Services as shellfish for public health purposes (i.e., mussels, clams and oysters).

Significant Difference
Defined as a statistically significant difference in the means of two distributions of sampling results at the 95 percent confidence level.

Six-Month Median Effluent Limitation
The highest allowable moving median of all daily discharges for any 180-day period.

Sludge
Any solid, semisolid, or liquid waste generated from a municipal, commercial, or industrial wastewater treatment plant, water supply treatment plant, or air pollution control facility or any other such waste having similar characteristics and effect.

State Water Quality Protection Areas (SWQPAs)
Non-terrestrial marine or estuarine areas designated to protect marine species or biological communities from an undesirable alteration in natural water quality. All ASBS that were previously designated by the State Water Board in Resolutions 74-28, 74-32, and 75-61 are now also classified as a subset of State Water Quality Protection Areas and require special protections afforded by the Ocean Plan.

TCDD Equivalents
The sum of the concentrations of chlorinated dibenzodioxins (2,3,7,8-CDDs) and chlorinated dibenzofurans (2,3,7,8-CDFs) multiplied by their respective toxicity factors, as shown in the table below.

Isomer Group	Toxicity Equivalence Factor
2,3,7,8-tetra CDD	1.0
2,3,7,8-penta CDD	0.5
2,3,7,8-hexa CDDs	0.1
2,3,7,8-hepta CDD	0.01
octa CDD	0.001
2,3,7,8 tetra CDF	0.1
1,2,3,7,8 penta CDF	0.05
2,3,4,7,8 penta CDF	0.5
2,3,7,8 hexa CDFs	0.1
2,3,7,8 hepta CDFs	0.01
octa CDF	0.001

Thirty-Day Average
See 30-day average above for definition of this term.

Toxicity Identification Evaluation (TIE)
A set of procedures conducted to identify the specific chemical(s) responsible for toxicity. These procedures are performed in three phases (characterization, identification, and confirmation) using aquatic organism toxicity tests.)

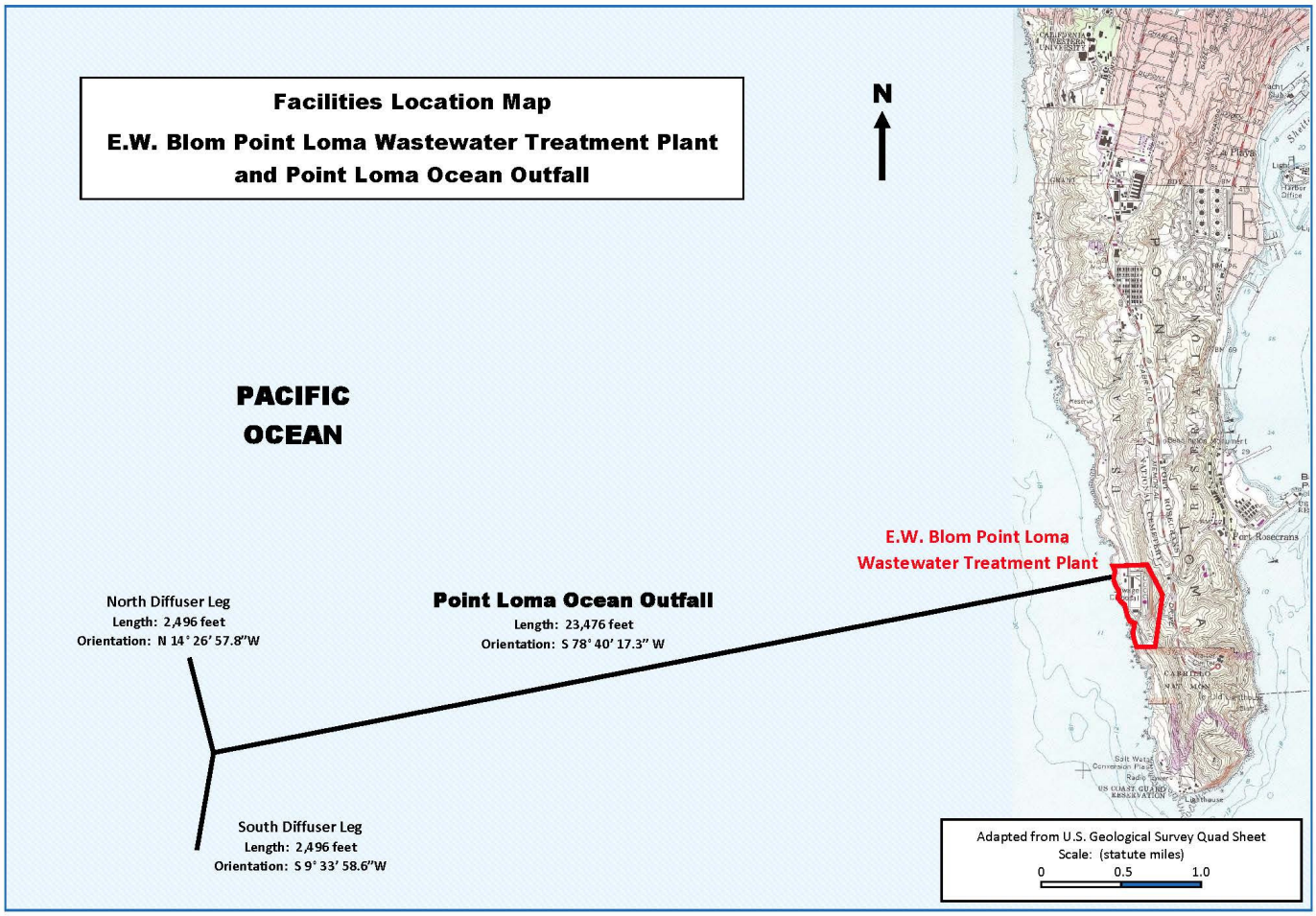
Toxicity Reduction Evaluation (TRE)
A study conducted in a step-wise process designed to identify the causative agents of effluent or ambient toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in toxicity. The first steps 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 chemical(s) responsible for toxicity. These procedures are performed in three phases (characterization, identification, and confirmation) using aquatic organism toxicity tests.)

Waste
As used in the Ocean Plan, waste includes a Discharger's total discharge, of whatever origin, i.e., gross, not net, discharge.

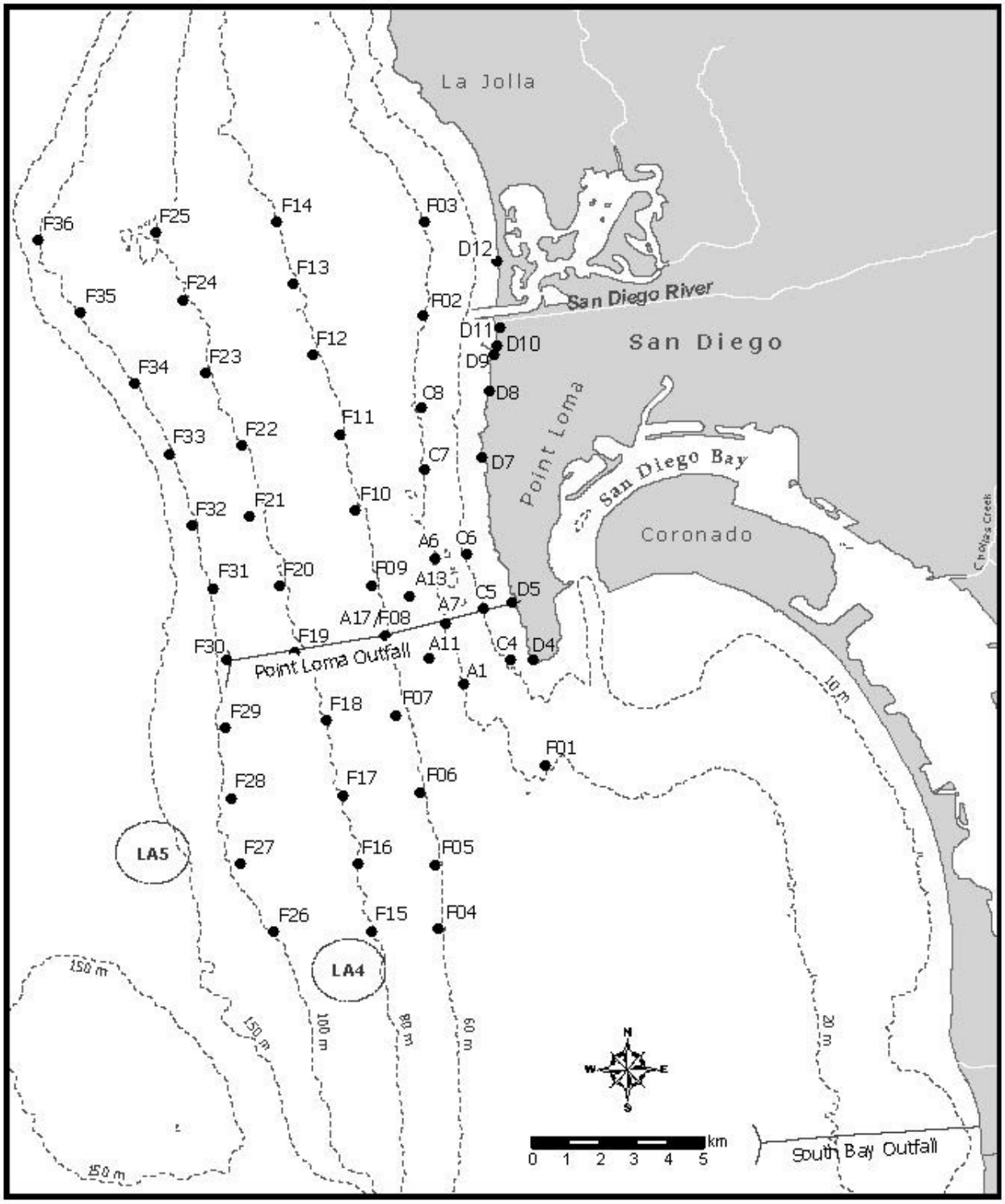
Wet Weather
Wet weather is the period of time of a storm event of 0.1 inches or greater plus 72 hours after cessation of precipitation, unless otherwise defined by another regulatory mechanism (e.g., a TMDL).

ATTACHMENT B – MAP
Map B-1. San Diego Metropolitan Sewerage System (Metro System)

Map B-2. Facility Location Map



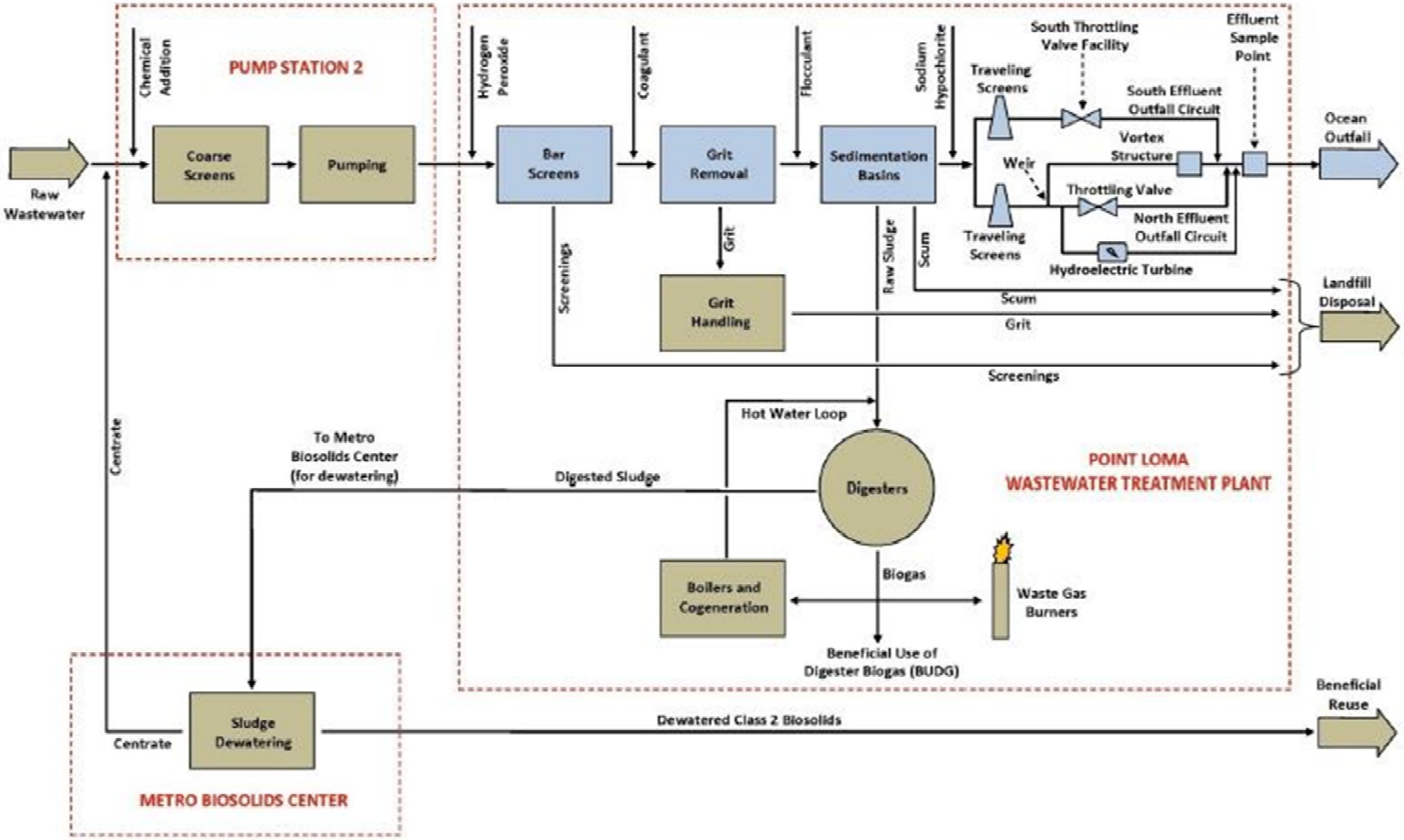
Map B-3. Offshore, Kelp, and Shoreline Monitoring Stations



City of San Diego
E.W. Blom Point Loma Wastewater Treatment Plant
Tentative ORDER R9-2017-0007
NPDES NO. CA0107409

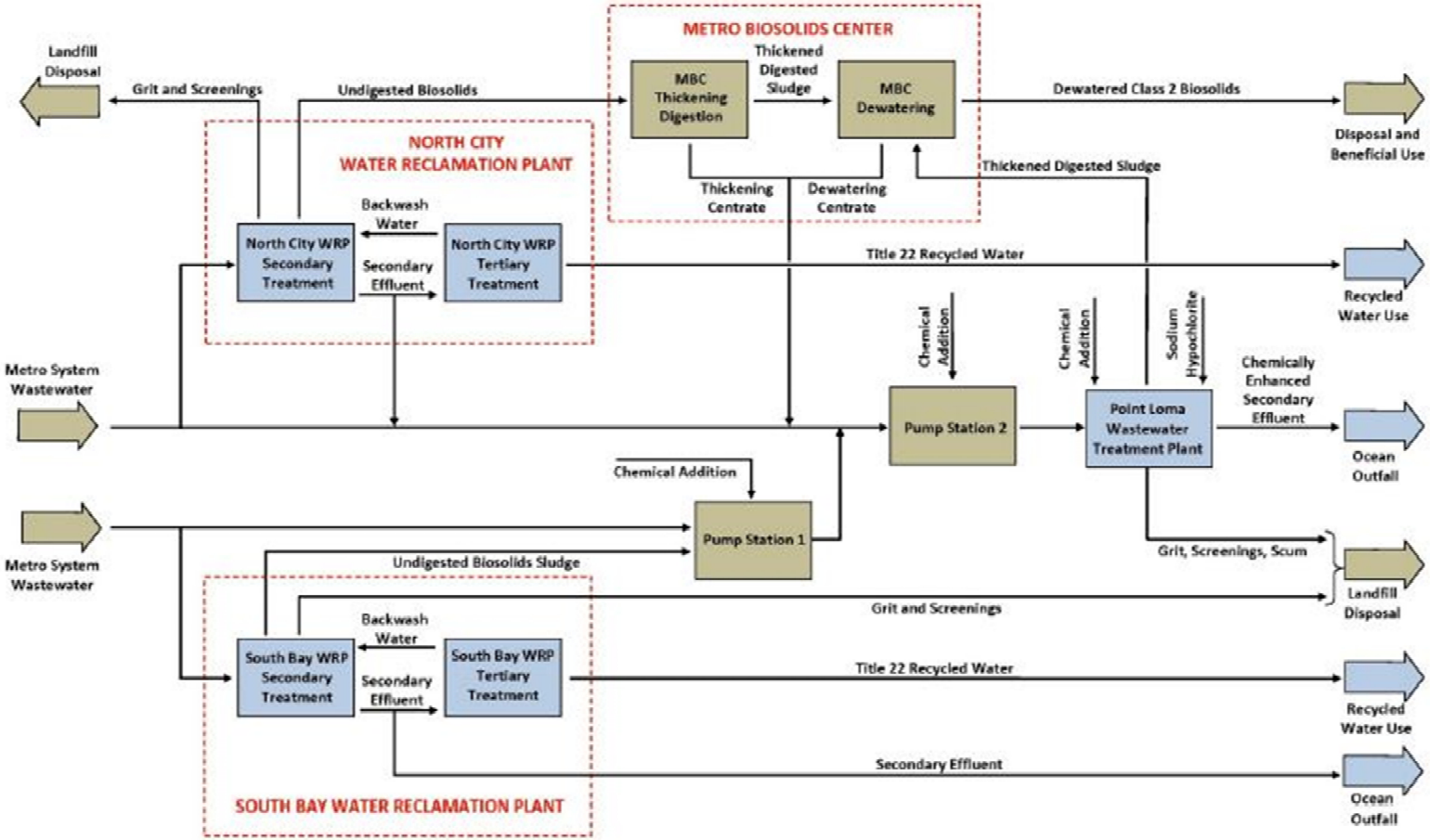
ATTACHMENT C – FLOW SCHEMATIC

Flow Schematic C-1.
Pump Station No. 2, E.W. Blom Point Loma Wastewater Treatment Plant (Facility), and Metro Biosolids Center (MBC)



City of San Diego
E.W. Blom Point Loma Wastewater Treatment Plant
Tentative ORDER R9-2017-0007
NPDES NO. CA0107409

Flow Schematic C-2. San Diego Metropolitan Sewerage System (Metro System)



ATTACHMENT D – STANDARD PROVISIONS

I. STANDARD PROVISIONS – PERMIT COMPLIANCE

A. Duty to Comply

1. The Discharger must comply with all of the terms, requirements, and conditions of this Order/Permit. Any noncompliance constitutes a violation of the Clean Water Act (CWA) and the California Water Code (Water Code) and is grounds for enforcement action; permit termination, revocation and reissuance, or modification; denial of a permit renewal application; or a combination thereof. (title 40 of the Code of Federal Regulations (40 CFR) section 122.41(a); and Water Code, sections 13261, 13263, 13265, 13268, 13000, 13001, 13304, 13350, and 13385.)

2. The Discharger shall comply with effluent standards or prohibitions established under section 307(a) of the CWA for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, even if this Order/Permit has not yet been modified to incorporate the requirement. (40 CFR section 122.41(a)(1).)

B. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a Discharger in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Order/Permit. (40 CFR section 122.41(c).)

C. Duty to Mitigate

The Discharger shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this Order/Permit that has a reasonable likelihood of adversely affecting human health or the environment. (40 CFR section 122.41(d).)

D. Proper Operation and Maintenance

The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Discharger to achieve compliance with the conditions of this Order/Permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance (QA) procedures. This provision requires the operation of backup or auxiliary facilities or similar systems that are installed by a Discharger only when necessary to achieve compliance with the conditions of this Order/Permit. (40 CFR section 122.41(e).)

E. Property Rights

1. This Order/Permit does not convey any property rights of any sort or any exclusive privileges. (40 CFR section 122.41(g).)

2. The issuance of this Order/Permit does not authorize any injury to persons or property or invasion of other private rights, or any infringement of State or local law or regulations. (40 CFR section 122.5(c).)

F. Inspection and Entry

The Discharger shall allow the San Diego Water Board, State Water Resources Control Board (State Water Board), U.S. Environmental Protection Agency (USEPA), and/or their authorized representatives (including an authorized contractor acting as their representative), upon the presentation of credentials and other documents, as may be required by law, to (33

U.S. Code (U.S.C.) section 1318(a)(4)(b); 40 CFR section 122.41(i); and Water Code, sections 13267 and 13383):

1. Enter upon the Discharger's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order/Permit (33 U.S.C. section 1318(a)(4)(b)(i); 40 CFR section 122.41(i)(1); and Water Code, sections 13267 and 13383);
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order/Permit (33 U.S.C. section 1318(a)(4)(b)(ii); 40 CFR section 122.41(i)(2); and Water Code, sections 13267 and 13383);
3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order/Permit (33 U.S.C. section 1318(a)(4)(b)(ii); 40 CFR section 122.41(i)(3); and Water Code, sections 13267 and 13383); and
4. Sample or monitor, at reasonable times, for the purposes of assuring Order/Permit compliance or as otherwise authorized by the CWA or the Water Code, any substances or parameters at any location. (33 U.S.C. section 1318(a)(4)(b); 40 CFR section 122.41(i)(4); and Water Code, sections 13267 and 13383.)

G. Bypass

1. Definitions
   a. “Bypass” means the intentional diversion of waste streams from any portion of a treatment facility. (40 CFR section 122.41(m)(1)(i).)
   b. “Severe property damage” means substantial physical damage to property, damage to the treatment facilities, which causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. (40 CFR section 122.41(m)(1)(ii).)
2. Bypass not exceeding limitations. The Discharger may allow any bypass to occur which does not cause exceedances of effluent limitations, but only if it is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions listed in Standard Provisions – Permit Compliance I.G.3, I.G.4, and I.G.5 below. (40 CFR section 122.41(m)(2).)
3. Prohibition of bypass. Bypass is prohibited, and the San Diego Water Board or USEPA, Region IX may take enforcement action against a Discharger for bypass, unless (40 CFR section 122.41(m)(4)(i)):
   a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 CFR section 122.41(m)(4)(i)(A));
   b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance (40 CFR section 122.41(m)(4)(i)(B)); and
   c. The Discharger submitted notice to the San Diego Water Board and USEPA, Region IX as required under Standard Provisions – Permit Compliance I.G.5 below. (40 CFR section 122.41(m)(4)(i)(C).)

4. The San Diego Water Board and USEPA, Region IX may approve an anticipated bypass, after considering its adverse effects, if the San Diego Water Board and USEPA, Region IX determine that it will meet the three conditions listed in Standard Provisions – Permit Compliance I.G.3 above. (40 CFR section 122.41(m)(4)(ii).)

5. Notice

   a. Anticipated bypass. If the Discharger knows in advance of the need for a bypass, it shall submit prior notice, if possible at least 10 days before the date of the bypass. The notice shall be sent to the San Diego Water Board. As of December 21, 2020, all notices must be submitted electronically to the initial recipient defined in Standard Provisions – Reporting section V.J below. Notices shall comply with 40 CFR part 3, 40 CFR section 122.22, and 40 CFR part 127. (40 CFR section 122.41(m)(3)(i).)

   b. Unanticipated bypass. The Discharger shall submit a notice of an unanticipated bypass as required in Standard Provisions - Reporting V.E below (24-hour notice). The notice shall be sent to the San Diego Water Board. As of December 21, 2020, all notices must be submitted electronically to the initial recipient, defined in Standard Provisions – Reporting section V.J below. Notices shall comply with 40 CFR part 3, 40 CFR section 122.22, and 40 CFR part 127. (40 CFR section 122.41(m)(3)(ii).)

H. Upset

Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the Discharger. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation. (40 CFR section 122.41(n)(1).)

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of Standard Provisions – Permit Compliance I.H.2 below are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review. (40 CFR section 122.41(n)(2).)

2. Conditions necessary for a demonstration of upset. A Discharger who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that (40 CFR section 122.41(n)(3)):

   a. An upset occurred and that the Discharger can identify the cause(s) of the upset (40 CFR section 122.41(n)(3)(i));

   b. The permitted facility was, at the time, being properly operated (40 CFR section 122.41(n)(3)(ii));

   c. The Discharger submitted notice of the upset as required in Standard Provisions – Reporting V.E.2.b below (24-hour notice) (40 CFR section 122.41(n)(3)(iii)); and

   d. The Discharger complied with any remedial measures required under Standard Provisions – Permit Compliance I.C above. (40 CFR section 122.41(n)(3)(iv))

3. Burden of proof. In any enforcement proceeding, the Discharger seeking to establish the occurrence of an upset has the burden of proof. (40 CFR section 122.41(n)(4).)

II. STANDARD PROVISIONS – PERMIT ACTION

A. General

This Order/Permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Discharger for modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any Order/Permit condition. (40 CFR section 122.41(f).)

B. Duty to Reapply

If the Discharger wishes to continue an activity regulated by this Order/Permit after the expiration date of this Order/Permit, the Discharger must apply for and obtain a new permit. (40 CFR section 122.41(b).)

C. Transfers

This Order/Permit is not transferable to any person except after notice to the San Diego Water Board and USEPA, Region IX. The San Diego Water Board and USEPA, Region IX may require modification or revocation and reissuance of the Order/Permit to change the name of the Discharger and incorporate such other requirements as may be necessary under the CWA and the Water Code. (40 CFR sections 122.41(l)(3), 122.61.)

III. STANDARD PROVISIONS – MONITORING

A. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. (40 CFR section 122.41(j)(1).)

B. Monitoring must be conducted according to test procedures approved under 40 CFR part 136 for the analyses of pollutants unless another method is required under 40 CFR chapter 1, subchapters N or O. Monitoring must be conducted according to sufficiently sensitive test methods approved under 40 CFR part 136 for the analysis of pollutants or pollutant parameters or as required under 40 CFR chapter 1, subchapter N or O. For the purposes of this paragraph, a method is sufficiently sensitive when:

1. The method Minimum Level (ML) is at or below the level of the most stringent effluent limitation established in this Order/Permit for the measured pollutant or pollutant parameter, and either the method ML is at or below the level of the most stringent applicable water quality criterion for the measured pollutant or pollutant parameter or the method ML is above the applicable water quality criterion but the amount of the pollutant or pollutant parameter in the facility's discharge is high enough that the method detects and quantifies the level of the pollutant or pollutant parameter in the discharge; or

2. The method has the lowest ML of the analytical methods approved under 40 CFR part 136 or required under 40 CFR chapter 1, subchapter N or O for the measured pollutant or pollutant parameter.

In the case of pollutants or pollutant parameters for which there are no approved methods under 40 CFR part 136 or otherwise required under 40 CFR chapter 1, subchapters N or O, monitoring must be conducted according to a test procedure specified in this Order/Permit for such pollutants or pollutant parameters. (40 CFR sections 122.21(e)(3),122.41(j)(4), 122.44(i)(1)(iv).)

IV. STANDARD PROVISIONS – RECORDS

A. Except for records of monitoring information required by this Order/Permit related to the Discharger's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR part 503), the Discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order/Permit, and records of all data used to complete the application for this Order/Permit, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the San Diego Water Board and USEPA, Region IX at any time. (40 CFR section 122.41(j)(2).)

B. Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements (40 CFR section 122.41(j)(3)(i));
2. The individual(s) who performed the sampling or measurements (40 CFR section 122.41(j)(3)(ii));
3. The date(s) analyses were performed (40 CFR section 122.41(j)(3)(iii));
4. The individual(s) who performed the analyses (40 CFR section 122.41(j)(3)(iv));
5. The analytical techniques or methods used (40 CFR section 122.41(j)(3)(v)); and
6. The results of such analyses. (40 CFR section 122.41(j)(3)(vi).)

C. Claims of confidentiality for the following information will be denied (40 CFR section 122.7(b)):

1. The name and address of any permit applicant or Discharger (40 CFR section 122.7(b)(1)); and
2. Permit applications and attachments, permits and effluent data. (40 CFR section 122.7(b)(2).)

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information

The Discharger shall furnish to the San Diego Water Board, State Water Board, or USEPA within a reasonable time, any information which the San Diego Water Board, State Water Board, or USEPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order/Permit or to determine compliance with this Order/Permit. Upon request, the Discharger shall also furnish to the San Diego Water Board, State Water Board, or USEPA copies of records required to be kept by this Order/Permit. (40 CFR section 122.41(h); Water Code, sections 13267 and 13383.)

B. Signatory and Certification Requirements

1. All applications, reports, or information submitted to the San Diego Water Board, State Water Board, and/or USEPA shall be signed and certified in accordance with Standard Provisions – Reporting V.B.2, V.B.3, V.B.4, V.B.5, and V.B.6 below. (40 CFR section 122.41(k).)
2. All permit applications shall be signed by either a principal executive officer or ranking elected official. For purposes of this provision, a principal executive officer of a federal agency includes: (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of USEPA). (40 CFR section 122.22(a)(3).).

3. All reports required by this Order/Permit and other information requested by the San Diego Water Board, State Water Board, or USEPA shall be signed by a person described in Standard Provisions – Reporting V.B.2 above, or by a duly authorized representative of that person. A person is a duly authorized representative only if:

   a. The authorization is made in writing by a person described in Standard Provisions – Reporting V.B.2 above (40 CFR section 122.22(b)(1));

   b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.) (40 CFR section 122.22(b)(2)); and

   c. The written authorization is submitted to the San Diego Water Board, State Water Board, and USEPA, Region IX. (40 CFR section 122.22(b)(3).)

4. If an authorization under Standard Provisions – Reporting V.B.3 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Standard Provisions – Reporting V.B.3 above must be submitted to the San Diego Water Board, State Water Board, and USEPA, Region IX prior to or together with any reports, information, or applications, to be signed by an authorized representative. (40 CFR section 122.22(c).)

5. Any person signing a document under Standard Provisions – Reporting V.B.2 or V.B.3 above shall make the following certification:

   "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations." (40 CFR section 122.22(d).)

6. Any person providing the electronic signature for documents described in Standard Provisions – V.B.1, V.B.2, or V.B.3 that are submitted electronically shall meet all relevant requirements of Standard Provisions – Reporting V.B, and shall ensure that all relevant requirements of 40 CFR part 3 (Cross-Media Electronic Reporting) and 40 CFR part 127 (NPDES Electronic Reporting Requirements) are met for that submission. (40 CFR section 122.22(e).)

C. Monitoring Reports

1. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program (MRP, Attachment E) in this Order/Permit. (40 CFR section 122.41(l)(4).)

2. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the San Diego Water Board or State Water Board for reporting the results of monitoring, sludge use, or disposal practices. As of December 21,

2016, all reports and forms must be submitted electronically to the initial recipient defined in Standard Provisions – Reporting section V.J and comply with 40 CFR part 3, 40 CFR section 122.22, and 40 CFR part 127. (40 CFR section 122.41(l)(4)(i).)

3. If the Discharger monitors any pollutant more frequently than required by this Order/Permit using test procedures approved under 40 CFR part 136, or another method required for an industry-specific waste stream under 40 CFR chapter 1, subchapters N or O, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the San Diego Water Board and USEPA, Region IX. (40 CFR section 122.41(l)(4)(ii).)

4. Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order/Permit. (40 CFR section 122.41(l)(4)(iii).)

D. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this Order/Permit, shall be submitted no later than 14 days following each schedule date. (40 CFR section 122.41(l)(5).)

E. Twenty-Four Hour Reporting

1. The Discharger shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Discharger becomes aware of the circumstances. A report shall also be provided within five (5) days of the time the Discharger becomes aware of the circumstances. The report shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

   For noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports must include the data described above (with the exception of time of discovery) as well as the type of event (i.e., combined sewer overflow, sanitary sewer overflow, or bypass event), type of overflow structure (e.g., manhole, combined sewer overflow outfall), discharge volume untreated by the treatment works treating domestic sewage, types of human health and environmental impacts of the event, and whether the noncompliance was related to wet weather.

   As of December 21, 2020, all reports related to combined sewer overflows, sanitary sewer overflows, or bypass events must be submitted electronically to the initial recipient defined in Standard Provisions – Reporting V.J. The reports shall comply with 40 CFR part 3, 40 CFR section 122.22, and 40 CFR part 127. The San Diego Water Board and USEPA, Region IX may also require the Discharger to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section. (40 CFR section 122.41(l)(6)(i).)

2. The following shall be included as information that must be reported within 24 hours:

   a. Any unanticipated bypass that exceeds any effluent limitation in this Order/Permit. (40 CFR section 122.41(l)(6)(ii)(A).)

   b. Any upset that exceeds any effluent limitation in this Order/Permit. (40 CFR section 122.41(l)(6)(ii)(B).)

3. The San Diego Water Board may waive the above required written report on a case-by-case basis if an oral report has been received within 24 hours. (40 CFR section 122.41(l)(6)(ii)(B).)

F. Planned Changes

The Discharger shall give notice to the San Diego Water Board and USEPA, Region IX as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required under this provision only when (40 CFR section 122.41(l)(1)):

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in section 122.29(b) (40 CFR section 122.41(l)(1)(i)); or
2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are not subject to effluent limitations in this Order/Permit. (40 CFR section 122.41(l)(1)(ii).)
3. The alteration or addition results in a significant change in the Discharger's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the Order/Permit application process or not reported pursuant to an approved land application plan. (40 CFR section 122.41(l)(1)(iii).)

G. Anticipated Noncompliance

The Discharger shall give advance notice to the San Diego Water Board and USEPA, Region IX of any planned changes in the permitted facility or activity that may result in noncompliance with this Order/Permit's requirements. (40 CFR section 122.41(l)(2).)

H. Other Noncompliance

The Discharger shall report all instances of noncompliance not reported under Standard Provisions – Reporting sections V.C, V.D, and V.E above at the time monitoring reports are submitted. The reports shall contain the information listed in Standard Provision – Reporting section V.E above. For noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports shall contain the information described in Standard Provision – Reporting section V.E and the applicable required data in appendix A to 40 CFR part 127. The San Diego Water Board and/or USEPA, Region IX may also require the Discharger to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section. (40 CFR section 122.41(l)(7).)

I. Other Information

When the Discharger becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the San Diego Water Board, State Water Board, or USEPA, the Discharger shall promptly submit such facts or information. (40 CFR section 122.41(l)(8).)

J. Initial Recipient for Electronic Reporting Data

The owner, operator, or the duly authorized representative is required to electronically submit NPDES information specified in appendix A to 40 CFR part 127 to the initial recipient defined in 40 CFR section 127.2(b). USEPA will identify and publish the list of initial recipients on its website and in the Federal Register, by State and by NPDES data group [see 40 CFR section 127.2(c)]. USEPA will update and maintain this listing.
(40 CFR section 122.41(l)(9).)

VI. STANDARD PROVISIONS – ENFORCEMENT

The San Diego Water Board is authorized to enforce the terms of this Order/Permit under several provisions of the Water Code, including, but not limited to, sections 13268, 13385, 13386, and 13387.

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

All publicly-owned treatment works (POTWs) shall provide adequate notice to the San Diego Water Board and USEPA, Region IX of the following (40 CFR section 122.42(b)):

A. Any new introduction of pollutants into the POTW from an indirect discharger that would be subject to sections 301 or 306 of the CWA if it were directly discharging those pollutants (40 CFR section 122.42(b)(1));

B. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of adoption of the Order/Permit. (40 CFR section 122.42(b)(2).); and

C. Adequate notice shall include information on the quality and quantity of effluent introduced into the POTW as well as any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW (40 CFR section 122.42(b)(3).).

ATTACHMENT E – MONITORING AND REPORTING PROGRAM

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ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

Section 308 of the federal Clean Water Act (CWA) and sections 122.41(h), (j)-(l), 122.44(i), and 122.48 of title 40 of the Code of Federal Regulations (40 CFR) require that all National Pollutant Discharge Elimination System (NPDES) permits specify monitoring and reporting requirements. California Water Code (Water Code) sections 13267 and 13383 also authorize the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) to establish monitoring, inspection, entry, reporting, and recordkeeping requirements. Pursuant to this authority this MRP establishes conditions for the City of San Diego (Discharger) to conduct routine or episodic self-monitoring of the discharges regulated under this Order/Permit at specified influent, internal operations, effluent, and receiving water monitoring locations. This MRP requires the Discharger to report the results to the San Diego Water Board and U.S. Environmental Protection Agency (USEPA), Region IX with information necessary to evaluate discharge characteristics and compliance status.

The purpose of this MRP is to determine and ensure compliance with effluent limitations and other requirements established in this Order/Permit, assess treatment efficiency, characterize effluents, and characterize the receiving water and the effects of the discharge on the receiving water. This MRP also specifies requirements concerning the proper use, maintenance, and installation of monitoring equipment and methods, and the monitoring type intervals and frequency necessary to yield data that are representative of the activities and discharges regulated under this Order/Permit.

Each monitoring section contains an introductory paragraph summarizing why the monitoring is needed and the key management questions the monitoring is designed to answer. In developing the list of key management questions the San Diego Water Board and USEPA, Region IX considered four basic types of information for each question:

(1) Management Information Need – Why does the San Diego Water Board and USEPA, Region IX need to know the answer?

(2) Monitoring Criteria – What monitoring will be conducted for deriving an answer to the question?

(3) Expected Product – How should the answer be expressed and reported?

(4) Possible Management Actions – What actions will be potentially influenced by the answer?

The framework for this monitoring program has three components that comprise a range of spatial and temporal scales: 1. core monitoring, 2. regional monitoring, and 3. special studies.

1. Core monitoring consists of the basic site-specific monitoring necessary to measure compliance with individual effluent limits and/or impacts to receiving water quality. Core monitoring is typically conducted in the immediate vicinity of the discharge by examining local scale spatial effects.

2. Regional monitoring provides information necessary to make assessments over large areas and serves to evaluate cumulative effects of all anthropogenic inputs. Regional monitoring data also assists in the interpretation of core monitoring studies. In the event that a regional monitoring effort takes place during this Order/Permit cycle in which this MRP does not specifically address regional monitoring, the San Diego Water Board and USEPA, Region IX may allow relief from aspects of core monitoring components in order to encourage participation pursuant to section V of this MRP.

3. Special studies are directed monitoring efforts designed in response to specific management or research questions identified through either core or regional monitoring programs. Often they are used to help understand core or regional monitoring results, where a specific environmental process is not well understood, or to address unique issues of local importance.

I. GENERAL MONITORING PROVISIONS

A. Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. All samples shall be taken at the monitoring points specified in section II, Table E-1 below and, unless otherwise specified, before the monitored flow joins or is diluted by any other waste stream, body of water, or substance. Monitoring points shall not be changed without notification to and the approval of the San Diego Water Board and USEPA, Region IX.

B. Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. The devices shall be installed, calibrated, and maintained to ensure that the accuracy of the measurement is consistent with the accepted capability of that type of device. Devices selected shall be capable of measuring flows with a maximum deviation of less than ±5 percent from true discharge rates throughout the range of expected discharge volumes.

C. Monitoring must be conducted according to USEPA test procedures approved at 40 CFR part 136, *Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the CWA* as amended, or unless other test procedures are specified in this Order/Permit and attachments thereof or otherwise specified by the San Diego Water Board and USEPA, Region IX.

D. All analyses shall be performed in a laboratory certified to perform such analyses by the State Water Resources Control Board (State Water Board) Division of Drinking Water (DDW) or a laboratory approved by the San Diego Water Board and USEPA, Region IX. The laboratory must be accredited under the DDW Environmental Laboratory Accreditation Program (ELAP) to ensure the quality of analytical data used for regulatory purposes to meet the requirements of this Order/Permit. Additional information on ELAP can be accessed at http://www.waterboards.ca.gov/drinking_water/programs/elap/ELAPContacts.shtml.

E. Records of monitoring information shall include information required under section IV of the Standard Provisions (Attachment D).

F. All monitoring instruments and devices used by the Discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their continued accuracy. All flow measurement devices shall be calibrated at least once per year, or more frequently, to ensure continued accuracy of the devices. Annually on July 1, the Discharger shall submit to the San Diego Water Board and USEPA, Region IX a written statement signed by a registered professional engineer certifying that all flow measurement devices have been calibrated and will reliably achieve an accuracy with a maximum deviation of less than ±5 percent from true discharge rates throughout the range of expected discharge volumes.

G. The Discharger shall have, and implement, an acceptable written quality assurance (QA) plan for laboratory analyses. Annually on April 1, the Discharger shall submit to the San Diego Water Board and USEPA, Region IX a report which summarizes the QA activities for the previous calendar year. Duplicate chemical analyses must be conducted on a minimum of 10 percent of the samples or at least one sample per month, whichever is greater. A similar frequency shall be maintained for analyzing spiked samples. When requested by San Diego

Water Board and/or USEPA, Region IX, the Discharger shall participate in a NPDES discharge monitoring report QA performance study. The Discharger shall have a success rate equal to or greater than 80 percent.

H. Analysis for toxic pollutants with effluent limitations or performance goals based on water quality objectives of the Water Quality Control Plan, Ocean Waters of California, California Ocean Plan (Ocean Plan) shall be conducted in accordance with procedures described in the Ocean Plan and restated in this MRP.

II. MONITORING LOCATIONS

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

Table E-1. Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description	Depth (meter, m)
--	INF-001	At a location where all influent wastestream flows to E.W. Blom Point Loma Wastewater Treatment Plant (Facility) are accounted for in monitoring events; upstream of any in-plant return flows; and where representative samples of influent can be collected before any process or treatment that could alter the properties of the influent.	--
001	EFF-001	A location where a representative sample of the effluent can be obtained.	--
--	EMG-001	A location where a representative sample of the Tijuana Cross-Border Emergency Connection can be obtained.	--
--	RS-001	A location where a representative sample of a return stream can be obtained; for multiple return streams, the return streams shall be sampled and composited based on each return streams contributing flow (flow weighted).	--
OFFSHORE STATIONS			
--	F-001	Latitude: 32° 38' 15.659"N, Longitude: 117° 14' 25.138"W	18[1]
--	F-002	Latitude: 32° 45' 25.077"N, Longitude: 117° 16' 21.838"W	18[1]
--	F-003	Latitude: 32° 46' 54.598"N, Longitude: 117° 16' 20.698"W	18[1]
--	F-004	Latitude: 32° 35' 40.318"N, Longitude: 117° 16' 7.500"W	60[2]
--	F-005	Latitude: 32° 36' 42.058"N, Longitude: 117° 16' 10.739"W	60[2]
--	F-006	Latitude: 32° 37' 50.999"N, Longitude: 117° 16' 24.96"W	60[2]
--	F-007	Latitude: 32° 39' 4.082"N, Longitude: 117° 16' 47.978"W	60[2]
--	F-008	Latitude: 32° 40' 19.740"N, Longitude: 117° 16' 58.8"W	60[2]
--	F-009	Latitude: 32° 41' 7.979"N, Longitude: 117° 17' 10.737"W	60[2]
--	F-010	Latitude: 32° 42' 19.508"N, Longitude: 117° 17' 26.368"W	60[2]
--	F-011	Latitude: 32° 43' 31.958"N, Longitude: 117° 17' 40.675"W	60[2]
--	F-012	Latitude: 32° 44' 47.699"N, Longitude: 117° 18' 7.437"W	60[2]
--	F-013	Latitude: 32° 45' 55.378"N, Longitude: 117° 18' 25.919""W	60[2]
--	F-014	Latitude: 32° 46' 53.612"N, Longitude: 117° 18' 41.123"W	60[2]
--	F-015	Latitude: 32° 35' 38.759"N, Longitude: 117° 17' 11.22"W	80[3]
--	F-016	Latitude: 32° 36' 42.598"N, Longitude: 117° 17' 24.237"W	80[3]
--	F-017	Latitude: 32° 37' 48.057"N, Longitude: 117° 17' 38.998"W	80[3]
--	F-018	Latitude: 32° 38' 59.157"N, Longitude: 117° 17' 53.998"W	80[3]
--	F-019	Latitude: 32° 40' 4.26"N, Longitude: 117° 18' 24.598"W	80[3]
--	F-020	Latitude: 32° 41' 7.497"N, Longitude: 117° 18' 39.477"W	80[3]
--	F-021	Latitude: 32° 42' 13.68"N, Longitude: 117° 19' 7.273"W	80[3]
--	F-022	Latitude: 32° 43' 21.827"N, Longitude: 117° 19' 15.247"W	80[3]

Discharge Point Name	Monitoring Location Name	Monitoring Location Description	Depth (meter, m)
--	F-023	Latitude: 32° 44' 30.779"N, Longitude: 117° 19' 49.497"W	80[3]
--	F-024	Latitude: 32° 45' 40.377"N, Longitude: 117° 20' 11.219"W	80[3]
--	F-025	Latitude: 32° 46' 44.22"N, Longitude: 117° 20' 36.898"W	80[3]
--	F-026	Latitude: 32° 35' 37.558"N, Longitude: 117° 18' 43.92"W	98[4]
--	F-027	Latitude: 32° 36' 42.419"N, Longitude: 117° 19' 16.978"W	98[4]
--	F-028	Latitude: 32° 37' 45.433"N, Longitude: 117° 19' 25.391"W	98[4]
--	F-029	Latitude: 32° 38' 52.134"N, Longitude: 117° 19' 29.747"W	98[4]
--	F-030	Latitude: 32° 39' 56.411"N, Longitude: 117° 19' 29.388"W	98[4]
--	F-031	Latitude: 32° 41' 4.805"N, Longitude: 117° 19' 42.071"W	98[4]
--	F-032	Latitude: 32° 42' 5.098"N, Longitude: 117° 20' 2.997"W	98[4]
--	F-033	Latitude: 32° 43' 13.678"N, Longitude: 117° 20' 23.698"W	98[4]
--	F-034	Latitude: 32° 44' 20.04"N, Longitude: 117° 20' 57.718"W	98[4]
--	F-035	Latitude: 32° 45' 27.719"N, Longitude: 117° 21' 48.178"W	98[4]
--	F-036	Latitude: 32° 46' 36.419"N, Longitude: 117° 22' 28.438"W	98[4]
KELP STATIONS			
--	A-001	Latitude: 32° 39' 33.6"N, Longitude: 117° 15' 43.2"W	18[1]
--	A-006	Latitude: 32° 41' 33.6"N, Longitude: 117° 16' 10.8"W	18[1]
--	A-007	Latitude: 32° 40' 31.8"N, Longitude: 117° 16' 0.60"W	18[1]
--	C-004	Latitude: 32° 39' 57.0"N, Longitude: 117° 14' 58.8"W	9[5]
--	C-005	Latitude: 32° 40' 45.0"N, Longitude: 117° 15' 24.0"W	9[5]
--	C-006	Latitude: 32° 41' 37.19"N, Longitude: 117° 15' 40.8"W	9[5]
--	C-007	Latitude: 32° 42' 58.8"N, Longitude: 117° 16' 19.8"W	18[1]
--	C-008	Latitude: 32° 43' 57.6"N, Longitude: 117° 16' 24.0"W	18[1]
SHORELINE STATIONS			
--	D-004	At the southernmost tip of Point Loma just north of the lighthouse. Latitude: 32° 39' 56.39"N, Longitude: 117° 14' 37.2"W	--
--	D-005	Directly in front of the Point Lama Wastewater Treatment Plant where the outfall enters the ocean. Latitude: 32° 40' 51.0"N, Longitude: 117° 14' 56.4"W	--
--	D-007	Sunset Cliffs at the foot of the stairs seaward of Ladera Street. Latitude: 32° 43' 9.59"N, Longitude: 117° 15' 26.4"W	--
--	D-008	Ocean Beach at the foot of the stairs seaward of Bermuda Street. Latitude: 32° 44' 13.19"N, Longitude: 117° 15' 19.2"W	--
--	D-009	Just south of the Ocean Beach pier at the foot of the stairs seaward of Narragansett. Latitude: 32° 44' 48.0"N, Longitude: 117° 15' 14.4"W	--
--	D-010	Ocean Beach just north of west end of Newport Avenue, directly west of main lifeguard station. Latitude: 32° 44' 57.0"N, Longitude: 117° 15' 10.8"W	--
--	D-011	North Ocean Beach, directly west of south end of Dog Beach parking area at Voltaire St terminus, south of stub jetty. Latitude: 32° 45' 14.4"N, Longitude: 117° 15' 9.6"W	--
--	D-012	Mission Beach, directly west of main lifeguard station in Belmont Park located at the west end of Mission Bay Drive. Latitude: 32° 46' 16.8"N, Longitude: 117° 15' 12.6 "W	--

Discharge Point Name	Monitoring Location Name	Monitoring Location Description	Depth (meter, m)
OFFSHORE BENTHIC STATIONS			
Primary Core Stations			
--	B-009	Latitude: 32° 45' 19.8"N, Longitude: 117° 21' 42.0"W	98
--	B-012	Latitude: 32° 46' 21.6"N, Longitude: 117° 22' 18.0"W	98
--	E-002	Latitude: 32° 37' 27.0"N, Longitude: 117° 19' 5.40"W	98
--	E-005	Latitude: 32° 38' 22.8"N, Longitude: 117° 19' 16.8"W	98
--	E-008	Latitude: 32° 38' 54.6"N, Longitude: 117° 19' 20.4"W	98
--	E-011	Latitude: 32° 39' 24.0"N, Longitude: 117° 19' 25.2"W	98
--	E-014	Latitude: 32° 39' 56.4"N, Longitude: 117° 19' 29.4"W	98
--	E-017	Latitude: 32° 40' 28.8"N, Longitude: 117° 19' 32.4"W	98
--	E-020	Latitude: 32° 40' 57.6"N, Longitude: 117° 19' 40.2"W	98
--	E-023	Latitude: 32° 41' 28.2"N, Longitude: 117° 19' 46.2"W	98
--	E-025	Latitude: 32° 42' 22.8"N, Longitude: 117° 20' 4.20"W	98
--	E-026	Latitude: 32° 43' 49.2"N, Longitude: 117° 20' 34.2"W	98
Secondary Core Stations			
--	B-008	Latitude: 32° 45' 30.0"N, Longitude: 117° 20' 46.2"W	88
--	B-011	Latitude: 32° 46' 34.2"N, Longitude: 117° 21' 21.0"W	88
--	E-001	Latitude: 32° 37' 31.8"N, Longitude: 117° 18' 21.0"W	88
--	E-007	Latitude: 32° 39' 0.0"N, Longitude: 117° 18' 39.0"W	88
--	E-019	Latitude: 32° 41' 2.40"N, Longitude: 117° 19' 10.8"W	88
--	B-010	Latitude: 32° 45' 13.19"N, Longitude: 117° 22' 9.60"W	116
--	E-003	Latitude: 32° 37' 17.39"N, Longitude: 117° 20' 5.39"W	116
--	E-009	Latitude: 32° 38' 45"N, Longitude: 117° 20' 3.59"W	116
--	E-015	Latitude: 32° 39' 52.8""N, Longitude: 117° 19' 54.6"W	116
--	E-021	Latitude: 32° 40' 53.4"N, Longitude: 117° 20' 0.0"W	116
TRAWL STATIONS			
--	SD-007 (Zone 4)	Latitude: 32° 35' 3.6"N, Longitude: 117° 18' 23.4"W	100
--	SD-008 (Zone 3)	Latitude: 32° 37' 32.4"N, Longitude: 117° 19' 22.2"W	100
--	SD-010 (Zone 1)	Latitude: 32° 39' 9.60"N, Longitude: 117° 19' 30"W	100
--	SD-012 (Zone 1)	Latitude: 32° 40' 39.0"N, Longitude: 117° 19' 48.6"W	100
--	SD-013 (Zone 2)	Latitude: 32° 42' 49.8"N, Longitude: 117° 20' 15"W	100
--	SD-014 (Zone 2)	Latitude: 32° 44' 18.0"N, Longitude: 117° 20' 57.6"W	100
RIG FISHING STATIONS			
--	RF-001	Latitude: 32° 40' 19.2"N, Longitude: 117° 19' 46.8"W	107
--	RF-002	Latitude: 32° 45' 40.2"N, Longitude: 117° 22' 1.19"W	96

1. Discrete depths for bacteria samples include: 1m, 12m, and 18m.
2. Discrete depths for bacteria samples include: 1m, 25m, and 60m.
3. Discrete depths for bacteria samples include: 1m, 25m, 60m, and 80m.
4. Discrete depths for bacteria samples include: 1m, 25m, 60m, 80m, and 98m.
5. Discrete depths for bacteria samples include: 1m, 3m, and 9m.

The North latitude and West longitude information in Table E-1 are approximate for administrative purposes.

III. CORE MONITORING REQUIREMENTS

A. Influent, Emergency Connection, and Return Stream Monitoring Requirements

Influent monitoring is the collection and analysis of samples or measurements of wastewater prior to the treatment processes. Influent monitoring of a wastewater stream prior to entering the treatment plant is necessary to address the following questions:

(1) Is the pretreatment program effectively controlling pollutant loads from industrial facilities?

(2) What is the frequency of unexpected industrial discharges (or pollutants loads) which can cause or contribute to an upset in the wastewater process?

(3) Is the influent inhibiting or disrupting the plant, its treatment processes or operations, or its sludge processes, use, or disposal?

(4) Is the Facility complying with permit conditions including, but not limited to, biochemical oxygen demand (5-day @ 20 degrees Celsius (°C)) (BOD_5) and total suspended solids (TSS) percent removal limitations?

(5) Is the nonindustrial source control program adequately minimizing the entrance of nonindustrial toxic pollutants and pesticides into the sewage collection system?

The Discharger shall monitor the influent at Monitoring Locations INF-001 and EMG-001 (when flow is present) as follows:

Table E-2. Influent and Emergency Connection Monitoring[1]

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	million gallons per day (MGD)	Recorder/Totalizer	Continuous	--
BOD_5	milligram per liter (mg/L)	24-hr Composite	1/Day at INF-001 1/Week at EMG-001	[2]
TSS	mg/L	24-hr Composite	1/Day at INF-001 1/Week at EMG-001	[2]
Volatile Suspended Solids	mg/L	24-hr Composite	1/Day at INF-001 1/Week at EMG-001	[2]
Total Dissolved Solids (TDS)	mg/L	24-hr Composite	1/Day at INF-001 1/Week at EMG-001	[2]
Temperature	°C	Grab	1/Day at INF-001 1/Week at EMG-001	[2]
Floating Particulates	mg/L	24-hr Composite	1/Day at INF-001 1/Week at EMG-001	[2]
Grease and Oil	mg/L	Grab	1/Day at INF-001 1/Week at EMG-001	[2]

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Settleable Solids	milliliter per liter (ml/L)	Grab	1/Day at INF-001 1/Week at EMG-001	[2]
Turbidity	nephelometric turbidity unit (NTU)	Grab	1/Day at INF-001 1/Week at EMG-001	[2]
pH	standard units	Grab	1/Day at INF-001 1/Week at EMG-001	[2]
Arsenic, Total Recoverable	microgram per liter (µg/L)	24-hr Composite	1/Week	[2]
Cadmium, Total Recoverable	µg/L	24-hr Composite	1/Week	[2]
Chromium (VI), Total Recoverable[3]	µg/L	24-hr Composite	1/Week	[2]
Copper, Total Recoverable	µg/L	24-hr Composite	1/Week	[2]
Lead, Total Recoverable	µg/L	24-hr Composite	1/Week	[2]
Mercury, Total Recoverable	µg/L	24-hr Composite	1/Week	[2,4]
Nickel, Total Recoverable	µg/L	24-hr Composite	1/Week	[2]
Selenium, Total Recoverable	µg/L	24-hr Composite	1/Week	[2]
Silver, Total Recoverable	µg/L	24-hr Composite	1/Week	[2]
Zinc, Total Recoverable	µg/L	24-hr Composite	1/Week	[2]
Cyanide, Total	µg/L	24-hr Composite	1/Week	[2,5]
Ammonia (as N)	µg/L	24-hr Composite	1/Week	[2]
Phenolic Compounds (nonchlorinated)	µg/L	24-hr Composite	1/Week	[2]
Phenolic Compounds (chlorinated)	µg/L	24-hr Composite	1/Week	[2]
Endosulfan	µg/L	24-hr Composite	1/Week	[2]
Endrin	µg/L	24-hr Composite	1/Week	[2]
Hexachlorocyclohexane (HCH)	µg/L	24-hr Composite	1/Week	[2]
Radioactivity	pico-curies per liter (pCi/L)	24-hr Composite	1/Month	[2]
Acrolein	µg/L	Grab	1/Month	[2]
Antimony, Total Recoverable	µg/L	24-hr Composite	1/Month	[2]
Bis (2-chloroethoxy) Methane	µg/L	24-hr Composite	1/Month	[2]
Bis (2-chloroisopropyl) Ether	µg/L	24-hr Composite	1/Month	[2]
Chlorobenzene	µg/L	Grab	1/Month	[2]
Chromium (III), Total Recoverable[3]	µg/L	24-hr Composite	1/Month	[2]
Di-n-butyl Phthalate	µg/L	24-hr Composite	1/Month	[2]
Dichlorobenzenes	µg/L	Grab	1/Month	[2]
Diethyl Phthalate	µg/L	24-hr Composite	1/Month	[2]
Dimethyl Phthalate	µg/L	24-hr Composite	1/Month	[2]
4,6-dinitro-2-methylphenol	µg/L	24-hr Composite	1/Month	[2]
2,4-dinitrophenol	µg/L	24-hr Composite	1/Month	[2]
Ethylbenzene	µg/L	Grab	1/Month	[2]
Fluoranthene	µg/L	24-hr Composite	1/Month	[2]
Hexachlorocyclopentadiene	µg/L	24-hr Composite	1/Month	[2]
Nitrobenzene	µg/L	24-hr Composite	1/Month	[2]
Thallium, Total Recoverable	µg/L	24-hr Composite	1/Month	[2]
Toluene	µg/L	Grab	1/Month	[2]

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Tributyltin	µg/L	24-hr Composite	1/Month	[2]
1,1,1-trichloroethane	µg/L	Grab	1/Month	[2]
Acrylonitrile	µg/L	Grab	1/Month	[2]
Aldrin	µg/L	24-hr Composite	1/Week	[2]
Benzene	µg/L	Grab	1/Month	[2]
Benzidine	µg/L	24-hr Composite	1/Month	[2]
Beryllium, Total Recoverable	µg/L	24-hr Composite	1/Month	[2]
Bis(2-chloroethyl) ether	µg/L	24-hr Composite	1/Month	[2]
Bis(2-ethylhexyl) phthalate	µg/L	24-hr Composite	1/Month	[2]
Carbon tetrachloride	µg/L	Grab	1/Month	[2]
Chlordane	µg/L	24-hr Composite	1/Week	[2]
Chlorodibromomethane (dibromochloromethane)	µg/L	Grab	1/Month	[2]
Chloroform	µg/L	Grab	1/Month	[2]
Dichlorodiphenyltrichloroethane (DDT)	µg/L	24-hr Composite	1/Week	[2]
1,4-Dichlorobenzene	µg/L	Grab	1/Month	[2]
3,3'-Dichlorobenzidine	µg/L	24-hr Composite	1/Month	[2]
1,2-Dichloroethane	µg/L	Grab	1/Month	[2]
1,1-Dichloroethylene	µg/L	Grab	1/Month	[2]
Dichlorobromomethane	µg/L	Grab	1/Month	[2]
Dichloromethane (Methylene Chloride)	µg/L	Grab	1/Month	[2]
1,3-Dichloropropene (1,3-Dichloropropylene)	µg/L	Grab	1/Month	[2]
Dieldrin	µg/L	24-hr Composite	1/Week	[2]
2,4-Dinitrotoluene	µg/L	24-hr Composite	1/Month	[2]
1,2-Diphenylhydrazine	µg/L	24-hr Composite	1/Month	[2]
Halomethanes	µg/L	Grab	1/Month	[2]
Heptachlor	µg/L	24-hr Composite	1/Month	[2]
Heptachlor Epoxide	µg/L	24-hr Composite	1/Month	[2]
Hexachlorobenzene	µg/L	24-hr Composite	1/Month	[2]
Hexachlorobutadiene	µg/L	24-hr Composite	1/Month	[2]
Hexachloroethane	µg/L	24-hr Composite	1/Month	[2]
Isophorone	µg/L	24-hr Composite	1/Month	[2]
N-nitrosodimethylamine	µg/L	24-hr Composite	1/Month	[2]
N-nitrosodi-N-propylamine	µg/L	24-hr Composite	1/Month	[2]
N-nitrosodiphenylamine	µg/L	24-hr Composite	1/Month	[2]
Polynuclear Aromatic Hydrocarbons (PAHs)	µg/L	24-hr Composite	1/Month	[2]
Polychlorinated Biphenyls (PCBs)	µg/L	24-hr Composite	1/Week	[2]
Tetrachlorodibenzodioxin (TCDD) Equivalents	µg/L	24-hr Composite	1/Month	[2]
1,1,2,2-Tetrachoroethane	µg/L	Grab	1/Month	[2]
Tetrachloroethylene (Tetrachloroethene)	µg/L	Grab	1/Month	[2]
Toxaphene	µg/L	24-hr Composite	1/Week	[2]
Trichloroethylene (Trichloroethene)	µg/L	Grab	1/Month	[2]

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
1,1,2-Trichloroethane	µg/L	Grab	1/Month	[2]
2,4,6-Trichlorophenol	µg/L	24-hr Composite	1/Month	[2]
Vinyl Chloride	µg/L	Grab	1/Month	[2]
Remaining priority pollutants[6]	µg/L	24-hr Composite	1/Month	[2]

1. See Attachment A for definitions of abbreviations and a glossary of common terms used in this Order/Permit.
2. As required under 40 CFR part 136.
3. The Discharger may, at their option, monitor for total chromium.
4. USEPA Method 1631E, with a quantitation level of 0.5 nanogram per liter (ng/L), shall be used to analyze total mercury.
5. If a Discharger can demonstrate to the satisfaction of the San Diego Water Board (subject to USEPA approval) that an analytical method is available to reliably distinguish between strongly and weakly complexed cyanide, effluent limitations for cyanide may be met by (or performance goals may be evaluated with) the combined measurement of free cyanide, simple alkali metals cyanides, and weakly complexed organometallic cyanide complexes. In order for the analytical method to be acceptable, the recovery of free cyanide from metal complexes must be comparable to that achieved by the approved method in 40 CFR part 136, as amended.
6. Also including the 301(h) pesticides listed at 40 CFR section 125.58(p).

The Discharger shall monitor return streams at Monitoring Location RS-001 as follows:

Table E-3. Return Stream Monitoring[1,2]

Parameter	Units[1]	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	MGD	Recorder/Totalizer	Continuous	--
BOD_5	mg/L	24-hr Composite	1/Day	[3]
TSS	mg/L	24-hr Composite	1/Day	[3]

1. See Attachment A for definitions of abbreviations and a glossary of common terms used in this Order/Permit.
2. Return Streams includes NCWRP Filter Backwash, NCWRP Plant Drain, NCWRP Secondary and Un-disinfected Filtered Effluent Bypass, NCWRP Final Effluent, and MBC Centrate.
3. As required under 40 CFR part 136.

B. Effluent Monitoring Requirements

Effluent monitoring is the collection and analysis of samples or measurements of effluents, after all treatment processes, to determine and quantify contaminants and to demonstrate compliance with applicable effluent limitations, standards, and other requirements of this Order/Permit.

Effluent monitoring is necessary to address the following questions:

(1) Does the effluent comply with permit effluent limitations, performance goals, and other requirements of this Order/Permit, thereby ensuring that water quality standards are achieved in the receiving water?

(2) What is the mass of constituents that are discharged daily, monthly, or annually?

(3) Is the effluent concentration or mass changing over time?

(4) Is the Facility being properly operated and maintained to ensure compliance with the conditions of this Order?

The Discharger shall monitor the effluent at Monitoring Location EFF-001 as follows:

Table E-4. Effluent Monitoring[1]

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	MGD	Recorder/Totalizer	Continuous[2]	--
BOD_5	mg/L	24-hr Composite	1/Day[3]	[5]
	system-wide percent removal	Calculate	1/Day	[5]
TSS	mg/L	24-hr Composite	1/Day[3]	[5]
	Facility and system-wide percent removal	Calculate	1/Day	[5]
Volatile Suspended Solids	mg/L	24-hr Composite	1/Day	[5]
TDS	mg/L	24-hr Composite	1/Day	[5]
Temperature	°C	Grab	1/Day	[5]
Floating Particles	mg/L	24-hr Composite	1/Day	[5]
Grease and Oil	mg/L	Grab	1/Day[3]	[5]
Settleable Solids	ml/L	Grab	1/Day	[5]
Turbidity	NTU	Grab	1/Day	[5]
pH	pH Units	Grab	1/Day	[5]
Total Coliform	colony forming units (CFU)/ 100 milliliter (ml)	Grab	1/Week	[5]
Fecal Coliform	CFU/100 ml	Grab	1/Week	[5]
Enterococcus	CFU/100 ml	Grab	1/Week	[5]
OCEAN PLAN TABLE 1 PARAMETERS FOR PROTECTION OF MARINE AQUATIC LIFE				
Arsenic, Total Recoverable	µg/L	24-hr Composite	1/Week[3,4,12]	[5]
Cadmium, Total Recoverable	µg/L	24-hr Composite	1/Week[3,4,12]	[5]
Chromium (VI), Total Recoverable[6]	µg/L	24-hr Composite	1/Week[3,4,12]	[5]
Copper, Total Recoverable	µg/L	24-hr Composite	1/Week[3,4,12]	[5]
Lead, Total Recoverable	µg/L	24-hr Composite	1/Week[3,4,12]	[5]
Mercury, Total Recoverable	µg/L	24-hr Composite	1/Week[3,4,12]	[5,7]
Nickel, Total Recoverable	µg/L	24-hr Composite	1/Week[3,4,12]	[5]
Selenium, Total Recoverable	µg/L	24-hr Composite	1/Week[3,4,12]	[5]
Silver, Total Recoverable	µg/L	24-hr Composite	1/Week[3,4,12]	[5]
Zinc, Total Recoverable	µg/L	24-hr Composite	1/Week[3,4,12]	[5]
Cyanide, Total	µg/L	24-hr Composite	1/Week[3,4,12]	[5,8]
Total Chlorine Residual	µg/L	Continuous	Continuous[3]	[5]
Ammonia Nitrogen, Total (as N)	µg/L	24-hr Composite	1/Week[3,4,12]	[5]
Chronic Toxicity	"Pass"/"Fail" (Test of Significant Toxicity)[10]	24-hr Composite	1/Month	[11]
Phenolic Compounds (nonchlorinated)	µg/L	24-hr Composite	1/Week[3,4,12]	[5]
Phenolic Compounds (chlorinated)	µg/L	24-hr Composite	1/Week[3,4,12]	[5]
Endosulfan	µg/L	24-hr Composite	1/Week[3,4,12]	[5]
Endrin	µg/L	24-hr Composite	1/Week[3,4,12]	[5]
HCH	µg/L	24-hr Composite	1/Week[3,4,12]	[5]
Radioactivity	pCi/L	24-hr Composite	1/Month[3,4]	[5]

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
OCEAN PLAN TABLE 1 PARAMETERS FOR PROTECTION OF HUMAN HEALTH – NONCARCINOGENS				
Acrolein	µg/L	Grab	1/Month[3,4,12]	[5]
Antimony, Total Recoverable	µg/L	24-hr Composite	1/Month[3,4,12]	[5]
Bis (2-chloroethoxy) Methane	µg/L	24-hr Composite	1/Month[3,4,12]	[5]
Bis (2-chloroisopropyl) Ether	µg/L	24-hr Composite	1/Month[3,4,12]	[5]
Chlorobenzene	µg/L	Grab	1/Month[3,4,12]	[5]
Chromium (III), Total Recoverable[6]	µg/L	24-hr Composite	1/Month[3,4]	[5]
Di-n-butyl Phthalate	µg/L	24-hr Composite	1/Month[3,4,12]	[5]
Dichlorobenzenes	µg/L	Grab	1/Month[3,4,12]	[5]
Diethyl Phthalate	µg/L	24-hr Composite	1/Month[3,4,12]	[5]
Dimethyl Phthalate	µg/L	24-hr Composite	1/Month[3,4]	[5]
4,6-dinitro-2-methylphenol	µg/L	24-hr Composite	1/Month[3,4,12]	[5]
2,4-dinitrophenol	µg/L	24-hr Composite	1/Month[3,4,12]	[5]
Ethylbenzene	µg/L	Grab	1/Month[3,4,12]	[5]
Fluoranthene	µg/L	24-hr Composite	1/Month[3,4,12]	[5]
Hexachlorocyclopentadiene	µg/L	24-hr Composite	1/Month[3,4]	[5]
Nitrobenzene	µg/L	24-hr Composite	1/Month[3,4,12]	[5]
Thallium, Total Recoverable	µg/L	24-hr Composite	1/Month[3,4,12]	[5]
Toluene	µg/L	Grab	1/Month[3,4,12]	[5]
Tributyltin	µg/L	24-hr Composite	1/Month[3,4,12]	[5]
1,1,1-trichloroethane	µg/L	Grab	1/Month[3,4,12]	[5]
OCEAN PLAN TABLE 1 PARAMETERS FOR PROTECTION OF HUMAN HEALTH – CARCINOGENS				
Acrylonitrile	µg/L	Grab	1/Month[3,4,12]	[5]
Aldrin	µg/L	24-hr Composite	1/Week[3,12]	[5]
Benzene	µg/L	Grab	1/Month[3,4,12]	[5]
Benzidine	µg/L	24-hr Composite	1/Month[3,4,12]	[5]
Beryllium, Total Recoverable	µg/L	24-hr composite	1/Month[3,4,12]	[5]
Bis (2-chloroethyl) Ether	µg/L	24-hr composite	1/Month[3,4,12]	[5]
Bis (2-ethlyhexyl) Phthalate	µg/L	24-hr composite	1/Month[3,4,12]	[5]
Carbon Tetrachloride	µg/L	Grab	1/Month[3,4,12]	[5]
Chlordane	µg/L	24-hr Composite	1/Week[3,4]	[5]
Chlorodibromomethane (dibromochloromethane)	µg/L	Grab	1/Month[3,4]	[5]
Chloroform	µg/L	Grab	1/Month[3,4]	[5]
DDT	µg/L	24-hr Composite	1/Week[3,4]	[5]
1,4-dichlorobenzene	µg/L	Grab	1/Month[3,4]	[5]
3,3'-dichlorobenzidine	µg/L	24-hr Composite	1/Month[3,4]	[5]
1,2-dichloroethane	µg/L	Grab	1/Month[3,4]	[5]
1,1-dichloroethylene	µg/L	Grab	1/Month[3,4]	[5]
Dichlorobromomethane	µg/L	24-hr Composite	1/Month[3,4]	[5]
Dichloromethane (Methylene Chloride)	µg/L	Grab	1/Month[3,4]	[5]
1,3-dichloropropene (1,3-Dichloropropylene)	µg/L	Grab	1/Month[3,4]	[5]
Dieldrin	µg/L	24-hr Composite	1/Week[3,4]	[5]
2,4-dinitrotoluene	µg/L	24-hr Composite	1/Month[3,4]	[5]
1,2-diphenylhydrazine	µg/L	24-hr Composite	1/Month[3,4]	[5]

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Halomethanes	µg/L	Grab	1/Month[3,4]	[5]
Heptachlor	µg/L	24-hr Composite	1/Month[3,4]	[5]
Heptachlor Epoxide	µg/L	24-hr Composite	1/Month[3,4,12]	[5]
Hexachlorobenzene	µg/L	24-hr Composite	1/Month[3,4,12]	[5]
Hexachlorobutadiene	µg/L	24-hr Composite	1/Month[3,4,12]	[5]
Hexachloroethane	µg/L	24-hr Composite	1/Month[3,4,12]	[5]
Isophorone	µg/L	24-hr Composite	1/Month[3,4,12]	[5]
N-nitrosodimethylamine	µg/L	24-hr Composite	1/Month[3,4,12]	[5]
N-nitrosodi-N-propylamine	µg/L	24-hr Composite	1/Month[3,4]	[5]
N-nitrosodiphenylamine	µg/L	24-hr Composite	1/Month[3,4,12]	[5]
PAHs	µg/L	24-hr Composite	1/Month[3,4,12]	[5]
PCBs	µg/L	24-hr Composite	1/Week[3,4,12]	[5]
TCDD equivalents	µg/L	24-hr Composite	1/Month[3,4]	[5]
1,1,2,2-tetrachloroethane	µg/L	Grab	1/Month[3,4,12]	[5]
Tetrachloroethylene (Tetrachloroethene)	µg/L	Grab	1/Month[3,4,12]	[5]
Toxaphene	µg/L	24-hr Composite	1/Week[3,4,12]	[5]
Trichloroethylene (Trichloroethene)	µg/L	Grab	1/Month[3,4,12]	[5]
1,1,2-trichloroethane	µg/L	Grab	1/Month[3,4,12]	[5]
2,4,6-trichlorophenol	µg/L	24-hr Composite	1/Month[3,4,12]	[5]
Vinyl Chloride	µg/L	Grab	1/Month[3,4,12]	[5]
Remaining priority pollutants[9]	µg/L	24-hr Composite	1/Month	[5]

1 See Attachment A for definitions of abbreviations and a glossary of common terms used in this Order/Permit.

2 Report the total daily effluent flow and the monthly average effluent flow.

3 The Discharger shall calculate and report the mass emission rate (MER) of the constituent for each sample taken. The MER shall be calculated in accordance with section VII.J.4 of this Order/Permit.

4 The minimum frequency of monitoring for this constituent is automatically increased to twice the minimum frequency specified, if any analysis for this constituent yields a result higher than the applicable effluent limitation or performance goal specified in this Order/Permit. The increased minimum frequency of monitoring shall remain in effect until the results of a minimum of four consecutive analyses for this constituent are below all applicable effluent limitations or performance goals specified in this Order/Permit.

5 As required under 40 CFR part 136.

6 The Discharger may, at their option, apply this performance goal as a total chromium performance goal.

7 USEPA Method 1631E, with a quantitation level of 0.5 ng/L, shall be used to analyze total mercury.

8 If a Discharger can demonstrate to the satisfaction of the USEPA and the State Water Board that an analytical method is available to reliably distinguish between strongly and weakly complexed cyanide, effluent limitations for cyanide may be met by the combined measurement of free cyanide, simple alkali metals cyanides, and weakly complexed organometallic cyanide complexes. In order for the analytical method to be acceptable, the recovery of free cyanide from metal complexes must be comparable to that achieved by the approved method in 40 CFR part 136, as amended.

9 Also including the 301(h) pesticides listed at 40 CFR section 125.58(p).

10 For compliance determination, chronic toxicity results shall be reported as “Pass” or “Fail.” For monitoring purpose only, chronic toxicity results shall also include “Percent Effect.”

11 As specified in section VII.M of this Order/Permit and section III.C of this MRP (Attachment E).

12 The Discharger shall calculate and report the MER (metric ton per year, mt/yr) of the constituent for each sample taken in the annual report. The MER shall be calculated in accordance with section VII.J.4 of this Order/Permit.

C. Whole Effluent Toxicity (WET) Testing Requirements

The WET refers to the overall aggregate toxic effect to aquatic organisms from all pollutants contained in a facility's wastewater (effluent). The control of WET is one approach this Order/Permit uses to control the discharge of toxic pollutants. WET tests evaluate the 1) aggregate toxic effects of all chemicals in the effluent including additive, synergistic, or antagonistic effects; 2) the effects of unmeasured chemicals in the effluent; and 3) variability in bioavailability of the chemicals in the effluent.

Monitoring to assess the overall toxicity of the effluent is required to answer the following questions:

(1) Does the effluent comply with permit effluent limitations for toxicity thereby ensuring that water quality standards are achieved in the receiving water?

(2) If the effluent does not comply with permit effluent limitations for toxicity, is the observed toxicity causing risk to aquatic life?

(3) If the effluent does not comply with permit effluent limitations, is the observed toxicity caused by one or more pollutants that are measured or unmeasured?

1. Discharge In-stream Waste Concentration (IWC) for Chronic Toxicity

   The chronic IWC is calculated by dividing 100 percent by the dilution ratio. The chronic toxicity IWC is 0.49 percent effluent.

2. Sample Volume and Holding Time

   The total sample volume shall be determined by the specific toxicity test method used. Sufficient sample volume shall be collected to perform the required toxicity test. For the receiving water, sufficient sample volume shall also be collected during accelerated monitoring for subsequent Toxicity Identification Evaluation (TIE) studies, if necessary, at each sampling event. All toxicity tests shall be conducted as soon as possible following sample collection. No more than 36 hours shall elapse between the conclusion of sample collection and test initiation.

3. Chronic Marine Species and Test Methods

   If effluent samples are collected from outfalls discharging to receiving waters with salinity >one parts per thousand (ppt), the Discharger shall conduct the following chronic toxicity tests on effluent samples, at the in-stream waste concentration for the discharge, in accordance with species and test methods in *Short-Term Methods for Estimating the Chronic Toxicity of Effluent and Receiving Waters to West Coast Marine Estuarine Organisms* (EPA/600/R-95/136, 1995). Artificial sea salts or hypersaline brine shall be used to increase sample salinity if needed. In no case shall these species be substituted with another test species unless written authorization from the San Diego Water Board and USEPA, Region IX is received.

   a. A static renewal toxicity test with the topsmelt, *Atherinops affinis* (Larval Survival and Growth Test Method 1006.01).

   b. A static non-renewal toxicity test with the purple sea urchin, *Strongylocentrotus purpuratus*/sand dollar, *Dendraster excentricus* (Fertilization Test Method 1008.0); or a static non-renewal toxicity test with the red abalone, *Haliotis rufescens* (Larval Shell Development Test Method).

   c. A static non-renewal toxicity test with the giant kelp, *Macrocystis pyrifera* (Germination and Growth Test Method 1009.0).

4. Species Sensitivity Screening

Species sensitivity screening shall be conducted during this Order/Permit's first required sample collection. The Discharger shall collect a single effluent sample to initiate and concurrently conduct three toxicity tests using the fish, an invertebrate, and the alga species previously referenced. This sample shall also be analyzed for the parameters required on a monthly frequency for the discharge, during that given month. As allowed under the test method for the *Atherinops affinis*, a second and third sample shall be collected for use as test solution renewal water as the seven-day toxicity test progresses. If the result of all three species is "Pass," then the species that exhibits the highest "Percent Effect" at the discharge IWC during species sensitivity screening shall be used for routine monitoring during this Order/Permit cycle. If only one species fails, then that species shall be used for routine monitoring during this Order/Permit cycle. Likewise, if two or more species result in "Fail," then the species that exhibits the highest "Percent Effect" at the discharge IWC during the suite of species sensitivity screening shall be used for routine monitoring during this Order/Permit cycle, until such time as a rescreening is required.

Species sensitivity rescreening is required every 24 months if there has been discharge during dry weather conditions. If the discharge is intermittent and occurs only during wet weather, rescreening is not required. If rescreening is necessary, the Discharger shall rescreen with the marine vertebrate species, a marine invertebrate species, and the alga species previously referenced, and continue to monitor with the most sensitive species. If the first suite of rescreening tests demonstrates that the same species is the most sensitive then the rescreening does not need to include more than one suite of tests. If a different species is the most sensitive or if there is ambiguity, then the Discharger may proceed with suites of screening tests for a minimum of three, but not to exceed five suites.

The species used to conduct the receiving water monitoring shall be the most sensitive species from the most recent species sensitivity screening.

During the calendar month, toxicity tests used to determine the most sensitive test species shall be reported as effluent compliance monitoring results for the chronic toxicity maximum daily effluent limitation (MDEL).

5. Quality Assurance and Additional Requirements

Quality assurance measures, instructions, and other recommendations and requirements are found in the test methods manual previously referenced. Additional requirements are specified below.

a. The discharge is subject to determination of "Pass" or "Fail" from a chronic toxicity test using the Test of Significant Toxicity (TST) statistical t-test approach described in *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833- R-10-003, 2010), Appendix A, Figure A-1 and Table A-1 and Appendix B, Table B-1. The null hypothesis (Ho) for the TST statistical approach is: Mean discharge IWC response ≤0.75 × Mean control response. A test result that rejects this null hypothesis is reported as "Pass." A test result that does not reject this null hypothesis is reported as "Fail." This is a t-test (formally Student's t-test), a statistical analysis comparing two sets of replicate observations—in the case of WET, only two test concentrations (i.e., a control and IWC). The purpose of this statistical test is to determine if the means of the two sets of observations are different (i.e., if the IWC or receiving water concentration differs from the control (the test result is "Pass" or "Fail"). The Welch's t-test employed by

the TST statistical approach is an adaptation of Student's t-test and is used with two samples having unequal variances. The relative "Percent Effect" at the discharge IWC is defined and reported as: ((Mean control response - Mean discharge IWC response) ÷ Mean control response) × 100.

b. If the effluent toxicity test does not meet all test acceptability criteria (TAC) specified in the referenced test method, Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms (EPA/600/R-95/136, 1995) (see Table E-6, below), the test should be declared invalid, then the Discharger must resample and re-test within 14 days of test termination.

c. Dilution water and control water, including brine controls, shall be uncontaminated natural water, as specified in the test methods manual. If dilution water and control water is different from test organism culture water, then a second control using culture water shall also be used.

d. Monthly reference toxicant testing is sufficient. All reference toxicant test results should be reviewed and reported using the effects concentration at 25 percent (EC25).

e. The Discharger shall perform toxicity tests on final effluent samples. Chlorine and ammonia shall not be removed from the effluent sample prior to toxicity testing, unless explicitly authorized under this section of this MRP and the rationale is explained in the Fact Sheet (Attachment F).

6. Preparation of an Initial Investigation Toxicity Reduction Evaluation (TRE) Work Plan

The Discharger shall prepare and submit a copy of the Discharger's Initial Investigation TRE Work Plan to the San Diego Water Board and USEPA, Region IX for approval within 90 days of the effective date of this Order/Permit. If the San Diego Water Board and/or USEPA, Region IX does not disapprove the work plan within 60 days, the work plan shall become effective. The Discharger shall use USEPA manual EPA/833B-99/002 (municipal) as guidance, or most current version. At a minimum, the work plan must contain the provisions in Attachment I, *Generic Toxicity Reduction Evaluation (TRE) Work Plan*. The TRE Work Plan shall describe the steps that the Discharger intends to follow if toxicity is detected, and shall include, at a minimum:

a. A description of the investigation and evaluation techniques that will be used to identify potential causes and sources of toxicity, effluent variability, and treatment system efficiency;

b. A description of the Facility's methods of maximizing in-house treatment efficiency and good housekeeping practices, and a list of all chemicals used in the operation of the Facility; and,

c. If a TIE is necessary, an indication of the person who would conduct the TIEs (i.e., an in-house expert or an outside contractor).

7. Accelerated Monitoring Schedule for Maximum Daily Single Result: "Fail."

The Maximum Daily single result shall be used to determine if accelerated testing needs to be conducted.

Once the Discharger becomes aware of this result, the Discharger shall notify the San Diego Water Board and USEPA, Region IX and implement an accelerated monitoring schedule within five calendar days of the receipt of the result. However, if the sample is

contracted out to a commercial laboratory, the Discharger shall ensure that the San Diego Water Board and USEPA, Region IX are notified and the first of four accelerated monitoring tests is initiated within seven calendar days of the Discharger becoming aware of the result. The accelerated monitoring schedule shall consist of four toxicity tests (including the discharge IWC), conducted at approximately two week intervals, over an eight week period; in preparation for the TRE process and associated reporting, these results shall also be reported using the EC25. If each of the accelerated toxicity tests results in "Pass," the Discharger shall return to routine monitoring for the next monitoring period. If one of the accelerated toxicity tests results in "Fail," the Discharger shall immediately implement the TRE Process conditions set forth below. During accelerated monitoring schedules, only TST results ("Pass" or "Fail") for chronic toxicity tests shall be reported as effluent compliance monitoring results for the chronic toxicity MDEL.

8. TRE Process

During the TRE Process, monthly effluent monitoring shall resume and TST results ("Pass" or "Fail") for chronic toxicity tests shall be reported as effluent compliance monitoring results for the chronic toxicity MDEL.

a. Preparation and Implementation of Detailed TRE Work Plan. The Discharger shall immediately initiate a TRE using, according to the type of treatment facility, USEPA manual *Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants* (EPA/833/B-99/002, 1999) and, within 15 days of receiving validated results, submit to the San Diego Water Board and USEPA, Region IX a Detailed TRE Work Plan, which shall follow the Initial Investigation TRE Work Plan revised as appropriate for this toxicity event. It shall include the following information, and comply with additional conditions set by the San Diego Water Board and/or USEPA, Region IX:

    i. Further actions by the Discharger to investigate, identify, and correct the causes of toxicity;

    ii. Actions the Discharger will take to mitigate the effects of the discharge and prevent the recurrence of toxicity; and

    iii. A schedule for these actions, progress reports, and the final report.

b. TIE Implementation. The Discharger may initiate a TIE as part of a TRE to identify the causes of toxicity using the same species and test method and, as guidance, USEPA manuals: *Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures* (EPA/600/6-91/003, 1991); *Methods for Aquatic Toxicity Identification Evaluations, Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity* (EPA/600/R-92/080, 1993); *Methods for Aquatic Toxicity Identification Evaluations, Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity* (EPA/600/R-92/081, 1993); and *Marine Toxicity Identification Evaluation (TIE): Phase I Guidance Document* (EPA/600/R-96-054, 1996). The TIE should be conducted on the species demonstrating the most sensitive toxicity response.

c. Many recommended TRE elements parallel required or recommended efforts for source control, pollution prevention, and storm water control programs. TRE efforts should be coordinated with such efforts. As toxic substances are identified or characterized, the Discharger shall continue the TRE by determining the sources and evaluating alternative strategies for reducing or eliminating the substances from

the discharge. All reasonable steps shall be taken to reduce toxicity to levels consistent with toxicity evaluation parameters.

d. The Discharger shall continue to conduct routine effluent monitoring for compliance determination purposes while the TRE and/or TIE process is taking place. Additional accelerated monitoring and TRE Work Plans are not required once a TRE is begun.

e. The San Diego Water Board and USEPA, Region IX recognizes that toxicity may be episodic and identification of causes and reduction of sources of toxicity may not be successful in all cases. The TRE may be ended at any stage if monitoring finds there is no longer toxicity.

9. Reporting

The Self-Monitoring Report (SMR) shall include a full laboratory report for each toxicity test. This report shall be prepared using the format and content of the test methods manual chapter called Report Preparation, and shall include:

a. The valid toxicity test results for the TST statistical approach, reported as “Pass” or “Fail” and “Percent Effect” at the chronic toxicity IWC for the discharge. All toxicity test results (whether identified as valid or otherwise) conducted during the calendar month shall be reported on the SMR due date specified in Table E-10.

b. Summary water quality measurements for each toxicity test (e.g., pH, dissolved oxygen, temperature, conductivity, hardness, salinity, chlorine, ammonia).

c. The statistical analysis used in *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R-10-003, 2010) Appendix A, Figure A-1 and Table A-1, and Appendix B, Table B-1.

d. TRE/TIE results. The San Diego Water Board and USEPA, Region IX shall be notified no later than 30 days from completion of each aspect of TRE/TIE analyses. Prior to the completion of the final TRE/TIE report, the Discharger shall provide status updates in the monthly monitoring reports, indicating which TRE/TIE steps are underway and which steps have been completed.

e. Statistical program (e.g., TST calculator, CETIS, etc.) output results, including graphical plots, for each toxicity test.

f. Graphical plots and tables clearly showing the laboratory’s performance for the reference toxicant for the previous 20 tests and the laboratory’s performance for the control mean, control standard deviation, and control coefficient of variation for the previous 12-month period.

g. Any additional quality assurance/quality control (QA/QC) documentation or any additional chronic toxicity-related information, upon written request from the San Diego Water Board and/or USEPA, Region IX.

D. Land Discharge Monitoring Requirements – Not Applicable

E. Recycling Monitoring Requirements – Not Applicable

IV. RECEIVING WATER MONITORING REQUIREMENTS

The receiving water and sediment monitoring requirements set forth below are designed to measure the effects of the Facility discharge on the receiving ocean waters. The overall receiving water monitoring program is intended to answer the following questions:

(1) Does the receiving water meet water quality standards?

(2) Are the receiving water conditions getting better or worse over time?

(3) What is the relative contribution of the Facility discharge to pollution in the receiving water?

Receiving water and sediment monitoring in the vicinity of the Point Loma Ocean Outfall (PLOO) shall be conducted as specified below. This program is intended to document conditions within the waste field in the vicinity of the zone of initial dilution (ZID) boundary, at reference stations, and at areas beyond the ZID where discharge impacts might be reasonably expected. Station location, sampling, sample preservation and analyses, when not specified, shall be by methods approved by the San Diego Water Board and USEPA, Region IX. The monitoring program may be modified by the San Diego Water Board and/or USEPA, Region IX at any time. The Discharger may also submit a list of proposed changes with supporting rational to these monitoring requirements that it considers to be appropriate to the San Diego Water Board and USEPA, Region IX for approval.

During monitoring events, sample stations shall be located using a land-based microwave positioning system or a satellite positioning system such as global positioning system (GPS). If an alternate navigation system is proposed, its accuracy should be compared to that of microwave and satellite based systems, and any compromises in accuracy shall be justified.

A. Shoreline Water Quality Monitoring Requirements

As ocean surface waves come closer to shore they break, forming the foamy, bubbly surface called surf. The region of breaking waves defines the shoreline.

Monitoring of the shoreline is intended to answer the following questions:

(1) Does the effluent cause or contribute to an exceedance of the water quality standards in the receiving water?

(2) Does the effluent reach water contact zones or commercial shellfish beds?

(3) Are densities of bacteria in water contact areas below levels protective of public health?

1. All shoreline stations (listed in Table E-1) shall be monitored as follows:

Table E-5. Shoreline Monitoring[1]

Parameter	Units	Sample Type	Minimum Sampling Frequency
Visual Observations	--	Visual	[2]
Temperature	°C	Grab	1/Week
Total and Fecal Coliforms; Enterococcus	CFU /100 ml	Grab	1/Week[3]

1 See Attachment A for definitions of abbreviations and a glossary of common terms used in this Order/Permit.

2 Visual observations of the surface water conditions at the designated receiving water stations shall be conducted in such a manner as to enable the observer to describe and report the presence, if any, of floatables of sewage origin. Observations of wind (direction and speed), weather (cloudy, sunny, or rainy), direction of current, tidal conditions (high or low), water color, discoloration, oil and grease, turbidity, and odor shall be recorded. These observations shall be taken whenever a sample is collected. Visual observations shall also be conducted for repeat sampling.

3. If a single sample exceeds any of the single sample maximum bacterial standards contained in section V.A.1.a.ii of this Order/Permit, repeat sampling at that location shall be conducted to determine the extent and persistence of the

exceedance. Repeat sampling shall be conducted within 24 hours of receiving analytical results and continued until the sample result is less than the single sample maximum standard or until a sanitary survey is conducted to determine the source of the high bacterial densities. When repeat sampling is required because of an exceedance of any one single sample density, results from all samples collected during that 30-day period will be used to calculate the 30-day geometric mean.

2. Sample Station Omission Due to Storm Condition (including required repeat sampling). In the event of stormy weather which makes sampling hazardous at certain shoreline stations, collection of samples at such stations may be omitted, provided that such omissions do not occur more than five days in any calendar year or occur at consecutive sampling times. The visual observations listed in footnote no. 2 to Table E-6 above shall still be recorded and reported in the monthly SMR to the San Diego Water Board and USEPA, Region IX for these stations at the time the sample collection. If practicable, an effort should be made to return to the sampling station that was omitted and collect the sample during calmer conditions within the same reporting period.

B. Offshore Water Quality Monitoring Requirements

Offshore monitoring is necessary to answer the following questions:

(1) Is natural light significantly reduced at any point outside the ZID as a result of the discharge?

(2) Does the discharge cause a discoloration of the ocean surface?

(3) Does the discharge of oxygen demanding waste cause the dissolved oxygen concentration to be depressed at any time more than 10 percent from that which occurs naturally outside the ZID?

(4) Does the discharge of waste cause the pH to change at any time more than 0.2 units from that which occurs naturally outside the ZID?

(5) Is the wastewater plume encroaching upon receiving water areas used for swimming, surfing, diving, and shellfish harvesting?

(6) What is the fate of the discharge plume?

1. Offshore receiving water monitoring shall be conducted at the offshore monitoring stations (listed in Table E-1) as follows:

Table E-6. Offshore Monitoring Requirements[1]

Parameter	Units	Sample Type	Sampling Frequency[2,3]	
			Offshore	Kelp
Visual Observations	--	Visual	[4]	[4]
Temperature and Depth[5]	practical salinity units, °C, meters	Profile	1/Quarter	1/Week
pH[5]	units	Profile	1/Quarter	1/Week
Salinity[5]	part per thousand (ppt)	Profile	1/Quarter	1/Week
Dissolved Oxygen[5]	mg/L	Profile	1/Quarter	1/Week
Light Transmittance[5]	percent	Profile	1/Quarter	1/Week
Chlorophyll a[5]	µg/L	Profile	1/Quarter	1/Week
Total Coliforms	CFU/100 ml	Grab	--	1/Week
Fecal Coliforms	CFU/100 ml	Grab	--	1/Week
Enterococcus	CFU/100 ml	Grab	1/Quarter	1/Week

1 See Attachment A for definitions of abbreviations and a glossary of common terms used in this Order/Permit.

2 Quarterly receiving water monitoring results shall be submitted within the monthly SMR for the month in which the monitoring was conducted.

3 Shall be monitored at all applicable discrete depths specified for bacterial monitoring in Table E-1 of this MRP.

4 Visual observations of the surface water conditions at the designated receiving water stations shall be conducted in such a manner as to enable the observer to describe and report the presence, if any, of floatables of sewage origin. Observations of wind (direction and speed), weather (cloudy, sunny, or rainy), direction of current, tidal conditions (high or low), water color, oil and grease, turbidity, and odor shall be recorded. These observations shall be taken whenever a sample is collected.

5 Temperature, depth, salinity, dissolved oxygen, light transmittance, pH, and chlorophyll a profile data shall be measured throughout the entire water column during the quarterly and weekly sampling events.

2. Plume Tracking

a. Plume Tracking Monitoring Plan (PTMP). Within 180 days of the effective date of this Order/Permit, the Discharger shall, in consultation with the San Diego Water Board and USEPA, Region IX, prepare and submit a PTMP to implement an ongoing program designed to map dispersion and fate of the wastewater plume discharged from the PLOO. The PTMP shall include, but is not limited to, the following elements.

i. Installation and operation by the Discharger of a permanent, real-time oceanographic mooring system located near the terminal diffuser wye structure of the PLOO. The mooring system shall be designed to measure, at minimum, direction and velocity of subsurface currents, and ocean stratification.

ii. Development of a work plan or pilot study (special study) for implementation of the PLOO real-time mooring system, including data acquisition and processing.

iii. Networking the PLOO system to be compatible with a similar system being deployed by the Discharger near the South Bay Ocean Outfall discharge site, as well as a third system operated by the University of California San Diego, Scripps Institution of Oceanography in the coastal waters off the City of Del Mar.

iv. Development of a work plan or pilot study (special study) for utilizing advanced oceanographic sampling technologies such as an autonomous underwater vehicle (AUV) or remotely operated towed vehicle (ROTV) in conjunction with the PLOO real-time mooring system to enhance collection of water quality data in real-time and provide higher resolution maps of plume location and movement.

b. Plume Tracking Implementation. The Discharger shall implement the PTMP within sixty (60) days after submission in accordance with the scheduled contained in the PTMP unless otherwise directed by the San Diego Water Board and USEPA, Region IX.

c. Plume Tracking Reporting. The Discharger shall submit reports to the San Diego Water Board and USEPA, Region IX on the PLOO real-time mooring system and associated pilot studies (e.g., AUV/ROTV surveys) biennially in accordance with the due dates specified in Table E-10 for the Biennial Receiving Waters Monitoring and Assessment Report. These reports shall include in-depth discussion, evaluation, interpretation, and tabulation of the real-time mooring and other project data. Report interpretations and conclusions shall include the state of the receiving waters into which the PLOO discharges and the estimated location of the PLOO plume

throughout the reporting period, Additional project progress reports may also be required per approved work plan schedules.

C. Benthic Monitoring Requirements

Seafloor sediments integrate constituents that are discharged to the ocean. Most particles that come from the PLOO discharge, and any associated contaminants, will eventually settle to the seafloor where they are incorporated into the existing sediments. Sediments can accumulate these particles over the years until the point where sediment quality is degraded and beneficial uses are impaired.

Benthic organisms are strongly affected by sediment contaminant exposure because these organisms often live in continual direct contact with sediment/pore water, and many species ingest significant quantities of sediment as a source of nutrition. Because the benthos are dependent on their surroundings, they serve as a biological indicator that reflects the overall conditions of the aquatic environment.

The assessment of sediment quality with respect to sediment chemistry, sediment toxicity and benthic community condition is necessary to answer the following questions:

(1) Is the dissolved sulfide concentration of waters in sediments significantly increased above that present under natural conditions?

(2) Is the concentration of substances, set forth in Table 1 of the Ocean Plan for protection of marine aquatic life, in marine sediments at levels which would degrade the benthic community?

(3) Is the concentration of organic pollutants in marine sediments at levels that would degrade the benthic community?

(4) Are benthic communities degraded as a result of the discharge?

(5) Is the sediment quality changing over time?

The assessment of sediment quality to evaluate potential effects of the PLOO discharge and compliance with narrative water quality standards specified in the Ocean Plan consist of the measurement and integration of three lines of evidence: 1) physical and chemical properties of seafloor sediments, 2) seafloor sediment toxicity to assess bioavailability and toxicity of sediment contaminants, and 3) ecological status of the biological communities (benthos) that live in or on the seafloor sediments.

1. Sediment Assessment for Physical and Chemical Properties

   a. Sediment Sampling Stations and Monitoring Frequency. The core sediment monitoring program is designed to assess spatial and temporal trends at 22 offshore benthic stations listed in Table E-1, including 12 primary core stations located along the outfall discharge depth contour and 10 secondary core stations located at other depths. At the discretion of the San Diego Water Board and USEPA, Region IX, the requirement for sampling the secondary stations may be relaxed to allow Discharger participation in Southern California Bight Regional Monitoring efforts, or to reallocate resources to accommodate approved Strategic Process Studies. Sediment samples shall be collected twice per year during the winter (e.g., January) and summer (e.g., July) at each of the above referenced benthic stations in order to assess benthic habitat condition in terms of physical and chemical composition (e.g., grain-size distribution, sediment chemistry).

   b. Sediment Sample Collection Methods. Sediment samples shall be taken using a 0.1-square meter modified Van Veen grab sampler. Samples for grain-size and

chemical analyses shall be collected from within the upper two centimeters of the surface sediment. Bulk sediment chemical analysis shall include at a minimum the set of constituents listed in Table E-8 below.

c. Sediment Chemistry. Sediment chemistry is the measurement of the concentration of chemicals of concern in sediments. The chemistry line of evidence is used to assess the potential overall exposure risk to benthic organisms from pollutants in surficial sediments. Chemical analysis of sediment shall be conducted using USEPA approved methods, methods developed by the National Oceanic and Atmospheric Administration's (NOAA's) *National Status and Trends for Marine Environmental Quality*, or methods developed in conjunction with the Southern California Bight Regional Monitoring Program. For chemical analysis of sediment, samples shall be reported on a dry weight basis.

Sediment monitoring for physical and chemical properties shall be conducted at the offshore benthic stations listed in Table E-1 as follows:

Table E-7. Sediment Monitoring Requirements[1]

Parameter	Units	Type of Sample	Minimum Frequency
Sediment Grain Size	micrometer (µm)	Grab	2/Year
Total Organic Carbon	Percent	Grab	2/Year
Total Nitrogen	Percent	Grab	2/Year
Acid Volatile Sulfides	Milligram/ kilogram (mg/kg)	Grab	2/Year
Dissolved Sulfides	mg/kg	Grab	2/Year
Aluminum	mg/kg	Grab	2/Year
Antimony	mg/kg	Grab	2/Year
Arsenic	mg/kg	Grab	2/Year
Cadmium	mg/kg	Grab	2/Year
Chromium	mg/kg	Grab	2/Year
Copper	mg/kg	Grab	2/Year
Iron	mg/kg	Grab	2/Year
Lead	mg/kg	Grab	2/Year
Manganese	mg/kg	Grab	2/Year
Mercury	mg/kg	Grab	2/Year
Nickel	mg/kg	Grab	2/Year
Selenium	mg/kg	Grab	2/Year
Silver	mg/kg	Grab	2/Year
Tin	mg/kg	Grab	2/Year
Zinc	mg/kg	Grab	2/Year
PCBs	nanograms/ kilogram (ng/kg)	Grab	2/Year
2,4-DDD	ng/kg	Grab	2/Year
4,4-DDD	ng/kg	Grab	2/Year
2,4-DDE	ng/kg	Grab	2/Year
4,4-DDE	ng/kg	Grab	2/Year
2,4-DDT	ng/kg	Grab	2/Year
4,4-DDT	ng/kg	Grab	2/Year
Aldrin	ng/kg	Grab	2/Year
Alpha-Chlordane	ng/kg	Grab	2/Year

Parameter	Units	Type of Sample	Minimum Frequency
Dieldrin	ng/kg	Grab	2/Year
Endosulfan	ng/kg	Grab	2/Year
Endrin	ng/kg	Grab	2/Year
Gamma-BHC	ng/kg	Grab	2/Year
Heptachlor	ng/kg	Grab	2/Year
Heptachlor Epoxide	ng/kg	Grab	2/Year
Hexachlorobenzene	ng/kg	Grab	2/Year
Mirex	ng/kg	Grab	2/Year
Trans-Nonachlor	ng/kg	Grab	2/Year
Acenapthene	microgram/ kilogram (µg/kg)	Grab	2/Year
Acenaphthylene	µg/kg	Grab	2/Year
Anthracene	µg/kg	Grab	2/Year
Benzo(a)anthracene	µg/kg	Grab	2/Year
Benzo(o)fluoranthene	µg/kg	Grab	2/Year
Benzo(k)fluoranthene	µg/kg	Grab	2/Year
Benzo(ghi)pyrelene	µg/kg	Grab	2/Year
Benzo(a)pyrene	µg/kg	Grab	2/Year
Benzo(e)pyrene	µg/kg	Grab	2/Year
Biphenyl	µg/kg	Grab	2/Year
Chrysene	µg/kg	Grab	2/Year
Dibenz(ah)anthraces	µg/kg	Grab	2/Year
Fluoranthene	µg/kg	Grab	2/Year
Fluorene	µg/kg	Grab	2/Year
Ideno(123cd)pyrene	µg/kg	Grab	2/Year
Naphthalene	µg/kg	Grab	2/Year
1-Methylnaphthalene	µg/kg	Grab	2/Year
2-Methylnaphthalene	µg/kg	Grab	2/Year
2,6-Dimethylnaphthalene	µg/kg	Grab	2/Year
2,3,5-Trimethylnaphthale	µg/kg	Grab	2/Year
Perylene	µg/kg	Grab	2/Year
Phenanthrene	µg/kg	Grab	2/Year
1-Methylphenanthene	µg/kg	Grab	2/Year
Pyrene	µg/kg	Grab	2/Year

1. See Attachment A for definitions of abbreviations and a glossary of common terms used in this Order/Permit.

2. Sediment Toxicity. Sediment toxicity is a measure of the response of invertebrates exposed to surficial sediments under controlled laboratory conditions. The sediment toxicity line of evidence is used to assess both pollutant related biological effects and exposure. The Discharger shall implement the *Sediment Toxicity Monitoring Plan for the South Bay Ocean Outfall and Point Loma Ocean Outfall Monitoring Regions, San Diego, California, Submitted by City of San Diego Public Utilities Department Environmental Monitoring & Technical Services Division, August 28, 2015* (Sediment Toxicity Plan) in accordance with the schedule contained in the Sediment Toxicity Plan unless otherwise directed in writing by the San Diego Water Board and USEPA, Region IX. Before beginning sample collection activities, the Discharger shall comply with any conditions set by the San Diego Water Board and USEPA, Region IX.

3. Benthic Community Condition

a. Benthic Community Sampling Stations and Frequency. Sediment samples for assessment of benthic community structure shall be collected twice per year during winter (e.g., January) and summer (e.g., July) at each of the 22 offshore benthic stations listed in Table E-1. One sample per station shall be collected for analysis of benthic community structure.

b. Benthic Community Sample Collection Methods. Benthic community sample shall be collected using the guidance specified in the most recent field manual developed for the Southern California Bight Regional Monitoring Program. The benthic samples shall be collected using a 0.1-square meter modified Van Veen grab sampler. These grab samples shall be separate from (but adjacent to as much as possible) samples collected for sediment grain-size and chemistry. The samples shall be sieved using a 1.0-millimeter mesh screen. The benthic organisms retained on the sieve shall be fixed in 10 percent buffered formalin, and transferred to at least 70 percent ethanol within two to seven days of storage. Benthic organisms, obtained during benthic monitoring shall be counted and identified to as low a taxon as possible.

c. Benthic Community Analysis. Analysis of benthic community structure shall include determination of the number of species, number of individuals per species, and total numerical abundance present. The following parameters or metrics shall be calculated for each 0.1-square meter grab sample and summarized by station, as appropriate:

i. Number of species;

ii. Total numerical abundance;

iii. Benthic Response Index (BRI);

iv. Swartz's 75 percent dominance index;

v. Shannon-Weiner's diversity index (H); and

vi. Pielou evenness index (J).

In addition to summarizing the above benthic community structure parameters at each station, a more rigorous assessment shall be performed as detailed in this MRP, section IV.E.

d. Benthic Random Sampling. This MRP and the MRPs for the South Bay Ocean Outfall (SBOO)[1] require U.S. Section of the International Boundary and Water Commission (USIBWC) and the Discharger to sample and analyze annually for sediment chemistry and benthic community conditions at an additional array of 40 randomly selected stations. The same sampling and processing procedures must be followed as outlined above for core benthic sediment and benthic community condition monitoring. These 40 randomly selected stations shall be reselected each

[1] Order No. R9-2013-0006 as amended by Order No. R9-2014-0071, NPDES No. CA0109045, *Waste Discharge Requirements for the City of San Diego South Bay Water Reclamation Plant Discharge to the Pacific Ocean via the South Bay Ocean Outfall*, Monitoring and Reporting Program (Attachment E)
Order No. R9-2014-0009 as amended by Order No. R9-2014-0094, NPDES Permint No. CA0108928, *Waste Discharge Requirements for the United States Section of the International Boundary and Water Commission, South Bay International Wastewater Treatment Plant, Discharge to the Pacific Ocean via the South Bay Ocean Outfall*, Monitoring and Reporting Program (Attachment E)

year by USEPA and San Diego Water Board, or their designee to meet the requirements for both this MRP and the MRPs for the SBOO, using the USEPA probability-based Environmental Monitoring and Assessment Program (EMAP) design.

The random benthic sampling requirement may be suspended as part of a resource exchange agreement to allow for participation in the Southern California Bight Regional Monitoring Surveys at the discretion of the San Diego Water Board and USEPA, Region IX.

D. Fish and Invertebrate Monitoring Requirements

Many pollutants discharged into receiving waters have the potential to bioaccumulate and persist in tissue of aquatic organisms, including marine fishes. Chemical pollutants that bioaccumulate tend to magnify in concentration as they pass through the aquatic food chain. Therefore, fish monitoring data is required to assess the human health risks for individuals who may consume fish and to assess trends of contaminants levels in the receiving waters over time.

Aquatic benthic invertebrates are excellent indicators of ecosystem health because they are ubiquitous, abundant, diverse, and typically sedentary. The growth, survival, and reproduction of many species of aquatic invertebrates are all sensitive to changes in environmental health, making analysis of assemblage structure a good ecosystem monitoring tool.

Fish and invertebrate monitoring is necessary to answer the following questions:

(1) Does the concentration of pollutants in fish, shellfish, or other marine organisms used for human consumption bioaccumulate to levels that are harmful to human health?

(2) Does the concentration of pollutants in marine life bioaccumulate to levels that degrade marine communities?

(3) Are the concentrations of pollutants in fish and other marine organisms changing over time?

(4) Is the health of fish changing over time?

(5) Are the populations of selected species of fish and invertebrates changing over time?

1. Fish and Invertebrate Trawls

a. Fish and Invertebrate Trawl Frequency and Monitoring Stations. Epibenthic trawls shall be conducted to assess the structure of demersal fish and megabenthic invertebrate communities, while the presence of priority pollutants in fish will be analyzed from species captured using both trawling and rig fishing techniques. Single community trawls for fish and invertebrates shall be conducted semi-annually in the winter (e.g., January) and summer (e.g., July) at six trawl stations at the locations listed in Table E-1. These stations represent two areas near Discharge Point No. 001 (stations SD-010 and SD-012), two areas up coast of Discharge Point No. 001 (stations SD-013 and SD-014), and two areas down coast of Discharge Point No. 001 (SD-007 and SD-008). Trawls shall be conducted using a Marinovich 7.62 m (25 feet) head rope otter trawl, using the guidance specified in the most recent field manual developed for the Southern California Bight Regional Monitoring Program. Captured organisms shall be identified at all stations.

In order to minimize negative impacts that may occur due to unsuccessful trawling efforts associated with unusual environmental conditions, the requirement to

conduct trawls during any given period may be postponed or waived at the discretion of the Executive Officer of the San Diego Water Board, in concurrence with USEPA, upon receipt of written justification provided by the Discharger. Examples of such unusual events include the presence of large populations of red tuna crabs (*Pleuroncodes planipes*) associated with El Niño and the occurrence of large squid egg masses that prevent hauling in the trawl nets.

b. Fish and Invertebrate Community Structure Analysis. All demersal fishes and megabenthic invertebrates collected by trawls should be identified to species if possible. For fish, community structure analysis shall consist of determining the standard length and total wet weight, total number of individuals per species, the total numerical abundance of all fish, species richness, species diversity (H'), and multivariate pattern analyses (e.g., ordination and classification analyses). The presence of any physical abnormalities or disease symptoms (e.g., fin erosion, external lesions, and tumors) or external parasites shall also be recorded. For invertebrates, community structure shall be summarized as the total number of individuals per species, the total numerical abundance of all invertebrates, species richness, and species diversity (H').

c. Fish Tissue Chemical Analysis. Chemical analyses of fish tissues shall be performed annually (e.g., during October) on target species collected at or near the trawl stations. The six stations are classified into four zones for the purpose of collecting sufficient numbers of fish for tissue analyses. Trawl Zone 1 represents the nearfield zone, defined as the area within a 1-km radius of stations SD-010 and/or SD-012; Trawl Zone 2 is considered the northern farfield zone, defined as the area within a 1-km radius of stations SD-013 and/or SD-014; Trawl Zone 3 represents the LA-5 disposal site zone, and is defined as the area centered within a 1-km radius of station SD-008; and Trawl Zone 4 is considered the southern farfield zone, and is defined as the area centered within a 1-km radius of station SD-007.

Liver tissues shall be analyzed during each survey from fishes collected in each of the above four trawl zones. No more than a maximum of five 10-minute (bottom time) trawls shall be required per zone in order to acquire sufficient numbers of fish for composite samples; these trawls may occur anywhere within a defined zone. If sufficient numbers of trawl zone target species cannot be, or are unlikely to be, captured by trawling, fish for tissue analysis from these areas may be collected using alternative methods such as those described below under Rig Fishing in section IV.D.2.b of this MRP (e.g., hook and line, baited lines).Three replicate composite samples shall be prepared from each trawl zone, with each composite consisting of tissues from at least three individual fish of the same species. These liver tissues shall be analyzed for the constituents listed in the Table E-9 below.

Table E-8. Fish Tissue Monitoring Requirements[1]

Parameter	Units	Type of Sample	Minimum Frequency
Total Lipids	µg/kg	Composite	Annual
Aluminum	mg/kg	Composite	Annual
Antimony	mg/kg	Composite	Annual
Arsenic	mg/kg	Composite	Annual
Cadmium	mg/kg	Composite	Annual
Chromium	mg/kg	Composite	Annual
Copper	mg/kg	Composite	Annual
Iron	mg/kg	Composite	Annual

Parameter	Units	Type of Sample	Minimum Frequency
Lead	mg/kg	Composite	Annual
Manganese	mg/kg	Composite	Annual
Mercury	mg/kg	Composite	Annual
Nickel	mg/kg	Composite	Annual
Selenium	mg/kg	Composite	Annual
Silver	mg/kg	Composite	Annual
Tin	mg/kg	Composite	Annual
Zinc	mg/kg	Composite	Annual
PCBs	µg/kg	Composite	Annual
2,4-DDD	µg/kg	Composite	Annual
4,4-DDD	µg/kg	Composite	Annual
2,4-DDE	µg/kg	Composite	Annual
4,4-DDE	µg/kg	Composite	Annual
2,4-DDT	µg/kg	Composite	Annual
4,4-DDT	µg/kg	Composite	Annual
Aldrin	µg/kg	Composite	Annual
Alpha-Chlordane	µg/kg	Composite	Annual
Dieldrin	µg/kg	Composite	Annual
Endosulfan	µg/kg	Composite	Annual
Endrin	µg/kg	Composite	Annual
Gamma-BHC	µg/kg	Composite	Annual
Heptachlor	µg/kg	Composite	Annual
Heptachlor Epoxide	µg/kg	Composite	Annual
Hexachlorobenzene	µg/kg	Composite	Annual
Mirex	µg/kg	Composite	Annual
Trans-Nonachlor	µg/kg	Composite	Annual
Acenapthene	µg/kg	Composite	Annual
Acenaphthylene	µg/kg	Composite	Annual
Anthracene	µg/kg	Composite	Annual
Benzo(a)anthracene	µg/kg	Composite	Annual
Benzo(o)fluoranthene	µg/kg	Composite	Annual
Benzo(k)fluoranthene	µg/kg	Composite	Annual
Benzo(ghi)pyrelene	µg/kg	Composite	Annual
Benzo(a)pyrene	µg/kg	Composite	Annual
Benzo(e)pyrene	µg/kg	Composite	Annual
Biphenyl	µg/kg	Composite	Annual
Chrysene	µg/kg	Composite	Annual
Dibenz(ah)anthraces	µg/kg	Composite	Annual
Fluoranthene	µg/kg	Composite	Annual
Fluorene	µg/kg	Composite	Annual
Ideno(123cd)pyrene	µg/kg	Composite	Annual
Naphthalene	µg/kg	Composite	Annual
1-Methylnaphthalene	µg/kg	Composite	Annual
2-Methylnaphthalene	µg/kg	Composite	Annual
2,6-Dimethylnaphthalene	µg/kg	Composite	Annual
2,3,5-Trimethylnaphthale	µg/kg	Composite	Annual
Perylene	µg/kg	Composite	Annual
Phenanthrene	µg/kg	Composite	Annual
1-Methylphenanthene	µg/kg	Composite	Annual
Pyrene	µg/kg	Composite	Annual

1. See Attachment A for definitions of abbreviations and a glossary of common terms used in this Order/Permit.

d. Fish Targeted for Analysis. The species of fish targeted for tissue analysis from the trawl sites shall be primarily flatfish including, but not limited to, Pacific sanddab (*Citharichthys sordidus*), longfin sanddab (*Citharichthys xanthostigma*), bigmouth sole (*Hippoglossina stomata*), and hornyhead turbot (*Pleuronichthys verticalis*). If sufficient numbers of these primary flatfish species are not present in a zone, secondary candidate species such as the California scorpionfish (*Scorpaena guttata*) and halfbanded rockfish (*Sebastes semicinctus*) may be collected as necessary.

2. Rig Fishing

a. Rig Fishing Frequency. Muscle tissues shall be analyzed annually (i.e., during October) from fishes collected in each of the two rig fishing zones described below in order to monitor the uptake of pollutants in species and tissues that are consumed by humans.

b. Rig Fishing Method and Location. The fish shall be collected by hook and line or by setting baited lines from within zones surrounding rig fishing stations RF-001 and FR-002 listed in Table E-1. Rig Fishing Zone 1 is the nearfield area centered within a 1-km radius of station RF-001; and Rig Fishing Zone 2 is considered the farfield area centered within a 1-km radius of station RF-002. There are no depth requirements for these two rig fishing zones with regards to the collection of fishes for tissue analysis. The species targeted for muscle tissue analysis in the rig fishing stations shall be representative of those caught by recreational and/or commercial fishery activities in the region. The species targeted for muscle tissue analysis shall be primarily rockfish, which may include, but are not limited to, the vermilion rockfish (*Sebastes miniatus*) and the copper rockfish (*Sebastes caurinus*). If sufficient numbers of these primary species are not present or cannot be caught in a particular zone, secondary target species (e.g., other rockfish, scorpionfish) may be collected and analyzed as necessary. Fish samples shall be identified to species, with number of individuals per species, standard length and wet weight recorded. Physical abnormalities and disease symptoms shall be recorded and itemized (e.g., fin rot, lesions, and tumors).

c. Rig Fishing Collection. Three replicate composite samples of the target species shall be obtained from each zone, with each composite consisting of a minimum of three individual fish. Muscle tissue shall be chemically analyzed for the same set of constituents as trawl-caught fish specified in Table E-9 above.

E. Receiving Water Monitoring Reports

1. The Discharger shall submit Interim and Biennial Receiving Water Monitoring Reports to the San Diego Water Board and USEPA, Region IX. The Interim Receiving Water Monitoring Reports will cover only one year of receiving water monitoring (e.g., separate reports for calendar years 2016, 2018, and 2020) and shall be submitted every other year. The Biennial Receiving Water Monitoring Reports will provide a more thorough discussion, evaluation (e.g., detailed statistical analyses), and interpretation than the Interim Receiving Water Monitoring Reports, will cover two years of receiving water monitoring (e.g., biennial reports for calendar years 2016-2017, 2018-2019, and 2020-2021), and shall be submitted the opposite years as the Interim Receiving Water Monitoring Reports. These reports are described below under sections IV.E.2 and IV.F.3 and cover the following monitoring requirements:
    a. Shoreline, offshore, and kelp monitoring (sections IV.A and IV.B of this MRP);
    b. Sediment chemistry (section IV.C.1 of this MRP);
    c. Sediment toxicity (section IV.C.2 of this MRP);
    d. Benthic community (section IV.C.3 of this MRP);
    e. Fish and invertebrate trawls (section IV.D.1 of this MRP);
    f. Rig fishing (section IV.D.2 of this MRP); and
    g. Plume tracking (section IV.B.2 of this MRP).
2. The Discharger shall submit Interim Receiving Water Monitoring Reports (Interim Reports, executive summary) as specified in Table E-10, section VIII.B of this MRP. The Interim Reports will cover the first “even” year in each biennial reporting cycle as described below in section IV.E.3 (e.g., separate reports for calendar years 2016, 2018, and 2020). The Interim Reports may be submitted as an integrated report covering both the receiving water monitoring required in this MRP and the receiving water monitoring for the SBOO (as required under separate waste discharge requirements (WDRs)). The Interim Reports shall include, as a minimum, the following information:
    a. A description of climatic and receiving water characteristics at the time of sampling (weather observations, floating debris, discoloration, wind speed and direction, swell or wave action, time of sampling, tide height, etc.);
    b. A description of sampling stations, including, if such information is available, differences unique to each station (e.g., station location, sediment grain size, distribution of bottom sediments, rocks, shell litter, calcareous worm tubes, etc.);
    c. A description of the sample collection and preservation procedures used in the survey;
    d. A description of the specific method used for laboratory analysis;
    e. A tabulation of the data; and
    f. A narrative summary of general observations, including any abnormal conditions.
3. The Discharger shall submit Biennial Receiving Water Monitoring and Assessment Reports (Biennial Reports, full assessment) as specified in Table E-10. These Biennial Reports will each cover a full 2-year monitoring cycle beginning with even-numbered years (e.g., biennial reports for calendar years 2016-2017, 2018-2019, 2020-2021). The Biennial Reports may be submitted as an integrated report covering both the receiving

water monitoring required in this MRP and the receiving water monitoring for the SBOO (as required under separate WDRs). The Biennial Reports shall include, as a minimum, the following information:

a. A description of climatic and receiving water characteristics at the time of sampling (weather observations, floating debris, discoloration, wind speed and direction, swell or wave action, time of sampling, tide height, etc.);

b. A description of sampling stations, including, if such information is available, differences unique to each station (e.g., station location, sediment grain size, distribution of bottom sediments, rocks, shell litter, calcareous worm tubes, etc.);

c. A description of the sample collection and preservation procedures used in the survey;

d. A description of the specific method used for laboratory analysis; and

e. An in-depth discussion, evaluation (e.g., detailed statistical analyses), interpretation and tabulation of the data including interpretations and conclusions as to whether applicable receiving water limitations in this Order/Permit have been attained at each station.

4. During the same year that the Biennial Reports are submitted, the Discharger shall provide a Biennial State of the Ocean Report (an oral report) to the San Diego Water Board summarizing the conclusions of the Biennial Report over the 2-year monitoring period. If an oral report cannot be scheduled for a San Diego Water Board meeting, the San Diego Water Board may approve submission of a written Biennial State of the Ocean Report instead. The Biennial State of the Ocean Report shall include, as a minimum, a description of the monitoring effort completed during the past two years, the status and trends of receiving waters quality conditions, and plans for future monitoring efforts.

V. REGIONAL MONITORING REQUIREMENTS

Regional ocean monitoring provides information about the sources, fates, and effects of anthropogenic contaminants in the coastal marine environment necessary to make assessments over large areas. The large scale assessments provided by regional monitoring describe and evaluate cumulative effects of all anthropogenic inputs and enable better decision making regarding protection of beneficial uses of ocean waters. Regional monitoring data assists in the interpretation of core monitoring studies by providing a more accurate and complete characterization of reference conditions and natural variability. Regional monitoring also leads to methods standardization and improved quality control through inter-calibration exercise. The coalitions implementing regional monitoring enable sharing of technical resources, trained personnel, and associated costs. Focusing these resources on regional issues and developing a broader understanding of pollutants effects in ocean waters enables the development of more rapid and effective response strategies. Based on all of these considerations the San Diego Water Board supports regional approaches to monitoring ocean waters.

The Discharger shall, as directed by the San Diego Water Board, participate with other regulated entities, other interested parties, and the San Diego Water Board in development and implementation of new and improved monitoring and assessment programs for ocean waters in the San Diego Region and discharges to those waters. These programs shall be developed and implemented so as to answer the following questions:

(1) What are the status and trends of conditions in ocean waters in the San Diego Region with regard to beneficial uses? For example:

i. Are fish and shellfish safe to eat?

ii. Is water quality safe for swimming?

iii. Are ecosystems healthy?

(2) What are the primary stressors causing or contributing to conditions of concern?

(3) What are the major sources of the stressors causing or contributing to conditions of concern?

(4) Are the actions taken to address such stressors and sources effective (i.e., environmental outcomes)?

Development and implementation of new and improved monitoring and assessment programs for ocean waters will be guided by the following:

1. The Ocean Plan;
2. San Diego Water Board Resolution No. R9-2012-0069, *Resolution in Support of A Regional Monitoring Framework*;
3. San Diego Water Board staff report entitled *A Framework for Monitoring and Assessment in the San Diego Region*; and
4. Other guidance materials, as appropriate.

A. Kelp Bed Canopy Monitoring Requirements

Kelp consists of a number of species of brown algae. Along the central and southern California coast, giant kelp (*Macrocystis pyrifera*) is the largest species colonizing rocky, and in some cases sandy, subtidal habitats. Giant kelp is an important component of coastal and island communities in southern California, providing food and habitat for numerous animals. Monitoring of the kelp beds is necessary to answer the following questions:

(1) What is the maximum areal extent of the coastal kelp bed canopies each year?

(2) What is the variability of the coastal kelp bed canopy over time?

(3) Are coastal kelp beds disappearing? If yes, what are factors that could contribute to the disappearance?

(4) Are new coastal kelp beds forming?

The Discharger shall participate with other Southern California ocean dischargers in an ongoing regional survey of coastal kelp beds in the Southern California Bight. The intent of these surveys is to provide an indication of the health of these kelp beds, recognizing that the extent of kelp bed canopies may change due to variety of influences.

Kelp beds shall be monitored by means of vertical aerial infrared photography to determine the maximum areal extent of the canopies of coastal kelp beds each year. Surveys shall be conducted as close as possible to when kelp bed canopies are at their greatest extent during the year. The entire San Diego Region coastline, from the international boundary to the San Diego Region/Santa Ana Region boundary shall be photographed on the same day.

The maximum areal extent of kelp bed canopies each year shall be compared to that observed in previous years. Any significant losses that persist for more than one year shall be investigated by divers to document benthic and understory conditions.

Annually on October 1, the Discharger shall submit to the San Diego Water Board and USEPA Region IX a report which summarizes the data, analyses, assessment, and images produced by the surveys. The report is a joint collaboration among a few ocean dischargers in the Southern California. In addition to the kelp bed canopies, the images shall show onshore reference points, locations of all ocean outfalls and diffusers, artificial reefs, areas of known hard-bottom substrate (i.e., rocky reefs), and depth contours at intervals of 30-feet mean lower low water (MLLW). The report shall also be made available in a user-friendly format on a website that is readily available to the public.

The surveys shall be conducted on a "continuous improvement" basis, as needed when improvements shall be made in monitoring, analysis, assessment, and/or documentation. For example, these could include:

1. More sophisticated analysis of patterns, correlations, and cycles that may be related to the extent of kelp bed canopies; or
2. Projects to improve understanding of influences on kelp beds or of how the extent of the canopies of various kelp beds has changed since the early 20th century.

B. Southern California Bight Monitoring Program Participation Requirements

The Discharger is required to participate in the, Southern California Bight Regional Monitoring Program coordinated by the Southern California Coastal Water Research Project (SCCWRP), or any other coordinator named by the San Diego Water Board, pursuant to Water Code sections 13267 and 13383, and 40 CFR section 122.48. The intent of the Southern California Bight Regional Monitoring Program is to maximize the efforts of all monitoring partners using a more cost-effective monitoring design and to best utilize the pooled scientific resources of the Southern California Bight.

During these coordinated sampling efforts, the Discharger's receiving water sampling and analytical effort, as defined in section IV of this MRP, may be reallocated to provide a regional assessment of the impact of the discharge of municipal wastewater to the Southern California Bight. In that event, the San Diego Water Board and USEPA, Region IX shall notify the Discharger in writing that the requirement to perform the receiving water sampling and analytical effort defined in section IV of this MRP is suspended for the duration of the reallocation. Anticipated modifications to the monitoring program will be coordinated so as to provide a more comprehensive picture of the ecological and statistical significance of monitoring results and to determine cumulative impacts of various pollution sources. The level of resources in terms of sampling and analytical effort redirected from the receiving water monitoring program required under section IV this MRP shall approximately equal the level of resources provided to implement the regional monitoring and assessment program, unless the San Diego Water Board, USEPA, Region IX, and the Discharger agree otherwise. The specific scope and duration of the receiving water monitoring program reallocation and redirection shall be determined in writing by the San Diego Water Board and USEPA, Region IX in consultation with the Discharger.

VI. SPECIAL STUDIES REQUIREMENTS

Climate Change Action Plan. The Discharger shall prepare and submit a Climate Change Action Plan (CCAP) within three years of the effective date of this Order/Permit. The CCAP shall be subject to the approval of the San Diego Water Board and USEPA, Region IX and shall be modified as directed by the San Diego Water Board and USEPA, Region IX. Changing climate conditions may fundamentally alter the way publicly-owned treatment works are designed and operated. Climate change research indicates the overarching driver of change is increased atmospheric carbon dioxide (CO_2) from human activity. The increased CO_2 emissions trigger

changes to climatic patterns, which increase the intensity of sea level rise and coastal storm surges (**Δ Sea Level)**, lead to more erratic rainfall and local weather patterns (**ΔWeather Patterns),** trigger a gradual warming of freshwater and ocean temperatures (**Δ Water Temperature**) and trigger changes to ocean water chemistry (**Δ Water pH**). The CCAP shall identify projected regional impacts on Metro System facilities and operations due to climate change if current trends continue. The CCAP shall also identify steps being taken or planned to address greenhouse gas emissions attributable to wastewater treatment plants, solids handling, and effluent discharge processes. The CCAP shall also identify steps being taken or planned to address flooding and sea level rise risks; volatile rain period impacts (both dry and wet weather); challenges in accommodating high and low wastewater flows; impacts on process design parameters due to higher BOD_5, ammonium, and TSS influent concentrations; impacts on wastewater treatment operations and quality; the potential need to adjust NPDES permit conditions and the Metro System pollution control program; the financing needed to pay for planned actions; schedules to update the CCAP as more information on climate change and its effect become more available; and any other factors as appropriate.

VII. OTHER MONITORING REQUIREMENTS

Outfall and Diffuser Inspection. Discharge Point No. 001 shall be inspected externally a minimum of once a year. Inspections shall include general observations and photographic/video graphic records of the outfall pipes and adjacent ballast material. The inspections may be conducted by remotely operated vehicle, diver, or manned submarine. A summary report of the inspection findings shall be provided annually on July 1. This written report will provide a description of the observed condition of the outfall structures from shallow water to their respective termini. Photographic/video graphic records shall be retained by the Discharger and submitted to the San Diego Water Board and USEPA upon request.

VIII. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

1. The Discharger shall comply with all Standard Provisions (Attachment D) related to monitoring, reporting, and recordkeeping.
2. The Discharger shall report all instances of noncompliance not reported under sections V.E, V.G, and V.H of the Standard Provisions (Attachment D) at the time monitoring reports are submitted.
3. The Discharger shall arrange all reported data in a tabular format. The data shall be summarized to clearly illustrate whether the Facility is operating in compliance with interim and/or final effluent limitations. The Discharger is not required to duplicate the submittal of data that is entered in a tabular format within California Integrated Water Quality System (CIWQS). When electronic submittal of data is required and CIWQS does not provide for entry into a tabular format within the system, the Discharger shall electronically submit the data in a tabular format as an attachment.
4. The Discharger shall attach a cover letter to the SMR. The information contained in the cover letter shall clearly identify violations of the WDRs; discuss corrective actions taken or planned; and the proposed time schedule for corrective actions. Identified violations must include a description of the requirement that was violated and a description of the violation.

B. Self-Monitoring Reports (SMRs)

1. The Discharger shall electronically submit SMRs using the State Water Board's CIWQS Program website at http://www.waterboards.ca.gov/water_issues/programs/ciwqs/. The CIWQS website will provide additional information for SMR submittal in the event there will be a planned service interruption for electronic submittal. SMRs must be signed and certified as required by section V of the Standards Provisions (Attachment D). The Discharger shall maintain sufficient staffing and resources to ensure it submits SMRs that are complete and timely. This includes provision for training and supervision of individuals on how to prepare and submit SMRs.

2. The Discharger shall report in the SMR the results for all monitoring specified in this MRP under sections III through IV. The Discharger shall submit SMRs including the results of all required monitoring using USEPA-approved test methods or other test methods specified in this Order/Permit. SMRs are to include all new monitoring results obtained since the last SMR was submitted. If the Discharger monitors any pollutant more frequently than required by this Order/Permit, the results of this monitoring shall be included in the calculations and reporting of the data submitted in the SMR.

3. Unless otherwise noted in this MRP, monitoring periods and reporting for all required monitoring shall be completed according to the following schedule:

Table E-9. Monitoring Periods and Reporting Schedule

Sampling Frequency/ Report Type	Monitoring Period Begins	Monitoring Period	SMR Due Date
Continuous	First day of the calendar month following the Order/Permit effective date or on the Order/Permit effective date if that date is first day of the month.	All	First day of second calendar month following month of sampling.
1/Day	First day of the calendar month following the Order/Permit effective date or on the Order/Permit effective date if that date is first day of the month.	(Midnight through 11:59 PM) or any 24-hour period that reasonably represents a calendar day for purposes of sampling.	First day of second calendar month following month of sampling.
1/Week	First Sunday of the calendar month following the Order/Permit effective date or on the Order/Permit effective date if that date is on the first Sunday of the calendar month.	Sunday through Saturday	First day of second calendar month following month of sampling.
1/Month[1,2]	First day of calendar month following the Order/Permit effective date or on the Order/Permit effective date if that date is first day of the month.	First day of calendar month through last day of calendar month	First day of second calendar month following month of sampling.
1/Quarter	Closest of January 1, April 1, July 1, or October 1 following (or on) the Order/Permit effective date.	January 1 through March 31 April 1 through June 30 July 1 through September 30 October 1 through December 31	May 1 August 1 November 1 February 1

Sampling Frequency/ Report Type	Monitoring Period Begins	Monitoring Period	SMR Due Date
2/Year	Closest of January 1 or July 1 following (or on) the Order/Permit effective date	January 1 through June 30 July 1 through December 31	September 1 March 1
Interim Receiving Water Monitoring Report (executive summary)[3]	January 1 following (or on) the Order/Permit effective date.	One calendar year	July 1 of the year following the even years (e.g., separate reports for calendar years 2016 (due 7/1/2017), 2018 (due 7/1/2019), and 2020 (due 7/1/2021))
Biennial Receiving Water Monitoring and Assessment Report (full assessment)[4]	January 1 following (or on) the Order/Permit effective date.	Two calendar years	July 1 of the year following the odd years (e.g., biennial reports for calendar years 2016-2017 (due 7/1/2018), 2018-2019 (due 7/1/2020), and 2020-2021(due 7/1/2022))
Oral/Written Biennial State of the Ocean Report[5]	January 1 following (or on) the Order/Permit effective date.	Two calendar years	By December 31 of the year following the odd years (e.g., biennial reports for calendar years 2016-2017 (due 12/2018), 2018-2019 (due 12/2020), and 2020-2021(due 12/2022))

1. Include the monthly spill report as required by sections VI.C.2.b.iv of this Order
2. Include monitoring results for offshore stations (section IV.B of this MRP) in the monthly SMRs;
3. As specified in sections IV.E.1 and IV.E.2 of this MRP.
4. As specified in sections IV.B.2.c, IV.E.1, and IV.E.3 of this MRP.
5. As specified in section IV.E.4 of this MRP.

4. Section III.B of the Standard Provisions (Attachment D) includes the standard provisions for test procedures. USEPA published regulations for the Sufficiently Sensitive Methods Rule (SSM Rule) which became effective September 18, 2015. For the purposes of the NPDES program, when more than one test procedure is approved under 40 CFR part 136 for the analysis of a pollutant or pollutant parameter, the test procedure must be sufficiently sensitive as defined at 40 CFR sections 122.21(e)(3) and 122.44(i)(1)(iv). Both 40 CFR sections 122.21(e)(3) and 122.44(i)(1)(iv) apply to the selection of a sufficiently sensitive analytical method for the purposes of monitoring and reporting under NPDES permits, including review of permit applications. A USEPA-approved analytical method is sufficiently sensitive where:

   a. The Minimum Level (reported ML, also known as the Reporting Level, or RL) is at or below both the level of the applicable water quality criterion/objective and this Order/Permit limitation for the measured pollutant or pollutant parameter; or

   b. In permit applications, the ML is above the applicable water quality criterion/objective, but the amount of the pollutant or pollutant parameter in a facility's discharge is high enough that the method detects and quantifies the level of the pollutant or pollutant parameter in the discharge; or

c. The method has the lowest ML of the USEPA-approved analytical methods where none of the USEPA-approved analytical methods for a pollutant can achieve the MLs necessary to assess the need for effluent limitations or to monitor compliance with a permit limitation.

The MLs in Ocean Plan Appendix II remain applicable. However, there may be situations when analytical methods are published with MLs that are more sensitive than the MLs for analytical methods listed in the Ocean Plan. For instance, USEPA Method 1631E for mercury is not currently listed in Ocean Plan Table II, but it is published with an ML of 0.5 ng/L that makes it a sufficiently sensitive analytical method. Similarly, USEPA Method 245.7 for mercury is published with an ML of 5 ng/L.

5. Reporting Protocols. The Discharger shall report with each sample result the applicable reported ML (also known as the Reporting Level, or RL) and the current Method Detection Limit (MDL), as described above in section VIII.B.4.

The Discharger 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 reported ML shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).

b. Sample results less than the reported ML, 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 the 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 considered appropriate by the laboratory.

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

d. The Discharger shall instruct laboratories to establish calibration standards so that the ML value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the Discharger to use analytical data derived from extrapolation beyond the lowest point of the calibration curve.

e. Compliance Determination. Compliance with effluent limitations for reportable pollutants shall be determined using sample reporting protocols defined above, section VII of this Order/Permit, and Attachment A. For purposes of reporting and administrative enforcement by the San Diego Water Board; State Water Board; and USEPA, Region IX, the Discharger shall be deemed out of compliance with effluent limitations if the concentration of the reportable pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reported ML.

6. Multiple Sample Data. When determining compliance with a measure of central tendency (arithmetic mean, geometric mean, median, etc.) of multiple sample analyses and the data set contains one or more reported determinations of DNQ or ND, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:

a. The data set shall be ranked from low to high, ranking the reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.

b. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.

C. Discharge Monitoring Reports (DMRs)

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

D. Other Reports

The following reports are required under Special Provisions (section VI.C of this Order), sections I, III, V.A, and VI of this MRP, and the California Code of Regulations (CCR). The reports shall be submitted to the San Diego Water Board using the State Water Board's CIWQS program website. The reports must be signed and certified as required by section V of the Standards Provisions (Attachment D). The CIWQS website will provide additional information for SMR submittal in the event of a planned or unplanned service interruption for electronic submittal.

Table E-10. Reporting Requirements for Special Reports

Report	Location of requirement	Due Date[1]
Annual Biosolids Report	Section VI.C.5.b.viii of this Order	Annually February 19
Annual Local Limits Analysis	Section VI.C.5.d.ii.b) of this Order	Annually July 1
Annual Pretreatment Report	Section VI.C.5.d.v of this Order	March 1
Task Reports for Pure Water San Diego Potable Reuse - Individual Tasks	Section VI.C.7.b of this Order	February 14, 2017, June 14, 2017, February 14, 2018 (2 tasks), June 14, 2018, February 14, 2019 November 14, 2019, and February 14, 2020
Semiannual Progress Reports for Pure Water San Diego Program	Section VI.C.7.c of this Order	January 1 through June 30 (due January 14) July 1 through December 31 (due July 14)
Annual Flow Report	Section I.F of this MRP	Annually on July 1
Annual Quality Assurance (QA) Report	Section I.G of this MRP	Annually on April 1
Initial Investigation Toxicity Reduction Evaluation (TRE) Work Plan	Section III of this MRP	Within 90 days of the effective date of this Order/Permit
Plume Tracking Monitoring Plan (PTMP)	Section IV.B.2 of this MRP	Within 180 days of the effective date of this Order/Permit
Kelp Bed Canopy Report	Section V.A of this MRP	Annually on October 1
Outfall and Diffuser Inspection Report	Section VI of this MRP	Annually on July 1
Report of Waste Discharge (for reissuance)	Title 23, CCR	180 days before the Order/Permit expiration date

[1] If the due date falls on a weekend or holiday, the due date will be the following workday.

ATTACHMENT F – FACT SHEET

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ATTACHMENT F – FACT SHEET

As described in section I, the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) and U.S. Environmental Protection Agency (USEPA), Region IX incorporates this Fact Sheet as findings of the San Diego Water Board and USEPA, Region IX supporting the issuance of this Order/Permit. This Fact Sheet includes the legal requirements and technical rationale that serve as the basis for the requirements of this Order/Permit.

This Order/Permit has been prepared under a standardized format to accommodate a broad range of discharge requirements for Dischargers in California. Only those sections or subsections of this Order/Permit that are specifically identified as “Not Applicable” have been determined not to apply to this Discharger. Sections or subsections of this Order/Permit not specifically identified as “Not Applicable” are fully applicable to this Discharger.

I. PERMIT INFORMATION

The following table summarizes administrative information related to the Facility.

Table F-1. Facility Information

WDID	9 000000275
Discharger	City of San Diego
Name of Facility	E.W. Blom Point Loma Wastewater Treatment Plant
Facility Address	1902 Gatchell Road
	San Diego, CA 92106
	San Diego County
Facility Contact, Title and Phone	Halla Razak, P.E., Director of Public Utilities (858) 292-6401
Authorized Person to Sign and Submit Reports	Same as above
Mailing Address	9192 Topaz Way, San Diego CA 92123
Billing Address	Same as mailing address
Type of Facility	Publicly-Owned Treatment Works (POTW)
Major or Minor Facility	Major
Threat to Water Quality	1
Complexity	A
Pretreatment Program	Yes
Recycling Requirements	No
Facility Permitted Flow	240 million gallons per day (MGD)
Facility Design Flow	240 MGD
301(h)-variance-based Flow	205 MGD
Watershed	Pacific Ocean
Receiving Water	Pacific Ocean
Receiving Water Type	Ocean

A. The City of San Diego (Discharger) is the owner and operator of the E.W. Blom Point Loma Wastewater Treatment Plant (Facility), Pump Station No. 2, the Metro Biosolids Center (MBC), the Point Loma Ocean Outfall (PLOO), and other associated infrastructure (collectively referred to as Facilities).

B. For the purposes of this Order/Permit, references to the "discharger" or "permittee" in applicable State and federal laws, regulations, plans, or policy are held to be equivalent to references to the Discharger herein.

C. The Facility discharges wastewater to the Pacific Ocean, a water of the U.S. The Facilities and associated discharges to the Pacific Ocean were previously regulated by Order No. R9-2009-0001 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0107409. Order No. R9-2009-0001 was adopted on June 10, 2009 by the San Diego Water Board and the 301(h)-modified permit (NPDES Permit No. CA0107409) was adopted on June 16, 2010 by USEPA, Region IX. Order No. R9-2009-0001 became effective on August 1, 2010 and expired on July 31, 2015. In accordance with title 40 of the Code of Federal Regulations (40 CFR) section 122.6 and title 23, division 3, chapter 9, article 3, section 2235.4 of the California Code of Regulations (CCR), the terms of Order No. R9-2009-0001 were administratively extended and continued in effect after the Order/Permit expiration date until the adoption of this Order/Permit. Attachment B provides a map of the area around the Facilities. Attachment C provides a flow schematic of the Facilities.

D. The Discharger filed a Report of Waste Discharge (ROWD) and submitted an application of renewal for its Waste Discharge Requirements (WDRs) and 301(h)-modified NPDES permit in January 2015. The 2015 301(h) application is based on an improved discharge, as defined at 40 CFR section 125.58(i).

E. Regulations at 40 CFR section 122.46 limit the duration of NPDES permits to a fixed term not to exceed five years. Accordingly, Tables 3 and 4 of this Order/Permit limits the duration of the discharge authorization. However, pursuant to CCR, title 23, section 2235.4, the terms and conditions of an expired permit are automatically continued pending reissuance of the Order/Permit if the Discharger complies with all federal NPDES requirements for continuation of expired permits.

II. FACILITY DESCRIPTION

A. Description of San Diego Metropolitan Sewerage System (Metro System)

The Facility serves as the terminal treatment facility of the Metro System. The Metro System collects and treats wastewater from the City of San Diego and 12 participating agencies within a 450-square mile service area throughout San Diego County, shown in Table F-2 below. Approximately 70 percent of the total Metro System flows are from the City of San Diego, with the remaining flow from the 12 participating agencies.

Table F-2. Metro System Participating Agencies

Municipalities	Water/Wastewater Districts	Sanitation/Maintenance Districts
City of Chula Vista City of Coronado City of Del Mar City of El Cajon City of Imperial Beach City of La Mesa City of National City City of Poway	Otay Water District Padre Dam Municipal Water District	Lemon Grove Sanitation District San Diego County[1]

[1] Includes the East Otay Mesa, Lakeside, Alpine, Spring Valley, and Wintergardens Service Areas.

In November 1965, the governments of the United States and Mexico agreed to construct, operate, and maintain an emergency connection from the Sewage System of the City of

Tijuana, Baja California to the Metropolitan Sewage System of San Diego, California, as an additional measure of safety to protect. U.S. lands and waters from an upset or shutdown in the Sewage System of the City of Tijuana (IBWC Minute No. 222 between the United States and Mexican sections of the International Boundary and Water Commission)[1]. During the period when it was operational, up to 13 MGD of sewage could be transferred from the Sewage System of the City of Tijuana to the Metropolitan Sewage System of San Diego through the Emergency Connection with treatment and disposal at the Discharger's Facility and discharge through the PLOO. The Emergency Connection was used daily throughout the 1980s and early 1990s and intermittently while the SBOO was still under construction. The Emergency Connection was last used on October 15, 2000; construction of the SBOO eliminated the need for continued use the Emergency Connection. According to the Discharger, this emergency connection still exists but is not currently used. If the Discharger is requested to accept wastewater originating in Tijuana, Mexico, treated or untreated during the term of this Order/Permit, such acceptance would be contingent upon an agreement acceptable to the USEPA, Region IX, San Diego Water Board, and the Discharger. The TSS contribution from that flow would not be counted toward the Discharger's mass emission limit(s).

The Discharger owns and operates Metro System collection, treatment, and effluent disposal facilities. Wastewater collection systems that discharge to the Metro System are owned and operated by the respective participating agencies.

Primary Metro System facilities include:

1. The North City Water Reclamation Plant (NCWRP)

   The NCWRP has a design capacity of 30 MGD and is an advanced wastewater treatment facility capable of producing tertiary-treated recycled water that complies with the requirements of title 22, division 4, chapter 3 of the CCRs (Title 22 Regulations). Discharges of tertiary-treated recycled water from the NCWRP are regulated under separate WDRs. Excess recycled water, secondary-treated effluent, and plant waste streams from NCWRP are returned to the sewer for transport to the Facility for additional treatment. Waste solids removed during treatment at NCWRP are directed to the MBC for treatment and use or disposal.

2. Metro Biosolids Center (MBC)

   The MBC is located on Marine Corps Air Station Miramar. MBC provides dewatering of sludge from the Facility and thickening, anaerobic digestion, and dewatering of sludge from the NCWRP. Dewatered solids are beneficially used as an alternate daily cover at a landfill or as a soil amendment.

3. South Bay Water Reclamation Plant (SBWRP)

   The SBWRP has a tertiary design capacity of 15 MGD and a hydraulic capacity of 18 MGD. SBWRP is an advanced wastewater treatment facility producing recycled water that complies with Title 22 Regulations for customers within the South Bay Region. Excess recycled water and secondary-treated effluent is directed to the South Bay Ocean Outfall. Waste solids are directed to the Facility through the South Metro

[1] Minute No. 222 - *Emergency Connection of the Sewage Sytem of the City of Tijuana, Baja California to the Metropolitan Sewage System of the City Of San Diego, California*, approved by United States on December 20, 1965, approved by Mexico on December 7, 1967, available at http://www.ibwc.gov/Files/Minutes/Min222.pdf (as of August 22, 2016).

Interceptor and Pump Stations Nos. 1 and 2, for treatment and removal. Discharges from the SBWRP are regulated under separate WDRs.

4. South Bay Ocean Outfall (SBOO)

   The SBOO is jointly owned by the U.S. Section of the International Boundary and Water Commission (USIBWC) and the Discharger. The outfall discharges secondary and tertiary treated wastewater from the SBWRP and secondary wastewater from the USIBWC South Bay International Wastewater Treatment Plant. The outfall has an average daily flow capacity of 174 MGD and a peak flow of 333 MGD. The SBOO discharges wastewater approximately 3.5 miles off the coast of the International Border at a depth of approximately 95 feet. Discharges from the SBOO are regulated under separate WDRs.

5. Pump Station No. 1

   Pump Station No. 1 conveys wastewater from the southern portion of the Metro System through the South Metro Interceptor to Pump Station No. 2. Pump Station No. 1 has a pumping capacity of approximately 160 MGD and receives ferrous chloride, sodium hydroxide, and sodium hypochlorite for odor and sulfide control. Additionally, Pump Station No. 1 provides screening via two traveling screens.

6. Pump Station No. 2

   Pump Station No.2 receives wastewater from the north, south, and central regions of the Metro System service area and conveys all influent to the Facility. Pump Station No. 2 also provides initial screening and chemical addition (hydrogen peroxide, sodium hydroxide, and sodium hypochlorite for odor and sulfide control and to assist in coagulation/sedimentation at the Facility). Pump Station No. 2 has a pumping capacity of approximately 432 MGD. Pump Station No. 2 discharges wastewater to the east portal of the Point Loma Tunnel through two 87-inch diameter force mains, respectively 2.9 and 2.7 miles long. One force main follows a land route while the second force main is routed underneath San Diego Bay. The Point Loma Tunnel conveys wastewater to the Facility under the Point Loma peninsula.

7. E.W. Blom Point Loma Wastewater Treatment Plant (Facility)

   The Facility is an advanced primary treatment plant and the terminal treatment facility discharging to the PLOO. The Facility has rated capacities of 240 MGD average annual daily flow and 432 peak wet weather flow. Treatment processes include: mechanical self-cleaning climber screens; chemical addition at Parshall flumes to enhance settling; aerated grit removal, including grit tanks, separators, and washers; sedimentation basins with sludge and scum removal facilities; and effluent disinfection facilities providing chlorination in the effluent channel.

B. Wastewater and Biosolids Treatment and Controls

In addition to receiving raw wastewater from both the northern and southern portions of the Metro System service area, the Facility may also receive treated effluent from the NCWRP. Excess NCWRP secondary effluent is discharged to the Facility via the North Metro Interceptor for retreatment and disposal. Additionally, during times when NCWRP recycled water production exceeds demands, excess NCWRP recycled water may also be conveyed to the Facility for treatment and disposal. The Facility also receives centrate from MBC and waste solids from the SBWRP.

The treatment train at the Facility consists of five influent screens, chemical injection (ferric chloride occurs in the Parshall flumes, and anionic polymer is added in the individual flumes

to the sedimentation tanks), six aerated grit chambers, 12 primary sedimentation basins, and sodium hypochlorite injection for chlorination. Increased total suspended solids (TSS) removal is largely attributed to the Discharger's implementation of an integrated system-wide chemical addition approach. The Discharger during the past several years has proceeded with phased implementation of a proprietary technology called Peroxide Regenerated Iron Sulfide Control. On-site solids treatment at the Facility consists of anaerobic sludge digestion. Dewatered solids are beneficially used as an alternate daily cover at a landfill or as a soil amendment. Digested sludge is transported via pipeline to MBC for dewatering and disposal. Screenings, grit, and scum are trucked to a landfill for disposal.

Chlorinated advanced primary treated effluent is discharged through the PLOO to the Pacific Ocean, approximately 4.5 miles offshore. Although this is beyond the limit of the ocean waters of the State, potential plume migration within the ocean waters of the State warrants joint regulation of the effluent. USEPA, Region IX has primary regulatory responsibility for the discharge. However, in 1984, a Memorandum of Understanding was signed between USEPA and the State of California to jointly administer discharges that are granted modifications from secondary treatment standards. Under California's Porter-Cologne Water Quality Control Act, the San Diego Water Board issues WDRs which serve as an NPDES permit.

In addition to domestic sewage and industrial discharges, the Facility accepts flow and pollutants from low-flow urban runoff diversion systems and "first flush" industrial storm water diversion systems that are routed to the sanitary sewer collection system.

C. Discharge Points and Receiving Waters

The PLOO has an average dry weather design flow of 240 MGD and a peak wet weather flow of 432 MGD. The PLOO discharges wastewater from the Facility approximately 4.5 miles off the coast of Point Loma (32° 39' 55" North; 117° 19' 25" West) at a discharge depth of approximately 310 feet at mean lower low water. The PLOO is 23,472 feet long and includes a wye (Y-shaped) diffuser with two 2,496 foot long diffuser legs. The diffuser has 416 discharge ports (208 on each leg). Order No. R9-2009-0001 carried over an initial dilution value for the PLOO of 204 parts seawater per part wastewater (204:1) from previous orders for the Facility. This initial dilution value was established based on the results of a modified version of the RSB model, submitted with the Discharger's 1995 ROWD and the Discharger's 1995, 2001, 2007, and 2015 301(h) applications to USEPA, Region IX. This initial dilution value was predicated based on the 301(h)-variance-based effluent flow of 205 MGD from the Facility. For the 2015 ROWD, the Facility end-of-permit term (calendar year 2022) projected average annual flow is 171 MGD. Because the Facility end-of-permit projected flow of 171 MGD is less than the 301(h)-variance-based flow of 205 MGD evaluated by USEPA, Region IX in the 1995, 2001, and 2007 applications, USEPA, Region IX believes that the 301(h)-variance-based flow of 205 MGD continues to be a reasonable estimate for evaluating initial dilutions in the 2015 application. Thus, this Order/Permit carries over the initial dilution value of 204:1, as discussed in Attachment H. This 301(h)-variance-based flow of 205 MGD and minimum initial dilution value of 204:1 is used by the San Diego Water Board and USEPA, Region IX to establish water quality-based effluent limitations (WQBELs) and performance goals and calculate mass-based effluent limitations for this Order/Permit, as discussed in section IV.B and C of this Fact Sheet.

D. Summary of Existing Requirements and Self-Monitoring Report (SMR) Data

Effluent limitations, and discharge specifications contained in Order No. R9-2009-0001 for discharges from the Facility and representative monitoring data from August 2010 – July 2015 are as follows:

Table F-3. Historic Effluent Limitations and Monitoring Data[1]

Parameter	Units	Effluent Limitation				Monitoring Data (August 2010 – July 2015)			
		Average Annual	Average Monthly	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Average Annual	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Maximum At Anytime
TSS	milligram per liter (mg/L)	--	75			--	51		
	Facility percent removal		[2]	--	--		83.7[3]		
	system-wide percent removal	--	≥80[4]			--	86.4[3]		
	metric ton per year (mt/yr)	15,000[5]	--			9,035	--		
		13,598[6]	--			6,770	--		
Biochemical Oxygen Demand (5-Day at 20 degrees Celsius (°C)) (BOD_5)	system-wide percent removal	≥58[4]	--			64.1[3]	--		
Oil & Grease	mg/L		25	40	75		14.8	16.7	44.3
	pounds per day (lbs/day)		42,743	68,388	128,228		18,458	23,494	52,833
Settleable Solids	milliliter per liter (ml/L)		1.0	1.5	3.0		0.5	1.0	3.5
Turbidity	nephelometric turbidity unit (NTU)		75	100	225		58.2	63.6	94.6
pH	standard units	Within limits of 6.0 - 9.0 at all times.				6.83 – 7.62			

1 See Attachment A for definitions of abbreviations and a glossary of common terms used in this Order/Permit.

2 The Discharger shall, as a 30-day average, remove 75 percent of suspended solids from the influent stream to the Facility before discharging wastewaters to the ocean, except that the effluent limitation to be met shall not be lower than 60 mg/L. This effluent limitation was derived from the Ocean Plan, Table 2.

3 Represents minimum.

4 The average monthly system-wide percent removal was derived from CWA sections 301(h) and (j)(5). Percent removal shall be calculated on a system-wide basis, as provided in section VII.G of this Order/Permit. Section VII.G of this Order/Permit is carried over from Orders Nos. R9-2002-0025 and R9-2009-0001.

5 To be achieved on permit effective date through December 31, 2013. Applies only to TSS discharges from POTWs owned and operated by the Discharger and the Discharger's wastewater generated in the Metro System service area; does not apply to wastewater (and the resulting TSS) generated in Mexico which, as a result of upset or shutdown, is treated at and discharged from the Facility.

[6] To be achieved on January 1, 2014. Applies only to TSS discharges from POTWs owned and operated by the Discharger and the Discharger's wastewater generated in the Metro System service area; does not apply to wastewater (and the resulting TSS) generated in Mexico which, as a result of upset or shutdown, is treated at and discharged from the Facility.

Table F-4. Historic Effluent Limitations and Monitoring Data (Protection of Marine Aquatic Life)[1]

Parameter	Units	Effluent Limitation			Monitoring Data (August 2010 – July 2015)		
		Six-Month Median	Maximum Daily	Instantaneous Maximum	Highest Six-month Median	Highest Maximum Daily	Highest Instantaneous Maximum
Chronic Toxicity	chronic toxicity unit (TUc)	--	205	--	--	667	--
Total Chlorine Residual	microgram per liter (µg/L)	410	1,600	12,000	Not Detected (ND)	7,130	7,130
	lbs/day	700	2,800	21,000	ND	15,183	15,183
Phenolic Compounds (Non-Chlorinated)	µg/L	6,200	25,000	62,000	26.5	42.4	42.4
	lbs/day	11,000	42,000	110,000	27.7	44.5	44.5
Chlorinated Phenolics	µg/L	210	820	2,100	ND	7.0	7.0
	lbs/day	350	1,400	3,500	ND	8.2	8.2

[1] See Attachment A for definitions of abbreviations and a glossary of common terms used in this Order/Permit.

Table F-5. Historic Effluent Limitations and Monitoring Data (protection of Human Health)[1]

Parameter	Units	Effluent Limitation	Monitoring Data (January 2010 – July 2015)
		30-day Average	Highest 30-day Average
Chlordane	µg/L	0.0047	ND
	lbs/day	0.0081	ND
Chlorodibromomethane (dibromochloromethane)	µg/L	1,800	1.0
	lbs/day	3,000	1.3
Chloroform	µg/L	27,000	10.8
	lbs/day	46,000	12.2
1,4-dichlorobenzene	µg/L	3,700	0.6
	lbs/day	6,300	0.8
Dichlorobromomethane	µg/L	1,300	1.3
	lbs/day	2,200	1.61
Dichloromethane (Methylene Chloride)	µg/L	92,000	2.6
	lbs/day	160,000	2.9
Halomethanes	µg/L	27,000	47.3
	lbs/day	46,000	53.5
Heptachlor	µg/L	0.010	ND
	lbs/day	0.018	ND

[1] See Attachment A for definitions of abbreviations and a glossary of common terms used in this Order/Permit.

E. Compliance Summary

Since August 2010, the Discharger has reported the following violations of Order No. R9-2009-0001:

1. Tetrachlorodibenzodioxin (TCDD) equivalents represent the sum of concentrations of chlorinated dibenzodioxins (2,3,7,8-CDDs) and chlorinated dibenzofurans (2,3,7,8-CDFs) multiplied by their respective toxicity factors. Effluent monitoring for TCDD equivalents is required monthly. Due to a laboratory error, the Discharger did not report effluent monitoring results for dioxin for October 2015.
2. Effluent monitoring for floating particulates is required daily. Due to a low sample volume, the Discharger did not report effluent monitoring results for floating particulates for October 6, 2015.
3. Section I.D of the Standard Provisions (Attachment D of Order No. R9-2009-0001) requires that the Discharger properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Discharger to achieve compliance with the conditions of this Order/Permit.
    a. On July 25, 2015 there was a 1,200 gallon spill of ferrous chloride by the ferrous pump area into the secondary containment area.
    b. On July 18, 2015 there was a 25 gallon spill of ferrous chloride by the ferrous pump area into the secondary containment area.
4. The effluent limitation for chronic toxicity is a maximum daily of 205 TUc.
    a. The Discharger reported that the effluent chronic toxicity was 370.4 TUc on May 12, 2015.
    b. The Discharger reported that the effluent chronic toxicity was 666.7 TUc on June 2, 2015.
5. The effluent limitation for settleable solids is an instantaneous maximum of 3 ml/L.
    a. The Discharger reported that the grab sample for settleable solids was 3.25 ml/L on November 23, 2011.
    b. The Discharger reported that the grab sample for settleable solids was 3.5 ml/L on February 8, 2012.

F. Planned Changes

As a condition of this Order/Permit, the Discharger has committed to implementing a comprehensive water reuse program called Pure Water San Diego that has the goal of producing potable water for the San Diego Region while offloading flows and loads from the Facility. This program is a long-term (approximately 20 years) joint water and wastewater facilities plan that would provide a safe, reliable, and cost-effective drinking water supply for the City of San Diego and surrounding areas through the application of advanced treatment technology to purify recycled water (i.e., potable reuse). This program envisions a significant investment in potable water reuse and ancillary facilities and is the result of collaboration between the Discharger, Metro Wastewater Joint Powers Authority (JPA)[2], and a diverse

[2] The Metro Wastewater JPA includes the City of Chula Vista, City of La Mesa, City of Del Mar, City of El Cajon, City of Lemon Grove, City of Poway, City of Coronado, City of Imperial Beach, City of National City, Padre Dam Municipal Water District, Otay Water District, and San Diego County.

array of regional stakeholders. The Discharger, Metro Wastewater JPA, and regional stakeholders have agreed to cooperate to:[3]

1. Implement a comprehensive potable reuse program using state-of-the-art advanced treatment technology to achieve an ultimate goal of 83 MGD of potable reuse by December 31, 2035 - an amount that equates to approximately one-third of the total City of San Diego potable water demand;
2. Sufficiently reduce influent flows and solids loads to the Facility so that ultimate PLOO TSS mass emissions are reduced to levels that would have occurred if the 240-MGD Facility were to achieve secondary treatment TSS concentration standards;
3. Support the Discharger's application for renewed 301(h)-modified TSS and BOD_5 limitations for the Facility; and
4. Support the Discharger's pursuit of administrative or legislative efforts to codify that, as a result of implementing the comprehensive Pure Water San Diego program, the PLOO discharge is recognized as equivalent to secondary treatment for purposes of compliance with the Clean Water Act (CWA). This concept is referred to as secondary treatment equivalency.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

The requirements contained in this Order/Permit are based on the requirements and authorities described in this section.

A. Legal Authorities

This Order/Permit is issued pursuant to federal CWA section 402 and implementing regulations adopted by the USEPA and chapter 5.5, division 7 of the California Water Code (Water Code) (commencing with section 13370). This Order/Permit shall serve as a jointly-issued State and federal NPDES permit authorizing the Discharger to discharge into waters of the U.S. at the discharge location described in Table 2 subject to the WDRs in this Order/Permit. This Order/Permit also serves as WDRs pursuant to article 4, chapter 4, division 7 of the Water Code (commencing with section 13260). Although Discharge Point No. 001 is beyond the limit of State-regulated ocean waters, effluent plume migration into State waters warrants joint regulation of the discharge by the San Diego Water Board and USEPA, Region IX.

B. California Environmental Quality Act (CEQA)

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

C. State and Federal Laws, Regulations, Policies, and Plans

1. **Water Quality Control Plan.** The San Diego Water Board adopted the *Water Quality Control Plan for the San Diego Basin* (Basin Plan) on September 8, 1994. The Basin Plan was subsequently approved by the State Water Resources Control Board (State Water Board) on December 13, 1994. Subsequent revisions to the Basin Plan have also been adopted by the San Diego Water Board and approved by the State Water Board.

[3] *Cooperatiive Agreement in Suppport of Pure Water San Diego*; *City of San Diego, San Diego Coastkeeper, San Diego County Surfrider, CERF, San Diego Audubon Society*; *October 2014*; Filed by the Office of the City Clerk San Diego, California on November 18, 2014; Signed and approved by the City of San Diego Attorney, Jan I. Goldsmith on December 9, 2014, available at ADD WEBLINK.

The Basin Plan was last amended by the San Diego Water Board on April 15, 2015. The Basin Plan designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. In addition, the Basin Plan implements State Water Board Resolution No. 88-63, which established State policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. Requirements in this Order/Permit implement the Basin Plan. Beneficial uses applicable to the Pacific Ocean specified in the Basin Plan are as follows:

Table F-6. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	Pacific Ocean	Industrial service supply; navigation; contact water recreation; non-contact water recreation; commercial and sport fishing; preservation of biological habitats of special significance; wildlife habitat; rare, threatened, or endangered species; marine habitat; aquaculture; migration of aquatic organisms; spawning, reproduction, and/or early development; and shellfish harvesting.

In order to protect the beneficial uses, the Basin Plan establishes water quality objectives and a program of implementation. Requirements of this Order/Permit implement the Basin Plan.

2. **California Ocean Plan.** The State Water Board adopted the *Water Quality Control Plan, Ocean Waters of California, California Ocean Plan* (Ocean Plan) in 1972 and amended it in 1978, 1983, 1988, 1990, 1997, 2000, 2005, 2009, 2012, and 2015. The State Water Board adopted the latest amendment on April 15, 2015, and it became effective on August 19, 2013. The Ocean Plan is applicable, in its entirety, to point source discharges to the ocean. The Ocean Plan identifies beneficial uses of ocean waters of the State to be protected as summarized below:

Table F-7. Ocean Plan Beneficial Uses

Discharge Point	Receiving Water	Beneficial Uses
Outfall 001	Pacific Ocean	Industrial water supply; water contact and non-contact recreation, including aesthetic enjoyment; navigation; commercial and sport fishing; mariculture; preservation and enhancement of designated Areas of Special Biological Significance (ASBS); rare and endangered species; marine habitat; fish spawning and shellfish harvesting

In order to protect the beneficial uses, the Ocean Plan establishes water quality objectives and a program of implementation. Requirements of this Order/Permit implement the Ocean Plan.

3. **Alaska Rule.** On March 30, 2000, USEPA revised its regulation that specifies when new and revised State and tribal water quality standards become effective for CWA purposes (40 CFR section 131.21, 65 Fed. Reg. 24641 (April 27, 2000)). Under the revised regulation (also known as the Alaska Rule), new and revised standards submitted to USEPA after May 30, 2000, must be approved by USEPA before being used for CWA purposes. The final rule also provides that standards already in effect and submitted to USEPA by May 30, 2000, may be used for CWA purposes, whether or not approved by USEPA.

4. **Antidegradation Policy.** Section 131.12 of 40 CFR requires that the State water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution 68-16 (*Statement of Policy with Respect to Maintaining High Quality of Waters in California*). Resolution 68-16 is deemed to incorporate the federal antidegradation policy where the federal policy applies under federal law. Resolution 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings. The San Diego Water Board's Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies. The permitted discharge must be consistent with the antidegradation provision of section 131.12 and State Water Board Resolution 68-16.

5. **Anti-Backsliding Requirements.** Sections 402(o) and 303(d)(4) of the CWA and federal regulations at 40 CFR section 122.44(l) restrict backsliding in NPDES permits. These Anti-backsliding provisions require that effluent limitations in a reissued permit must be as stringent as those in the previous permit, with some exceptions in which limitations may be relaxed.

6. **Endangered Species Act Requirements.** This Order/Permit 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, sections 2050 to 2097) or the federal Endangered Species Act (16 U.S. Code (U.S.C.) sections 1531 to 1544). This Order/Permit requires compliance with effluent limits, receiving water limits, and other requirements to protect the beneficial uses of waters of the State, including protecting rare and endangered species. The Discharger is responsible for meeting all requirements of the applicable Endangered Species Act.

D. Impaired Water Bodies on the CWA section 303(d) List

In July 2015, USEPA approved the list of impaired water bodies, prepared by the State Water Board pursuant to CWA section 303(d), which are not expected to meet applicable water quality standards after implementation of technology-based effluent limitations (TBELs) for point sources. The 303(d) list includes sections of the Pacific Ocean shoreline inside the San Diego Region as impaired for bacteria indicators. Several total maximum daily loads (TMDLs) for bacteria indicators have been adopted and approved within San Diego Region; however, these TMDLs did not contain applicable wasteload allocations for this Facility. Nonetheless, this Order/Permit implements receiving water objectives for bacterial indicators. The 303(d) list for waters in the vicinity of the PLOO include:

1. Pacific Ocean Shoreline, Point Loma HA, at Bermuda Ave for total coliform; and
2. Pacific Ocean Shoreline, Scripps HA, at Pacific Beach Point, Pacific Beach for enterococcus, fecal coliform, and total coliform.

TMDLs for bacteria indicators have been adopted and approved within San Diego Region; however, there is no TMDL wasteload allocation applicable to the PLOO discharge. Nonetheless, this Order/Permit implements receiving water quality objectives for bacterial indicators.

E. Other Plans, Polices and Regulations

1. **301(h) Waiver and Primary Treatment Requirements.** The Discharger has submitted an application for renewal of their 301(h)-modified NPDES permit for the Facility. The Discharger requested a renewal of their variance (informally called a "waiver" or "modification") under CWA section 301(h) and the Ocean Pollution Reduction Act of

1994, from federal secondary treatment standards contained in CWA section 301(b)(1)(B). The Discharger has proposed alternative effluent limitations for TSS and BOD_5, described below. The 2015 301(h) application is based on an improved discharge, as defined at 40 CFR section 125.58(i). The Discharger has proposed to continue effluent disinfection (chlorination) to achieve applicable water quality standards for bacteria in State waters. The administrative processing for a CWA section 301(h) variance by USEPA generally consists of the following actions:

- Filing of a timely application by the discharger;
- Initial screening of the application by the State and USEPA;
- USEPA preparation of a Tentative Decision Document (TDD) which involves comparison of the application with criteria set forth in applicable statutes and regulations;
- Announcement of the tentative decision for the 301(h) variance by the USEPA Regional Administrator;
- Public notice of a draft 301(h)-modified permit incorporating the USEPA Regional Administrator's tentative decision and the TDD;
- Public hearings to address public interest;
- State concurrence in the granting of a 301(h) variance through State and USEPA joint issuance of a 301(h)-modified NPDES permit, or denial by the State and/or the USEPA Regional Administrator; and
- Processing of appeals in accordance with 40 CFR part 124.

The Discharger has proposed the following alternative effluent limitations for TSS and BOD_5. The Discharger's percent removal limitations for TSS and BOD_5 are computed on a "system-wide" basis, whereby the Discharger receives credit for removal achieved as part of water reclamation operations in the Metro System service area which ultimately connect to the Facility and discharge through the PLOO.

Table F-8. Summary of TBELs Based on CWA sections 301(h) and (j)(5)[1]

Parameter	Units	Effluent Limitations	
		Average Monthly	Average Annual
TSS	system-wide percent removal	≥80[2]	
	mg/L	60[3]	--
	mt/yr	--	12,000[4]
		--	11,999[5]
BOD_5	system-wide percent removal		≥58[2]

1 See Attachment A for definitions of abbreviations and a glossary of common terms used in this Order/Permit.

2 Percent removal shall be calculated on a system-wide basis, as provided in section VII.G of this Order/Permit. Section VII.G of this Order/Permit is carried over from Orders Nos. R9-2002-0025 and R9-2009-0001.

3 Based on average monthly performance data (1990 through 1994) for the Facility provided by the Discharger for the 1995 301(h) application.

4 To be achieved on the effective date of this Order/Permit through the end of the fourth year of this Order/Permit. Mass emission limits for TSS apply only to discharges from POTWs owned and operated by the Discharger and the Discharger's wastewater generated in the Metro System service area, excluding TSS contributions from Metro System flows treated in the City of Escondido and South Bay WRP flows discharged to the South Bay Ocean Outfall. If the Discharger is requested to accept wastewater originating in Tijuana, Mexico, treated or untreated, such acceptance would

be contingent upon an agreement acceptable to the USEPA, Region IX, San Diego Water Board and Discharger. The TSS contribution from that flow would not be counted toward Discharger's mass emission limit(s).

[5] To be achieved on the beginning of the fifth year of this Order/Permit. Mass emission limits for TSS apply only to discharges from POTWs owned and operated by the Discharger and the Discharger's wastewater generated in the Metro System service area, excluding TSS contributions from Metro System flows treated in the City of Escondido and South Bay WRP flows discharged to the South Bay Ocean Outfall. If the Discharger is requested to accept wastewater originating in Tijuana, Mexico, treated or untreated, such acceptance would be contingent upon an agreement acceptable to the USEPA, Region IX, San Diego Water Board and Discharger. The TSS contribution from that flow would not be counted toward Discharger's mass emission limit(s).

A POTW applying for a 301(h) variance must demonstrate satisfactorily to USEPA that the modified discharge will meet the following CWA section 301(h) requirements:

- The modified discharge will comply with all applicable water quality standards and the State has determined that the modified discharge will comply with State law;
- The modified discharge, alone or in combination with other sources, will not interfere with the attainment or maintenance of water quality that assures the protection of public water supplies; assures the protection and propagation of a balanced indigenous population of fish, shellfish, and wildlife; and allows for recreational activities;
- A monitoring program has been established by the applicant to monitor the impact of the modified discharge, including biological, water quality, and effluent monitoring;
- The modified discharge will not result in additional requirements on other point and nonpoint sources of pollutants and the State has determined that the modified discharge will not result in any such additional requirements;
- An applicant serving a population of 50,000 or more that receives toxic pollutants from industrial sources must demonstrate they have complied with urban area pretreatment requirements at the time the permit is approved;
- An applicant must make a demonstration that pretreatment requirements for industrial sources introducing wastes into the treatment works will be enforced;
- An applicant must demonstrate that a schedule of activities has been established to minimize the introduction of toxic substances from non-industrial sources onto the treatment works, including the development and implementation of programs for public education and non-industrial source control;
- An applicant must demonstrate that the modified discharge will not result in new or substantially increased discharges of the waived pollutants above the discharge specified in the 301(h)-modified permit. Projections of effluent volumes and mass emission rates (MERs) for pollutants to which the modification applies must be provided in 5-year increments for the design life of the facility; and
- The modified discharge must receive at least primary or equivalent treatment and must meet CWA section 304(a)(1) criteria, in accordance with 40 CFR section 125.62(a). Variances are prohibited for discharges into waters that contain significant amounts of previously discharged effluent from the treatment works, or into saline estuarine waters that do not support a balanced indigenous population, do not allow recreation, or which violate water quality standards or criteria beyond the zone of initial dilution (ZID).

Under 40 CFR section 125.59(b), no 301(h)-modified permit may be issued for:

- Discharges that do not comply with 40 CFR parts 122 and 125, subpart G;
- Discharges of sewage sludge;
- Discharges that would not be in compliance with applicable provisions of State, local, or other federal laws and Executive Orders; or
- Discharges that enter the New York Bight Apex.

In addition, the Discharger must meet the following requirements under the Ocean Pollution Reduction Act of 1994, CWA section 301(j)(5):

- 80 percent removal of TSS based on a system-wide monthly average;
- 58 percent removal of BOD_5 based on a system-wide average annual;
- 45 MGD of water reclamation capacity by the year 2010; and
- Reduction of TSS discharged into the ocean during the period of the Order/Permit modification.

During the term of the 1995 permit, the Discharger implemented a reclamation program with a system capacity of 45 MGD of reclaimed water, thereby meeting the requirement for reclaimed water capacity of 45 MGD in CWA section 301(j)(5). On an average annual basis, currently a little over 12 MGD of reclaimed water is delivered to reuse sites from NCWRP and SBWRP. On a system-wide basis, the Discharger will be able to remove not less than 80 percent of TSS (on a monthly average) and not less than 58 percent of BOD_5 (on an average annual) in the discharge to which the 2015 301(h) application applies.

USEPA, Region IX has drafted a 301(h) TDD evaluating the Discharger's proposed improved discharge and effluent limitations for TSS and BOD_5, the projected average annual end-of-permit effluent flow rate, and 2009 through 2015 effluent concentrations for TSS and BOD_5, as provided in the updated 2015 301(h) application. The 2016 TDD concludes that the Discharger's 301(h) application satisfies CWA sections 301(h) and 301(j)(5). Based on this information, it is the USEPA, Region IX Regional Administrator's tentative decision to grant the Discharger's variance request for TSS and BOD_5, in accordance with the terms, conditions, and limitations of the TDD. In accordance with this decision and the 1984 301(h) Memorandum of Understanding between the State of California and USEPA, the San Diego Water Board and USEPA, Region IX have jointly proposed issuance of a draft 301(h)-modified permit incorporating both federal NPDES requirements and State WDRs. The final permit will be issued without prejudice to the rights of any party to address the legal issue of the applicability of CWA section 1311 (j)(5) to the Discharger's future NPDES permits.

The Discharger's Order/Permit renewal of the variance from federal secondary treatment standards, pursuant to CWA sections 301(h) and (j)(5), is contingent upon:

- Determination by the California Coastal Commission that the proposed discharge is consistent with the Coastal Zone Management Act of 1972, as amended (16 U.S.C. section 1451 et seq.);
- Determination by the U.S. Fish and Wildlife Service and the National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service that the proposed discharge is consistent with the federal Endangered Species Act of 1973, as amended (16 U.S.C. section 1531, et seq.);

- Determination by the NOAA National Marine Fisheries Service that the proposed discharge is consistent with the Magnuson-Stevens Fishery Conservation and Management Act, as amended (16 U.S.C. section 1801, et seq.);
- Determination by the San Diego Water Board that the discharge will not result in additional treatment pollution control, or other requirement, on any other point or nonpoint sources (40 CFR section 125.64);
- The San Diego Water Board's certification concurrence that the discharge will comply with water quality standards for the pollutants which the 301(h) variance is requested (40 CFR section 125.61) (i.e., TSS and BOD_5). The joint issuance of a NPDES permit which incorporates both the 301(h) variance and State WDRs will serve as the State's concurrence; and
- The USEPA, Region IX Regional Administrator's final decision regarding the Discharger's CWA section 301(h) variance request.

2. **Storm Water.** Sewage treatment works with a design flow of 1.0 MGD or greater are required to comply with State Water Board Order No. 2014-0057-DWQ (NPDES General Permit No. CAS000001), *Waste Discharge Requirements for Dischargers of Storm Water Associated with Industrial Activities*. The Facility is currently enrolled under the State Water Board Order No. 2014-0057-DWQ.
3. **Pretreatment.** Federal requirements at 40 CFR part 403 establish pretreatment requirements for POTWs which receive pollutants from nondomestic users. This Order/Permit contains pretreatment requirements pursuant to 40 CFR part 403.
4. **Collection System.** Publicly-owned collection systems are subject to coverage under State Water Board Order No. 2006-0003-DWQ, *Statewide General Waste Discharge Requirements for Sanitary Sewer Systems* and any subsequent Order. The Discharger owns and operates a publicly-owned collection system and must retain coverage under Order No. 2006-0003-DWQ and any subsequent Order.

   In addition, the provisions of this Order/Permit prohibit discharges from any point other than the authorized discharge point. Therefore, any discharges from the collection system are prohibited. Moreover, the collection system is part of the POTW and, therefore, must comply with the provisions of this Order/Permit requiring reports of any noncompliance (40 CFR sections 122.44(1)(6) and (7)), proper operation and maintenance (40 CFR section 122.41(e)), and duty to mitigate sewage spills (40 CFR section 122.41(d)).
5. **Biosolids.** On February 19, 1993, the USEPA, Region IX issued a final rule for the use and disposal of sewage sludge (40 CFR part 503). This regulation requires that producers of sewage sludge meet certain handling, disposal, and monitoring requirements. The USEPA, Region IX, not the San Diego Water Board, will oversee compliance with 40 CFR part 503.

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 that are discharged into the waters of the U.S. The control of pollutants discharged is established through effluent limitations and other requirements in NPDES permits. There are two principal bases for effluent limitations in the Code of Federal Regulations: 40 CFR section 122.44(a) requires that permits include applicable technology-based effluent limitations and standards (TBELs); and 40 CFR section 122.44(d) requires that permits include

water quality-based effluent limitations (WQBELs) to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water.

A. Discharge Prohibitions

This Order/Permit retains the discharge prohibitions from Order No. R9-2009-0001, as described below. Compliance determination language is included in section VII of this Order/Permit to accurately describe how violations of these prohibitions are determined. Discharges from the Facility to surface waters in violation of prohibitions contained in this Order/Permit are violations of the CWA and therefore are subject to third party lawsuits. Discharges from the Facility to land in violation of prohibitions contained in this Order/Permit are violations of the Water Code and are not subject to third party lawsuits under the CWA because the Water Code does not contain provisions allowing third party lawsuits.

1. Discharge Prohibition III.A has been carried over from Order No. R9-2009-0001. Prohibition III.A clearly defines what types of discharges are prohibited. This prohibition is based on 40 CFR section 122.21(a), duty to apply, and Water Code section 13260, which requires filing a ROWD before discharges can occur. Discharges not described in the ROWD, and subsequently in this Order/Permit, are prohibited.
2. Prohibitions III.B and III.C include discharge prohibitions of the Ocean Plan and the Basin Plan. These discharge prohibitions are consistent with Standard Provisions VI.A.2.a and b within Order No. R9-2009-0001.
3. Order No. R9-2009-0001 prohibited discharges to the Pacific Ocean through the PLOO in excess of a 240 MGD average monthly flow rate. Because this prohibition is now included as an effluent limitation, this requirement is not retained in section III of this Order/Permit.

B. Technology-Based Effluent Limitations (TBELs)

1. Scope and Authority

CWA section 301(b) and implementing USEPA permit regulations at 40 CFR section 122.44(a)(1) require that permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards.

Regulations promulgated in 40 CFR section 125.3 require TBELs to be placed in NPDES permits.

The *Federal Water Pollution Control Act Amendments of 1972* (PL 92-500) established the minimum performance requirements attainable through the application of secondary treatment [defined in 40 CFR section 304(d)(1)].

Based on this statutory requirement, USEPA developed secondary treatment regulations, which are specified in 40 CFR part 133. These technology-based regulations apply to all wastewater treatment plants and identify the minimum level of effluent quality attainable by secondary treatment in terms of BOD_5, TSS, and pH.

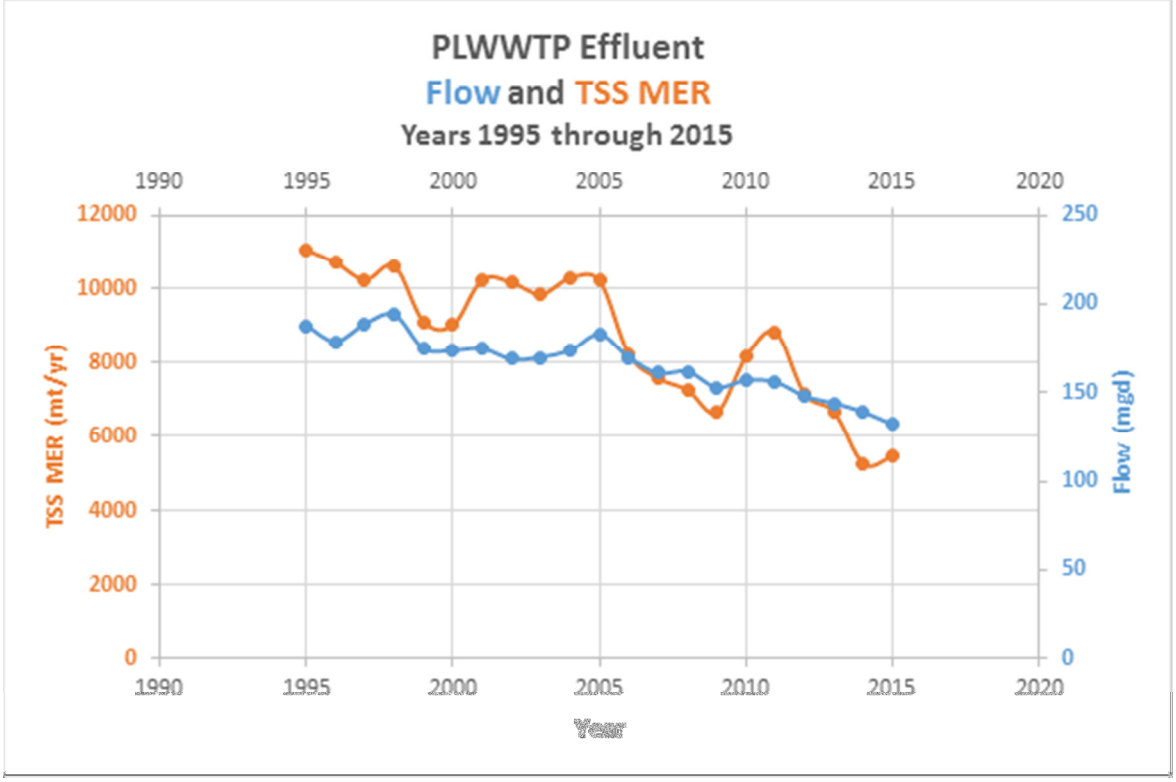
The Ocean Plan is applicable, in its entirety, to point source discharges to the Pacific Ocean. Therefore, the discharge of wastewater to the Pacific Ocean at Discharge Point No. 001 is subject to the Ocean Plan. The Ocean Plan establishes water quality objectives, general requirements for management of waste discharged to the ocean, effluent quality requirements for waste discharges, discharge prohibitions, and general provisions. Further, Table 2 of the Ocean Plan establishes TBELs for POTWs and

industrial discharges for which Effluent Limitation Guidelines have not been established pursuant to CWA sections 301, 302, or 306 (summarized in Table F-9 below).

The Discharger has requested a renewal of its variance under CWA section 301(h), 33 U.S.C. section 1311(h), and the Ocean Pollution Reduction Act of 1994, 33 U.S.C. section 1311(j)(5), from the federal secondary treatment standards contained in CWA section 301(b)(1)(B), U.S.C. section 1311(b)(1)(B), for the pollutants TSS and BOD_5. A modification for pH was not requested. The effluent limitations for TSS and BOD_5, based on CWA sections 301(h) and (j)(5), are previously described in this Fact Sheet, section III.E.1. The TBEL for pH, required by 40 CFR part 133, continues to apply to the discharge which must be maintained within the limits of 6.0 to 9.0 pH units, at all times.

The Facility consistently met the removal requirements for BOD_5 and TSS established in Order No. R9-2009-0001. Based on CWA sections 301(h) and (j)(5), the percent removal requirements of BOD_5 and TSS remain appropriate and are carried over from Order No. R9-2009-0001. TSS and BOD_5 removal is computed on a "system-wide" basis to avoid double-counting of return solids and centrate streams. Table 2 of the Ocean Plan contains a percent removal requirement of 75 percent for TSS. This requirement is not computed on a system-wide basis and applies directly to the Facility influent and effluent waste streams. It is established in this Order/Permit as an effluent limitation based on Table 2 of the Ocean Plan.

The mass emission limitations for TSS in the existing permit are based on the effluent limitations requested by the Discharger in the 2015 301(h) application which were evaluated by USEPA, Region IX in the 2016 TDD. The Discharger requested TSS mass emission limitations of 12,000 mt/yr for years 1 through 4 of this Order/Permit, and 11,999 mt/yr in year 5 of this Order/Permit. This represents a 1,598 mt/yr reduction during years 1 through 4 of this Order/Permit, and 1,599 mt/yr reduction in year 5 of this Order/Permit, from the current mass emission limitation of 13,598 mt/yr. These mass reductions are consistent with the Discharger's proposed plan to reduce mass emissions to 11,500 mt/yr by 2026, and to 9,942 mt/yr by 2028. An annual reduction down to 9,942 mt/yr is equivalent to levels that would have occurred if the 240-MGD Facility were to achieve TSS concentration standards of 30 mg/L, which is consistent with secondary treatment regulations specified in 40 CFR part 133. The figure below shows the Facility discharge annual average flow rates (MGD) and mass emissions of TSS (metric tons/yr) from 1995 to 2015. During this same time period, the population increased in the Metro System by 16 percent.



The effluent limitation for TSS of 75 mg/L was contained in the 1995, 2003, and 2009 permits. This effluent limitation was based on the Facility performance during the 1990s. Since the 1990s, the Discharger has improved its TSS effluent concentration at the Facility. During 2008-2015, monthly average effluent TSS concentration for the Facility ranged from 23 to 50 mg/l. During 2014, the annual average effluent TSS concentration for the Facility was less than 30 mg/l. Given the improved Facility performance for removing TSS and the TSS effluent limitation from the Ocean Plan , this Order/Permit reduces the TSS effluent limitation from 75 to 60 mg/l.

Table F-9. Monthly and annual average effluent concentrations for TSS (mg/l) at the Facility

Month	2008	2009	2010	2011	2012	2013	2014	2015
January	39	30	35	41	46	35	27	29
February	34	29	36	37	44	39	32	25
March	38	31	36	35	38	37	26	29
April	37	29	37	38	38	36	25	26
May	36	32	34	42	34	38	23	30
June	38	30	39	41	32	38	26	27
July	29	31	36	44	39	50	25	29
August	28	34	34	46	36	27	29	28
September	24	33	37	46	36	24	29	30
October	24	31	39	47	34	25	29	32
November	31	32	37	42	35	26	30	36

December	30	36	45	39	35	27	28	35
Annual Average (average of the 12 monthly averages)	32	32	37	42	37	34	27	30
Maximum Month	39	36	45	47	46	50	32	36
Minimum Month	24	29	34	35	32	24	23	25

Section 122.45(f) of 40 CFR requires effluent limitations be expressed in terms of mass, with some exceptions, and 40 CFR section 122.45(b) requires mass-based effluent limitations for POTWs to be calculated based on the design flow. The average annual design flow rate for the Facility is 240 MGD. The previous orders have contained mass-based effluent limitations for oil and grease calculated using the 301(h)-variance-based annual flow rate of 205 MGD, taken from the 1995 301(h) application. The Discharger has maintained compliance with effluent limitations for mass emissions calculated using 205 MGD. USEPA, Region IX has not evaluated the impact of the PLOO discharge and compliance with CWA section 301(h) decision criteria at an oil and grease MER associated with a PLOO discharge of 240 MGD. Based on the 2015 301(h) application, mass-based effluent limitations continue to be based on the 301(h)-variance-based flow rate of 205 MGD, as they were in the 1995, 2003, and 2009 permits (see section II.C of this Fact Sheet for more info).

The CWA requires that TBELs be established based on several levels of controls:

a. Best practicable treatment control technology (BPT) represents the average of the best existing performance by well-operated facilities within an industrial category or subcategory. BPT standards apply to toxic, conventional, and non-conventional pollutants.

b. Best available technology economically achievable (BAT) represents the best existing performance of treatment technologies that are economically achievable within an industrial point source category. BAT standards apply to toxic and non-conventional pollutants.

c. Best conventional pollutant control technology (BCT) represents the control from existing industrial point sources of conventional pollutants including BOD, TSS, fecal coliform, pH, and oil and grease. The BCT standard is established after considering a two-part reasonableness test. The first test compares the relationship between the costs of attaining a reduction in effluent discharge and the resulting benefits. The second test examines the cost and level of reduction of pollutants from the discharge from POTWs to the cost and level of reduction of such pollutants from a class or category of industrial sources. Effluent limitations must be reasonable under both tests.

d. New source performance standards (NSPS) represent the best available demonstrated control technology standards. The intent of NSPS guidelines is to set limitations that represent state-of-the-art treatment technology for new sources.

2. Applicable TBELs

Technology-based regulations, specified in Table 2 of the Ocean Plan and CWA sections 301(h) and (j)(5), are summarized in the Table F-9 below.

Table F-10. Summary of TBELs, Discharge Point No. 001[1]

Parameter	Units	Effluent Limitations[2]				
		Average Annual	Average Monthly	Average Weekly	Instantaneous Minimum	Instantaneous Maximum
TSS	mg/L	--	60[3]	--	--	--
	Facility percent removal	--	75[3]	--	--	--
	system-wide percent removal	--	≥80[4]	--	--	--
	mt/yr	12,000[5]	--	--	--	--
		11,999[6]	--	--	--	--
BOD_5	system-wide percent removal	≥58[4]	--	--	--	--
Oil and Grease	mg/L	--	25	40	--	75
	lbs/day	--	42,743	68,388	--	128,228
Settleable Solids	ml/L	--	1.0	1.5	--	3.0
Turbidity	NTU	--	75	100	--	225
pH	standard units	--	--	--	6.0	9.0

1. See Attachment A for definitions of abbreviations and a glossary of common terms used in this Order/Permit.
2. The MER limitation, in lbs/day, was calculated based on the following equation: MER (lbs/day) = 8.34 x Q x C, where Q is the 301(h)-variance-based flow of 205 MGD and C is the concentration (in mg/L). The 301(h)-variance-based average annual flow rate of 205 MGD was taken from the 1995 301(h) application and carried over from Orders Nos. 95-106, R9-2002-0025, and R9-2009-0001 (see section II.C of this Fact Sheet for more info).
3. Dischargers shall, as a 30-day average, remove 75% of suspended solids from the influent stream before discharging wastewaters to the ocean,* except that the effluent limitation to be met shall not be lower than 60 mg/l.
4. The average monthly system-wide percent removal was derived from CWA sections 301(h) and (j)(5). Percent removal shall be calculated on a system-wide basis, as provided in section VII.G of this Order/Permit. Section VII.G of this Order/Permit is carried over from Orders Nos. R9-2002-0025 and R9-2009-0001.
5. To be achieved on the effective date of this Order/Permit through the end of the fourth year of this Order/Permit. Mass emission limits for TSS apply only to discharges from POTWs owned and operated by the Discharger and the Discharger's wastewater generated in the Metro System service area, excluding TSS contributions from Metro System flows treated in the City of Escondido and South Bay WRP flows discharged to the South Bay Ocean Outfall. If the Discharger is requested to accept wastewater originating in Tijuana, Mexico, treated or untreated, such acceptance would be contingent upon an agreement acceptable to the USEPA, Region IX, San Diego Water Board and Discharger. The TSS contribution from that flow would not be counted toward Discharger's mass emission limit(s).
6. To be achieved by the beginning of the fifth year of this Order/Permit. Mass emission limits for TSS apply only to discharges from POTWs owned and operated by the Discharger and the Discharger's wastewater generated in the Metro System service area, excluding TSS contributions from Metro System flows treated in the City of Escondido and South Bay WRP flows discharged to the South Bay Ocean Outfall. If the Discharger is requested to accept wastewater originating in Tijuana, Mexico, treated or untreated, such acceptance would be contingent upon an agreement acceptable to the USEPA, Region IX, San Diego Water Board and Discharger. The TSS contribution from that flow would not be counted toward Discharger's mass emission limit(s).

Order No. R9-2009-0001 contains a prohibition of discharges from the Facility in excess of a monthly average flow rate of 240 MGD. As explained in section IV.A.3 of this Fact Sheet, this prohibition is now included as an effluent limitation in this Order/Permit. This flow rate is based on the design flow rate of the Facility.

C. Water Quality-Based Effluent Limitations (WQBELs)

1. Scope and Authority

CWA section 301(b) and 40 CFR section 122.44(d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards.

Section 122.44(d)(1)(i) of 40 CFR requires that permits include effluent limitations for all pollutants that are or may be discharged at levels that have the reasonable potential to cause or contribute to an exceedance of a water quality standard, including numeric and narrative objectives within a standard. Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective for the pollutant, WQBELs must be established using: (1) USEPA criteria guidance under CWA section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed State criterion or policy interpreting the State's narrative criterion, supplemented with other relevant information, as provided in 40 CFR section 122.44(d)(1)(vi).

The process for determining reasonable potential and calculating WQBELs when necessary is intended to protect the designated uses of the receiving water as specified in the Basin Plan and Ocean Plan, and achieve applicable water quality objectives and criteria that are contained in the Ocean Plan.

2. Applicable WQBELs

The Basin Plan and Ocean Plan designate beneficial uses, establish water quality objectives, and contain implementation programs and policies to achieve those objectives for all waters.

a. Basin Plan. The beneficial uses specified in the Basin Plan applicable to the Pacific Ocean are summarized in section III.C.1 of this Fact Sheet.

   The Basin Plan water quality objective for dissolved oxygen applicable to ocean waters is stated as follows: "The dissolved oxygen concentration in ocean waters shall not at any time be depressed more than 10 percent from that which occurs naturally, as the result of the discharge of oxygen demanding waste materials."

   The Basin Plan water quality objective for pH applicable to ocean waters is stated as follows: "The pH value shall not be changed at any time more than 0.2 pH units from that which occurs naturally."

b. Ocean Plan. The beneficial uses specified in the Ocean Plan for the Pacific Ocean are summarized in section III.C.2 of this Fact Sheet. The Ocean Plan also includes water quality objectives for the ocean receiving water for bacterial characteristics, physical characteristics, chemical characteristics, biological characteristics, and radioactivity.

   Table 1 of the Ocean Plan includes the following water quality objectives for toxic pollutants and whole effluent toxicity:

   i. Six-month median, daily maximum, and instantaneous maximum objectives for 21 chemicals and chemical characteristics, including total chlorine residual and chronic toxicity, for the protection of marine aquatic life;

ii. 30-day average objectives for 20 non-carcinogenic chemicals for the protection of human health;

iii. 30-day average objectives for 42 carcinogenic chemicals for the protection of human health; and

iv. Daily maximum objectives for acute and chronic toxicity.

3. Determining the Need for WQBELs

Order No. R9-2009-0001 contained effluent limitations for non-conventional and toxic pollutant parameters in Table B of the 2005 Ocean Plan. For this Order/Permit, the need for effluent limitations based on water quality objectives in Table 1 of the 2015 Ocean Plan was re-evaluated in accordance with 40 CFR section 122.44(d) and guidance for statistically determining the "reasonable potential" for a discharged pollutant to exceed an objective, as outlined in the revised *Technical Support Document for Water Quality-Based Toxics Control* (TSD; EPA/505/2-90-001, 1991) and the Ocean Plan Reasonable Potential Analysis (RPA) Amendment that was adopted by the State Water Board on April 21, 2005. The statistical approach combines knowledge of effluent variability (as estimated by a coefficient of variation) with the uncertainty due to a limited amount of effluent data to estimate a maximum effluent value at a high level of confidence. This estimated maximum effluent value is based on a lognormal distribution of daily effluent values. Projected receiving water values (based on the estimated maximum effluent value or the reported maximum effluent value and minimum probable initial dilution) can then be compared to the appropriate objective to determine the potential for an exceedance of that objective and the need for an effluent limitation. According to the Ocean Plan amendment, the RPA can yield three endpoints: 1) Endpoint 1, an effluent limitation is required and monitoring is required; 2) Endpoint 2, an effluent limitation is not required and the San Diego Water Board and USEPA, Region IX may require monitoring; and 3) Endpoint 3, the RPA is inconclusive, monitoring is required, and an existing effluent limitation may be retained or a permit reopener clause may be included to allow inclusion of an effluent limitation if future monitoring warrants the inclusion. Endpoint 3 is typically the result when there are fewer than 16 data points and all are censored data (i.e., below quantitation or method detection levels for an analytical procedure). If no data was provided for a parameter, and an RPA could not be conducted for that parameter, reasonable potential for that parameter was carried over to this Order/Permit based on the requirements of State and federal Anti-backsliding regulations. Data for all parameters was available to conduct an RPA.

The implementation provisions for Table 1 of the Ocean Plan specify that the minimum initial dilution is the lowest average initial dilution within any single month of the year. Dilution estimates are to be based on observed waste flow characteristics, observed receiving water density structure, and the assumption that no currents of sufficient strength to influence the initial dilution process flow across the discharge structure.

Using the RPcalc 2.0 software tool developed by the State Water Board for conducting RPAs, the San Diego Water Board and USEPA, Region IX has conducted the RPA for the parameters listed in Table 1 of the Ocean Plan. For parameters that do not display reasonable potential, this Order/Permit includes desirable maximum effluent concentrations which were derived using effluent limitation determination procedures described below and are referred to in this Order/Permit as "performance goals." A narrative receiving water limitation statement to comply with all Ocean Plan objectives requirements is provided for those parameters not displaying reasonable potential. The Discharger is required to monitor for these parameters pursuant to the Monitoring and

Reporting Program (MRP, Attachment E) in order to gather data for use in RPA for future permit reissuances. Conventional pollutants were not a part of the RPA.

Effluent data provided in the Discharger's monitoring reports for the Facility from August 2010 through July 2015 were used in the RPA.

During the development of Order No. R9-2009-0001, initial dilution was assessed using USEPA modeling application Visual Plumes (UM3) and the minimum initial dilution was calculated to be 227:1. Effluent and outfall characteristics have not changed sufficiently to warrant the need for another dilution analysis and the dilution is not anticipated to have changed. The calculated value from the 2009 UM3 analysis is higher than the previous initial dilution (204:1) based on the results of a modified version of the RSB model, submitted with the Discharger's 1995 ROWD and the Discharger's 1995, 2001, 2007, and 2015 301(h) applications to USEPA, Region IX. The Discharger has recommended retaining the previous initial dilution value as more appropriate and representative of PLOO minimum initial dilution. Thus the initial dilution value of 204:1 has been carried over from Order No. R9-2009-0001 to this Order/Permit. A detailed description of the 2009 UM3 analysis is provided in Attachment H.

A summary of the RPA results is provided below:

Table F-11. RPA Results Summary[1]

Parameter	Units	N[2]	MEC[3,4]	Most Stringent Criteria	Background[5]	RPA Endpoint[6]
Arsenic, Total Recoverable	µg/L	251	1.71	8	3	2
Cadmium, Total Recoverable	µg/L	251	1.13	1	0	2
Chromium (VI), Total Recoverable[7]	µg/L	251	9	2	0	2
Copper, Total Recoverable	µg/L	251	46.8	3	2	2
Lead, Total Recoverable	µg/L	251	18.9	2	0	2
Mercury, Total Recoverable	µg/L	253	0.05	0.04	0.0005	2
Nickel, Total Recoverable	µg/L	251	16.1	5	0	2
Selenium, Total Recoverable	µg/L	251	2.05	15	0	2
Silver, Total Recoverable	µg/L	251	1.21	0.7	0.16	2
Zinc, Total Recoverable	µg/L	251	66.1	20	8	2
Cyanide, Total	µg/L	252	4	1	0	2
Total Chlorine Residual	µg/L	1,808	7,130	2	0	1
Ammonia	µg/L	251	41,600	600	0	2
Chronic Toxicity	TUc	270	666.7	1	0	1
Phenolic Compounds	µg/L	251	78.9	30	0	2
Chlorinated Phenolics	µg/L	251	7	1	0	2
Endosulfan	µg/L	241	<0.0046	0.009	0	2
Endrin	µg/L	250	0.0165	0.002	0	2
Hexachlorocyclohexane (HCH)	µg/L	250	0.0085	0.004	0	2
Radioactivity	pico-curies per liter (pCi/L)	-----	-----	-----	-----	-----
Acrolein	µg/L	61	<1.3	220	0	2
Antimony, Total Recoverable	µg/L	251	6.7	1,200	0	2
Bis(2-chloroethoxyl)methane	µg/L	62	<1.01	4.4	0	2
Bis(2-chloroisopropyl)ether	µg/L	62	<1.16	1,200	0	2
Chlorobenzene	µg/L	61	0.725	570	0	2
Chromium (III), Total Recoverable[7]	µg/L	251	9	190,000	0	2

Parameter	Units	N[2]	MEC[3,4]	Most Stringent Criteria	Background[5]	RPA Endpoint[6]
Di-n-butyl phthalate	µg/L	62	<3.96	3,500	0	2
Dichlorobenzenes	µg/L	61	<0.9	5,100	0	2
Diethyl phthalate	µg/L	62	19.1	33,000	0	2
Dimethyl phthalate	µg/L	62	<1.44	820,000	0	2
4,6-Dinitro-2-methylphenol	µg/L	250	<1.52	220	0	2
2,4-Dinitrophenol	µg/L	250	<2.16	4	0	2
Ethylbenzene	µg/L	61	1.53	4,100	0	2
Fluoranthene	µg/L	62	<1.33	15	0	2
Hexachlorocyclopentadiene	µg/L	62	<1.25	58	0	2
Nitrobenzene	µg/L	62	<1.6	4.9	0	2
Thallium, Total Recoverable	µg/L	251	7.85	2	0	2
Toluene	µg/L	61	2.93	85,000	0	2
Tributyltin	µg/L	63	<2	0.0014	0	3
1,1,1-Trichloroethane	µg/L	61	<0.4	540,000	0	2
Acrylonitrile	µg/L	61	<0.7	0.1	0	2
Aldrin	µg/L	248	0.0062	0.000022	0	1
Benzene	µg/L	61	<0.4	5.9	0	2
Benzidine	µg/L	62	<1.52	0.000069	0	3
Beryllium, Total Recoverable	µg/L	251	0.084	0.033	0	2
Bis(2-chloroethyl) ether	µg/L	62	<1.38	0.045	0	2
Bis(2-ethylhexyl) phthalate	µg/L	62	<8.96	3.5	0	2
Carbon tetrachloride	µg/L	61	<0.4	0.9	0	2
Chlordane	µg/L	250	<0.002	0.000023	0	2
Chlorodibromomethane (dibromochloromethane)	µg/L	61	1.18	8.6	0	2
Chloroform	µg/L	61	10.8	130	0	2
Dichlorodiphenyltrichloroethane (DDT)	µg/L	250	<0.002	0.00017	0	2
1,4-Dichlorobenzene	µg/L	60	0.925	18	0	2
3,3-Dichlorobenzidine	µg/L	62	<2.44	0.0081	0	3
1,2-Dichloroethane	µg/L	61	<0.5	28	0	2
1,1-Dichloroethylene	µg/L	61	<0.4	0.9	0	2
Dichlorobromomethane	µg/L	61	1.34	6.2	0	2
Dichloromethane (Methylene Chloride)	µg/L	60	5.25	450	0	2
1,3-dichloropropene (1,3-Dichloropropylene)	µg/L	61	<0.5	8.9	0	2
Dieldrin	µg/L	250	<0.003	0.00004	0	2
2,4-Dinitrotoluene	µg/L	62	<1.36	2.6	0	2
1,2-Diphenylhydrazine	µg/L	62	<1.37	0.16	0	2
Halomethanes	µg/L	61	45	130	0	2
Heptachlor	µg/L	250	<0.0006	0.00005	0	2
Heptachlor Epoxide	µg/L	250	<0.004	0.00002	0	2
Hexachlorobenzene	µg/L	62	<1.48	0.00021	0	3
Hexachlorobutadiene	µg/L	62	<1.64	14	0	2
Hexachloroethane	µg/L	62	<1.32	2.5	0	2
Isophorone	µg/L	62	<1.53	730	0	2
N-nitrosodimethylamine	µg/L	62	<1.27	7.3	0	2
N-nitrosodi-N-propylamine	µg/L	62	<1.16	0.38	0	2
N-nitrosodiphenylamine	µg/L	61	<3.48	2.5	0	2
Polynuclear Aromatic	µg/L	60	<1.77	0.0088	0	2

Parameter	Units	N[2]	MEC[3,4]	Most Stringent Criteria	Background[5]	RPA Endpoint[6]
Hydrocarbons (PAHs)						
Polychlorinated Biphenyls (PCBs)	µg/L	250	<0.0309	0.000019	0	3
TCDD equivalents	pictograms/ liter (pg/L)	58	5.40E-05	3.9E-09	0	1
1,1,2,2-Tetrachoroethane	µg/L	61	<0.5	2.3	0	2
Tetrachloroethylene (Tetrachloroethene)	µg/L	61	1.15	2	0	2
Toxaphene	µg/L	250	<0.0033	0.00021	0	2
Trichloroethylene (Trichloroethene)	µg/L	61	<0.7	27	0	2
1,1,2-Trichloroethane	µg/L	61	<0.5	9.4	0	2
2,4,6-Trichlorophenol	µg/L	250	<1.65	0.29	0	2
Vinyl Chloride	µg/L	61	<0.4	36	0	2

1. See Attachment A for definitions of abbreviations and a glossary of common terms used in this Order/Permit.
2. Number of data points available for the RPA.
3. If there is a detected value, the highest reported value is summarized in the table. If there are no detected values, the lowest method detection limit (MDL) is summarized in the table.
4. Note that the reported MEC does not account for dilution. The RPA does account for dilution; therefore it is possible for a parameter with an MEC in exceedance of the most stringent criteria not to present a reasonable potential (i.e., Endpoint 2).
5. Background concentrations contained in Table 3 of the Ocean Plan.
6. Endpoint 1 – Reasonable Potential (RP) determined, limitation required, monitoring required.
   Endpoint 2 – Discharge determined not to have RP, monitoring may be established.
   Endpoint 3 – RPA was inconclusive, carry over previous limitations if applicable, and establish monitoring.
7. Discharger monitored for total chromium, in lieu of chromium (VI) and chromium (III).

Reasonable potential to cause or contribute to an exceedance of water quality objectives contained within the Ocean Plan (i.e., Endpoint 1) was determined for aldrin, chronic toxicity, total residual chlorine, and TCDD equivalents. Thus effluent limitations for these parameters have been retained (chronic toxicity and total residual chlorine) or established (aldrin and TCDD equivalents).

For parameters for which the RPA was inconclusive (i.e., Endpoint 3), reasonable potential was not determined. Endpoint 3 applied to 3,3-dichlorobenzidine, benzidine, hexachlorobenzene, PCBs, and tributyltin. Order No. R9-2009-0001 did not include effluent limitations for these parameters, therefore effluent limitations have not been carried forward. Performance goals have instead been established for these parameters.

Consistent with 40 CFR section 122.44(l)(2)(i)(B), effluent limitations from Order No. R9-2009-0001 were not retained for parameters for which there was no reasonable potential (i.e., Endpoint 2), including phenolic compounds (non-chlorinated), chlorinated phenolics, chlorodane, chlorodibromomethane, chloroform, 1,4-dichlorobenzene, Dichlorobromomethane, dichloromethane, halomethanes, and heptachlor. Instead, performance goals have been established for these parameters.

The monitoring requirements in MRP (Attachment E) are designed to obtain additional information for these constituents to determine if reasonable potential exists for these parameters in future permit renewals and/or updates.

4. WQBEL Calculations

a. From the Table 1 of the Ocean Plan, effluent limitations and performance goals are calculated according to the following equations:

For all pollutants, except for acute toxicity (if applicable) and radioactivity:

Ce = Co + Dm (Co – Cs) where,

Ce = the effluent limitation (µg/L)

Co = the water quality objective to be met at the completion of initial dilution (µg/L)

Cs = background seawater concentration (µg/L), from Table 3 of the Ocean Plan

Dm = minimum probable initial dilution expressed as parts seawater per part wastewater

For acute toxicity (if applicable):

Ce = Ca + (0.1) Dm (Ca) where,

Ce = the effluent limitation

Ca = the concentration (water quality objective) to be met at the edge of the acute mixing zone

Dm = minimum probable initial dilution expressed as parts seawater per part wastewater (This equation applies only when Dm > 24)

b. As discussed in section IV.C.3 above, the initial dilution (Dm) of 204:1 has been carried over from Order No. R9-2009-0001.

c. Table 3 of the Ocean Plan establishes background concentrations for some pollutants to be used when determining reasonable potential (represented as “Cs”). In accordance with Table 1 implementing procedures of the Ocean Plan, Cs equals zero for all pollutants not established in Table 3 of the Ocean Plan. The background concentrations provided in Table 3 of the Ocean Plan are summarized in the Table F-11 below:

Table F-12. Pollutants Having Background Concentrations

Pollutant	Background Seawater Concentration
Arsenic	3 µg/L
Copper	2 µg/L
Mercury	0.0005 µg/L
Silver	0.16 µg/L
Zinc	8 µg/L

d. Section 122.45(f)(1) of 40 CFR requires effluent limitations be expressed in terms of mass, with some exceptions, and 40 CFR section 122.45(f)(2) allows pollutants that are limited in terms of mass to additionally be limited in terms of other units of measurement. Section III.C.4.j of the Ocean Plan requires that MER limitations be

established in addition to the effluent concentration limitations for all Ocean Plan Table 1 parameters. This Order/Permit includes effluent limitations expressed in terms of mass and concentration. In addition, pursuant to the exceptions to mass limitations provided in 40 CFR section 122.45(f)(1), some effluent limitations are not expressed in terms of mass, such as pH and temperature. Exceptions to mass limitations are also allowable where effluent limitations are based on applicable standards expressed in terms of concentration (e.g., California Toxics Rule criteria and maximum contaminant level) and mass limitations are not necessary to protect the beneficial uses of the receiving water.

MER limitations were calculated using the following equation:

MER (lbs/day) = Permitted Flow (MGD) x Pollutant Concentration (mg/L) x 8.34

e. The calculations for the effluent limitations for total residual chlorine are shown below as an example of how effluent limitations and performance goals have been calculated.

Table F-13. Water Quality Objectives from the Ocean Plan for Total Residual Chlorine

Parameter	Units	Six-month Median	Daily Maximum	Instantaneous Maximum
Total Residual Chlorine	µg/L	2	8	60

Using the equations in sections IV.C.4.a and d above, and the 301(h)-variance-based flow of 205 MGD in lieu of the permitted flow, as explained in section II.C, effluent limitations are calculated for total residual chlorine as follows.

Ce = Co + Dm (Co – Cs)

Ce = 2 + 204 (2 – 0) = 410 µg/L (Six-month Median)

Ce = 8 + 204 (8 – 0) = 1,640 µg/L (Daily Maximum)

Ce = 60 + 204 (60 – 0) = 12,300 µg/L (Instantaneous Maximum)

lb/day = Flow (MGD) x Pollutant Concentration (mg/L) x 8.34

lb/day = 205 MGD x 0.410 mg/L x 8.34 = 701 lb/day

lb/day = 205 MGD x 1.640 mg/L x 8.34 = 2,736 lb/day

lb/day = 205 MGD x 12.300 mg/L x 8.34 = 21,029 lb/day

Based on the implementing procedures described above, effluent limitations and performance goals have been calculated for all pollutants in Table 1 of the Ocean Plan and incorporated into this Order/Permit.

f. A summary of the WQBELs established in this Order/Permit is provided below:

Table F-14. Summary of WQBELs, Discharge Point No. 001[1]

Parameter	Units	Effluent Limitations[2,3]			
		Average Monthly	Maximum Daily	Instantaneous Maximum	Six-month Median
Total Residual Chlorine	µg/L		1.6E+03	1.2E+04	4.1E+02
	lbs/day		2.7E+03	2.1E+04	7.0E+02
Chronic Toxicity (Test of Significant Toxicity)[4,5]	"Pass"/"Fail"		"Pass"		
Aldrin	µg/L	4.5E-03			
	lbs/day	7.7E-03			
TCDD Equivalents	µg/L	8.0E-07			
	lbs/day	1.4E-06			

1 See Attachment A for definitions of abbreviations and a glossary of common terms used in this Order/Permit.

2 The MER limitation, in lbs/day, was calculated based on the following equation: MER (lbs/day) = 8.34 x Q x C, where Q is the 301(h)-variance-based flow of 205 MGD and C is the concentration (in mg/L). The 301(h)-variance-based average annual flow rate of 205 MGD was taken from the 1995 301(h) application and carried over from Orders Nos. 95-106, R9-2002-0025, and R9-2009-0001 (see section II.C of this Fact Sheet for more info).

3 Scientific "E" notation is used to express certain values. In scientific "E" notation, the number following the "E" indicates that position of the decimal point in the value. Negative numbers after the "E" indicate that the value is less than 1, and positive numbers after the "E" indicate that the value is greater than 1. In this notation a value of 6.1E-02 represents 6.1×10^{-2} or 0.061, 6.1E+02 represents 6.1×10^{2} or 610, and 6.1E+00 represents 6.1×10^{0} or 6.1.

4 As specified in section VII.M of this Order/Permit and section III.C of the MRP (Attachment E).

5 The Chronic Toxicity final effluent limitation is protective of both the numeric acute and chronic toxicity 2015 Ocean Plan water quality objectives. The final effluent limitation will be implemented using Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms (EPA/600/R-95/136, 1995), current USEPA guidance in the *National Pollutant Discharge Elimination System Test of Significant Toxicity implementation Document* (EPA 833-R-10-003, June 2010) (https://www3.epa.gov/npdes/pubs/wet_final_tst_implementation2010.pdf) and EPA Regions 8, 9, and 10, Toxicity Training Tool (January 2010).

g. Parameters that do not have reasonable potential (as determined in section IV.C.3 of this Fact Sheet) have been assigned as performance goals in this Order/Permit. Performance goals serve to ensure existing treatment levels and effluent quality is sufficient to support State and federal antidegradation policies. Additionally, performance goals provide all interested parties with information regarding the expected levels of pollutants in the discharge that should not be exceeded in order to maintain the water quality objectives established in the Ocean Plan. Performance goals are not limitations or standards for the regulation of the discharge. Effluent concentrations above the performance goals will not be considered as violations of the Order/Permit, but serve as red flags that indicate water quality concerns. Repeated red flags may prompt the San Diego Water Board and USEPA, Region IX to reopen and amend this Order/Permit to replace performance goals for parameters of concern with effluent limitations.

A summary of the performance goals established in this Order/Permit in Table 6 is provided below:

Table F-15. Performance Goals, Discharge Point No. 001[1]

Parameter	Units	Performance Goals[2,3]			
		Six-month Median	Maximum Daily	Instantaneous Maximum	Average Monthly
BASED ON OCEAN PLAN OBJECTIVES FOR PROTECTION OF MARINE AQUATIC LIFE					
Arsenic, Total Recoverable	µg/L	1.0E+03	5.9E+03	1.6E+04	--
	lbs/day	1.8E+03	1.0E+04	2.7E+04	--
Cadmium, Total Recoverable	µg/L	2.1E+02	8.2E+02	2.1E+03	--
	lbs/day	3.5E+02	1.4E+03	3.5E+03	--
Chromium (VI), Total Recoverable[4]	µg/L	4.1E+02	1.6E+03	4.1E+03	--
	lbs/day	7.0E+02	2.8E+03	7.0E+03	--
Copper, Total Recoverable	µg/L	2.1E+02	2.1E+03	5.7E+03	--
	lbs/day	3.5E+02	3.5E+03	9.8E+03	--
Lead, Total Recoverable	µg/L	4.1E+02	1.6E+03	4.1E+03	--
	lbs/day	7.0E+02	2.8E+03	7.0E+03	--
Mercury, Total Recoverable[5]	µg/L	8.1E+00	3.3E+01	8.2E+01	--
	lbs/day	1.4E+01	5.6E+01	1.4E+02	--
Nickel, Total Recoverable	µg/L	1.0E+03	4.1E+03	1.0E+04	--
	lbs/day	1.8E+03	7.0E+03	1.8E+04	--
Selenium, Total Recoverable	µg/L	3.1E+03	1.2E+04	3.1E+04	--
	lbs/day	5.3E+03	2.1E+04	5.3E+04	--
Silver, Total Recoverable	µg/L	1.1E+02	5.4E+02	1.4E+03	--
	lbs/day	1.9E+02	9.3E+02	2.4E+03	--
Zinc, Total Recoverable	µg/L	2.5E+03	1.5E+04	3.9E+04	--
	lbs/day	4.2E+03	2.5E+04	6.7E+04	--
Cyanide, Total[6]	µg/L	2.1E+02	8.2E+02	2.1E+03	--
	lbs/day	3.5E+02	1.4E+03	3.5E+03	--
Ammonia (as N)	µg/L	1.2E+05	4.9E+05	1.2E+06	--
	lbs/day	2.1E+05	8.4E+05	2.1E+06	--
Phenolic Compounds (Non-Chlorinated)	µg/L	6.2E+03	2.5E+04	6.2E+04	--
	lbs/day	1.1E+04	4.2E+04	1.1E+05	--
Chlorinated Phenolics	µg/L	2.1E+02	8.2E+02	2.1E+03	--
	lbs/day	3.5E+02	1.4E+03	3.5E+03	--
Endosulfan	µg/L	1.8E+00	3.7E+00	5.5E+00	--
	lbs/day	3.2E+00	6.3E+00	9.5E+00	--
Endrin	µg/L	4.1E-01	8.2E-01	1.2E+00	--
	lbs/day	7.0E-01	1.4E+00	2.1E+00	--
HCH	µg/L	8.2E-01	1.6E+00	2.5E+00	--
	lbs/day	1.4E+00	2.8E+00	4.2E+00	--
Radioactivity	pCi/L	Not to exceed limits specified in title 17, division 1, chapter 5, subchapter 4, group 3, article 3, section 30253 of the CCRs, Reference to section 30253 is prospective, including future changes to any incorporated provisions of federal law, as the changes take effect.			

Parameter	Units	Performance Goals[2,3]			
		Six-month Median	Maximum Daily	Instantaneous Maximum	Average Monthly
BASED ON OCEAN PLAN OBJECTIVES FOR PROTECTION OF HUMAN HEALTH – NONCARCINOGENS					
Acrolein	µg/L	--	--	--	4.5E+04
	lbs/day	--	--	--	7.7E+04
Antimony, Total Recoverable	µg/L	--	--	--	2.5E+05
	lbs/day	--	--	--	4.2E+05
Bis(2-chloroethoxy) Methane	µg/L	--	--	--	9.0E+02
	lbs/day	--	--	--	1.5E+03
Bis(2-chloroisopropyl) Ether	µg/L	--	--	--	2.5E+05
	lbs/day	--	--	--	4.2E+05
Chlorobenzene	µg/L	--	--	--	1.2E+05
	lbs/day	--	--	--	2.0E+05
Chromium (III), Total Recoverable[4]	µg/L	--	--	--	3.9E+07
	lbs/day	--	--	--	6.7E+07
Di-n-butyl Phthalate	µg/L	--	--	--	7.2E+05
	lbs/day	--	--	--	1.2E+06
Dichlorobenzenes	µg/L	--	--	--	1.0E+06
	lbs/day	--	--	--	1.8E+06
Diethyl Phthalate	µg/L	--	--	--	6.8E+06
	lbs/day	--	--	--	1.2E+07
Dimethyl Phthalate	µg/L	--	--	--	1.7E+08
	lbs/day	--	--	--	2.9E+08
4,6-dinitro-2-methylphenol	µg/L	--	--	--	4.5E+04
	lbs/day	--	--	--	7.7E+04
2,4-dinitrophenol	µg/L	--	--	--	8.2E+02
	lbs/day	--	--	--	1.4E+03
Ethylbenzene	µg/L	--	--	--	8.4E+05
	lbs/day	--	--	--	1.4E+06
Fluoranthene	µg/L	--	--	--	3.1E+03
	lbs/day	--	--	--	5.3E+03
Hexachlorocyclopentadiene	µg/L	--	--	--	1.2E+04
	lbs/day	--	--	--	2.0E+04
Nitrobenzene	µg/L	--	--	--	1.0E+03
	lbs/day	--	--	--	1.7E+03
Thallium, Total Recoverable	µg/L	--	--	--	4.1E+02
	lbs/day	--	--	--	7.0E+02
Toluene	µg/L	--	--	--	1.7E+07
	lbs/day	--	--	--	3.0E+07
Tributyltin	µg/L	--	--	--	2.9E-01
	lbs/day	--	--	--	4.9E-01
1,1,1-trichloroethane	µg/L	--	--	--	1.1E+08
	lbs/day	--	--	--	1.9E+08

Parameter	Units	Performance Goals[2,3]			
		Six-month Median	Maximum Daily	Instantaneous Maximum	Average Monthly
BASED ON OCEAN PLAN OBJECTIVES FOR PROTECTION OF HUMAN HEALTH - CARCINOGENS					
Acrylonitrile	µg/L	--	--	--	2.1E+01
	lbs/day	--	--	--	3.5E+01
Benzene	µg/L	--	--	--	1.2E+03
	lbs/day	--	--	--	2.1E+03
Benzidine	µg/L	--	--	--	1.4E-02
	lbs/day	--	--	--	2.4E-02
Beryllium, Total Recoverable	µg/L	--	--	--	6.8E+00
	lbs/day	--	--	--	1.2E+01
Bis(2-chloroethyl) Ether	µg/L	--	--	--	9.2E+00
	lbs/day	--	--	--	1.6E+01
Bis(2-ethlyhexyl) Phthalate	µg/L	--	--	--	7.2E+02
	lbs/day	--	--	--	1.2E+03
Carbon Tetrachloride	µg/L	--	--	--	1.8E+02
	lbs/day	--	--	--	3.2E+02
Chlordane	µg/L	--	--	--	4.7E-03
	lbs/day	--	--	--	8.1E-03
Chlorodibromomethane	µg/L	--	--	--	1.8E+03
	lbs/day	--	--	--	3.0E+03
Chloroform	µg/L	--	--	--	2.7E+04
	lbs/day	--	--	--	4.6E+04
DDT	µg/L	--	--	--	3.5E-02
	lbs/day	--	--	--	6.0E-02
1,4-dichlorobenzene	µg/L	--	--	--	3.7E+03
	lbs/day	--	--	--	6.3E+03
3,3'-dichlorobenzidine	µg/L	--	--	--	1.7E+00
	lbs/day	--	--	--	2.8E+00
1,2-dichloroethane	µg/L	--	--	--	5.7E+03
	lbs/day	--	--	--	9.8E+03
1,1-dichloroethylene	µg/L	--	--	--	1.8E+02
	lbs/day	--	--	--	3.2E+02
Dichlorobromomethane	µg/L	--	--	--	1.3E+03
	lbs/day	--	--	--	2.2E+03
Dichloromethane	µg/L	--	--	--	9.2E+04
	lbs/day	--	--	--	1.6E+05
1,3-dichloropropene	µg/L	--	--	--	1.8E+03
	lbs/day	--	--	--	3.1E+03
Dieldrin	µg/L	--	--	--	8.2E-03
	lbs/day	--	--	--	1.4E-02
2,4-dinitrotoluene	µg/L	--	--	--	5.3E+02
	lbs/day	--	--	--	9.1E+02

Parameter	Units	Performance Goals[2,3]			
		Six-month Median	Maximum Daily	Instantaneous Maximum	Average Monthly
1,2-diphenylhydrazine	µg/L	--	--	--	3.3E+01
	lbs/day	--	--	--	5.6E+01
Halomethanes	µg/L	--	--	--	2.7E+04
	lbs/day	--	--	--	4.6E+04
Heptachlor	µg/L	--	--	--	1.0E-02
	lbs/day	--	--	--	1.8E-02
Heptachlor Epoxide	µg/L	--	--	--	4.1E-03
	lbs/day	--	--	--	7.0E-03
Hexachlorobenzene	µg/L	--	--	--	4.3E-02
	lbs/day	--	--	--	7.4E-02
Hexachlorobutadiene	µg/L	--	--	--	2.9E+03
	lbs/day	--	--	--	4.9E+03
Hexachloroethane	µg/L	--	--	--	5.1E+02
	lbs/day	--	--	--	8.8E+02
Isophorone	µg/L	--	--	--	1.5E+05
	lbs/day	--	--	--	2.6E+05
N-nitrosodimethylamine	µg/L	--	--	--	1.5E+03
	lbs/day	--	--	--	2.6E+03
N-nitrosodi-N-propylamine	µg/L	--	--	--	7.8E+01
	lbs/day	--	--	--	1.3E+02
N-nitrosodiphenylamine	µg/L	--	--	--	5.1E+02
	lbs/day	--	--	--	8.8E+02
PAHs	µg/L	--	--	--	1.8E+00
	lbs/day	--	--	--	3.1E+00
PCBs	µg/L	--	--	--	3.9E-03
	lbs/day	--	--	--	6.7E-03
1,1,2,2-tetrachloroethane	µg/L	--	--	--	4.7E+02
	lbs/day	--	--	--	8.1E+02
Tetrachloroethylene	µg/L	--	--	--	4.1E+02
	lbs/day	--	--	--	7.0E+02
Toxaphene	µg/L	--	--	--	4.3E-02
	lbs/day	--	--	--	7.4E-02
Trichloroethylene	µg/L	--	--	--	5.5E+03
	lbs/day	--	--	--	9.5E+03
1,1,2-trichloroethane	µg/L	--	--	--	1.9E+03
	lbs/day	--	--	--	3.3E+03
2,4,6-trichlorophenol	µg/L	--	--	--	5.9E+01
	lbs/day	--	--	--	1.0E+02
Vinyl Chloride	µg/L	--	--	--	7.4E+03
	lbs/day	--	--	--	1.3E+04

1. See Attachment A for definitions of abbreviations and a glossary of common terms used in this Order/Permit.

2. The MER limitation, in lbs/day, was calculated based on the following equation: MER (lbs/day) = 8.34 x Q x C, where Q is the 301(h)-variance-based flow of 205 MGD and C is the concentration (in mg/L). The 301(h)-variance-based average annual flow rate of 205 MGD was taken from the 1995 301(h) application and carried over from Orders Nos. 95-106, R9-2002-0025, and R9-2009-0001 (see section II.C of this Fact Sheet for more info).
3. Scientific "E" notation is used to express certain values. In scientific "E" notation, the number following the "E" indicates that position of the decimal point in the value. Negative numbers after the "E" indicate that the value is less than 1, and positive numbers after the "E" indicate that the value is greater than 1. In this notation a value of 6.1E-02 represents 6.1×10^{-2} or 0.061, 6.1E+02 represents 6.1×10^{2} or 610, and 6.1E+00 represents 6.1×10^{0} or 6.1.
4. Discharger may, at its option, meet this performance goal as a total chromium performance goal.
5. USEPA Method 1631E, with a quantitation level of 0.5 nanogram per liter (ng/L), shall be used to analyze total mercury.
6. If a Discharger can demonstrate to the satisfaction of the San Diego Water Board (subject to USEPA approval) that an analytical method is available to reliably distinguish between strongly and weakly complexed cyanide, effluent limitations for cyanide may be met by (or performance goals may be evaluated with) the combined measurement of free cyanide, simple alkali metals cyanides, and weakly complexed organometallic cyanide complexes. In order for the analytical method to be acceptable, the recovery of free cyanide from metal complexes must be comparable to that achieved by the approved method in 40 CFR part 136, as amended.

5. Whole Effluent Toxicity (WET)

a. The WET testing protects receiving waters from the aggregate toxic effect of a mixture of pollutants in the effluent. Because of the nature of industrial discharges into the POTW sewershed, it is possible that toxic constituents could be present in the Facility effluent, or could have additive, synergistic, or antagonistic effects.

b. For chronic toxicity, Order No. R9-2009-0001 established an effluent limitation of 205 TUc and monthly monitoring. During the Order/Permit term for Order No. R9-2009-0001, one sample exceeded 205 TUc, with a result of 666.7 TUc (June 2015). Using the RPA procedures from the Ocean Plan, the effluent does have reasonable potential to cause an exceedance of the narrative water quality objective for chronic toxicity (i.e., Endpoint 1). Therefore, this Order/Permit retains effluent limitations and monitoring for chronic toxicity.

Compliance with this chronic toxicity effluent limitation (i.e., determination of "pass" or "fail") shall be evaluated using the Test of Significant Toxicity (TST) statistical approach at the discharge "in-stream" waste concentration (IWC), as described in section VII.M of this Order/Permit and section III.C of the MRP (Attachment E). The TST statistical approach is described in the *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R-10-003, 2010), Appendix A, Figure A-1 and Table A-1. The TST null hypothesis shall be "mean discharge IWC response ≤ 0.75 × mean control response." A test that rejects this null hypothesis shall be reported as "pass." A test that does not reject this null hypothesis shall be reported as "fail." Discharger shall also report the "Percent Effect" as part of chronic toxicity result.

Section III.F of the 2015 Ocean Plan provides for more stringent requirements if necessary to protect the designated beneficial uses of ocean waters. Diamond et al. (2013) examined the side-by-side comparison of No-Observed-Effect-Concentration (NOEC) and TST results using California chronic toxicity test data (including data from POTWs) for the West Coast marine methods and test species required under this Order/Permit. *See* Table 1 (method types 1 through 5) on page 1103 in Diamond D, Denton D, Roberts, J, Zheng L. 2013. *Evaluation of the Test of Significant Toxicity for Determining the Toxicity of Effluents and Ambient Water*

Samples. *Environ Toxicol Chem* 32:1101-1108. This comparison shows that while the TST and NOEC statistical approaches perform similarly most of the time, the TST performs better in identifying toxic and nontoxic samples, a desirable characteristic for chronic toxicity testing conducted under this Order/Permit. This examination also signals that the test methods' false positive rate (β no higher than 0.05 at a mean effect of 10%) and false negative rate (α no higher than 0.05 (0.25 for topsmelt) at a mean effect of 25%) are indeed low. This highlights that using the TST in this Order/Permit - in conjunction with other Ocean Plan requirements (West Coast WET method/test species for monitoring and limiting chronic toxicity, the IWC representing the critical condition for water quality protection, the initial dilution procedure, and a single test for compliance)—provides increased assurance that statistical error rates are more directly addressed and accounted for in decisions regarding chronic toxicity in the discharge. As a result and in accordance with Ocean Plan section III.F, the San Diego Water Board is exercising its discretion to use the TST statistical approach for this discharge. USEPA, Region IX agrees with the San Diego Water Board's determination.

c. For acute toxicity, Order No. R9-2009-0001 established performance goals and semiannual monitoring. An acute toxicity test is conducted over a short time period and measures mortality. A chronic toxicity test is conducted over a short or a longer exposure period of time and may measure mortality, reproduction, and growth. A chemical at a low concentration could have chronic effects but no acute effects until the chemical was at a higher concentration. Thus, chronic toxicity is a more stringent requirement than acute toxicity. To ensure the aggregated impacts of pollutants present within the Discharger's effluent does not result in the presence of toxicity within the receiving water, this Order/Permit removes performance goals and monitoring requirements for acute toxicity and retains effluent limitations for chronic toxicity. Removal of the numeric acute toxicity performance goals does not constitute backsliding because chronic toxicity is a more stringent requirement than acute toxicity. Effluent limitations for chronic toxicity are necessary, feasible, and appropriate because effluent data exhibited reasonable potential to cause or contribute to an exceedance of the toxicity water quality objectives.

This Order/Permit contains chronic toxicity effluent limitations because effluent data exhibited reasonable potential to cause or contribute to an exceedance of the water quality objective. Compliance with the chronic toxicity requirement contained in this Order/Permit shall be determined in accordance to section VII.M of this Order/Permit. Nevertheless, this Order/Permit contains a reopener to require the San Diego Water Board and USEPA, Region IX to modify this Order/Permit, if necessary, to make it consistent with any new policy, law, or regulation.

The Ocean Plan's approach to chronic toxicity WQBELs is based on a "toxic unit" derived from one multi-concentration toxicity test. In 2010, USEPA endorsed the TST statistical approach in *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R-10-003, 2010) used in this NPDES permit. Compliance with this chronic toxicity maximum daily effluent limitation (MDEL) (i.e., determination of "pass" or "fail") shall be evaluated using the TST statistical approach at the discharge IWC, as described in section VII.M of this Order/Permit and in section III.C of the MRP (Attachment E). The TST statistical approach is described in *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R-10-003, 2010), Appendix A, Figure A-1 and Table A-1.

In January 2010, USEPA published a guidance document entitled; *EPA Regions 8, 9 and 10 Toxicity Training Tool*, which among other things discusses permit limitation expression for chronic toxicity. The document acknowledges that NPDES regulations at 40 CFR section 122.45(d) require that all permit limits be expressed, unless impracticable, as an average weekly effluent limitation (AWEL) and average monthly effluent limitation (AMEL) for POTWs. Following section 5.2.3 of the Technical Support Document (TSD), the use of an AWEL and AMEL is not appropriate for WET. In lieu of an AWEL and AMEL for POTWs, USEPA recommends establishing a maximum daily effluent limitation (MDEL) for toxic pollutants and pollutants in water quality permitting, including WET. This is appropriate for two reasons. The basis for the average weekly and average monthly requirement for POTWs derives from secondary treatment regulations and is not related to the requirement to assure achievement of water quality standard. Moreover, an average weekly and average monthly requirement comprising up to seven and thirty-one daily samples, respectively, could average out daily peak toxic concentrations for WET and therefore, the discharge's potential for causing acute and chronic effects would be missed. It is impracticable to use an AWEL and AMEL, because short-term spikes of toxicity levels that would be permissible under the 7-day and 31-day average scheme, respectively, would not be adequately protective of all beneficial uses. The MDEL is the highest allowable value for the discharge measured during a calendar day or 24-hour period representing a calendar day. This approach is comparable to that of the Ocean Plan, which calls for a daily maximum chronic toxicity limit.

Later in June 2010, USEPA published another guidance document titled, *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R-10-003, June 2010), in which the following was recommended: "Permitting authorities should consider adding the TST approach to their implementation procedures for analyzing valid WET data for their current NPDES WET Program." The TST approach is another statistical option for analyzing valid WET test data. Use of the TST approach does not result in any changes to USEPA's WET test methods. Section 9.4.1.2 of USEPA's *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms* (EPA/821/R-02/013, 2002), recognizes that, "the statistical methods in this manual are not the only possible methods of statistical analysis." The TST approach can be applied to acute (survival) and chronic (sublethal) endpoints and is appropriate to use for both freshwater and marine EPA WET test methods.

The USEPA's WET testing program and acute and chronic WET methods rely on the measurement result for a specific test endpoint, not upon achievement of specified concentration-response patterns to determine toxicity. USEPA's WET methods do not require achievement of specified effluent or ambient concentration-response patterns prior to determining that toxicity is present.[4] Nevertheless, USEPA's acute and chronic WET methods require that effluent and ambient concentration-response patterns generated for multi-concentration acute and chronic toxicity tests be reviewed—as a component of test review following statistical analysis—to ensure that the calculated measurement result for the toxicity test is interpreted appropriately. (EPA-821-R-02-012, section 12.2.6.2; EPA-821-R-

[4] See, Supplementary Information in support of the Final Rule establishing WET test methods at 67 Fed. Reg. 69952, 69963, Nov. 19, 2002.

02-013, section 10.2.6.2). In 2000, EPA provided guidance for such reviews to ensure that test endpoints for determining toxicity based on the statistical approaches utilized at the time the guidance was written (no-observed-effect-concentration (NOEC), percent waste giving 50 percent survival of test organisms (lethal concentration 50, LC 50), effects concentration at 25 percent (EC25) were calculated appropriately (EPA 821-B-00-004).

USEPA designed its 2000 guidance as a standardized step-by step review process that investigates the causes for ten commonly observed concentration-response patterns and provides for the proper interpretation of the test endpoints derived from these patterns for NOECs, LC 50, and EC25, thereby reducing the number of misclassified test results. The guidance provides one of three determinations based on the review steps: that calculated effect concentrations are reliable and should be reported, that calculated effect concentrations are anomalous and should be explained, or that the test was inconclusive and should be repeated with a newly collected sample. The standardized review of the effluent and receiving water concentration-response patterns provided by USEPA's 2000 guidance decreased discrepancies in data interpretation for NOEC, LC 50, and EC25 test results, thereby lowering the chance that a truly nontoxic sample would be misclassified and reported as toxic.

Appropriate interpretation of the measurement result from USEPA's TST statistical approach ("Pass"/"Fail") for effluent and receiving water samples is, by design, independent from the concentration-response patterns of the toxicity tests for those samples. Therefore, when using the TST statistical approach, application of USEPA's 2000 guidance on effluent and receiving waters concentration-response patterns will not improve the appropriate interpretation of TST results as long as all Test Acceptability Criteria and other test review procedures—including those related to quality assurance for effluent and receiving water toxicity tests, reference toxicity tests, and control performance (mean, standard deviation, and coefficient of variation)—described by the WET test methods manual and TST guidance, are followed. The 2000 guidance may be used to identify reliable, anomalous, or inconclusive concentration-response patterns and associated statistical results to the extent that the guidance recommends review of test procedures and laboratory performance already recommended in the WET test methods manual. The guidance does not apply to single-concentration (IWC) and control statistical t-tests and does not apply to the statistical assumptions on which the TST is based. The San Diego Water Board and USEPA, Region IX will not consider a concentration-response pattern as sufficient basis to determine that a TST t- test result for a toxicity test is anything other than valid, absent other evidence. In a toxicity laboratory, unexpected concentration-response patterns should not occur with any regular frequency and consistent reports of anomalous or inconclusive concentration-response patterns or test results that are not valid will require an investigation of laboratory practices.

Any Data Quality Objectives or Standard Operating Procedure used by the toxicity testing laboratory to identify and report valid, invalid, anomalous, or inconclusive effluent or receiving water toxicity test measurement results from the TST statistical approach which include a consideration of concentration-response patterns and/or Percent Minimum Significant Differences (PMSDs) must be submitted for review by the San Diego Water Board, in consultation with USEPA, Region IX and the State Water Board's Quality Assurance Officer and Environmental Laboratory Accreditation Program (ELAP) (40 CFR section 122.44(h)). As described in the bioassay laboratory audit directives to the San Jose Creek Water Quality Laboratory

from the State Water Board dated August 7, 2014, and from the USEPA dated December 24, 2013, the PMSD criteria only apply to compliance for NOEC and the sublethal endpoints of the NOEC, and therefore are not used to interpret TST results.

D. Final Effluent Limitation Considerations

1. Anti-Backsliding Requirements

NPDES permits must conform with Anti-backsliding requirements discussed in section III.C.5 of this Fact Sheet. The effluent limitations in this Order/Permit are at least as stringent as the effluent limitations in the previous Order (Order No. R9-2009-0001), with the exception of effluent limitations for the following parameters: phenolic compounds (non-chlorinated), chlorinated phenolics, chlordane, chlorodibromomethane, chloroform, 1,4-dichlorobenzene, dichlorobromomethane, dichloromethane, halomethanes, and heptachlor. The effluent limitations for these parameters were removed and replaced with performance goals based on the results of the RPA performed on data collected during the Order/Permit cycle for Order No. R9-2009-0001. The removal of these effluent limitations from this Order/Permit is consistent with the federal Anti-backsliding requirements for the reasons set forth below.

As discussed in section IV.C.3 of this Fact Sheet, effluent limitations from Order No. R9 2009-0001 are not retained for parameters for which RPA results indicated Endpoint 2; instead performance goals have been assigned for these parameters. Based on the RPA performed on new monitoring data, parameters for which Endpoint 2 was indicated are determined not to have reasonable potential, thus it is inappropriate to establish effluent limitations for these parameters. The removal of the effluent limitations for parameters for which RPA results indicated Endpoint 2 is appropriate under the exceptions described in 40 CFR section 122.44(l)(2)(i)(B)(1), which specify that permits may include a less stringent effluent limitation than the previous permit, if information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation at the time of permit issuance. The performance goals that replace the removed effluent limitations and continued monitoring for these parameters serve to ensure existing treatment levels and effluent quality is maintained. The monitoring requirements in the Monitoring and Reporting Program (Attachment E) for parameters with performance goals are intended to obtain additional information for these parameters to determine if reasonable potential exists for these parameters in future permit renewals and/or updates.

As discussed in section IV.C.5.c of this Fact Sheet, the acute toxicity performance goal and monitoring from Order No. R9-2009-0001 has been removed. An acute toxicity test is conducted over a short time period and measures mortality. A chronic toxicity test is conducted over a short or a longer period of time and may measure mortality, reproduction, and growth. A chemical at a low concentration could have chronic effects but no acute effects until the chemical was at a higher concentration. Thus, chronic toxicity is a more stringent requirement than acute toxicity. To ensure the aggregated impacts of pollutants present within the Discharger's effluent does not result in the presence of toxicity within the receiving water, this Order/Permit removes performance goals and monitoring requirements for acute toxicity and retains effluent limitations for chronic toxicity. Removal of the numeric acute toxicity performance goals does not constitute backsliding because chronic toxicity is a more stringent requirement than acute toxicity. Effluent limitations for chronic toxicity are necessary, feasible, and

appropriate because effluent data exhibited reasonable potential to cause or contribute to an exceedance of the toxicity water quality objectives.

Based on all of these considerations, this Order/Permit complies with all applicable State and federal Anti-backsliding regulations.

2. Antidegradation Policies

The WDRs for the Discharger must conform with antidegradation requirements discussed in section III.C.4 of this Fact Sheet.

This Order/Permit has been modified from Order No. R9-2009-0001, to replace WQBELs for some parameters with performance goals based on the conclusions of an RPA. The procedures for conducting the RPA are explained in section IV.C.3 of this Fact Sheet. Performance goals were included in this Order/Permit for parameters determined not to have reasonable potential to cause or contribute to an exceedance of water quality objectives, and thus, for which WQBELs were not included. Performance goals will indicate the level of discharge at which possible water quality impacts may be significant. The removal of WQBELs by themselves is not expected to cause a change in the physical nature of the effluent discharged and is not expected to impact beneficial uses nor cause a reduction of the water quality of the receiving water. Coupled with the inclusion of performance goals and retention of the monitoring program for parameters without WQBELs, the existing water quality is expected to be maintained. For these reasons, an antidegradation analysis is not required to consider the possible impacts resulting from the removal of WQBELs following an RPA.

Provision VI.C.2.e of Order No. R9-2009-0001 required the Discharger to conduct a full antidegradation analysis justifying that the continued increase in effluent loading of phenolic compounds (non-chlorinated) to a Tier II waterbody was not subject to an antidegradation analysis. The Discharger conducted an analysis of the phenolic compounds (non-chlorinated) projected effluent load above the mass emission benchmark level and the resulting impact to receiving water quality of the total effluent load. Provision VI.C.2.e establishes a level of significance test where water quality impacts are deemed "not significant" if projected receiving water quality beyond the ZID is less than 50 percent of the Ocean Plan receiving water standard. As demonstrated in Discharger's 2011 Significance Study, the existing discharge complies with this "significance" test by two orders of magnitude or more for non-chlorinated phenolic compounds. In addition to complying with the Ocean Plan receiving water standards, the discharge ensures compliance with federal water quality criteria for the protection of human health (consumption of organisms). The study concludes that the existing discharge complies with Tier 1 antidegradation regulations, and no Tier 2 socioeconomic analysis is required for non-chlorinated phenolic compounds. The Assessment documents that both the current and projected future Plant effluent concentrations of phenolic compounds (non-chlorinated) are projected to remain far below the Tier 1 threshold of 50 percent below the Ocean Plan receiving water standard.

As discussed in section IV.C.5.c of this Fact Sheet, the acute toxicity performance goal and monitoring from Order No. R9-2009-0001 has been removed. An acute toxicity test is conducted over a short time period and measures mortality. A chronic toxicity test is conducted over a short or a longer period of time and may measure mortality, reproduction, and growth. A chemical at a low concentration could have chronic effects but no acute effects until the chemical was at a higher concentration. Thus, chronic toxicity is a more stringent requirement than acute toxicity. For these reasons, the removal of performance goal and monitoring for acute toxicity and the retention of

effluent limitations and monitoring for chronic toxicity is not expected to cause a change in the physical nature of the effluent discharged and is not expected to impact beneficial uses nor cause a reduction of the water quality of the receiving water. Thus, an antidegradation analysis is not required to consider the possible impacts resulting from the removal of performance goal and monitoring for acute toxicity.

This Order/Permit complies with the antidegradation provision of 40 CFR section 131.12 and State Water Board Resolution No. 68-16.

3. Annual Toxics Mass Emission Performance Goals

Order Nos. 95-106, R9-2002-0025, and R9-2009-0001 contained toxics mass emission performance goals for effluent discharged through the PLOO. These performance goals were established to address the uncertainty due to projected increases in toxic pollutant loadings from the Facility to the marine environment during the 5-year 301(h) variance, and to establish a framework for evaluating the need for an antidegradation analysis to determine compliance with water quality standards at the time of permit reissuance. The performance goals contained in Order No. R9-2009-0001 have been carried over to this Order/Permit.

The annual mass emission performance goals for the 1995 permit were determined using 1990 through April 1995 n-day average monthly performance (95th percentile) of the Facility and the 301(h)-variance-based effluent flow of 205 MGD for the 1995 301(h) application and the following equations:

MER (lbs/day) = Permitted Flow (MGD) x Pollutant Concentration (mg/L) x 8.34.

For the 2002 permit, mass emission performance goals for copper and selenium were recalculated using the 1994 n-day average monthly performance (95th percentile) and 205 MGD and the mass emission benchmark for cyanide was corrected. Average monthly performance was calculated as outlined in Appendix E of *Technical Support Document for Water Quality-based Toxics Control* (EPA/5005/2-90-001, 1991; TSD).

These mass emission performance goals are not WQBELs and are not enforceable, as such. The mass emission performance goals may be re-evaluated and modified during this Order/Permit term, or this Order/Permit may be modified to incorporate WQBELs, in accordance with the requirements set forth at 40 CFR sections 122.62 and 124.5. The following effluent mass emission performance goals for toxic and carcinogenic materials apply to the undiluted effluent from the Facility discharged to the PLOO at Monitoring Location EFF-001 as described in the MRP (Attachment E):

Table F-16. Summary of Annual Toxics Mass Emission Performance Goals[1] (based on 205 MGD)

Effluent Constituent	Units	Annual Mass Emission
Arsenic, Total Recoverable	mt/yr	0.88
Cadmium, Total Recoverable	mt/yr	1.4
Chromium (VI), Total Recoverable[2]	mt/yr	14.2
Copper, Total Recoverable	mt/yr	26
Lead, Total Recoverable	mt/yr	14.2
Mercury, Total Recoverable[3]	mt/yr	0.19
Nickel, Total Recoverable	mt/yr	11.3
Selenium, Total Recoverable	mt/yr	0.44
Silver, Total Recoverable	mt/yr	2.8
Zinc, Total Recoverable	mt/yr	18.3
Cyanide, Total[4]	mt/yr	1.57
Ammonia (as N)	mt/yr	8,018
Phenolic Compounds (Non-Chlorinated)	mt/yr	2.57
Chlorinated Phenolics	mt/yr	1.73
Endosulfan	mt/yr	0.006
Endrin	mt/yr	0.008
HCH	mt/yr	0.025
Acrolein	mt/yr	17.6
Antimony, Total Recoverable	mt/yr	56.6
Bis(2-chloroethoxy) Methane	mt/yr	1.5
Bis(2-chloroisopropyl) Ether	mt/yr	1.61
Chlorobenzene	mt/yr	1.7
Di-n-butyl Phthalate	mt/yr	1.33
Dichlorobenzenes	mt/yr	2.8
Diethyl Phthalate	mt/yr	6.23
4,6-dinitro-2-methylphenol	mt/yr	6.8
2,4-dinitrophenol	mt/yr	11.9
Ethylbenzene	mt/yr	2.04
Fluoranthene	mt/yr	0.62
Nitrobenzene	mt/yr	2.07
Thallium	mt/yr	36.8
Toluene	mt/yr	3.31
Tributyltin	mt/yr	0.001
1,1,1-trichloroethane	mt/yr	2.51
Acrylonitrile	mt/yr	5.95
Aldrin	mt/yr	0.006
Benzene	mt/yr	1.25
Benzidine	mt/yr	12.5
Beryllium, Total Recoverable	mt/yr	1.42

Effluent Constituent	Units	Annual Mass Emission
Bis(2-chloroethyl) Ether	mt/yr	1.61
Bis(2-ethylhexyl) Phthalate	mt/yr	2.89
Carbon Tetrachloride	mt/yr	0.79
Heptachlor Epoxide	mt/yr	0.024
Hexachlorobenzene	mt/yr	0.54
Hexachlorobutadiene	mt/yr	0.54
Hexachloroethane	mt/yr	1.13
Isophorone	mt/yr	0.71
N-nitrosodimethylamine	mt/yr	0.76
N-nitrosodiphenylamine	mt/yr	1.47
PAHs	mt/yr	15.45
PCBs	mt/yr	0.275
1,1,2,2-tetrachloroethane	mt/yr	1.95
Tetrachloroethylene	mt/yr	4
Toxaphene	mt/yr	0.068
Trichloroethylene	mt/yr	1.56
1,1,2-trichloroethane	mt/yr	1.42
2,4,6-trichlorophenol	mt/yr	0.960
Vinyl Chloride	mt/yr	0.40

1. See Attachment A for definitions of abbreviations and a glossary of common terms used in this Order/Permit.
2. Discharger may, at its option, meet this annual mass emission performance as a total chromium annual mass emission performance.
3. USEPA Method 1631E, with a quantitation level of 0.5 ng/L, shall be used to analyze total mercury.
4. If a Discharger can demonstrate to the satisfaction of the San Diego Water Board (subject to USEPA approval) that an analytical method is available to reliably distinguish between strongly and weakly complexed cyanide, effluent limitations for cyanide may be met by (or performance goals may be evaluated with) the combined measurement of free cyanide, simple alkali metals cyanides, and weakly complexed organometallic cyanide complexes. In order for the analytical method to be acceptable, the recovery of free cyanide from metal complexes must be comparable to that achieved by the approved method in 40 CFR part 136, as amended.

4. Stringency of Requirements for Individual Pollutants

This Order/Permit contains both TBELs and WQBELs for individual pollutants. The TBELs consist of restrictions on BOD_5, TSS, oil and grease, settleable solids, turbidity, and pH, which are discussed in section IV.B of this Fact Sheet. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements. These limitations are not more stringent than required by the CWA.

WQBELs have been derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to federal law and are the applicable federal water quality standards. The procedures for calculating the individual WQBELs are based on the Ocean Plan, which was approved by USEPA on February 14, 2006 and has since been further amended. All beneficial uses and water quality objectives contained in the Basin Plan were approved under State law and submitted to and approved by USEPA prior to May 30, 2000. Any

water quality objectives and beneficial uses submitted to USEPA prior to May 30, 2000, but not approved by USEPA before that date, are nonetheless "applicable water quality standards for purposes of the CWA" pursuant to 40 CFR section 131.21(c)(1). For pH, both technology-based effluent limitations and WQBELs are applicable. The more stringent of these effluent limitations are implemented by this Order/Permit. Collectively, this Order's restrictions on individual pollutants are no more stringent than required to implement the requirements of the CWA.

E. Interim Effluent Limitations – Not Applicable

F. Land Discharge Specifications – Not Applicable

G. Recycling Specifications – Not Applicable

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

Receiving water limitations of this Order/Permit are derived from the water quality objectives for ocean waters established by the Basin Plan and the Ocean Plan.

Prior to 2009, the San Diego Water Board interpreted the Bacterial Characteristics Water-contact Standards of the Ocean Plan to apply only in the zone bounded by the shoreline and a distance 1,000 feet from the shoreline or the 30-foot depth contour, whichever is further from the shoreline, and within kelp beds. The Ocean Plan provides that these Bacteriological Standards also apply in designated areas outside this zone used for water contact sports, as determined by the Regional Water Boards (i.e., all waters designated with the contact water recreation (REC-1) beneficial use). These designated areas must be specifically defined in the Basin Plan. Because the San Diego Water Board has designated the ocean waters with the REC-1 beneficial use in the Basin Plan, the Ocean Plan Bacterial Standards apply throughout State of California territorial marine waters in the San Diego Region, which extend from surface to bottom, out to three nautical miles from the shoreline. This interpretation has been confirmed by USEPA.

VI. RATIONALE FOR PROVISIONS

A. Standard Provisions

Standard Provisions, which apply to all NPDES permits in accordance with 40 CFR section 122.41, and additional conditions applicable to specified categories of permits in accordance with 40 CFR section 122.42, are provided in the Standard Provisions (Attachment D).

Sections 122.41(a)(1) and (b) through (n) of 40 CFR establish conditions that apply to all State-issued NPDES permits. These conditions must be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to the regulations must be included in the Order/Permit. Section 123.25(a)(12) allows the State to omit or modify conditions to impose more stringent requirements. In accordance with 40 CFR section 123.25, this Order/Permit omits federal conditions that address enforcement authority specified in 40 CFR sections 122.41(j)(5) and (k)(2) because the enforcement authority under the Water Code is more stringent. In lieu of these conditions, this Order/Permit incorporates by reference Water Code section 13387(e).

B. Special Provisions

1. Reopener Provisions

This Order/Permit may be reopened and modified, revoked and reissued, or terminated in accordance with the provisions of 40 CFR parts 122, 123, 124, and 125. The San Diego Water Board and USEPA, Region IX may reopen this Order/Permit to modify permit conditions and requirements. Causes for modifications include, but are not limited to, increased/ modified receiving water requirements and participation in the Southern

California Coastal Water Research Project (SCCWRP) model monitoring program; the promulgation of new regulations; modification in sludge use or disposal practices; or adoption of new regulations by the State Water Board or the San Diego Water Board or USEPA, Region IX, including revisions to the Basin Plan.

2. Special Studies and Additional Monitoring Requirements

a. Spill Prevention and Response Plans

The CWA largely prohibits any discharge of pollutants from point sources to waters of the U.S. except as authorized under an NPDES permit. In general, any point source discharge of sewage effluent to waters of the U.S. must comply with technology-based, secondary treatment standards, at a minimum, and any more stringent requirements necessary to meet applicable water quality standards and other requirements. The unpermitted discharge of wastewater to waters of the U.S. is illegal under the CWA. Further, the Basin Plan prohibits discharges of waste to land, except as authorized by WDRs or the terms described in Water Code section 13264. The Basin Plan also prohibits the unauthorized discharge of treated or untreated sewage to waters of the State or to a storm water conveyance system. Further, Discharge Prohibition III.A of this Order/Permit prohibits the discharges of wastes in a manner or to a location which have not been specifically authorized by this Order/Permit and for which valid WDRs are not in force.

Sanitary collection and treatment systems experience periodic failures resulting in discharges that may affect waters of the State. There are many factors which may affect the likelihood of a spill. To ensure appropriate funding, management, and planning to reduce the likelihood of a spill, and increase the spill preparedness, this Order/Permit requires the Discharger to maintain and implement Spill Prevention and Response Plans.

b. Spill Reporting Requirements

To determine compliance with Discharge Prohibition III.A and provide appropriate notification to the general public for the protection of public health, spill reporting requirements have been established in section VI.C.2.b of this Order/Permit.

3. Best Management Practices and Pollution Prevention

The Pollutant Minimization Program is based on the requirements of the section III.C.9 of the Ocean Plan.

4. Construction, Operation, and Maintenance Specifications

This provision is based on the requirements of 40 CFR 122.41(e).

5. Special Provisions for Publicly-Owned Treatment Works (POTWs)

a. Treatment Plant Capacity

Title 23, division 3, chapter 9, article 9, section 2232 of the CCR requires POTWs ensure adequate treatment plant capacity. This Order/Permit retains the requirement for a treatment plant capacity study which serves as an indicator to the San Diego Water Board and USEPA, Region IX of the Facility's hydraulic capacity and potential growth in the service area.

b. Sludge (Biosolids) Requirements

The use and disposal of biosolids within the U.S. is regulated under State and federal laws and regulations, including permitting requirements and technical

standards included in 40 CFR part 503. The Discharger is required to comply with the standards and time schedules contained in 40 CFR part 503 for biosolids used or disposed of within the U.S.

Title 27, division 2, subdivision 1, section 20005 of the CCR establishes approved methods for the disposal of collected screenings, residual sludge, biosolids, and other solids removed from liquid wastes. Requirements to ensure the Discharger disposes of solids in compliance with State and federal regulations have been included in this Order/Permit.

c. Requirements for Receipt of Anaerobically Digestible Material

Some POTWs choose to accept organic material such as food waste, fats, oils, and grease into their anaerobic digesters for co-digestion to increase production of methane and other biogases for energy production and to prevent such materials from being discharged into the collection system, which could cause sanitary sewer overflows. The California Department of Resources Recycling and Recovery has proposed an exemption from requiring Process Facility/Transfer Station permits where this activity is regulated under WDRs or NPDES permits. The proposed exemption is restricted to anaerobically digestible material that has been prescreened, slurried, and processed/conveyed in a closed system to be co-digested with regular POTW sludge. The proposed exemption requires that a POTW develop Standard Operating Procedures (SOPs) for the proper handling, processing, tracking, and management of the anaerobically digestible material before it is received by the POTW.

The SOPs are required for POTWs that accept hauled food waste, fats, oil, and grease for injection into anaerobic digesters. The development and implementation of SOPs for management of these materials is intended to allow the California Department of Resources Recycling and Recovery to exempt this activity from separate and redundant permitting programs. If the POTW does not accept food waste, fats, oil, or grease for resource recovery purposes, it is not required to develop and implement SOPs.

d. Pretreatment

CWA section 307 and 40 CFR part 403 establish pretreatment requirements for POTWs which receive pollutants from non-domestic users. This Order/Permit contains pretreatment program requirements pursuant to 40 CFR part 403 that are applicable to the Discharger. Also, this Order/Permit incorporates conditions for implementing urban area pretreatment program requirements under CWA section 301(h) and 40 CFR part 125. Also, this Order/Permit retains the requirement to conduct an annual analysis of the local limits as required under 40 CFR section 125.65(c)(1)(iii).

e. Collection System

The State Water Board issued Order 2006-0003-DWQ, *Statewide General Waste Discharge Requirements for Sanitary Sewer System* (Statewide General SSO Order) on May 2, 2006. The State Water Board amended the MRP for the Statewide General SSO Order through Order WQ 2013-0058-EXEC on August 6, 2013. The Statewide General SSO Order requires public agencies that own or operate sanitary sewer systems with sewer lines one mile of pipe or greater to enroll for coverage and comply with the Statewide General SSO Order. The Statewide General SSO

Order requires agencies to develop sanitary sewer management plans (SSMPs) and report all sanitary sewer overflows, among other requirements and prohibitions.

The Statewide General SSO Order contains requirements for operation and maintenance of collection systems and for reporting and mitigating sanitary sewer overflows that are more extensive, and therefore, more stringent than the requirements under federal standard provisions. The Discharger and public agencies that are discharging wastewater into the facility's collection system were required to obtain enrollment for regulation under the Statewide General SSO Order by December 1, 2006.

The San Diego Water Board issued Order No. R9-2007-0005*, Waste Discharge Requirements for Sewage Collection Agencies in the San Diego Region (Regional General SSO Order).* Order No. R9-2007-0005 is more stringent and prescriptive than the Statewide General SSO Order. Agencies that are enrolled under the Statewide General SSO Order are also required to also comply with the Regional General SSO Order.

6. Other Special Provisions – Not Applicable

7. Compliance Schedules

Pure Water San Diego Potable Reuse Tasks and Goals. As discussed in section II.F of this Fact Sheet, the Discharger has committed to implementing a comprehensive water reuse program called Pure Water San Diego as a condition of this 301(h) waiver of secondary treatment requirements. This program is a long-term joint water and wastewater facilities plan that will provide a safe, reliable, and cost-effective drinking water supply for San Diego while offloading flows and loads from the Facility. This program is the result of collaboration between the Discharger, Metro Wastewater JPA, and a diverse array of regional stakeholders.

To ensure that the Discharger will complete the Pure Water San Diego project by December 31, 2035, section VI.C.7 of this Order/Permit contains a detailed compliance schedule to be completed during this Order/Permit term and implementation goals to be incorporated as required tasks within subsequent Orders/Permits term. Facilities planning, including the potential to accelerate the implementation schedule, has been aggressively pursued by the Discharger since the submittal of the ROWD for renewal of the Facility NPDES modified permit. Implementation of Pure Water San Diego faces a unique challenge, well beyond what a normal expansion of the water and wastewater infrastructure would experience. In recognition of this the enforceable milestones and schedule originally presented by the Discharger remains applicable for use in this Order/Permit, while realizing that the Discharger is using its best efforts to achieve its goals ahead of schedule.

A compliance schedule is required because the Discharger must implement specific tasks in order to reduce TSS loading to that which would be allowable if the Facility were meeting secondary treatment standards for TSS. That is, if the Facility were treating wastewater at its facility design flow of 240 MGD and meeting the secondary treatment standards for TSS (average monthly effluent limitation of 30 mg/L), the annual mass effluent rate would be 9,942 mt/yr for TSS (using the equation MER (lbs/day) = Permitted Flow (MGD) x Pollutant Concentration (mg/L) x 8.34). Table F-16 below summarizes the required step-wise reductions in PLOO TSS mass emissions.

Table F-17. Future TSS MER Limits

Year	TSS MER Limitation in mt/yr
2014	13,598
2015 through 2025	12,000
2026 through 2027	11,500
2028 forward	9,942

VII. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

CWA section 308 and 40 CFR sections 122.41(h), (j)-(*l*), 122.44(i), and 122.48 require that all NPDES permits specify monitoring and reporting requirements. Water Code sections 13267 and 13383 also authorize the San Diego Water Board to establish monitoring, inspection, entry, reporting, and recordkeeping requirements. The MRP (Attachment E) establishes monitoring, reporting, and recordkeeping requirements that implement State and federal requirements. The following provides the rationale for the monitoring and reporting requirements contained in the MRP (Attachment E).

A. Core Monitoring Requirements

1. Influent Monitoring

   Influent monitoring is required to determine the effectiveness of the pretreatment and non-industrial source control programs, to assess the performance of treatment facilities, and to evaluate compliance with effluent limitations. Influent monitoring requirements have been carried over from Order No. R9-2009-0001.

   Refer to section III.A of the MRP (Attachment E).

2. Return Stream Monitoring

   Return stream monitoring is required to evaluate compliance with effluent limitations (i.e., system-wide percent removal for BOD_5 and TSS). Return stream monitoring requirements have been carried over from Order No. R9-2009-0001.

   Refer to section III.A of the MRP (Attachment E).

3. Effluent Monitoring

   Effluent monitoring is required to determine compliance with the conditions of this Order/Permit, to identify operational problems, to improve plant performance, and to conduct reasonable potential analyses for subsequent orders. Effluent monitoring also provides information on wastewater characteristics for use in interpreting water quality and biological data. Effluent monitoring requirements have been carried over from Order No. R9-2009-0001.

   Refer to section III.B of the MRP (Attachment E).

4. Whole Effluent Toxicity (WET) Testing Requirements

   This Order/Permit contains chronic toxicity effluent limitations as described in sections IV.C.3 and IV.C.5 of this Fact Sheet.

   This Order/Permit requires the Discharger to conduct additional toxicity testing for exceedances of the toxicity effluent limitations. If the additional tests demonstrate toxicity, the Discharger is required to submit a Toxicity Reduction Evaluation (TRE) Work Plan in accordance with the submitted TRE Work Plan and USEPA guidance which shall include: further steps taken by the Discharger to investigate, identify, and correct the

causes of toxicity; actions the Discharger will take to mitigate the effects of the discharge and prevent the recurrence of toxicity; and a schedule for these actions.

Section III.C.10 of the Ocean Plan requires a TRE if a discharge consistently exceeds an effluent limitation based on a toxicity objective in Table 1 of the Ocean Plan.

Consistent with the requirements of the Ocean Plan, section III.C.5 of the MRP (Attachment E) requires the Discharger to develop an Initial Investigation TRE Work Plan and submit the Initial Investigation TRE Work Plan within 90 days of the effective date of this Order/Permit. The Work Plan must describe steps the Discharger intends to follow if the effluent limitation for chronic toxicity is exceeded.

If the effluent limitation for chronic toxicity is exceeded in any one test, the Discharger must conduct a TRE if the toxicity is exceeded in any of the next four succeeding tests performed at 14-day intervals and notify the San Diego Water Board and USEPA, Region IX. The requirement for a minimum of four succeeding tests performed at 14-day intervals is based on the probability of encountering at least one toxicity exceedance assuming a true, but unknown level of occurrence. After the chronic toxicity exceedance, the Discharger must continue to conduct the routine monthly monitoring for chronic toxicity as required in Monitoring and Reporting Program (Attachment E). The TRE shall be conducted in accordance with the approved TRE Work Plan and available USEPA guidance documents.[5] The Discharger must also implement a Toxicity Identification Evaluation (TIE), as necessary, based upon the magnitude and persistence of toxicity effluent limitation exceedances. Once the source of toxicity is identified, the Discharger must take all reasonable steps to reduce the toxicity to meet the chronic toxicity effluent limitation identified in section IV.A of this Order/Permit.

Within 30 days of completion of the TRE, the Discharger must submit the results of the TRE, including a summary of the findings, data generated, a list of corrective actions taken or planned to achieve consistent compliance with all the toxicity limitations of this Order/Permit and prevent recurrence of exceedances of those limitations, and a time schedule for implementation of any planned corrective actions. The Discharger must implement any planned corrective actions in the TRE Final Report in accordance with the specified time schedule, unless otherwise directed in writing by the San Diego Water Board and/or USEPA, Region IX. The corrective actions and time schedule must be modified at the direction of the San Diego Water Board and/or USEPA, Region IX.

Refer to section III.C of the MRP (Attachment E).

5. Land Discharge Monitoring Requirements – Not Applicable

6. Recycling Monitoring Requirements – Not Applicable

[5] See (a) *TRE Guidance for Municipal Wastewater Treatment Plants* (EPA 833-B-99-002, 1999); (b) *Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations* (EPA/600/2-88/070); *Toxicity Identification Evaluation, Phase I* (EPA/600/6-91/005F); (c) *Methods for Aquatic Toxicity Identification Evaluations, Phase II* (EPA/600/R-92/080); (d) *Methods for Aquatic Toxicity Identification Evaluations, Phase III* (EPA/600/R-92/081); and (e) *Marine Toxicity Identification Evaluation (TIE): Phase I Guidance Document* (EPA/600/R-96-054,1996).

B. Receiving Water Monitoring

The receiving water and sediment monitoring requirements set forth below are designed to measure the effects of the Facility discharge on the receiving water. These monitoring requirements will remain in effect on an interim basis, pending development of a new and updated monitoring and assessment program.

Refer to section IV of the MRP (Attachment E).

1. Shoreline Water Quality Monitoring Requirements

   Shoreline water quality monitoring is required to determine if the effluent is causing or contributing to exceedances in the water quality standards in the shoreline, the area where the ocean surface waves come closer to shore and break. The monitoring frequency has been modified from 5/monthly to weekly in this Order/Permit to be consistent with the receiving water monitoring conducted for SBOO. The Discharger conducts the monitoring for PLOO and SBOO at the same time and standardizing the two monitoring programs makes it easier and more efficient for the Discharger to manage the two monitoring programs.

   Refer to section IV.A of the MRP (Attachment E).

2. Offshore Water Quality Monitoring Requirements

   Offshore monitoring stations are shown on Map B-3 in Attachment B. Offshore water quality monitoring is required to determine if the effluent is causing or contributing to exceedances in the water quality standards outside of the ZID and to determine the fate of the effluent plume. Offshore monitoring requirements have been carried over from Order No. R9-2009-0001, with some exceptions. The monitoring frequency for kelp stations has been modified from 5/monthly to weekly in this Order/Permit to be consistent with the changes made to the shoreline monitoring frequency and with the receiving water monitoring conducted for SBOO.

   In 2008, the Discharger began partial chlorination of the effluent, which made using bacteria as a plume tracer ineffective. As a replacement plume tracer, receiving water monitoring for ammonia was added to Order No. R9-2009-0001. However, monitoring for ammonia has produced no useful data since all ammonia results have been ND near the outfall. Given this, receiving water monitoring for ammonia has been removed in this Order/Permit.

   Refer to section IV.B.1 of the MRP (Attachment E).

3. Benthic Community Protection Monitoring Requirements

   Sediments integrate constituents that are discharged to the ocean. Most particles that come from the PLOO discharge, and any associated contaminants, will eventually settle to the seafloor where they are incorporated into the existing sediments. Sediments can accumulate these particles over the years until the point where sediment quality has degraded and beneficial uses are impaired.

   The MRP requires periodic assessment of sediment quality to evaluate potential effects of the PLOO discharge and compliance with narrative water quality standards specified in the Ocean Plan. The required assessment consists of the measurement and integration of three lines of evidence: 1) physical and chemical properties of seafloor sediments, 2) seafloor sediment toxicity to assess bioavailability and toxicity of sediment contaminants and 3) ecological status of the biological communities (benthos) that live in or on the seafloor sediments.

The benthic community is strongly affected by sediment composition (e.g., sand, silt, and clay distributions), sediment quality (e.g., chemistry, toxicity), and water quality. Because benthic macroinvertebrates (e.g., infauna) are dependent on their surroundings, they often serve as important biological indicators that reflect the overall conditions of the marine environment.

Order No. R9-2009-0001 requires two infaunal samples and one sediment sample per station per survey. However, the second infaunal sample (replicate) is of little value since it does not have a corresponding sediment sample. Therefore, this Order/Permit reduces the infaunal sampling to a single sample per station per survey. This reduction is consistent with the receiving water monitoring conducted for SBOO.

As a component of the joint receiving water monitoring program for PLOO and for SBOO, this Order/Permit adds a requirement for the annual survey of 40 randomly selected benthic stations each year, as requested by the Discharger in its ROWD. These 40 randomly selected stations will be sampled and analyzed annually to meet the requirements in both this Order/Permit and WDRs for SBOO[6].

Refer to section IV.C of the MRP (Attachment E).

4. Fish and Invertebrate Monitoring Requirements

Many pollutants discharged into receiving waters have the potential to bioaccumulate and persist in the tissues of aquatic organisms, including marine fishes. Chemical pollutants that bioaccumulate tend to magnify in concentration as they pass through the aquatic food chain. Fish monitoring data is required to assess the human health risks for individuals who may consume fish and to assess trends of contaminants levels in the receiving water over time.

Marine aquatic invertebrates are excellent indicators of ecosystem health because they are ubiquitous, abundant, diverse, and typically sedentary. The growth, survival, and reproduction of aquatic invertebrates are all sensitive to declines in environmental health, making analysis of assemblage structure a good ecosystem monitoring tool.

Refer to section IV.D of the MRP (Attachment E).

5. Plume Tracking

As commissioned by the Discharger and funded by a grant from the NOAA, staff at the University of California San Diego, Scripps Institution of Oceanography conducted a study to determine the characteristic fates of the wastewater plume from the PLOO. The results of the study were summarized in the *Final Report Point Loma Ocean Outfall Plume Behavior Study*, dated September 14, 2012 (Plume Study). Recommendations from the Plume Study have been included in this Order/Permit.

Refer to section IV.B.2 of the MRP (Attachment E).

6. Receiving Water Monitoring Reports.

In a letter dated November 5, 2015, the Discharger requested modifications to the reporting requirements for the receiving water monitoring for PLOO and SBOO. Order No. R9-2009-0001 for PLOO and Order No. R9-2013-0006 as amended by Order No. R9-2014-0071 for SBOO required the Discharger to submit annual full assessment

[6] Order No. R9-2013-0006 as amended by Order No. R9-2014-0071, NPDES Permit No. CA0109045, *Waste Discharge Requirements for the City of San Diego South Bay Water Reclamation Plant Discharge to the Pacific Ocean via the South Bay Ocean Outfall*, Monitoring and Reporting Program (Attachment E)

reports, one annual report for PLOO and one annual report for SBOO. The Discharger also prepares separate annual full assessment reports for USIBWC[7] for their discharge through the SBOO. The Discharger requested these three annual reports be replaced with Interim Receiving Water Monitoring Reports (Interim Reports, executive summary) and Biennial Receiving Water Monitoring Reports (Biennial Reports, full assessment) submitted on alternating years. The Interim Reports will cover a single monitoring year (e.g., 2018, 2020), while the Biennial Reports will cover two years (e.g., 2016-2017, 2018-2019, 2020-2021). The Interim Receiving Water Monitoring Reports will cover only one year of receiving water monitoring (e.g., separate reports for calendar years 2016, 2018, and 2020) and shall be submitted every other year. The Biennial Receiving Water Monitoring Reports will provide a more thorough discussion, evaluation (e.g., detailed statistical analyses), and interpretation than the Interim Receiving Water Monitoring Reports, will cover two years of receiving water monitoring (e.g., biennial reports for calendar years 2016-2017, 2018-2019, and 2020-2021), and shall be submitted the opposite years as the Interim Receiving Water Monitoring Reports. These reports may be submitted as an integrated report covering the receiving water monitoring requirements for both the MRP for the PLOO (Attachment E) and the MRPs for the SBOO (Orders Nos. R9-2013-0006 and R9-2014-0009).

In the November 5, 2015 letter, the Discharger offered to provide a Biennial State of the Ocean Report (an oral report) to the San Diego Water Board following each submittal of the Biennial Reports. The oral report would focus on the effort completed during the past two years, the status of the receiving waters, and plans for future monitoring efforts. If the oral report is not feasible (e.g., board meetings are cancelled or have too many items), a written Biennial State of the Ocean Report may be provided in lieu of the oral report.

The requirements for Interim Reports, Biennial Reports, and Biennial State of the Ocean Reports on the Biennial Reports have been included in this Order/Permit.

Refer to section IV.E of the MRP (Attachment E).

7. Groundwater – Not Applicable

C. Regional Monitoring Requirements

Regional ocean water monitoring provides information about the sources, fates, and effects of anthropogenic contaminants in the coastal marine environment necessary to make assessments over large areas. The large scale assessments provided by regional monitoring describe and evaluate cumulative effects of all anthropogenic inputs and enable better decision making regarding protection of beneficial uses of ocean waters. Regional monitoring data assists in the interpretation of core monitoring studies by providing a more accurate and complete characterization of reference conditions and natural variability. Regional monitoring also leads to methods standardization and improved quality control through inter-calibration exercise. The coalitions implementing regional monitoring enable sharing of technical resources, trained personnel, and associated costs. Focusing these resources on regional issues and developing a broader understanding of pollutants effects in ocean waters enables the development of more rapid and effective response strategies. Based on all of these considerations the San Diego Water Board supports regional approaches to monitoring ocean waters.

[7] Order No. R9-2014-0009 as amended by Order No. R9-2014-0094, NPDES Permit No. CA0108928, *Waste Discharge Requirements for the United States Section of the International Boundary and Water Commission, South Bay International Wastewater Treatment Plant Discharge to the Pacific Ocean via the South Bay Ocean Outfall*, Monitoring and Reporting Program (Attachment E)

The Discharger shall, as directed by the San Diego Water Board, participate with other regulated entities, other interested parties, and the San Diego Water Board in development and implementation of new and improved monitoring and assessment programs for ocean waters in the San Diego Region and discharges to those waters.

Refer to section V of the MRP (Attachment E).

1. Kelp Bed Canopy Monitoring Requirements

   Kelp consists of a number of species of brown algae. Along the central and southern California coast, giant kelp (Macrocystis pyrifera) is the largest species colonizing rocky, and in some cases sandy, subtidal habitats. Giant kelp is an important component of coastal and island communities in southern California, providing food and habitat for numerous animals.

   Refer to section V.A of the MRP (Attachment E).

2. Southern California Bight Monitoring Program Participation Requirements

   The Discharger is required to participate in the SCCWRP, Southern California Bight Regional Monitoring Program, or any other coordinator named by the San Diego Water Board, pursuant to Water Code sections 13267 and 13383, and 40 CFR section 122.48. The intent of the Southern California Bight Regional Monitoring Program is to maximize the efforts of all monitoring partners using a more cost-effective monitoring design and to best utilize the pooled scientific resources of the Southern California Bight.

   During these coordinated sampling efforts, the Discharger's receiving water sampling and analytical effort, as defined in section IV of the MRP (Attachment E), may be reallocated to provide a regional assessment of the impact of the discharge of municipal wastewater to the Southern California Bight In that event, the San Diego Water Board and USEPA, Region IX shall notify the Discharger in writing that the requirement to perform the receiving water sampling and analytical effort defined in section IV of the MRP (Attachment E) is suspended for the duration of the reallocation. Anticipated modifications to the monitoring program will be coordinated so as to provide a more comprehensive picture of the ecological and statistical significance of monitoring results and to determine cumulative impacts of various pollution sources. The level of resources in terms of sampling and analytical effort redirected from the receiving water monitoring program required under section IV of the MRP (Attachment E) shall equal the level of resources provided to implement the regional monitoring and assessment program, unless the San Diego Water Board, USEPA, Region IX, and the Discharger agree otherwise. The specific scope and duration of the receiving water monitoring program reallocation and redirection shall be determined and set by the San Diego Water Board and USEPA, Region IX in consultation with the Discharger.

   Refer to section V.B of the MRP (Attachment E).

D. Special Studies Requirements

Climate Change Action Plan. Changing climate conditions may fundamentally alter the way publicly-owned treatment works are designed and operated. Climate change research indicates the overarching driver of change is increased atmospheric carbon dioxide (CO2) from human activity. The increased CO2 emissions trigger changes to climatic patterns, which increase the intensity of see level rise and coastal storm surges (Δ Sea Level), lead to more erratic rainfall and local weather patterns (ΔWeather Patterns), trigger a gradual warming of freshwater and ocean temperatures (Δ Water Temperature) and trigger changes to ocean water chemistry (Δ Water pH). This Order/Permit requires the Discharger to prepare and submit a Climate Change Action Plan (CCAP) within three years of the effective date of this Order/Permit. The CCAP shall be subject to the approval of the San Diego Water Board and USEPA, Region IX and shall be modified as directed by the San Diego Water Board and USEPA, Region IX.

E. Other Monitoring Requirements

Outfall and Diffuser Inspection

The annual inspection is required to ensure a periodic assessment of the integrity of the outfall pipes and ballasting system.

VIII. PUBLIC PARTICIPATION

The San Diego Water Board and USEPA, Region IX have jointly considered the issuance of WDRs in this Order/Permit that will serve as an NPDES permit for the Discharger. As a step in the adoption process of this Order/Permit for the Facility, the San Diego Water Board and USEPA, Region IX developed a Tentative Order/Permit and encouraged public participation in the joint proceedings to consider adoption of the Tentative Order/Permit in accordance with the requirements of 40 CFR section 124.10 and Water Code section 13167.5.

A. Notification of Joint Public Hearing and Public Comment Period

By electronic mail dated October 28, 2016, the USEPA, Region IX and San Diego Water Board notified the Discharger and interested agencies and persons of its intent to jointly consider adoption of this Tentative Order/Permit and of its intent to conduct a joint public hearing during a regularly scheduled San Diego Water Board meeting on December 14, 2016. The San Diego Water Board and USEPA, Region IX also provided notice that this Tentative Order/Permit was posted on the San Diego Water Board website and provided a period of at least 30 days for public review and comment. On October 28, 2016, notice of the joint public hearing and public comment period was also published in the San Diego Union Tribune, a daily newspapers within the area affected by the Facility. The San Diego Water Board will not be acting on the NPDES permit at the December 14, 2016 hearing, but will formally act on this Tentative Order/Permit at a subsequent Board meeting.

The public also had access to the joint meeting agenda including all supporting documents and any changes in meeting dates and locations through the San Diego Water Board's website at: http://www.waterboards.ca.gov/sandiego/

B. Written Comments and Responses

Interested persons were invited to submit written comments concerning the Tentative Order/Permit as provided through the notification process. Written comments or e-mailed comments were required to be received in the following addresses:

Executive Officer
San Diego Water Board
2375 Northside Drive, Suite 100,
San Diego, CA 92108.

Peter Kozelka
USEPA, Region IX
NPDES Permits Office (WTR 2-3)
75 Hawthorne Street
San Francisco, CA 94105

To be fully responded to by staff and considered by the San Diego Water Board and USEPA, Region IX, the written or e-mailed comments were due at the San Diego Water Board office and USEPA, Region IX office by 5:00 p.m. on Wednesday, December 21, 2016. The San Diego Water Board and USEPA, Region IX provided written responses to all timely received public comments on this Tentative Order/Permit and posted the response to comments document on the Board's website in advance of the public hearing date.

C. Public Hearing

The San Diego Water Board and USEPA, Region IX held a joint public hearing on this Tentative Order/Permit during its joint meeting on the following date and time and at the following location:

Date:	December 14, 2016
Time:	9:00 AM
Location:	San Diego Water Board Meeting Room, 2375 Northside Drive, San Diego California

Interested persons were invited to attend. At the joint public hearing, the San Diego Water Board and USEPA, Region IX heard and considered all comments and testimony pertinent to the discharge and the Tentative Order. For accuracy of the record, important testimony was requested in writing.

The San Diego Water Board will not be acting on the NPDES permit at the December 14, 2016 hearing, but will formally act on this Tentative Order/Permit at a subsequent Board meeting. Upon issuance of the final Order/Permit and 301(h)-modified NPDES permit decision and response to comments, the San Diego Water Board and USEPA, Region IX will notify the Discharger and persons who submitted written comments, or requested notice of the final decision.

D. Petition for State Water Board Review

Any aggrieved person may petition the State Water Board to review the decision of the San Diego Water Board regarding the final WDRs of this Order/Permit in accordance with Water Code section 13320 and the CCR, title 23, sections 2050 and following. The State Water Board must receive the petition by 5:00 p.m., 30 days after the adoption date of this Order/Permit, except that if the thirtieth day following the adoption date of this Order/Permit falls on a Saturday, Sunday, or State holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the State Water Board website at: http://www.waterboards.ca.gov/public_notices/petitions/water_quality or will be provided upon request.

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

E. Appeal of Federal Permit

When a final 301(h)-modified NPDES permit is issued by USEPA, Region IX, it will become effective 33 days following the date it is mailed to the Discharger, unless a request for review is filed. If a request for review is filed, only those permit conditions which are uncontested will go into effect pending deposition of the request for review. Requests for review must be filed within 33 days following the date the final permit is mailed and must meet the requirements of 40 CFR section 124.19. All requests for review should be addressed to the Environmental Appeals Board (EAB) as follows. Requests sent through the U.S. Postal Service (except by Express Mail) must be addressed to the EAB's mailing address, which is:

USEPA
Clerk of the Board
Environmental Appeals Board (MC 11 03B)
Ariel Rios Building
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460-0001

All filings delivered by hand or courier, including Federal Express, UPS, and U.S. Postal Express Mail, should be directed to the following address:

Environmental Appeals Board
USEPA
Colorado Building
1341 G Street, N.W., Suite 600
Washington, D.C. 20460

Those persons filing a request for review must have filed comments on the tentative decision and draft permit, or participated in the public hearing, except as provided in 40 CFR section 124.19. Otherwise, any such request for review may be filed only to the extent of changes from the draft permit to the final permit decision.

F. Public Access to Records

Records pertinent to the San Diego Water Board's and USEPA, Region IX's proceedings to adopt this Order/Permit including but not limited to the ROWD, public notices, draft and finalized versions of the Tentative Order, public comments received, Board responses to comments received, and other supporting documents are maintained by the San Diego Water Board and USEPA, Region IX. These records are available for public access Monday through Friday between the hours of 8:00 a.m. to 5:00 p.m. at the San Diego Water Board office and USEPA, Region IX office.

The San Diego Water Board website contains information and instructions on how to request access and obtain copies of these records at: http://www.waterboards.ca.gov/sandiego/about_us/contact_us/records.shtml.

Before making a request to view public records in the San Diego Water Board office you may wish to determine if the information is already available on the San Diego Water Board's website at http://www.waterboards.ca.gov/sandiego.

Copying of documents may also be arranged by calling the USEPA, Region IX office at 415-972-3524.

G. Register of Interested Persons

Any person interested in being placed on the mailing list for information regarding this Order/Permit should contact the San Diego Water Board and/or USEPA at the address below, reference this Facility or Order, and provide a name, address, email address (if available), and phone number.

San Diego Regional Water Quality Control Board
2375 Northside Drive, Suite 100
San Diego, CA 92108-2700
Phone (619) 516-1990
Fax (619) 516-1994
E-mail rb9_questions@waterboards.ca.gov

Peter Kozelka
USEPA, Region IX
NPDES Permits Office (WTR 2-3)
75 Hawthorne Street
San Francisco, CA 94105
Phone (415) 972-3448

H. Additional Information

Requests for additional information or questions regarding this Order/Permit should be directed to Joann Lim at 619-521-3362 or to the San Diego Water Board via e-mail at rb9_questions@waterboards.ca.gov; and Peter Kozelka of USEPA, Region IX at 415-972-3448.

ATTACHMENT G – OCEAN PLAN AND BASIN PLAN PROHIBITIONS

A. Ocean Plan Discharge Prohibitions

1. The Discharge of any radiological chemical, or biological warfare agent or high-level radioactive waste into the ocean is prohibited.
2. Waste shall not be discharged to designated Areas of Special Biological Significance (ASBS) except as provided in chapter III.E of the Ocean Plan.
3. Pipeline discharge of sludge to the ocean is prohibited by federal law; the discharge of municipal and industrial waste sludge directly to the ocean, or into a waste stream that discharges to the ocean, is prohibited. The discharge of sludge digester supernatant directly to the ocean, or to a waste stream that discharges to the ocean without further treatment, is prohibited.
4. The by-passing of untreated wastes containing concentrations of pollutants in excess of those of Table 2 or Table 1 of the Ocean Plan is prohibited.

B. Basin Plan Discharge Prohibitions

1. The discharge of waste to waters of the State in a manner causing, or threatening to cause a condition of pollution, contamination or nuisance as defined in Water Code section 13050, is prohibited.
2. The discharge of waste to land, except as authorized by WDRs or the terms described in Water Code section 13264 is prohibited.
3. The discharge of pollutants or dredged or fill material to waters of the U.S. except as authorized by an NPDES permit or a dredged or fill material permit (subject to the exemption described in Water Code section 13376) is prohibited.
4. Discharges of recycled water to lakes or reservoirs used for municipal water supply or to inland surface water tributaries thereto are prohibited, unless this San Diego Water Board issues an NPDES permit authorizing such a discharge; the proposed discharge has been approved by the State of California Department of Public Health and the operating agency of the impacted reservoir; and the discharger has an approved fail-safe long-term disposal alternative.
5. The discharge of waste to inland surface waters, except in cases where the quality of the discharge complies with applicable receiving water quality objectives, is prohibited. Allowances for dilution may be made at the discretion of the San Diego Water Board. Consideration would include streamflow data, the degree of treatment provided and safety measures to ensure reliability of facility performance. As an example, discharge of secondary effluent would probably be permitted if streamflow provided 100:1 dilution capability.
6. The discharge of waste in a manner causing flow, ponding, or surfacing on lands not owned or under the control of the discharger is prohibited, unless the discharge is authorized by the San Diego Water Board.
7. The dumping, deposition, or discharge of waste directly into waters of the State, or adjacent to such waters in any manner which may permit its being transported into the waters, is prohibited unless authorized by the San Diego Water Board.

8. Any discharge to a storm water conveyance system that is not composed entirely of storm water is prohibited unless authorized by the San Diego Water Board. [The federal regulations, title 40 of the Code of Federal Regulations (40 CFR) section 122.26(b)(13), define storm water as storm water runoff, snow melt runoff, and surface runoff and drainage. Section 122.26(b)(2) of 40 CFR defines an illicit discharge as any discharge to a storm water conveyance system that is not composed entirely of storm water except discharges pursuant to an NPDES permit and discharges resulting from firefighting activities.] [section 122.26 amended at 56 FR 56553, November 5, 1991; 57 FR 11412, April 2, 1992].
9. The unauthorized discharge of treated or untreated sewage to waters of the State or to a storm water conveyance system is prohibited.
10. The discharge of industrial wastes to conventional septic tank/ subsurface disposal systems, except as authorized by the terms described in Water Code section 13264, is prohibited.
11. The discharge of radioactive wastes amenable to alternative methods of disposal into the waters of the State is prohibited.
12. The discharge of any radiological, chemical, or biological warfare agent into waters of the State is prohibited.
13. The discharge of waste into a natural or excavated site below historic water levels is prohibited unless the discharge is authorized by the San Diego Water Board.
14. The discharge of sand, silt, clay, or other earthen materials from any activity, including land grading and construction, in quantities which cause deleterious bottom deposits, turbidity or discoloration in waters of the State or which unreasonably affect, or threaten to affect, beneficial uses of such waters is prohibited.

ATTACHMENT H – DILUTION MODEL INFORMATION

Initial dilution for the Point Loma Ocean Outfall (PLOO) was assessed using an U.S. Environmental Protection Agency (USEPA) modeling application, Visual Plumes (UM3). UM3 is an acronym for the three-dimensional Updated Merge model for simulating single and multi-port submerged discharges.

The USEPA Visual Plumes website is located at: https://www.epa.gov/exposure-assessment-models/visual-plumes.

The diffuser is a simple wye diffuser. The PLOO is 2,472 feet long and includes a wye (Y-shaped) diffuser with two 2,496 feet long diffuser legs. The diffuser has 416 discharge ports (208 on each leg).

A. Dilution

Initial dilution is defined in the Ocean Plan as follows:

> "The process which results in the rapid and irreversible turbulent mixing of wastewater with ocean water around the point of discharge. For a submerged buoyant discharge, characteristic of most municipal and industrial wastes that are released from the submarine outfalls, the momentum of the discharge and its initial buoyancy act together to produce turbulent mixing. Initial dilution in this case is completed when the diluting wastewater ceases to rise in the water column and first begins to spread horizontally."

Initial dilution, as defined by the Ocean Plan, is interpreted to be when the effluent plume either surfaces or reaches its initial trapping level (level at which the density of the effluent equals that of the ambient background and the effluent no longer has upward momentum based solely on buoyancy).

Dilution is a function of various characteristics of the diffuser, effluent, and ambient background. Dilution of an effluent plume into a receiving water is dependent on the flow of effluent, the momentum of the effluent flow into the receiving water (highly dependent on the effluent flow, shape, size, and number of diffuser ports), the buoyancy of the effluent within the receiving water (highly dependent between the delta between effluent and the ambient background of salinity and temperature), the placement of diffuser ports (space between diffuser ports and directional settings of each port), and the available volume and boundaries of the receiving water.

To effectively model dilution, Visual Plumes breaks data entry into the modeling system into three main components:

1. Diffuser and Effluent Characteristics;
2. An Ambient Profile; and
3. Special Settings

A summary of each of these components and the assumptions for each of these components while conducting the modeling effort is provided below.

B. Diffuser and Effluent Characteristics

Diffuser and effluent characteristics are necessary to determine the momentum of the effluent as it enters the receiving water, and the density of the effluent (which will affect it's buoyancy in the receiving water).

The input fields for the model are listed below with applicable explanations for the input into each field:

1. Port Diameter

   In the Report of Waste Discharge (ROWD) the City of San Diego (Discharger) provided a summary of the diffuser set up, including the number of ports and their respective diameters. Visual Plumes data entry limitations include only allowing a single input for "Port Diameter". Thus, a single port diameter must be determined. This was done by taking an average port size (as centimeter cubed, cm^3) of all the ports as summarized below:

   A port diameter of 10.66 centimeter was entered.

2. Port Elevation

   The port elevation (or height of the port from the sea bed) was not specified in the ROWD. Diffuser drawings were provided by the facility upon request. On October 27, 2008 the Discharger provided a report on dilution indicating that the elevation of the ports was seven feet. Based on this information, a port elevation of seven feet was entered.

3. Vertical Angle

   The vertical angle is defined in the Visual Plumes manual (4th Edition) as the discharge angle relative to the horizontal with zero being horizontal, 90 being vertical upward, and -90 being vertically downward. The ROWD indicates that the ports are located on the diffuser facing opposing directions, 180 degrees away from each other. A data entry limitation of Visual Plumes is that only one vertical angle may be entered. The Visual Plumes manual suggests that a fairly simple and accurate approach to modeling such a situation is to treat the diffuser as if all ports are on one side with half the spacing. In the October 27, 2008 report the Discharger contends that modeling all the ports on one side and reducing the spacing in half over simplifies the modeling for the PLOO and results in the combined outfall plume from all outfall ports being squeezed into a significantly reduced volume. The Discharger further states that because the Ocean Plan requires initial dilution be assessed on the basis of zero ocean currents and the PLOO's high horizontal discharge velocities, no cross-merging of the plumes from either side of the diffuser will occur prior to initial dilution. Using UM3 modeling the Discharger demonstrates that the plume does not cross the diffuser centerline (which would indicate merging). A single vertical angle of 0 was used in the model.

   Because the plumes from each side of the diffuser do not merge, a single representative side of the diffuser can be modeled and assumed for each individual plume on each side of the diffuser. To accurately calculate proper effluent velocity, the total flow through the diffuser must be reduced in half to accurately represent flow through a single side of the diffuser. An effluent flow of 120 million gallons per day (MGD) was used.

4. Horizontal Angle

   The horizontal angle is defined in the Visual Plumes manual as the angle of the diffuser relative to the x-coordinate. Assuming that the default units (degrees) are used, zero is in the direction of the x-coordinate (flow towards the east) and 90 in the direction of the y-coordinate (flow towards the north). The ROWD indicates that the two legs of the wye diffuser extend approximately 150 degrees in separate directions (roughly one towards 255 degrees and one towards 75 degrees). A data entry limitation of Visual Plumes is that only one vertical angle may be entered. A middle direction was chosen, 180 degrees was entered into the data field. This field is important when considering currents and

stream flow, both of which are not considered when modeling for ocean discharges to which the Ocean Plan is applicable. Thus, this data entry field was not expected to have an effect on the final initial dilution.

5. Number of Ports

   Based on the number of ports specified in the ROWD (and summarized in the Port Diameter portion of this Attachment), 208 was entered into the data field to account for each side of the diffuser.

6. Port Spacing

   The ROWD indicated that the ports were approximately 7.33 meters apart. This value did not include an additional discharge port located on the diffuser just upstream of the wye structure. Thus using the total distance of the length of the diffuser on which the ports are located, the port spacing was recalculated and determined to be 7.3 meters.

7. Acute Mix Zone/Chronic Mix Zone

   This value is not relevant to the final initial dilution calculations.

8. Port Depth

   The ROWD indicates that the length of diffuser on which diffuser ports are located, is between 93.3 meters to 95.5 meters deep under the ocean surface. An average between these two values was taken, and 94.35 meters was entered into the data field.

9. Effluent Flow

   The 301(h)-variance-based flow for the Discharger is 205 MGD. The Discharger currently discharges a monthly average flow significantly below this value which would result in a greater (and less conservative) dilution value. Because the Discharger will continue to be capable of discharging up to 205 MGD, and this is the most conservative value to use while calculating dilution, 205 MGD was considered to be the applicable discharge volume through the outfall. Due to the modeling limitations explained in section B.3 of this summary, half the flow was used to represent the appropriate effluent flow from each side of the diffuser.

10. Effluent Conductivity

    Conductivity data was available from January 2002 through December 2007. Higher levels of salinity in the effluent result in a less buoyant effluent. The highest monthly average conductivity was used, 3.125 millimhos per centimeter (mmhos/cm) was entered into the data field.

11. Effluent Temperature

    Temperature data was available from January 2002 through December 2007. The smaller the difference between the effluent and receiving water, the less dilution is likely to occur. Receiving water temperatures are significantly lower than the effluent temperature at Discharge Point No. 001. Thus, a lower effluent temperature is likely to result in lower dilution. The lowest monthly average temperature of 21.1 degrees Celsius (℃) was entered into the data field.

12. Effluent Concentration

    This data field is for calculating "effective dilution" and does not have an effect on the final initial dilution calculated. However a value must be entered into this field for the model to run, so "20 parts per million (ppm)" was chosen.

C. Ambient Profile

An ambient profile is a conservative profile of the receiving water. This profile includes components of density (temperature and salinity), current (which is always set to zero when running models for the Ocean Plan), and a far-field diffusion coefficient. The ambient profile takes into consideration the natural stratification of the receiving waters, allowing for the entry of various data points at varying depths. The model is capable (and this feature was utilized during the modeling effort for PLOO) of extrapolating data for the depths that were not entered based on the data that is entered.

Receiving water monitoring of temperature and salinity was established during the current permit term at the following monitoring locations which are representative of the receiving water at the point of discharge:

- F-029
- F-030
- F-031

Monitoring was conducted quarterly (January, April, July, and October).

Part C.3.d of the Ocean Plan states:

> "For the purpose of this Plan, minimum initial dilution is the lowest average initial dilution within any single month of the year."

Using data from 2003 through 2007, the most conservative monthly profile was determined to be January. In the October 27, 2008 report from the Discharger, the Discharger provided additional depth data for January 2003, 2004, 2005, 2006, and 2007. The following dilutions for January were calculated by the Discharger using Visual Plumes and all available data:

Year	Dilution
January 2003	228.3
January 2004	249.8
January 2005	244.1
January 2006	241.1
January 2007	225.5

Based on the Discharger's results, the ambient profile for January 2007 was the most conservative. The following ambient profile for January 2007 was used to calculate the final initial dilution by the San Diego Water Board using Visual Plumes:

Depth (m)	Temperature (℃)	Density (sigma theta)
1	14.86	24.88
7	14.85	24.89
13	14.80	24.89
19	14.74	24.91
25	14.57	24.94
31	14.27	25.00
37	13.67	25.11
43	13.25	25.22
49	12.95	25.29
55	12.59	25.39
61	12.29	25.45
67	11.88	25.51
73	11.77	25.55
75	11.75	25.55
81	11.60	25.61
87	11.46	25.70
93	11.29	25.77
97	11 03	25.86

Data was extrapolated for depths at which no data was available.

Far-field Diffusion Coefficient

The Visual Plumes manual recommends the use of 0.0003 m0.67/s2. This value was used in the data field as a constant (not extrapolated as the ambient temperature and density were).

D. Special Settings

1. UM3 Tidal Pollutant Buildup Parameters

   This field is used to calculate "effective dilution," which was irrelevant to the PLOO modeling effort.

2. Diffuser Port Contraction Coefficient

   The shape of the diffuser ports was not specified in the ROWD. Upon request the Discharger indicated that the diffuser ports are sharp-edged cylinders. Thus, a diffuser port contraction coefficient of 0.61 was used as recommended in the Visual Plumes manual.

3. Standard Light Adsorption Coefficient

   The value of 0.16 is recommended in the Visual Plumes manual as a conservative value. This is not relevant to final initial dilution, and is for the Mancini bacteria model applications of the model.

4. Far-field Increment (meter)

   This value controls the number of lines output by the Brooks far-field algorithm. A small value produces more lines and graphic output than large values. A value between 100 to 1000 m is recommended by the Visual Plumes manual. This field has little effect on the final calculated initial dilution, a value of 100 meters was used in the data field.

5. UM3 Aspiration Coefficient

   This is the rate at which ambient fluid is entrained (diluted) into the plume. The default value of 0.1 is an average that is rarely changed. A larger value causes more rapid plume spreading and affects other characteristics, like plume rise. The default value of 0.1 was used in the data field.

6. Far-field Diffusivity Option

   As recommended by the Visual Plumes manual, a 4/3 Power Diffusivity was chosen for this field because the discharge is occurring in open water.

E. Final Results

Four model runs were conducted using the data input specified above, one for each ambient profile (January, April, July, and October). This provided seasonal dilution values (expressed as trapping levels) when considering worst case scenarios (most conservative- high flow, high effluent salinity, low effluent temperature, etc.) A summary of the modeling result is included below and has been copied directly from the Visual Plumes text output.

The local maximum height of rise for January 2007 was calculated to be 227.1:1 parts seawater per parts wastewater (227.2:1) (as compared to 225.5 provided by the Discharger). The dilution provided in Order No. R9-2002-0025 is 204:1. The Discharger has recommended retaining, the previously applied initial dilution value of 204:1 as more appropriate and representative of PLOO minimum initial dilution. Because the Discharger has not requested additional dilution, a dilution of 204:1 is applied to the discharge from PLOO without consideration of additional dilution. Should the San Diego Water Board determine, pursuant to title 40 of the Code of Federal Regulations (40 CFR) section 174.55, that a more stringent initial dilution value is appropriate to assure compliance with water quality standards, this Order/Permit will be revised to reflect that initial dilution value.

UM3. *11/14/2008* 12:14:13 PM
Case 1; ambient file C:\Plumes\January additional data.001.db; Diffuser table record 2: ----------

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-den	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	*m/s*	deg	psu	C	kglkg	s-1	*m/s*	deg	*mO.67/s2*	sigma-T
0.0	0.0	0.0	32.65	14.86	10.0	2.0	2.0	40.0	0.0003	24.22
1.0	0.0	0.0	32.66	14.86	10.0	2.0	2.0	40.0	0.0003	24.22
7.0	0.0	0.0	32.67	14.85	10.0	2.0	2.0	40.0	0.0003	24.23
13.0	0.0	0.0	32.67	14.8	10.0	2.0	2.0	40.0	0.0003	24.24
19.0	0.0	0.0	32.69	14.74	10.0	2.0	2.0	40.0	0.0003	24.28
25.0	0.0	0.0	32.73	14.57	10.0	2.0	2.0	40.0	0.0003	24.34
31.0	0.0	0.0	32.81	14.27	10.0	2.0	2.0	40.0	0.0003	24.46
37.0	0.0	0.0	32.95	13.67	10.0	2.0	2.0	40.0	0.0003	24.7
43.0	0.0	0.0	33.09	13.25	10.0	2.0	2.0	40.0	0.0003	24.89
49.0	0.0	0.0	33.18	12.95	10.0	2.0	2.0	40.0	0.0003	25.02
55.0	0.0	0.0	33.31 .	12.59	10.0	2.0	2.0	40.0	0.0003	25.19
61.0	0.0	0.0	33.39	12.29	10.0	2.0	2.0	40.0	0.0003	25.31
67.0	0.0	0.0	33.47	11.88	10.0	2.0	2.0	40.0	0.0003	25.45
73.0	0.0	0.0	33.52	11.77	10.0	2.0	2.0	40.0	0.0003	25.51
75.0	0.0	0.0	33.52	11.75	10.0	2.0	2.0	40.0	0.0003	25.51
81.0	0.0	0.0	33.6	11.6	10.0	2.0	2.0	40.0	0.0003	25.6
87.0	0.0	0.0	33.71	11.46	10.0	2.0	2.0	40.0 .	0.0003	25.71
93.0	0.0	0.0	33.8	11.29	10.0·	2.0	2.0	40.0	0.0003	25.82
97.0	0.0	0.0	33.92	11.03	10.0	2.0	2.0	40.0	0.0003	25.95

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	Spacing	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-con	Temp	Polutnt
(cm)	(ft)	(deg)	(deg)	()	(m)	(m)	(m)	(m)	(MGD)	(mmho/cm)	(C)	(ppm)
10.66	7.0	0.0	180.0	208.0	7.3	400.0	400.0	94.35	120.0	3.125	22.6	20.0

Simulation:

Froude number: 31.49; effluent density (sigma-T) -0.827; effluent velocity 4.643(m/s);

Step	Depth (m)	Amb-cur *(m/s)*	P-dia (cm)	Pollutant (ppm)	4/3Eddy (ppm)	Dilutn ()	x-posn (m)	y-posn (m)
0	94.35	0.0	8.326	20.0	20.0	1.0	-0.0	0.0; stream limit
20	94.35	0.0	12.2	3.626E+6	3.626E+6	1.473	-0.0977	0.0; reached
40	94.35	.0	18.07	6.205E+6	6.205E+6	2.176	-0.244	0.0;
60	94.35	0.0	26.8	8.072E+6	8.072E+6	3.221·	-0.461	0.0;
80	94.34	0.0	39.77	9.350E+6	9.350E+6	4.774	-0.784	0.0;
100	94.32	0.0	59.0	1.001E+7	1.001E+7	7.082	-1.264	0.0;
120	94.25	0.0	87.3	1.017E+7	1.017E+7	10.51	-1.974	0.0;
140	94.02	0.0	127.5	1.018E+7	1.018E+7	15.59	-2.996	0.0;
160	93.58	0.0	167.4	1.013E+7	1.013E+7	21.24	-4.044	0.0;
180	92.91	0.0	203.4	1.012E+7	1.012E+7	27.53	-5.037	0.0;
200	91.81	0.0	243.0	1.014E+7	1.014E+7	36.27	-6.113	0.0;
220	89.8	0.0	299.3	1.019E+7	1.019E+7	51.64	-7.415	0.0;
240	86.73	0.0	379.1	1.019E+7	1.019E+7	76.73	-8.754	0.0;
260	82.64	0.0	492.1	1.012E+7	1.012E+7	114.0	-10.03	0.0;
280	77.09	0.0	680.2	-:9.058E+14	-9.058E+14	169.4	-11.41	0.0;
281	76.76	0.0	693.5	4.435E+15	4.435E+15	172.8	-11.49	0.0; trap level;
284	75.73	0.0	737.6	-7.016E+17	-7.016E+17	183.4	-11.73	0.0; merging;
300	69.22	0.0	1402.1	-1.040E+33	-1.040E+33	225.1	-13.6	0.0;
301	69.1	0.0	1445.7	3.961 E+33	3.961 E+33	225.5	-13.65	0.0; begin
320	68.05	0.0	2153.4	-3.741E+37	-3.741E+37	227.1	-14.17	0.0; overlap;
340	67.73	0.0	2782.0	-1.321 E+24	-1.321 E+24	227.1	-14.44	0.0;
360	67.59	0.0	3293.5	5.591 E+6	5.591 E+6	227.2	-14.6	0.0;
380	67.53	0.0	3670.1	1.000E+7	1.000E+7	227.2	-14.73	0.0;
400	67.5	0.0	3898.7	1.000E+7	1.000E+7	227.2	-14.83	0.0;
418	67.49	0.0	3971.5	1.000E+7	1.000E+7	227.2	-14.92	0.0; local;
420	67.49	0.0	3971.8	1.000E+7	1.000E+7	227.2	-14.93	0.0; maximum
440	67.51	0.0	3888.3	1.000E+7	1.000E+7	227.2	-15.02	0.0; rise or fall
460	67.54	0.0	3653.7	1.000E+7	1.000E+7	227.2	-15.13	0.0;
480	67.62	0.0	3279.6	1.000E+7	1.000E+7	227.2	-15.26	0.0;
500	67.78	0.0	2784.2	1.000E+7	1.000E+7	227.2	-15.43	0.0;
520	68.14	0.0	2192.9	1.000E+7	1.000E+7	227.3	-15.7	0.0;
540	69.32	0.0	1553.6	1.001E+7	1.001E+7	228.8	-16.25	0.0;
545	70.04	0.0	1407.3	1.007E+7	1.007E+7	231.3	-16.5	0.0; end overlap;
560	78.67	0.0	1207.8	-9.409E+20	-9.409E+20	273.4	-18~55	0.0; trap level;
567	82.43	0.0	1785.2	3.555E+28	3.555E+28	291.9	-19.45	0.0; begin;
580	83.22	0.0	2673.0	-5.295E+31	-5.295E+31	292.9	-19.75	0.0; overlap
600	83.55	0.0	3850.3	-1.317E+16	-1.317E+16	292.9	-19.93	0.0;
605	83.58	0.0	4118.3	-8.117E+12	-8.117E+12	292.9	-19.96	0.0; bottom hit;
620	83.66	0.0	4851.8	3.657E+6	3.657E+6	293.0	-20.03	0.0;
640	83.71	0.0	5647.2	1.000E+7	1.000E+7	293.0	-20.1	0.0;
660	83.73	0.0	6209.4	1.000E+7	1.000E+7	293.0	-20.15	0.0;
680	83.74	0.0	6519.6	1.000E+7	1.000E+7	293.0	-20.2	0.0;
692	83.74	0.0	6580.5	1.000E+7	1.000E+7	293.0	-20.23	0.0; local max rise or fall

4/3 Power Law. Farfield dispersion based on wastefield width of 582.63 m

conc dilutn (ppm)	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)
1.00E+ 7	294.3	583.8	100.0	0.0111	10.0
1.00E+7	294.0	585.3	200.0	0.025	10.0
1.00E+7	293.9	586.8	300.0	0.0389	10.0
1.00E+7	293.8	588.4	400.0	0.0527	10.0

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ATTACHMENT I – GENERIC TOXICITY REDUCTION EVALUATION (TRE) WORK PLAN

Information and Data Acquisition

A. Operations and performance review
   1. NPDES permit requirements
      a. Effluent limitations
      b. Special conditions
      c. Monitoring data and compliance history
   2. POTW design criteria
      a. Hydraulic loading capacities
      b. Pollutant loading capacities
      c. Biodegradation kinetics calculations/assumptions
   3. Influent and effluent conventional pollutant data
      a. Biochemical oxygen demand (5-Day @ 20℃) (BOD_5)
      b. Chemical oxygen demand (COD)
      c. Suspended solids (SS)
      d. Ammonia
      e. Residual chlorine
      f. pH
   4. Process control data
      a. Primary sedimentation - hydraulic loading capacity and BOD5 and SS removal
      b. Activated sludge - Food-to-microorganism (F/M) ratio, mean cell residence time (MCRT), mixed liquor suspended solids (MLSS), sludge yield, and BOD_5 and COD removal
      c. Secondary clarification - hydraulic and solids loading capacity, sludge volume index and sludge blanket depth
   5. Operations information
      a. Operating logs
      b. Standard operating procedures
      c. Operations and maintenance practices
   6. Process sidestream characterization data
      a. Sludge processing sidestreams
      b. Tertiary filter backwash
      c. Cooling water

7. Combined sewer overflow (CSO) bypass data
    a. Frequency
    b. Volume
8. Chemical coagulant usage for wastewater treatment and sludge processing
    a. Polymer
    b. Ferric chloride
    c. Alum

B. Publicly-owned treatment works (POTW) influent and effluent characterization data
1. Toxicity
2. Priority pollutants
3. Hazardous pollutants
4. SARA 313 pollutants
5. Other chemical-specific monitoring results

C. Sewage residuals (raw, digested, thickened and dewatered sludge and incinerator ash) characterization data
1. EP toxicity
2. Toxicity Characteristic Leaching Procedure (TCLP)
3. Chemical analysis

D. Industrial waste survey (IWS)

1. Information on Industrial Users (IUs) with categorical standards or local limits and other significant non-categorical IUs
2. Number of IUs
3. Discharge flow
4. Standard Industrial Classification (SIC) code
5. Wastewater flow
    a. Types and concentrations of pollutants in the discharge
    b. Products manufactured
6. Description of pretreatment facilities and operating practices
7. Annual pretreatment report
8. Schematic of sewer collection system
9. POTW monitoring data
    a. Discharge characterization data
    b. Spill prevention and control procedures
    c. Hazardous waste generation
10. IU self-monitoring data
    a. Description of operations
    b. Flow measurements
    c. Discharge characterization data
    d. Notice of sludge loading
    e. Compliance schedule (if out of compliance)
11. Technically based local limits compliance reports
12. Waste hauler monitoring data manifests
13. Evidence of POTW treatment interferences (i.e., biological process inhibition)