



California Regional Water Quality Control Board

Central Coast Region



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Arnold Schwarzenegger
Governor

ORDER NO. R3-2010-0043
NPDES NO. CA 0048194

WASTE DISCHARGE REQUIREMENTS FOR THE CITY OF SANTA CRUZ WASTEWATER TREATMENT PLANT

The following Discharger is subject to waste discharge requirements as set forth in this Order.

Table 1. Discharger Information

Discharger	City of Santa Cruz
Name of Facility	Wastewater Treatment Plant
Facility Address	110 California Street
	Santa Cruz, CA 95060
	Santa Cruz County
The U.S. Environmental Protection Agency (USEPA) and the Regional Water Quality Control Board have classified this discharge as a major discharge.	

Discharges by the City of Santa Cruz Wastewater Treatment Facility from the discharge point identified below are subject to waste discharge requirements as set forth in this Order.

Table 2. Discharge Location

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
001	Secondary Treated Wastewater and Plant Stormwater.	36 ° , 56 ' , 08 " N	122 ° , 04 ' , 08 " W	Pacific Ocean (Monterey Bay)

Table 3. Administrative Information

This Order was adopted by the Regional Water Quality Control Board on:	December 9, 2010
This Order shall become effective on:	December 9, 2010
This Order shall expire on:	December 9, 2015
The Discharger shall file a Report of Waste Discharge in accordance with title 23, California Code of Regulations, as application for issuance of new waste discharge requirements no later than:	<u>180 days before the Order's expiration date</u>

IT IS HEREBY ORDERED, that Order No. R3-2005-0003 is rescinded upon the effective date of this Order except for enforcement purposes, and, to meet the provisions contained in division 7 of the California Water Code (commencing with section 13000) and regulations adopted thereunder, and the provisions of the federal Clean Water Act (CWA) and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order.

Item No. 13, Attachment 1
December 9, 2010 Meeting
Reissue NPDES Permit (WDRs)
for City of Santa Cruz WWTP

I, Roger Briggs Executive Officer, do hereby certify that this Order, with all attachments, is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Coastal Region, on December 9, 2010.

Roger W. Briggs, Executive Officer

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I. FACILITY INFORMATION

The following Discharger is subject to waste discharge requirements as set forth in this Order.

Table 4. Facility Information

Discharger	City of Santa Cruz
Name of Facility	Wastewater Treatment Plant
Facility Address	110 California Street
	Santa Cruz, CA 95060
	Santa Cruz County
Facility Contact, Title, and Phone	Dan Seidel, Plant Superintendent, (831)420-6044
Mailing Address	110 California Street, Santa Cruz, CA 95060
Type of Facility	POTW
Facility Design Flow	17 million-gallons-per-day (MGD, average dry weather flow)
	81 MGD (peak wet weather flow)

II. FINDINGS

The California Water Resources Control Board, Central Coast Region (hereinafter the Regional Water Board), finds:

A. Background. The Discharger is currently discharging pursuant to Order No. R3-2005-0003 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0048194. The Discharger submitted a Report of Waste Discharge, dated February 18, 2010, and applied for an NPDES permit renewal to discharge up to an average dry-weather flow of 17 MGD of treated wastewater from the Discharger's Wastewater Treatment Facility. The application was deemed complete on February 18, 2010.

For the purposes of this Order, references to the "discharger" or "Permittee" in applicable federal and state laws, regulations, plans, or policy are held to be equivalent to references to the Discharger herein.

B. Facility Description. The Discharger owns and operates a wastewater collection, treatment, and disposal system which provides sewerage service for the City of Santa Cruz and areas of the Santa Cruz County Sanitation District. The City of Scotts Valley adds its treated wastewater to the Discharger's effluent for combined disposal. The collection system comprises 185 miles of gravity sanitary sewer lines, 4.2 miles of force main, and 54 pump stations, all of which discharge untreated municipal wastewater to the treatment plant. The treatment plant also treats dry weather flows from Neary Lagoon, septage from unsewered areas, and grease trap pumping. The treatment plant's design, average dry weather treatment capacity is 17 MGD, with a design peak wet weather treatment capacity of 81 MGD. In 2009, average monthly influent flow ranged from 8.1 to 13.9 MGD and averaged 9.2 MGD. Average monthly effluent flow ranged between 7.1 and 12.5 MGD and averaged 8.1 MGD.

The treatment plant comprises screening, aerated grit removal, primary sedimentation, biological tower trickling filters, solids contact stabilization (activated sludge), and

secondary clarification, and disinfection with ultraviolet light. Biosolids are processed by anaerobic digestion, and belt filter press dewatering. Stabilized solids are transported to the San Joaquin Valley and applied to farmlands. Methane gas produced by anaerobic digestion is used to generate power and heat the treatment plant's digesters. Treated wastewater is discharged through a 12,250-foot outfall/diffuser system to Monterey Bay.

Discharge of secondary treated wastewater currently occurs approximately one mile from the shoreline in Monterey Bay at a depth of approximately 100 feet. The diffuser section of the outfall system is 424 feet in length with 54, 4-inch diffuser ports and provides a minimum initial dilution of 139:1 (parts seawater to parts effluent), as determined by the State Water Resources Control Board.

Stormwater runoff due to rainfall which falls upon the treatment plant and which may be exposed to on-site pollutant sources is routed to the plant's headworks for treatment. This permit therefore regulates stormwater discharges at this facility and complies with federal regulations regarding stormwater management.

- C. Legal Authorities.** This Order is issued pursuant to CWA section 402 and implementing regulations adopted by the USEPA and chapter 5.5, division 7 of the California Water Code (commencing with section 13370). It shall serve as an NPDES permit for point source discharges from this facility to surface waters. This Order also serves as Waste Discharge Requirements (WDRs) pursuant to article 4, chapter 4, division 7 of the California Water Code (commencing with section 13260).
- D. Background and Rationale for Requirements.** The Regional Water Board developed the requirements in this Order based on information submitted in the application, through monitoring and reporting programs, and other available information. The Fact Sheet (Attachment F), which contains background information and rationale for Order requirements, is incorporated into this Order and constitutes Findings for this Order. Attachments A through E are also incorporated into this Order.
- E. California Environmental Quality Act (CEQA).** Pursuant to Water Code section 13389, this action to adopt an NPDES permit is exempt from the provisions of the CEQA, Public Resources Code sections 21100-21177.
- F. Technology-Based Effluent Limitations.** CWA Section 301 (b) and USEPA's NPDES regulations at 40 CFR 122.44 require that permits include, at a minimum, conditions meeting applicable technology-based requirements and any more stringent effluent limitations necessary to meet applicable water quality standards. Discharges authorized by this Order must meet minimum federal technology-based requirements based on Secondary Treatment Standards established at 40 CFR Part 133 and Best Professional Judgment (BPJ) in accordance with 40 CFR 125.3. A detailed discussion of development of technology-based effluent limitations is included in the Fact Sheet (Attachment F).
- G. Water Quality-Based Effluent Limitations.** CWA Section 301 (b) and NPDES regulations at 40 CFR 122.44 (d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards.

NPDES regulations at 40 CFR 122.44 (d) (1) (i) mandate 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 is established for a pollutant, but there is no numeric criterion or objective for the pollutant, water quality-based effluent limitations (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 at 40 CFR 122.44 (d) (1) (vi).

H. Water Quality Control Plans. The Regional Water Board has adopted a *Water Quality Control Plan for the Central Coast Region* (the Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for receiving waters within the Region. To address ocean waters, the Basin Plan incorporates by reference the *Water Quality Control Plan for Ocean Waters of California* (the Ocean Plan).

The Basin Plan implements State Water Board Resolution No. 88-63, which establishes State policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply (MUN). Because TDS levels of marine waters exceed 3000 mg/L, such waters are not considered suitable for municipal or domestic supply and therefore meet an exception to Resolution No. 88-63. Beneficial uses established by the Basin Plan for coastal waters between Soquel Point and the Salinas River are presented in Table 5, below.

Table 5. Basin Plan Beneficial Uses for the Pacific Ocean

Discharge Point	Receiving Water	Beneficial Use(s)
001	Pacific Ocean (Monterey Bay)	<ul style="list-style-type: none"> • Water Contact and Non-Contact Recreation • Industrial Service Supply • Navigation • Shellfish Harvesting • Commercial and Sport Fishing • Marine Habitat • Rare, Threatened, or Endangered Species • Wildlife Habitat

To protect the beneficial uses, the Basin Plan establishes water quality objectives and a program of implementation. Requirements of this Order implement the Basin Plan.

I. California Ocean Plan

The State Water Board adopted the *Water Quality Control Plan for the Ocean Waters of California, California Ocean Plan* (Ocean Plan) in 1972 and amended it in 1978, 1983, 1988, 1990, 1997, 2000, and 2005. The State Water Board adopted the latest amendment on April 21, 2005 and it became effective on February 14, 2006. The Ocean Plan is applicable, in its entirety, to point source discharges to the Ocean. The Ocean Plan identifies the following beneficial uses of ocean waters of the State.

Table 6. Ocean Plan Beneficial Uses

Discharge Point	Receiving Water	Beneficial Uses
001	Pacific Ocean (Monterey Bay)	<ul style="list-style-type: none"> • 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 Migration • Fish Spawning and Shellfish Harvesting

To protect beneficial uses, the Ocean Plan establishes water quality objectives and programs of implementation to achieve and maintain those objectives. Requirements of this Order implement the Ocean Plan.

- J. 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. [65 Fed. Reg. 24641 (April 27, 2000), codified at 40 CFR 131.21] 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.
- K. Stringency of Requirements for Individual Pollutants.** This Order contains both technology-based and water quality-based effluent limitations for individual pollutants. As discussed in section IV. B of the Fact Sheet, the Order establishes technology-based effluent limitations for total organic carbon (TOC), total suspended solids (TSS), settleable solids, oil and grease, turbidity, and pH for Discharge Point 001. These technology-based limitations implement the minimum, applicable federal technology-based requirements. The Order also contains effluent limitations in addition to the minimum, federal technology-based requirements, necessary to meet applicable water quality standards. These limitations are not more stringent than required by the CWA.

WQBELs have been scientifically derived to implement water quality objectives that protect beneficial uses. The water quality objectives and beneficial uses implemented by this Order are contained in the Basin Plan and the 2005 Ocean Plan, which was approved by USEPA on February 14, 2006. These water quality objectives and beneficial uses are the applicable water quality standards pursuant to 40 CFR 131.21 (c) (1) and have been approved pursuant to federal law. WQBELs for toxic pollutants are derived using procedures established by the Ocean Plan.

All beneficial uses and water quality objectives contained in the Basin Plan and Ocean 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 131.21 (c) (1). Collectively, this Order’s restrictions on individual pollutants are no more stringent than required to implement the requirements of the CWA.

- L. Antidegradation Policy.** NPDES regulations at 40 CFR 131.12 require that State water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California’s antidegradation policy in State Water Board Resolution No. 68-16, which incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that the existing quality of waters be maintained unless degradation is justified based on specific findings. The Regional Water Board’s Basin Plan implements and incorporates by reference both the State and federal antidegradation policies. As discussed in detail in the Fact Sheet, the permitted discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution No. 68-16.
- M. Anti-Backsliding Requirements.** CWA Sections 402 (o) (2) and 303 (d) (4) and NPDES regulations at 40 CFR 122.44 (l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions where limitations may be relaxed. As discussed in the Fact Sheet, effluent limitations and other requirements established by this Order satisfy applicable anti-backsliding provisions of the CWA and NPDES regulations.
- N. Endangered Species Act.** This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code sections 2050 to 2097) or the federal Endangered Species Act (16 U.S.C.A. sections 1531 to 1544). This Order requires compliance with effluent limits, receiving water limits, and other requirements to protect the beneficial uses of waters of the State. The Discharger is responsible for meeting all requirements of State and federal law regarding threatened and endangered species.
- O. Monitoring and Reporting.** NPDES regulations at 40 CFR 122.48 require that all NPDES permits specify requirements for recording and reporting monitoring results. California Water Code sections 13267 and 13383 authorize the Regional Water Board to require technical and monitoring reports. The Monitoring and Reporting Program (Attachment E) establishes monitoring and reporting requirements to implement federal and State requirements.
- P. Standard and Special Provisions.** Standard Provisions, which apply to all NPDES permits in accordance with NPDES regulations at 40 CFR 122.41, and additional conditions applicable to specified categories of permits in accordance with 40 CFR 122.42, are provided in Attachment D. The Central Coast Water Board has also included in this Order special provisions applicable to the Discharger. A rationale for the special provisions contained in this Order is provided in the attached Fact Sheet.
- Q. Provisions and Requirements Implementing State Law.** The provisions/requirements in subsections IV.B, IV.C, and V.B of this Order 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.

- R. Notification of Interested Parties.** The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Details of notification are provided in the Fact Sheet accompanying this Order.
- S. Consideration of Public Comment.** The Regional Water Board, in a public meeting, heard and considered all comments pertaining to the discharge. Details of the Public Hearing are provided in the Fact Sheet of this Order.
- T. Privilege to Discharge.** A permit and the privilege to discharge waste into waters of the State are conditional upon the discharge complying with provisions of division 7 of the California Water Code and of the Clean Water Act (as amended or as supplemented by implementing guidelines and regulations); and with any more stringent effluent limitations necessary to implement water quality control plans, to protect beneficial uses, and to prevent nuisances.

III. DISCHARGE PROHIBITIONS

- A.** Discharge of treated wastewater to the Pacific Ocean Bay at a location other than as described by this Order at 36° 56' 08" N. Latitude, 122° 04' 08" W. Longitude is prohibited.
- B.** Discharge of any waste in any manner other than as described by this Order, excluding stormwater regulated by General Permit No. CAS000001 (Waste Discharge Requirements for Discharges of Stormwater Associated with Industrial Activities), and excluding the reuse of treated wastewater in accordance with California Water Code sections 13500 – 13577 (Water Reclamation) and California Code of Regulations title 22, sections 60301 – 60357 (Water Recycling Criteria), is prohibited.
- C.** The discharge of any radiological, chemical, or biological warfare agent or high-level radioactive waste into the ocean is prohibited.
- D.** Federal law prohibits the discharge of sludge by pipeline to the Ocean. The discharge of municipal or 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, without further treatment, directly to the Ocean or to a waste stream that discharges to the Ocean, is prohibited.
- E.** The overflow or bypass of wastewater from the Discharger's collection, treatment, or disposal facilities and the subsequent discharge of untreated or partially treated wastewater, except as provided for in Attachment D, Standard Provision I. G (Bypass), is prohibited.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations – Discharge Point 001

1. **Conventional Pollutants.** The Discharger shall maintain compliance with the following effluent limitations at Discharge Point 001 with compliance measured at Monitoring Location EFF-001 as described in the attached MRP.

Table 7. Effluent Limitations for Conventional Pollutants

Parameter	Units	Effluent Limitations		
		Average Monthly	Average Weekly	Maximum Daily
TOC ^[1]	mg/L	17	23	--
	lbs/day ^[2]	2,412	3,263	--
TSS	mg/L	30	45	--
	lbs/day ^[2]	4,255	6,384	--
Oil & Grease	mg/L	25	40	75
	lbs/day	3,546	5,675	10,640
Settleable Solids	mL/L/hr	1.0	1.5	3.0
Turbidity	NTUs	75	100	225
pH ^[3]	pH units	6.0 – 9.0 at all times		

[1] As allowed by 40 CFR §133.104, the Executive Officer of the CRWQCB has determined that the discharger has demonstrated an adequately robust statistical correlation between TOC and BOD₅ at this facility and has approved the establishment of effluent limitations for TOC to meet the technology-based effluent limitation for BOD₅. A detailed discussion of the approved correlation is provided in section IV. B of the Fact Sheet (Attachment F).

[2] For flows equal to or less than 17 MGD, the effluent mass emission rate shall not exceed the Maximum Allowable Mass Emission Rate.

[3] Excursions from the effluent limit range are permitted subject to the following limitations (40 CFR Section 401.17):

- The total time during which the pH values are outside the required range of pH values shall not exceed 7 hours and 26 minutes in any calendar month; and
- No individual excursion from the range of pH values shall exceed 60 minutes.

Note: 40 CFR 401.17(2)(c) notes that, for the purposes of 40 CFR 401.17, "excursion" is defined as "an unintentional and temporary incident in which the pH value of discharge wastewater exceeds the range set forth in the applicable effluent limitations guidelines." The State Board may adjust the requirements set forth in paragraph 40 CFR 401.17 (a) with respect to the length of individual excursions from the range of pH values, if a different period of time is appropriate based upon the treatment system, plant configuration, or other technical factors.

2. **Toxic Pollutants.** The Discharger shall maintain compliance with the following effluent limitations for toxic pollutants at Discharge Point 001, with compliance measured at Monitoring Location EFF-001, as described in the attached MRP.

Table 8. Effluent Limitations for the Protection of Marine Aquatic Life

Pollutant	Unit	6-Month Median ^[1]	Daily Maximum ^[2]	Instantaneous Maximum ^[3]
Arsenic ^[4]	µg/L	--	--	--
Cadmium	µg/L	140	560	1,400
Chromium (+6) ^[5]	µg/L	280	1,100	2,800
Copper ^[4]	µg/L	--	--	--

Pollutant	Unit	6-Month Median ^[1]	Daily Maximum ^[2]	Instantaneous Maximum ^[3]
Lead	µg/L	280	1,100	2,800
Mercury	µg/L	5.0	22	56
Nickel ^[4]	µg/L	--	--	--
Selenium	µg/L	2,100	8,400	21,000
Silver	µg/L	98	392	980
Zinc ^[4]	µg/L	--	--	--
Cyanide ^[6]	µg/L	140	560	1,400
Total Residual Chlorine ^[7]	µg/L	280	1,100	8,400
Ammonia (as N) ^[4]	µg/L	--	--	--
Acute Toxicity ^{[8], [9]}	TUa	---	4.5	---
Chronic Toxicity ^[10]	TUc	---	140	---
Phenolic Compounds (non-chlorinated)	µg/L	4,200	16,800	42,000
Chlorinated Phenolics	µg/L	140	560	1,400
Endosulfan ^[11]	µg/L	1.3	2.5	3.8
Endrin	µg/L	0.28	0.56	0.84
HCH ^[12]	µg/L	0.56	1.1	1.7
Radioactivity	Not to exceed limits specified in Title 17, Division 1, Chapter 5, Subchapter 4, Group 3, Article 3, Section 30253 of the California Code of Regulations. Reference to Section 30253 is prospective, including future changes to any incorporated provisions of federal law, as the changes take effect.			

^[1] The six-month median shall apply as a moving median of daily values for any 180-day period in which daily values represent flow weighted average concentrations within a 24-hour period. For intermittent discharges, the daily value shall be considered to equal zero for days on which no discharge occurred. The six-month median limit on daily mass emissions shall be determined using the six-month median effluent concentration as Ce and the observed flow rate Q in millions of gallons per day (each variable referring to Equation 3 of the Ocean Plan).

^[2] The daily maximum shall apply to flow weighted 24-hour composite samples. The daily maximum mass emission shall be determined using the daily maximum effluent concentration limit as Ce and the observed flow rate Q in millions of gallons per day (each variable referring to Equation 3 of the Ocean Plan).

^[3] The instantaneous maximum shall apply to grab sample determinations.

^[4] Limit not retained as described in section IV. C of the Fact Sheet.

^[5] Dischargers may, at their option, meet this limitation as a total chromium limitation.

^[6] If a Discharger can demonstrate to the satisfaction of the Regional 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 the combined measurement of free cyanide, simple alkali metal cyanides, and weakly complexed organometallic cyanide complexes. 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 revised May 14, 1999.

^[7] Water quality objectives for total chlorine residual applying to intermittent discharges not exceeding two hours shall be determined using the following equation:

$$\text{Log}y = -0.43(\text{log}x) + 1.8 \text{ where}$$

y = the water quality objective (in µg/L) to apply when chlorine is being discharged; and

x = the duration of uninterrupted chlorine discharge in minutes.

The applicable effluent limitation must then be determined using Equation No. 1 from the Ocean Plan.

^[8] The mixing zone for the Ocean Plan's Table B acute toxicity objective shall be ten percent (10%) of the distance from the edge of the outfall structure to the edge of the chronic mixing zone (zone of initial dilution). There is no vertical limitation on this zone. This acute toxicity effluent limitation takes this requirement into consideration and was derived using Equation No. 2 of the Ocean Plan.

^[9] Acute Toxicity - Expressed in Toxic Units Acute (TUa)

$$TUa = \frac{100}{\frac{96\text{-hour LC}}{50\%}}$$

Lethal Concentration 50% (LC 50) - LC 50 (percent waste giving 50% survival of test organisms) shall be determined by static or continuous flow bioassay techniques using standard marine test species as specified in the Ocean Plan's Appendix III. If specific identifiable substances in wastewater can be demonstrated by the discharger as being rapidly rendered harmless upon discharge to the marine environment, but not as a result of dilution, the LC 50 may be determined after the test samples are adjusted to remove the influence of those substances.

When it is not possible to measure the 96-hour LC 50 due to greater than 50 percent survival of the test species in 100 percent waste, the toxicity concentration shall be calculated by the expression:

$$TUa = \frac{\log(100 - S)}{1.7}$$

where:

S = percentage survival in 100% waste. If S > 99, TUa shall be reported as zero.

^[10] 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.

Chronic Toxicity - 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 Appendix II.

^[11] Endosulfan shall mean the sum of endosulfan-alpha and -beta and endosulfan sulfate.

^[12] HCH shall mean the sum of the alpha, beta, gamma (lindane) and delta isomers of hexachlorocyclohexane.

Table 9. Effluent Limitations for the Protection of Human Health - (Non-Carcinogens)

Pollutant	Unit	30-day Average
Acrolein	µg/L	3.1E+04
Antimony	µg/L	1.7E+05
Bis(2-Chloroethoxy)Methane	µg/L	6.2E+02
Bis(2-Chloroisopropyl)Ether	µg/L	1.7E+05
Chlorobenzene	µg/L	8.6E+04
Chromium (III) ^[1]	µg/L	--
Di-n-Butyl Phthalate	µg/L	4.9E+05
Dichlorobenzenes ^[2]	µg/L	7.1E+05
Diethyl Phthalate	µg/L	4.6E+06
Dimethyl Phthalate	µg/L	1.1E+08
4,6-Dinitro-2-methylphenol	µg/L	3.1E+04
2,4-Dinitrophenol	µg/L	5.6E+02
Ethylbenzene	µg/L	5.7E+05
Fluoranthene ^[1]	µg/L	--
Hexachlorocyclopentadiene	µg/L	8.1E+03
Nitrobenzene	µg/L	6.9E+02

Pollutant	Unit	30-day Average
Thallium	µg/L	2.8E+02
Toluene	µg/L	1.2E+07
Tributyltin	µg/L	2.0E-01
1,1,1-Trichloroethane	µg/L	7.6E+07

^[1] Limit not retained as described in section IV. C of the Fact Sheet.

^[2] Dichlorobenzenes shall mean the sum of 1,2- and 1,3-dichlorobenzene.

Table 10. Effluent Limitations for the Protection of Human Health - (Carcinogens)

Pollutant	Unit	30-day Average
Acrylonitrile	µg/L	1.4E+01
Aldrin	µg/L	3.1E-03
Benzene	µg/L	8.3E+02
Benzidine	µg/L	9.7E-03
Beryllium	µg/L	4.6E+00
Bis(2-chloroethyl) ether	µg/L	6.3E+00
Bis(2-ethylhexyl) phthalate	µg/L	4.9E+02
Carbon Tetrachloride	µg/L	1.3E+03
Chlordane ^[1]	µg/L	3.2E-03
Chlorodibromomethane	µg/L	1.2E+03
Chloroform	µg/L	1.8E+04
DDT ^[2]	µg/L	2.4E-02
1,4-Dichlorobenzene	µg/L	2.5E+03
3,3-Dichlorobenzidine	µg/L	1.1E+00
1,2-Dichloroethane	µg/L	3.9E+03
1,1-Dichloroethylene	µg/L	1.3E+02
Dichlorobromomethane	µg/L	8.7E+02
Dichloromethane	µg/L	6.3E+04
1,3-Dichloropropene	µg/L	1.3E+03
Dieldrin	µg/L	5.6E-03
2,4-Dinitrotoluene	µg/L	3.6E+02
1,2-Diphenylhydrazine	µg/L	2.2E+01
Halomethanes ^[3]	µg/L	1.8E+04
Heptachlor	µg/L	7.0E-03
Heptachlor Epoxide	µg/L	2.8E-03
Hexachlorobenzene	µg/L	2.9E-02
Hexachlorobutadiene	µg/L	2.0E+03
Hexachloroethane	µg/L	3.5E+02
Isophorone	µg/L	1.0E+05
N-nitrosodimethylamine	µg/L	1.0E+03
N-nitrosdi-N-propylamine	µg/L	5.3E+01
N-nitrosodiphenylamine	µg/L	3.5E+02

Pollutant	Unit	30-day Average
PAHs ^[4]	µg/L	1.2E+00
PCBs ^[5]	µg/L	2.7E-03
TCDD Equivalents ^[6]	µg/L	5.5E-07
1,1,2,2-Tetrachloroethane	µg/L	3.2E+02
Tetrachloroethylene	µg/L	2.8E+02
Toxaphene	µg/L	2.9E-06
Trichloroethylene	µg/L	3.8E+03
1,1,2-Trichloroethane	µg/L	1.3E+03
2,4,6-Trichlorophenol	µg/L	4.1E+01
Vinyl Chloride	µg/L	5.0E+03

^[1] Chlordane shall mean the sum of chlordane-alpha, chlordane-gamma, chlordene-alpha, chlordene-gamma, nonachlor-alpha, nonachlor-gamma, and oxychlordane.

^[2] 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.

^[3] Halomethanes shall mean the sum of bromoform, bromomethane (methyl bromide), and chloromethane (methyl chloride).

^[4] PAHs (polynuclear aromatic hydrocarbons) shall mean 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.

^[5] PCBs (polychlorinated biphenyls) shall mean 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.

^[6] TCDD equivalents shall mean 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

3. Percent Removal: The average monthly percent removal of TOC, BOD₅ and TSS shall not be less than 85 percent.

4. Bacteria. The following total coliform, fecal coliform, and enterococcus effluent limits apply if the Executive Officer concludes from a bacterial assessment (described in Receiving Water Limitation A.1) that the discharge consistently exceeds Receiving Water Limitation A.1. See Monitoring and Reporting Program, Table E-1 for associated monitoring requirements. Total coliform, fecal coliform, and

enterococcus effluent limits are based on the 2005 Ocean Plan and a dilution ratio of 139:1, and apply after the last treatment process and at a measurable location before disposal to the ocean outfall.

- a. The daily maximum total coliform density shall not exceed 139,000 CFU per 100 mL.
- b. The daily maximum fecal coliform density shall not exceed 27,800 CFU per 100 mL.
- c. The daily maximum enterococcus density shall not exceed 4,879 CFU per 100 mL.

5. Initial Dilution: The minimum initial dilution of treated effluent at the point of discharge to Monterey Bay shall not be less than 139 to 1 (seawater to effluent) at any time.

6. Dry Weather Flow: Effluent daily dry weather flow shall not exceed a monthly average of 17.0 MGD.

7. Effluent shall be essentially free of materials and substances that:

- a. Float or become floatable upon discharge;
- b. May form sediments which degrade benthic communities or other aquatic life;
- c. Accumulate to toxic levels in marine waters, sediments, or biota;
- d. Decrease the natural light to benthic communities and other marine life; and
- e. Result in aesthetically undesirable discoloration of the ocean surface.

B. Land Discharge Specifications. This section of the standardized permit is not applicable to the City of Santa Cruz.

C. Reclamation Specifications. If applicable, the Discharger shall comply with applicable State and local requirements regarding the production and use of reclaimed wastewater, including requirements established by the Department of Public Health at title 22, sections 60301 – 60357 of the California Code of Regulations, Water Recycling Criteria.

V. RECEIVING WATER LIMITATIONS

A. Surface Water Limitations

The following receiving water limitations are based on water quality objectives contained in the Ocean Plan and are a required part of this Order. Compliance shall be determined from samples collected at stations representative of the area within the waste field where initial dilution is completed.

1. Within a zone bounded by the shoreline and a distance of 1,000 feet from the shoreline or the 30-foot depth contour, whichever is further from the shoreline, and in areas outside this zone used for water contact sports, as determined by the Regional Water Board, but including all kelp beds, the following bacteriological objectives shall be maintained throughout the water column.

30-Day Geometric Mean – The following standards are based on the geometric mean of the five most recent samples from each receiving water monitoring location.

- a. Total coliform density shall not exceed 1,000 CFU per 100 mL, nor shall a single sample density;
- b. Fecal coliform density shall not exceed 200 CFU per 100 mL; and
- c. Enterococcus density shall not exceed 35 CFU per 100 mL.

Single Sample maximum;

- a. Total coliform density shall not exceed 10,000 CFU per 100 ml;
 - b. Fecal coliform density shall not exceed 400 CFU per 100 mL; and
 - c. Enterococcus density shall not exceed 104 CFU per 100 mL; and
 - d. Total coliform density shall not exceed 1,000 CFU per 100 mL when the fecal coliform to total coliform ratio exceeds 0.1
2. At all areas where shellfish may be harvested for human consumption, as determined by the Regional Water Board, the following bacteriological objectives shall be maintained throughout the water column:
 - a. The median total coliform density shall not exceed 70 organisms per 100 mL, and in not more than 10 percent of samples shall coliform density exceed 230 organisms per 100 mL.
 3. Floating particulates and grease and oil shall not be visible.
 4. The discharge of waste shall not cause aesthetically undesirable discoloration of the ocean surface.
 5. Natural light shall not be significantly reduced at any point outside the initial dilution zone as the result of the discharge of waste.
 6. The rate of deposition of inert solids and the characteristics of inert solids in ocean sediments shall not be changed such that benthic communities are degraded.
 7. The dissolved oxygen concentration shall not at any time be depressed more than 10 percent from that which occurs naturally.

8. The pH shall not be changed at any time more than 0.2 units from that which occurs naturally, and shall be within the range of 7.0 to 8.5 at all times.
9. The dissolved sulfide concentration of waters in and near sediments shall not be significantly increased above that present under natural conditions.
10. The concentration of substances set forth in Table B of the Ocean Plan in marine sediments shall not be increased to levels that would degrade indigenous biota.
11. The concentration of organic materials in marine sediments shall not be increased to levels that would degrade marine life.
12. Nutrient levels shall not cause objectionable aquatic growths or degrade indigenous biota.
13. Discharges shall not cause exceedances of water quality objectives for ocean waters of the State established in Table B of the Ocean Plan.
14. Marine communities, including vertebrate, invertebrate and plant species, shall not be degraded.
15. The natural taste, odor, and color of fish, shellfish, or other marine resources used for human consumption shall not be altered.
16. 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.
17. Discharge of radioactive waste shall not degrade marine life.

B. Groundwater Limitations

Activities at the facility shall not cause exceedance/deviation from the following water quality objectives for groundwater established by the Basin Plan.

1. Groundwater shall not contain taste or odor producing substances in concentrations that adversely affect beneficial uses.
2. Radionuclides shall not be present in concentrations that are deleterious to human, plant, animal, or aquatic life; or result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal, or aquatic life.

VI. PROVISIONS

A. Standard Provisions

1. **Federal Standard Provisions.** The Discharger shall comply with all Standard Provisions included in Attachment D of this Order.

- 2. Central Coast Water Board Standard Provisions.** The Discharger shall comply with all Central Coast Water Board Standard Provisions included in Attachment D-1 of this Order.

B. Monitoring and Reporting Program (MRP) Requirements

The Discharger shall comply with the Monitoring and Reporting Program, and future revisions thereto, in Attachment E of this Order. All monitoring shall be conducted according to 40 CFR Part 136, *Guidelines Establishing Test Procedures for Analysis of Pollutants*.

C. Special Provisions

1. Reopener Provisions

This permit may be reopened and modified in accordance with NPDES regulations at 40 CFR 122 and 124, as necessary, to include additional conditions or limitations based on newly available information or to implement any U.S. EPA approved, new, State water quality objective. As effluent is further characterized through additional monitoring, and if a need for additional effluent limitations becomes apparent after additional effluent characterization, the Order will be reopened to incorporate such limitations. This provision contemplates, without limitation, effluent limitations that are necessary because monitoring establishes that the discharge causes, has the reasonable potential to cause, or contributes to an excursion above a water quality objective in Table B of the Ocean Plan.

2. Special Studies, Technical Reports and Additional Monitoring Requirements

a. Toxicity Reduction Requirements

If the discharge consistently exceeds an effluent limitation for toxicity specified by Section IV of this Order, the Discharger shall conduct a Toxicity Reduction Evaluation (TRE) in accordance with the Discharger's TRE Workplan.

A TRE is 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. The TRE shall include all reasonable steps to identify the source of toxicity. The Discharger shall take all reasonable steps to reduce toxicity to the required level once the source of toxicity is identified.

The Discharger shall maintain a Toxicity Reduction Evaluation (TRE) Workplan, which describes steps that the Discharger intends to follow in the event that a toxicity effluent limitation established by this Order is exceeded in the discharge. The workplan shall be prepared in accordance with current technical guidance and reference material, including EPA/600/2-88-070 (for industrial discharges) or EPA/600/2-88/062 (for municipal discharges), and shall include, at a minimum:

- (1) Actions that will be taken to investigate/identify the causes/sources of toxicity,
- (2) Actions that will be evaluated to mitigate the impact of the discharge, to correct the non-compliance, and/or to prevent the recurrence of acute or chronic toxicity (this list of action steps may be expanded, if a TRE is undertaken), and
- (3) A schedule under which these actions will be implemented.

When monitoring measures toxicity in the effluent above a limitation established by this Order, the Discharger shall resample immediately, if the discharge is continuing, and retest for whole effluent toxicity. Results of an initial failed test and results of subsequent monitoring shall be reported to the Executive Officer (EO) as soon as possible following receipt of monitoring results. The EO will determine whether to initiate enforcement action, whether to require the Discharger to implement a Toxicity Reduction Evaluation, or to implement other measures. The Discharger shall conduct a TRE giving due consideration to guidance provided by the U.S. EPA’s Toxicity Reduction Evaluation Procedures, Phases 1, 2, and 3 (EPA document nos. EPA 600/3-88/034, 600/3-88/035, and 600/3-88/036, respectively). A TRE, if necessary, shall be conducted in accordance with the following schedule.

Table 11. Toxicity Reduction Evaluation—Schedule

Action Step	When Required
Take all reasonable measures necessary to immediately reduce toxicity, where the source is known.	Within 24 hours of identification of noncompliance.
Initiate the TRE in accordance to the Workplan.	Within 7 days of notification by the EO
Conduct the TRE following the procedures in the Workplan.	Within the period specified in the Workplan (not to exceed one year, without an approved Workplan)
Submit the results of the TRE, including summary of findings, required corrective action, and all results and data.	Within 60 days of completion of the TRE
Implement corrective actions to meet Permit limits and conditions.	To be determined by the EO

b. Infiltration/Inflow and Spill Prevention Program Requirements

The City of Santa Cruz shall continue to implement an Infiltration/Inflow and Spill Prevention Program (Program) to address problems associated with infiltration

(e.g., groundwater entering into the collection system through defective pipe joints or connections to manholes), and inflow (e.g., stormwater entering manhole covers). The Program shall be reviewed and updated as necessary **by September 1 of every year**, and shall be incorporated into the CSMP.

- (1) The Program shall be developed in accordance with good engineering practices and shall address the following objectives:
 - (a) Identify infiltration and inflow sources that may affect treatment facility operation or possibly result in overflow or exceed pump station capacity; and,
 - (b) Identify, assign, and implement spill prevention measures and collection system management practices to ensure overflows and contribution of pollutants or incompatible wastes to Discharger's treatment system are minimized.
- (2) The Discharger shall make a copy of the Program available upon request to a representative of the Regional Water Board, State Water Board, or USEPA.
- (3) The Program shall provide a description of the collection and transport system, measures used to ensure proper operation, and other information necessary to determine compliance with these requirements. The Program shall include, at a minimum, the following items:
 - (a) A map showing: collection system lines greater than 12 inches, pump stations, standby power facilities, surface water bodies (including discharge point(s) where pump station overflows may occur), storm drain inlets, and date of last revision.
 - (b) A narrative description of the following:
 - (i) Available equipment and cleaning schedule to clean and flush the system every two years, and assigned staff
 - (ii) Coordination with plumbers to address introduction of wastes during lateral cleaning;
 - (iii) Visual inspection methods and frequency. Inspection records shall be retained for five years;
 - (iv) Current and five-year projected investigation methods, frequency, results, and efforts to reduce stormwater inflows and collection system exfiltration. Inspection records shall be retained for five years;
 - (v) A projected schedule to replace failing pipelines. Separately list each project or reach of conveyance to be replaced, along with proposed start and estimated completion dates;
 - (vi) Pump stations, location, flow monitoring, and the previous year's operational problems and overflows;

- (vii) Alternate power supply for each pump station.
- (4) The Program shall report staff available to operate the system. The Program shall include, at a minimum, the following items:
- (a) Personnel: Identify specific individuals (and job titles) who are responsible for developing, implementing, and revising the Program. Provide an organizational chart of all staff, positions, duties, and training received during the past year. Identify managers and provide a list of contacts with associated telephone numbers.
 - (b) Training: List the frequency of training, the qualifications of each employee, and coordination efforts between the City and the Districts. Periodic dates for training shall be indentified.
- (5) The Program shall describe planning efforts and reporting of system operation. The Program shall include, at a minimum, the following items:
- (a) A spill response plan, and identify employees responsible and duties necessary to implement the City's responses to spills. Identify posting, notification, and spill estimation practices used.
 - (b) Annual Reporting List spills or system problems during the previous year, cleanups, amounts, locations, and corrective actions taken to ensure similar spills or problems do not recur. A tracking or follow-up procedures shall be used to ensure appropriate response has been taken. Inspections and maintenance activities shall be documented and recorded.
 - (c) Offsite and Onsite Spill Alarms: Describe the current or proposed alarm system (or why unnecessary), central information location, staffing, and response times for detecting spills from the system.
 - (d) Wet Season Manhole Inspections: Describe or propose frequency to conduct inspections to detect line blockage during wet season flows and to avoid system overflows, staffing, and available and anticipated equipment to ensure safe and effective inspections.
 - (e) Capital Improvement: Describe a current and projected work plan;
 - (f) Five-Year Planning: Describe projected planning efforts.
 - (g) Describe long-term planning efforts.
- (6) The Discharger shall provide an annual report, by **February 1st of each year** describing program development and permit compliance over the previous calendar year. The reports shall be of sufficient content as to enable the Regional Board to determine compliance with all requirements.

d. Ocean Outfall and Diffuser Monitoring

At least once per year (in the same month annually), the Discharger shall conduct a dye dilution study to visually inspect the entire outfall structure to determine whether there are leaks, potential leaks, or malfunctions. This inspection shall be collected along the outfall pipe/diffuser system from landfall to its ocean terminus. In addition, at least once per year (in the same month annually), an outfall inspection will be conducted to check the structural integrity and possible external blockage of ports by sand and/or silt deposition. The two inspections may be conducted together or in different months in order to optimize the underwater conditions and visibility for conducting each inspection. Results of the outfall inspections shall be reported in the applicable annual report.

3. Best Management Practices and Pollution Prevention

a. Pollutant Minimization Goal

The goal of the Pollutant Minimization Program is to reduce potential sources of Ocean Plan Table B toxic pollutants through pollutant minimization (control) strategies, including pollution prevention measures, to maintain effluent concentrations at or below the effluent limitation.

b. Determining the Need for a Pollutant Minimization Program

- (1) The Discharger shall develop and implement a Pollutant Minimization Program if:
 - (a) A calculated effluent limitation is less than the reported Minimum Level,
 - (b) The concentration of the pollutant is reported as DNQ, and
 - (c) There is evidence showing that the pollutant is present in the effluent above the calculated effluent limitation. Such evidence may include: health advisories for fish consumption; presence of whole effluent toxicity; results of benthic or aquatic organism tissue sampling; sample results from analytical methods more sensitive than methods included in the permit; and the concentration of the pollutant is reported as DNQ and the effluent limitation is less than the MDL.
- (2) Alternatively, the Discharger shall develop and implement a Pollutant Minimization Program if:
 - (a) A calculated effluent limitation is less than the Method Detection Limit (MDL),
 - (b) The concentration of the pollutant is reported as ND, and
 - (c) There is evidence showing that the pollutant is present in the effluent above the calculated effluent limitation. Such evidence may include: health advisories for fish consumption; presence of whole effluent

toxicity; results of benthic or aquatic organism tissue sampling; sample results from analytical methods more sensitive than methods included in the permit; and the concentration of the pollutant is reported as DNQ and the effluent limitation is less than the MDL.

c. Elements of a Pollutant Minimization Program

A Pollutant Minimization Program shall include actions and submittals acceptable to the Regional Water Board including, but not limited to, the following.

- (1) An annual review and semiannual monitoring of potential sources of the reportable pollutant, which may include fish tissue monitoring and other bio-uptake sampling;
- (2) Quarterly monitoring for the reportable pollutant in influent to the wastewater treatment system;
- (3) Submittal of a control strategy designed to proceed toward the goal of maintaining concentrations of the reportable priority pollutant in the effluent at or below the calculated effluent limitation;
- (4) Implementation of appropriate cost-effective control measures for the pollutant, consistent with the control strategy;
- (5) An annual status report that shall be sent to the Executive Officer that includes:
 - (a) All Pollutant Minimization Program monitoring results for the previous year;
 - (b) A list of potential sources of the reportable pollutant;
 - (c) A summary of all actions taken in accordance with the control strategy; and
 - (d) A description of actions to be taken in the following year.

4. Construction, Operation and Maintenance Specifications

This section of the standardized permit is not applicable to the City of Santa Cruz.

5. Special Provisions for Municipal Facilities (POTWs Only)

- a. Biosolids Management.** The handling, management, and disposal of sludge and solids derived from wastewater treatment must comply with applicable provisions of USEPA regulations at 40 CFR 257,258, 501, and 503, including all monitoring, record keeping, and reporting requirements.

Solids and sludge treatment, storage, and disposal or reuse shall not create a nuisance, such as objectionable odors or flies, and shall not result in

groundwater contamination. Sites for solids and sludge treatment and storage shall have adequate facilities to divert surface water runoff from adjacent areas to protect the boundaries of such sites from erosion, and to prevent drainage from treatment and storage sites.

The treatment, storage, disposal, or reuse of sewage sludge and solids shall not cause waste material to be in a position where it is, or can be, conveyed from the treatment and storage sites and deposited into waters of the State. The Discharger is responsible for assuring that all biosolids produced at its facility are used or disposed of in accordance with the above rules, whether the Discharger uses or disposes of the biosolids itself, or transfers them to another party for further treatment, use, or disposal. The Discharger is responsible for informing subsequent preparers, applicators, and disposers of the requirements that they must adhere to under these rules.

- b.** A Pretreatment Program is a regulatory program administered by the Discharger that implements National Pretreatment Standards. These standards are promulgated by the USEPA in accordance with Section 307 (b) and (c) of the Federal Clean Water Act (CWA). This permit implements General Pretreatment Regulations of 40 CFR 403, latest revision.

The objective of the pretreatment program is to prevent the introduction of pollutants into the POTW which will interfere with the operation of the treatment works, pass through the treatment facility, reduce opportunities to recycle and reuse municipal wastewater and sludge, or expose POTW employees to hazardous chemicals.

The Discharger shall implement and enforce its Approved POTW Pretreatment Program. The Discharger's Approved POTW Pretreatment Program is hereby made an enforceable condition of this Order and Permit. USEPA or the State may initiate enforcement standards and requirements as provided in the Clean Water Act.

The Discharger shall enforce the requirements promulgated under Sections 307(b), 307(c), 307(d), and 402(b) of the Clean Water Act. The Discharger shall cause industrial 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 industrial user, upon commencement of the discharge.

The Discharger shall perform the pretreatment functions as required in 40 CFR 403 including, but not limited to:

- (1) Maintain a sewer use ordinance to provide all of the legal authorities described in 40 CFR 403.8(f)(1);
- (2) Enforce the pretreatment requirements under 40 CFR 403.5 and 403.6;
- (3) Implement the programmatic functions as provided in 40 CFR 403.8(f)(2); and

- (4) Provide the requisite funding and personnel to implement the pretreatment program as provided in 40 CFR 403.8(f)(3).

6. Other Special Provisions

- a. **Discharges of Stormwater.** For the control of stormwater discharged from the site of the wastewater treatment and disposal facilities, if applicable, the Discharger shall seek authorization to discharge under and meet the requirements of the State Water Resources Control Board's Water Quality Order 97-03-DWQ, NPDES General Permit No. CAS000001, *Waste Discharge Requirements for Discharges of Stormwater Associated with Industrial Activities Excluding Construction Activities*.
- b. **Statewide General Waste Discharge Requirements for Sanitary Sewer Systems (State Water Board Order No. 2006-0003-DWQ).** This General Permit, adopted on May 2, 2006, is applicable to all "federal and state agencies, municipalities, counties, districts, and other public entities that own or operate sanitary sewer systems greater than one mile in length that collect and/or convey untreated or partially treated wastewater to a publicly owned treatment facility in the State of California." The purpose of the General Permit is to promote the proper and efficient management, operation, and maintenance of sanitary sewer systems and to minimize the occurrences and impacts of sanitary sewer overflows. The Discharger is enrolled under Order No. 2006-0003-DWQ.
- c. **Sanitary Sewer Inspection.** The Discharger shall conduct sanitary sewer surveys when so directed by the Regional Water Board or the Executive Officer. The Discharger shall control any controllable discharges identified in a sanitary sewer survey.
- d. **Additional Connections.** The Regional Water Board must approve any additional connections outside the City sewer service area to the effluent sewer main.
- e. **Discharge of Pathogenic Organisms.** 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 health hazard should be used.

7. Compliance Schedules

This section of the standardized permit template is not applicable.

VII. COMPLIANCE DETERMINATION

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

- A. General.** Compliance with effluent limitations for reportable pollutants shall be determined using sample reporting protocols defined in the MRP and Attachment A of this Order. For purposes of reporting and administrative enforcement by the Regional and State Water Boards, 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 Minimum Level (ML).
- B. 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 “Detected, but Not Quantified” (DNQ) or “Not Detected” (ND), the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:
1. 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.
 2. 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.

ATTACHMENT A – DEFINITIONS**Acute Toxicity:**

a. Acute Toxicity (TUa)

Expressed in Toxic Units Acute (TUa)

$$TUa = \frac{100}{\frac{96\text{-hr LC}}{50\%}}$$

b. Lethal Concentration 50% (LC 50)

LC 50 (percent waste giving 50% survival of test organisms) shall be determined by static or continuous flow bioassay techniques using standard marine test species as specified in Ocean Plan Appendix III. If specific identifiable substances in wastewater can be demonstrated by the discharger as being rapidly rendered harmless upon discharge to the marine environment, but not as a result of dilution, the LC 50 may be determined after the test samples are adjusted to remove the influence of those substances.

When it is not possible to measure the 96-hour LC 50 due to greater than 50 percent survival of the test species in 100 percent waste, the toxicity concentration shall be calculated by the expression:

$$TUa = \frac{\log(100 - S)}{1.7}$$

where: S = percentage survival in 100% waste. If S > 99, TUa shall be reported as zero.

Areas of Special Biological Significance (ASBS): are 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 Areas of Special Biological Significance are also classified as a subset of STATE WATER QUALITY PROTECTION AREAS.

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.

Chlordane shall mean the sum of chlordane-alpha, chlordane-gamma, chlordene-alpha, chlordene-gamma, nonachlor-alpha, nonachlor-gamma, and oxychlordane.

Chronic Toxicity: 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.

a. Chronic Toxicity (TUc)

Expressed as Toxic Units Chronic (TUc)

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

b. 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.

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.

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

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.

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) are those sample results less than the reported Minimum Level, but greater than or equal to the laboratory's MDL.

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

Downstream Ocean Waters shall mean waters downstream with respect to ocean currents.

Dredged Material: Any material excavated or dredged from the navigable waters of the United States, including material otherwise referred to as “spoil”.

Enclosed Bays are 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 shall mean the sum of endosulfan-alpha and -beta and endosulfan sulfate.

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 California Water Code, Suisun Bay, Carquinez Strait downstream to Carquinez Bridge, and appropriate areas of the Smith, Klamath, Mad, Eel, Noyo, and Russian Rivers.

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

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

Initial Dilution is 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 Regional 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).

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.

Mariculture is 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 United States. See also, DREDGED MATERIAL.

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

MDL (Method Detection Limit) is the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero, as defined in title 40 of the Code of Federal Regulations, PART 136, Appendix B.

Minimum Level (ML) is the concentrations 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 Regional Water Board by measurement of light transmissivity or total irradiance, or both, according to the monitoring needs of the Regional Water Board.

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

Ocean Waters are 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.

PAHs (polynuclear aromatic hydrocarbons) shall mean 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.

PCBs (polychlorinated biphenyls) shall mean 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.

Pollutant Minimization Program (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 Ocean Plan Table B pollutants through pollutant minimization (control) strategies, including pollution prevention measures as appropriate, to maintain the effluent concentration at or below the water quality-based effluent limitation. Pollution prevention measures may be particularly appropriate for persistent bioaccumulative priority pollutants where there is evidence that beneficial uses are being impacted. The Regional 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 Water Code section 13263.3(d), shall be considered to fulfill the PMP requirements.

Reported Minimum Level is the ML (and its associated analytical method) chosen by the Discharger for reporting and compliance determination from the MLs included in this Order. The MLs included in this Order correspond to approved analytical methods for reporting a sample result that are selected by the Regional Water Board either from 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.

Satellite Collection System is the portion, if any, of a sanitary sewer system owned or operated by a different public agency than the agency that owns and operates the wastewater treatment facility that a sanitary sewer system is tributary to.

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

Significant Difference is 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.

State Water Quality Protection Areas (SWQPAs) are non-terrestrial marine or estuarine areas designated to protect marine species or biological communities from an undesirable alteration in natural water quality. All AREAS OF SPECIAL BIOLOGICAL SIGNIFICANCE (ASBS) that were previously designated by the State Water Board in Resolution No.s 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 shall mean 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.

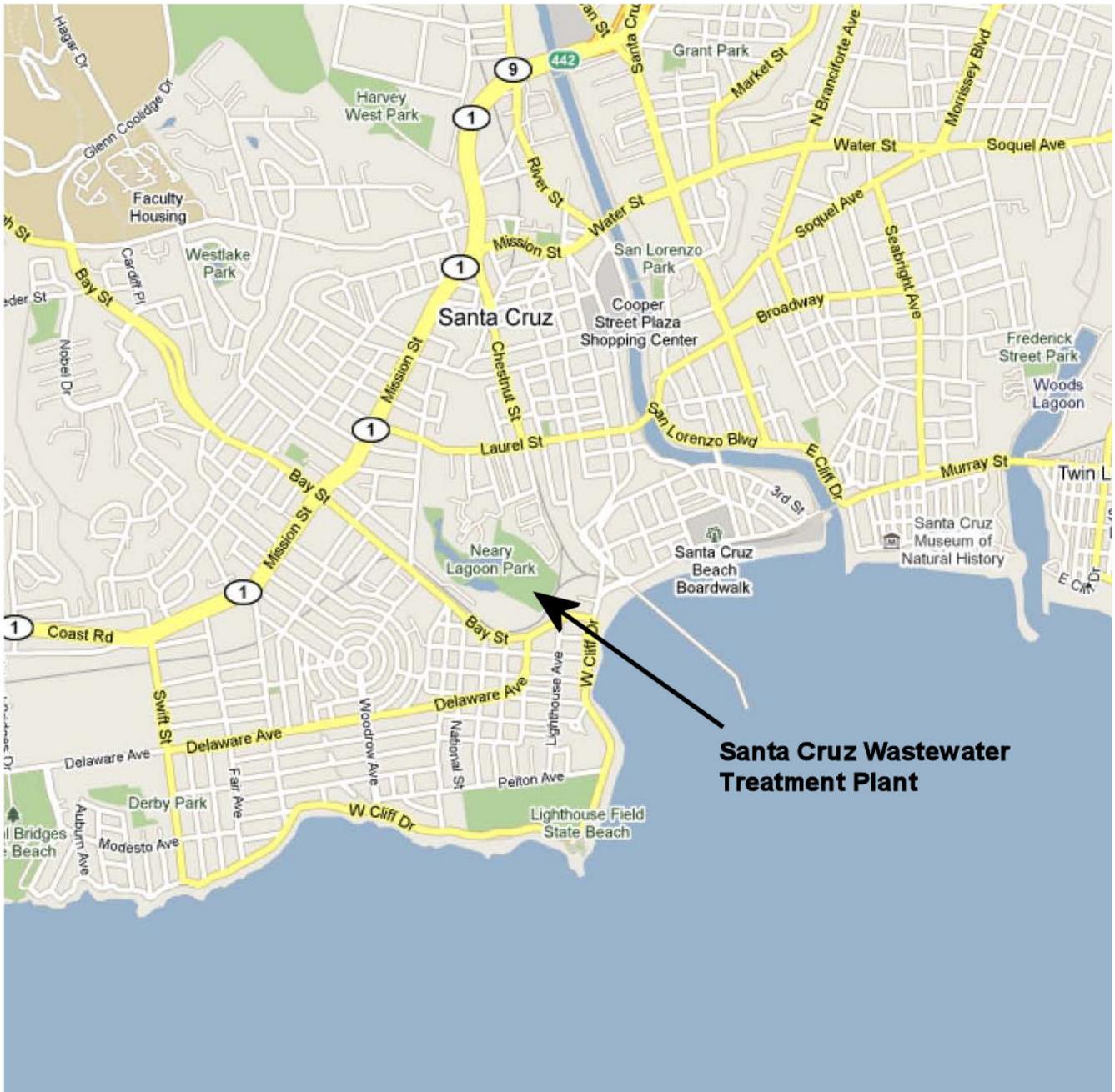
Isomer Group	Toxicity Equivalence Factor
2,3,7,8-tetra CDD	1.0
2,3,7,8-penta CDD	0.5
2,3,7,8-hexa CDDs	0.1
2,3,7,8-hepta CDD	0.01
octa CDD	0.001
2,3,7,8 tetra CDF	0.1
1,2,3,7,8 penta CDF	0.05
2,3,4,7,8 penta CDF	0.5
2,3,7,8 hexa CDFs	0.1
2,3,7,8 hepta CDFs	0.01
octa CDF	0.001

Toxicity Reduction Evaluation (TRE) is 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.

Water Reclamation: The treatment of wastewater to render it suitable for reuse, the transportation of treated wastewater to the place of use, and the actual use of treated wastewater for a direct beneficial use or controlled use that would not otherwise occur.

ATTACHMENT B – MAP



Bottom Characteristics Legend

-  Sediment - Sand with a general absence of boulders or rock. Sea floor is smooth except for sand wave features
-  Low Density of Boulders (5-20%) 1-4 feet in diameter on sea floor. Large areas of sandy bottom probably less than 2 feet thick.
-  Moderate Density of Boulders (20-60%) 1-4 feet in diameter and isolated rock exposures on the sea floor. Local sand pockets are probably 1 foot thick or less.
-  High Density of Boulders and Rock Exposures (Over 60%) with Bottom Relief 2-6 feet - Occasional localized sandpockets probably less than 1 foot thick.
-  Rock - Sea floor generally flat with occasional boulders 1-3 feet in diameter. May have thin veneer of sediments overlying a more irregular rock surface than bottom features indicate.
-  Rock - Discontinuous rock ledges 1-4 feet high and 10-100 feet wide. General trend of ledges is west to northwest. Localized thin sediment pockets less than 1 foot thick.
-  Rock - Continuous ledges 2-4 feet high, 60-90 feet wide, and traceable for 100 to over 500 feet. Localized thin sediment pockets less than 1 foot thick. (Boundaries of this zone are approximated.)
-  Rock - Resistant ridge up to 24 feet bottom relief. Rock surface is rough and irregular.

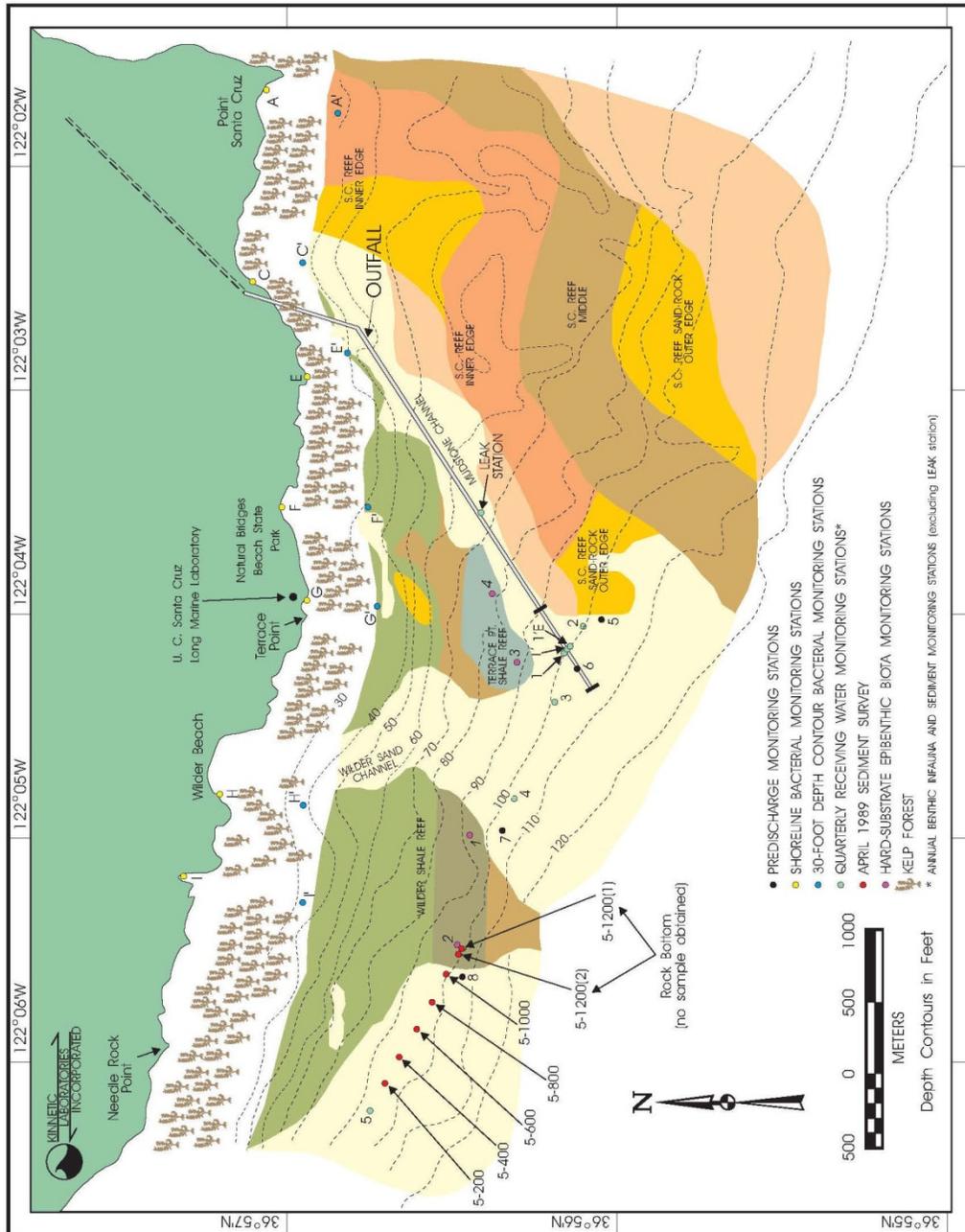
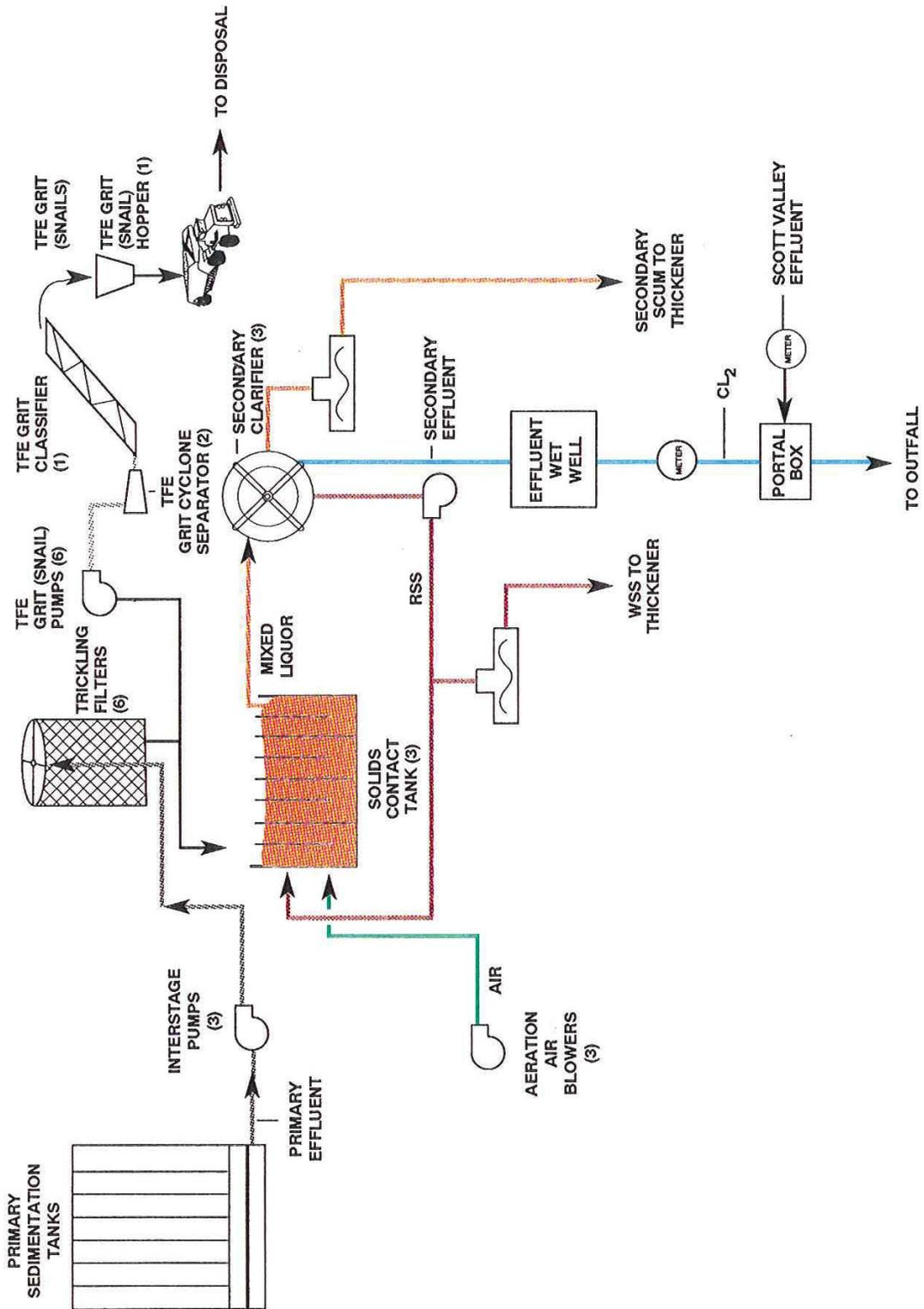


Figure 1. Location of Santa Cruz predischARGE monitoring stations (5, 6, 7, and 8), outfall shoreline bacterial monitoring stations (A, C, E, F, G, H, and I), 30-foot depth contour bacterial monitoring stations (A', C', E', F', G', H', and I'), quarterly receiving water monitoring stations (1, 2, 3, 4, 5, and LEAK), benthic infauna and sediment stations locations (1, 2, 3, 4 and 5), April 1989 sediment survey (Stations 5-200 through 5-1200(2)), and hard-substrate epibenthic biota monitoring stations (Wilder Reef: 1 and 2; and Terrace Point Reef: 3 and 4).

ATTACHMENT C – FLOW SCHEMATIC



ATTACHMENT D –STANDARD PROVISIONS

I. STANDARD PROVISIONS – PERMIT COMPLIANCE

A. Duty to Comply

1. The Discharger must comply with all of the conditions of this Order. Any noncompliance constitutes a violation of the Clean Water Act (CWA) and the California Water Code and is grounds for enforcement action, for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. (40 C.F.R. § 122.41(a).)
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 has not yet been modified to incorporate the requirement. (40 C.F.R. § 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. (40 C.F.R. § 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 that has a reasonable likelihood of adversely affecting human health or the environment. (40 C.F.R. § 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. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance 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. (40 C.F.R. § 122.41(e).)

E. Property Rights

1. This Order does not convey any property rights of any sort or any exclusive privileges. (40 C.F.R. § 122.41(g).)
2. The issuance of this Order 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 C.F.R. § 122.5(c).)

F. Inspection and Entry

The Discharger shall allow the Regional Water Board, State Water Board, United States 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 (40 C.F.R. § 122.41(i); Wat. Code, § 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 (40 C.F.R. § 122.41(i)(1));
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order (40 C.F.R. § 122.41(i)(2));
3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order (40 C.F.R. § 122.41(i)(3)); and
4. Sample or monitor, at reasonable times, for the purposes of assuring Order compliance or as otherwise authorized by the CWA or the Water Code, any substances or parameters at any location. (40 C.F.R. § 122.41(i)(4).)

G. Bypass

1. Definitions
 - a. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility. (40 C.F.R. § 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 C.F.R. § 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 C.F.R. § 122.41(m)(2).)
3. Prohibition of bypass. Bypass is prohibited, and the Regional Water Board may take enforcement action against a Discharger for bypass, unless (40 C.F.R. § 122.41(m)(4)(i)):
 - a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 C.F.R. § 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 C.F.R. § 122.41(m)(4)(i)(B)); and
 - c. The Discharger submitted notice to the Regional Water Board as required under Standard Provisions – Permit Compliance I.G.5 below. (40 C.F.R. § 122.41(m)(4)(i)(C).)
 4. The Regional Water Board may approve an anticipated bypass, after considering its adverse effects, if the Regional Water Board determines that it will meet the three conditions listed in Standard Provisions – Permit Compliance I.G.3 above. (40 C.F.R. § 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 a notice, if possible at least 10 days before the date of the bypass. (40 C.F.R. § 122.41(m)(3)(i).)
 - b. Unanticipated bypass. The Discharger shall submit notice of an unanticipated bypass as required in Standard Provisions - Reporting V.E below (24-hour notice). (40 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 122.41(n)(3)):
 - a. An upset occurred and that the Discharger can identify the cause(s) of the upset (40 C.F.R. § 122.41(n)(3)(i));

- b. The permitted facility was, at the time, being properly operated (40 C.F.R. § 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 C.F.R. § 122.41(n)(3)(iii)); and
 - d. The Discharger complied with any remedial measures required under Standard Provisions – Permit Compliance I.C above. (40 C.F.R. § 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 C.F.R. § 122.41(n)(4).)

II. STANDARD PROVISIONS – PERMIT ACTION

A. General

This Order 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 condition. (40 C.F.R. § 122.41(f).)

B. Duty to Reapply

If the Discharger wishes to continue an activity regulated by this Order after the expiration date of this Order, the Discharger must apply for and obtain a new permit. (40 C.F.R. § 122.41(b).)

C. Transfers

This Order is not transferable to any person except after notice to the Regional Water Board. The Regional Water Board may require modification or revocation and reissuance of the Order to change the name of the Discharger and incorporate such other requirements as may be necessary under the CWA and the Water Code. (40 C.F.R. § 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 C.F.R. § 122.41(j)(1).)
- B. Monitoring results must be conducted according to test procedures under Part 136 or, in the case of sludge use or disposal, approved under Part 136 unless otherwise specified in Part 503 unless other test procedures have been specified in this Order. (40 C.F.R. § 122.41(j)(4); § 122.44(i)(1)(iv).)

IV. STANDARD PROVISIONS – RECORDS

- A. Except for records of monitoring information required by this Order 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 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, and records of all data used to complete the application for this Order, 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 Regional Water Board Executive Officer at any time. (40 C.F.R. § 122.41(j)(2).)

B. Records of monitoring information shall include:

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

C. Claims of confidentiality for the following information will be denied (40 C.F.R. § 122.7(b)):

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

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information

The Discharger shall furnish to the Regional Water Board, State Water Board, or USEPA within a reasonable time, any information which the Regional Water Board, State Water Board, or USEPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order or to determine compliance with this Order. Upon request, the Discharger shall also furnish to the Regional Water Board, State Water Board, or USEPA copies of records required to be kept by this Order. (40 C.F.R. § 122.41(h); Wat. Code, § 13267.)

B. Signatory and Certification Requirements

1. All applications, reports, or information submitted to the Regional 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, and V.B.5 below. (40 C.F.R. § 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 C.F.R. § 122.22(a)(3).)
3. All reports required by this Order and other information requested by the Regional 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 C.F.R. § 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 C.F.R. § 122.22(b)(2)); and
 - c. The written authorization is submitted to the Regional Water Board and State Water Board. (40 C.F.R. § 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 Regional Water Board

and State Water Board prior to or together with any reports, information, or applications, to be signed by an authorized representative. (40 C.F.R. § 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 C.F.R. § 122.22(d).)

C. Monitoring Reports

1. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program (Attachment E) in this Order. (40 C.F.R. § 122.41(l)(4).)
2. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the Regional Water Board or State Water Board for reporting results of monitoring of sludge use or disposal practices. (40 C.F.R. § 122.41(l)(4)(i).)
3. If the Discharger monitors any pollutant more frequently than required by this Order using test procedures approved under Part 136 or, in the case of sludge use or disposal, approved under Part 136 unless otherwise specified in Part 503, or as specified in this Order, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Regional Water Board. (40 C.F.R. § 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. (40 C.F.R. § 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, shall be submitted no later than 14 days following each schedule date. (40 C.F.R. § 122.41(l)(5).)

E. Twenty-Four Hour Reporting

1. The Discharger shall report any noncompliance that 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 written submission shall also be provided within five (5) days of the time the Discharger becomes aware of the circumstances. The written submission 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. (40 C.F.R. § 122.41(l)(6)(i).)

2. The following shall be included as information that must be reported within 24 hours under this paragraph (40 C.F.R. § 122.41(l)(6)(ii)):
 - a. Any unanticipated bypass that exceeds any effluent limitation in this Order. (40 C.F.R. § 122.41(l)(6)(ii)(A).)
 - b. Any upset that exceeds any effluent limitation in this Order. (40 C.F.R. § 122.41(l)(6)(ii)(B).)
3. The Regional Water Board may waive the above-required written report under this provision on a case-by-case basis if an oral report has been received within 24 hours. (40 C.F.R. § 122.41(l)(6)(iii).)

F. Planned Changes

The Discharger shall give notice to the Regional Water Board as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required under this provision only when (40 C.F.R. § 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 C.F.R. § 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. (40 C.F.R. § 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 permit application process or not reported pursuant to an approved land application plan. (40 C.F.R. § 122.41(l)(1)(iii).)

G. Anticipated Noncompliance

The Discharger shall give advance notice to the Regional Water Board or State Water Board of any planned changes in the permitted facility or activity that may result in noncompliance with General Order requirements. (40 C.F.R. § 122.41(l)(2).)

H. Other Noncompliance

The Discharger shall report all instances of noncompliance not reported under Standard Provisions – Reporting 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 V.E above. (40 C.F.R. § 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 Regional Water Board, State Water Board, or USEPA, the Discharger shall promptly submit such facts or information. (40 C.F.R. § 122.41(l)(8).)

VI. STANDARD PROVISIONS – ENFORCEMENT

- A. The Regional Water Board is authorized to enforce the terms of this permit under several provisions of the Water Code, including, but not limited to, sections 13385, 13386, and 13387.

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS**A. Publicly-Owned Treatment Works (POTWs)**

All POTWs shall provide adequate notice to the Regional Water Board of the following (40 C.F.R. § 122.42(b)):

1. 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 C.F.R. § 122.42(b)(1)); and
2. 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. (40 C.F.R. § 122.42(b)(2).)
3. 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 C.F.R. § 122.42(b)(3).)

**ATTACHMENT D-1 - CENTRAL COAST WATER BOARD STANDARD PROVISIONS
(JANUARY 1985)****I. Central Coast General Permit Conditions****A. Central Coast Standard Provisions – Prohibitions**

1. Introduction of "incompatible wastes" to the treatment system is prohibited.
2. Discharge of high-level radiological waste and of radiological, chemical, and biological warfare agents is prohibited.
3. Discharge of "toxic pollutants" in violation of effluent standards and prohibitions established under Section 307(a) of the Clean Water Act is prohibited.
4. Discharge of sludge, sludge digester or thickener supernatant, and sludge drying bed leachate to drainageways, surface waters, or the ocean is prohibited.
5. Introduction of pollutants into the collection, treatment, or disposal system by an "indirect discharger" that:
 - a. Inhibit or disrupt the treatment process, system operation, or the eventual use or disposal of sludge; or,
 - b. Flow through the system to the receiving water untreated; and,
 - c. Cause or "significantly contribute" to a violation of any requirement of this Order, is prohibited.
6. Introduction of "pollutant free" wastewater to the collection, treatment, and disposal system in amounts that threaten compliance with this order is prohibited.

B. Central Coast Standard Provisions – Provisions

1. Collection, treatment, and discharge of waste shall not create a nuisance or pollution, as defined by Section 13050 of the California Water Code.
2. All facilities used for transport or treatment of wastes shall be adequately protected from inundation and washout as the result of a 100-year frequency flood.
3. Operation of collection, treatment, and disposal systems shall be in a manner that precludes public contact with wastewater.
4. Collected screenings, sludges, and other solids removed from liquid wastes shall be disposed in a manner approved by the Executive Officer.
5. Publicly owned wastewater treatment plants shall be supervised and operated by persons possessing certificates of appropriate grade pursuant to Title 23 of the California Administrative Code.

6. After notice and opportunity for a hearing, this order may be terminated for cause, including, but not limited to:
 - a. violation of any term or condition contained in this order;
 - b. obtaining this order by misrepresentation, or by failure to disclose fully all relevant facts;
 - c. a change in any condition or endangerment to human health or environment that requires a temporary or permanent reduction or elimination of the authorized discharge; and,
 - d. a substantial change in character, location, or volume of the discharge.
7. Provisions of this permit are severable. If any provision of the permit is found invalid, the remainder of the permit shall not be affected.
8. After notice and opportunity for hearing, this order may be modified or revoked and reissued for cause, including:
 - a. Promulgation of a new or revised effluent standard or limitation;
 - b. A material change in character, location, or volume of the discharge;
 - c. Access to new information that affects the terms of the permit, including applicable schedules;
 - d. Correction of technical mistakes or mistaken interpretations of law; and,
 - e. Other causes set forth under Sub-part D of 40 CFR Part 122.
9. Safeguards shall be provided to assure maximal compliance with all terms and conditions of this permit. Safeguards shall include preventative and contingency plans and may also include alternative power sources, stand-by generators, retention capacity, operating procedures, or other precautions. Preventative and contingency plans for controlling and minimizing the affect of accidental discharges shall:
 - a. identify possible situations that could cause "upset", "overflow" or "bypass", or other noncompliance. (Loading and storage areas, power outage, waste treatment unit outage, and failure of process equipment, tanks and pipes should be considered.)
 - b. evaluate the effectiveness of present facilities and procedures and describe procedures and steps to minimize or correct any adverse environmental impact resulting from noncompliance with the permit.
10. Physical Facilities shall be designed and constructed according to accepted engineering practice and shall be capable of full compliance with this order when properly operated and maintained. Proper operation and maintenance shall be

described in an Operation and Maintenance Manual. Facilities shall be accessible during the wet-weather season.

11. Production and use of reclaimed water is subject to the approval of the Board. Production and use of reclaimed water shall be in conformance with reclamation criteria established in Chapter 3, Title 22, of the California Administrative Code and Chapter 7, Division 7, of the California Water Code. An engineering report pursuant to section 60323, Title 22, of the California Administrative Code is required and a waiver or water reclamation requirements from the Board is required before reclaimed water is supplied for any use, or to any user, not specifically identified and approved either in this Order or another order issued by this Board.

C. Central Coast Standard Provisions – General Monitoring Requirements

1. If results of monitoring a pollutant appear to violate effluent limitations based on a weekly, monthly, 30-day, or six-month period, but compliance or non-compliance cannot be validated because sampling is too infrequent, the frequency of sampling shall be increased to validate the test within the next monitoring period. The increased frequency shall be maintained until the Executive Officer agrees the original monitoring frequency may be resumed.

For example, if copper is monitored annually and results exceed the six-month median numerical effluent limitation in the permit, monitoring of copper must be increased to a frequency of at least once every two months (Central Coast Standard Provisions – Definitions I.G.13.). If suspended solids are monitored weekly and results exceed the weekly average numerical limit in the permit, monitoring of suspended solids must be increased to at least four (4) samples every week (Central Coast Standard Provisions – Definitions I.G.14.).

2. Water quality analyses performed in order to monitor compliance with this permit shall be by a laboratory certified by the State Department of Health Services for the constituent(s) being analyzed. Bioassay(s) performed in order to monitor compliance with this permit shall be in accord with guidelines approved by the State Water Resources Control Board and the State Department of Fish and Game. If the laboratory used or proposed for use by the discharger is not certified by the California Department of Health Services or, where appropriate, the Department of Fish and Game due to restrictions in the State's laboratory certification program, the discharger shall be considered in compliance with this provision provided:
 - a. Data results remain consistent with results of samples analyzed by the Central Coast Water Board;
 - b. A quality assurance program is used at the laboratory, including a manual containing steps followed in this program that is available for inspections by the staff of the Central Coast Water Board; and,
 - c. Certification is pursued in good faith and obtained as soon as possible after the program is reinstated.

3. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. Samples shall be taken during periods of peak loading conditions. Influent samples shall be samples collected from the combined flows of all incoming wastes, excluding recycled wastes. Effluent samples shall be samples collected downstream of the last treatment unit and tributary flow and upstream of any mixing with receiving waters.
4. 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.

D. Central Coast Standard Provisions – General Pretreatment Provisions

1. Discharge of pollutants by “indirect dischargers” in specific industrial sub-categories (appendix C, 40 CFR Part 403), where categorical pretreatment standards have been established, or are to be established, (according to 40 CFR Chapter 1, Subchapter N), shall comply with the appropriate pretreatment standards:
 - a. By the date specified therein;
 - b. Within three (3) years of the effective date specified therein, but in no case later than July 1, 1984; or,
 - c. If a new indirect discharger, upon commencement of discharge.

E. Central Coast Standard Provisions – General Reporting Requirements

1. Reports of marine monitoring surveys conducted to meet receiving water monitoring requirements of the Monitoring and Reporting Program shall include at least 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 differences unique to each station (e.g., station location, grain size, rocks, shell litter, calcareous worm tubes, evident life, etc.).
 - c. A description of the sampling procedures and preservation sequence used in the survey.
 - d. A description of the exact method used for laboratory analysis. In general, analysis shall be conducted according to Central Coast Standard Provisions – C.1 above, and Federal Standard Provision – Monitoring III.B. However, variations in procedure are acceptable to accommodate the special requirements of sediment analysis. All such variations must be reported with the test results.

- e. A brief discussion of the results of the survey. The discussion shall compare data from the control station with data from the outfall stations. All tabulations and computations shall be explained.
2. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule shall be submitted within 14 days following each scheduled date unless otherwise specified within the permit. If reporting noncompliance, the report shall include a description of the reason, a description and schedule of tasks necessary to achieve compliance, and an estimated date for achieving full compliance. A second report shall be submitted within 14 days of full compliance.
3. The "Discharger" shall file a report of waste discharge or secure a waiver from the Executive Officer at least 180 days before making any material change or proposed change in the character, location, or plume of the discharge.
4. Within 120 days after the discharger discovers, or is notified by the Central Coast Water Board, that monthly average daily flow will or may reach design capacity of waste treatment and/or disposal facilities within four (4) years, the discharger shall file a written report with the Central Coast Water Board. The report shall include:
 - a. the best estimate of when the monthly average daily dry weather flow rate will equal or exceed design capacity; and,
 - b. a schedule for studies, design, and other steps needed to provide additional capacity for waste treatment and/or disposal facilities before the waste flow rate equals the capacity of present units.

In addition to complying with Federal Standard Provision – Reporting V.B., the required technical report shall be prepared with public participation and reviewed, approved and jointly submitted by all planning and building departments having jurisdiction in the area served by the waste collection, treatment, or disposal facilities.

5. All "Dischargers" shall submit reports to the:

California Regional Water Quality Control Board
Central Coast Region
895 Aerovista Place, Suite 101
San Luis Obispo, CA 93401-7906

In addition, "Dischargers" with designated major discharges shall submit a copy of each document to:

Regional Administrator
US Environmental Protection Agency, Region 9
Attention: CWA Standards and Permits Office (WTR-5)
75 Hawthorne Street
San Francisco, California 94105

6. Transfer of control or ownership of a waste discharge facility must be preceded by a notice to the Central Coast Water Board at least 30 days in advance of the proposed transfer date. The notice must include a written agreement between the existing "Discharger" and proposed "Discharger" containing specific date for transfer of responsibility, coverage, and liability between them. Whether a permit may be transferred without modification or revocation and reissuance is at the discretion of the Board. If permit modification or revocation and reissuance is necessary, transfer may be delayed 180 days after the Central Coast Water Board's receipt of a complete permit application. Please also see Federal Standard Provision – Permit Action II.C.
7. Except for data determined to be confidential under Section 308 of the Clean Water Act (excludes effluent data and permit applications), all reports prepared in accordance with this permit shall be available for public inspection at the office of the Central Coast Water Board or Regional Administrator of USEPA. Please also see Federal Standard Provision – Records IV.C.
8. By January 30th of each year, the discharger shall submit an annual report to the Central Coast Water Board. The report shall contain both tabular and graphical summaries of the monitoring data obtained during the previous year. The discharger shall discuss the compliance record and corrective actions taken, or which may be needed, to bring the discharge into full compliance. The report shall address operator certification and provide a list of current operating personnel and their grade of certification. The report shall inform the Board of the date of the Facility's Operation and Maintenance Manual (including contingency plans as described Central Coast Standard Provision – Provision B.9., above), of the date the manual was last reviewed, and whether the manual is complete and valid for the current facility. The report shall restate, for the record, the laboratories used by the discharger to monitor compliance with effluent limits and provide a summary of performance relative to Section C above, General Monitoring Requirements.

If the facility treats industrial or domestic wastewater and there is no provision for periodic sludge monitoring in the Monitoring and Reporting Program, the report shall include a summary of sludge quantities, analyses of its chemical and moisture content, and its ultimate destination.

If applicable, the report shall also evaluate the effectiveness of the local source control or pretreatment program using the State Water Resources Control Board's "Guidelines for Determining the Effectiveness of Local Pretreatment Programs."

F. Central Coast Standard Provisions – Enforcement

1. Any person failing to file a report of waste discharge or other report as required by this permit shall be subject to a civil penalty not to exceed \$5,000 per day.
2. Upon reduction, loss, or failure of the treatment facility, the "Discharger" shall, to the extent necessary to maintain compliance with this permit, control production or all discharges, or both, until the facility is restored or an alternative method of treatment is provided.

G. Central Coast Standard Provisions – Definitions

(Not otherwise included in Attachment A to this Order)

1. A “composite sample” is a combination of no fewer than eight (8) individual samples obtained at equal time intervals (usually hourly) over the specified sampling (composite) period. The volume of each individual sample is proportional to the flow rate at the time of sampling. The period shall be specified in the Monitoring and Reporting Program ordered by the Executive Officer.
2. “Daily Maximum” limit means the maximum acceptable concentration or mass emission rate of a pollutant measured during a calendar day or during any 24-hour period reasonably representative of the calendar day for purposes of sampling. It is normally compared with results based on “composite samples” except for ammonia, total chlorine, phenolic compounds, and toxicity concentration. For all exceptions, comparisons will be made with results from a “grab sample”.
3. “Discharger”, as used herein, means, as appropriate: (1) the Discharger, (2) the local sewerage entity (when the collection system is not owned and operated by the Discharger), or (3) “indirect discharger” (where “Discharger” appears in the same paragraph as “indirect discharger”, it refers to the discharger.)
4. “Duly Authorized Representative” is one where:
 - a. the authorization is made in writing by a person described in the signatory paragraph of Federal Standard Provision V.B.;
 - b. the authorization specifies either an individual or the occupant of a position having either responsibility for the overall operation of the regulated facility, such as the plant manager, or overall responsibility for environmental matters of the company; and,
 - c. the written authorization was submitted to the Central Coast Water Board.
5. A “grab sample” is defined as any individual sample collected in less than 15 minutes. “Grab samples” shall be collected during peak loading conditions, which may or may not be during hydraulic peaks. It is used primarily in determining compliance with the daily maximum limits identified in Central Coast Standard Provision – Provision G.2. and instantaneous maximum limits.
6. “Hazardous substance” means any substance designated under 40 CFR Part 116 pursuant to Section 311 of the Clean Water Act.
7. “Incompatible wastes” are:
 - a. Wastes which create a fire or explosion hazard in the treatment works;
 - b. Wastes which will cause corrosive structural damage to treatment works, but in no case wastes with a pH lower than 5.0 unless the works is specifically designed to accommodate such wastes;

- c. Solid or viscous wastes in amounts which cause obstruction to flow in sewers, or which cause other interference with proper operation of treatment works;
 - d. Any waste, including oxygen demanding pollutants (BOD, etc), released in such volume or strength as to cause inhibition or disruption in the treatment works and subsequent treatment process upset and loss of treatment efficiency; and,
 - e. Heat in amounts that inhibit or disrupt biological activity in the treatment works or that raise influent temperatures above 40°C (104°F) unless the treatment works is designed to accommodate such heat.
8. "Indirect Discharger" means a non-domestic discharger introducing pollutants into a publicly owned treatment and disposal system.
 9. "Log Mean" is the geometric mean. Used for determining compliance of fecal or total coliform populations, it is calculated with the following equation:

$$\text{Log Mean} = (C_1 \times C_2 \times \dots \times C_n)^{1/n},$$

in which "n" is the number of days samples were analyzed during the period and any "C" is the concentration of bacteria (MPN/100 ml) found on each day of sampling. "n" should be five or more.

10. "Mass emission rate" is a daily rate defined by the following equations:

$$\text{mass emission rate (lbs/day)} = 8.34 \times Q \times C; \text{ and,}$$

$$\text{mass emission rate (kg/day)} = 3.79 \times Q \times C,$$

where "C" (in mg/l) is the measured daily constituent concentration or the average of measured daily constituent concentrations and "Q" (in MGD) is the measured daily flow rate or the average of measured daily flow rates over the period of interest.

11. The "Maximum Allowable Mass Emission Rate," whether for a month, week, day, or six-month period, is a daily rate determined with the formulas in paragraph G.10, above, using the effluent concentration limit specified in the permit for the period and the average of measured daily flows (up to the allowable flow) over the period.
12. "Maximum Allowable Six-Month Median Mass Emission Rate" is a daily rate determined with the formulas in Central Coast Standard Provision – Provision G.10, above, using the "six-month Median" effluent limit specified in the permit, and the average of measured daily flows (up to the allowable flow) over a 180-day period.
13. "Median" is the value below which half the samples (ranked progressively by increasing value) fall. It may be considered the middle value, or the average of two middle values.
14. "Monthly Average" (or "Weekly Average", as the case may be) is the arithmetic mean of daily concentrations or of daily mass emission rates over the specified 30-day (or 7-day) period.

$$\text{Average} = (X_1 + X_2 + \dots + X_n) / n$$

in which "n" is the number of days samples were analyzed during the period and "X" is either the constituent concentration (mg/l) or mass emission rate (kg/day or lbs/day) for each sampled day. "n" should be four or greater.

15. "Municipality" means a city, town, borough, county, district, association, or other public body created by or under state law and having jurisdiction over disposal of sewage, industrial waste, or other waste.
16. "Overflow" means the intentional or unintentional diversion of flow from the collection and transport systems, including pumping facilities.
17. "Pollutant-free wastewater" means inflow and infiltration, stormwaters, and cooling waters and condensates which are essentially free of pollutants.
18. "Primary Industry Category" means any industry category listed in 40 CFR Part 122, Appendix A.
19. "Removal Efficiency" is the ratio of pollutants removed by the treatment unit to pollutants entering the treatment unit. Removal efficiencies of a treatment plant shall be determined using "Monthly averages" of pollutant concentrations (C, in mg/l) of influent and effluent samples collected about the same time and the following equation (or its equivalent):
$$C_{\text{Effluent}} \text{ Removal Efficiency (\%)} = 100 \times (1 - C_{\text{effluent}} / C_{\text{influent}})$$
20. "Severe property damage" means substantial physical damage to property, damage to treatment facilities which causes them to become inoperable, or substantial and permanent loss to natural resources which can reasonably be expected to occur in the absence of a "bypass". It does not mean economic loss caused by delays in production.
21. "Sludge" means the solids, residues, and precipitates separated from, or created in, wastewater by the unit processes of a treatment system.
22. To "significantly contribute" to a permit violation means an "indirect discharger" must:
 - a. Discharge a daily pollutant loading in excess of that allowed by contract with the "Discharger" or by Federal, State, or Local law;
 - b. Discharge wastewater which substantially differs in nature or constituents from its average discharge;
 - c. Discharge pollutants, either alone or in conjunction with discharges from other sources, which results in a permit violation or prevents sewage sludge use or disposal; or
 - d. Discharge pollutants, either alone or in conjunction with pollutants from other sources that increase the magnitude or duration of permit violations.

23. "Toxic Pollutant" means any pollutant listed as toxic under Section 307 (a) (1) of the Clean Water Act or under 40 CFR Part 122, Appendix D. Violation of maximum daily discharge limitations are subject to 24-hour reporting (Federal Standard Provisions V.E.).
24. "Zone of Initial Dilution" means the region surrounding or adjacent to the end of an outfall pipe or diffuser ports whose boundaries are defined through calculation of a plume model verified by the State Water Resources Control Board.

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ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

NPDES regulations at 40 CFR 122.48 require NPDES permits specify monitoring and reporting requirements. Water Code sections 13267 and 13383 also authorize the Regional Water Board to require technical and monitoring reports. This MRP establishes monitoring and reporting requirements, which implement the federal and California regulations.

I. GENERAL MONITORING PROVISIONS

- A.** Laboratories analyzing monitoring samples shall be certified by the Department of Health Services, in accordance with Water Code section 13176, and must include quality assurance/quality control data with their reports.
- B.** 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 locations specified below and, unless otherwise specified, before the monitored flow joins or is diluted by any other waste stream, body of water, or substance. Monitoring locations shall not be changed without notification to and approval of the Regional Board.
- C.** 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 measurements 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 ± 10 percent from true discharge rates throughout the range of expected discharge volumes. Guidance in selection, installation, calibration, and operation of acceptable flow measurement devices can be obtained from the following references.
 - 1. A Guide to Methods and Standards for the Measurement of Water Flow, U.S. Department of Commerce, National Bureau of Standards, NBS Special Publication 421, May 1975, 96 pp. (Available from the U.S. Government Printing Office, Washington, D.C. 20402. Order by SD Catalog No. C13.10:421.)
 - 2. Water Measurement Manual, U.S. Department of Interior, Bureau of Reclamation, Second Edition, Revised Reprint, 1974, 327 pp. (Available from the U.S. Government Printing Office, Washington D.C. 20402. Order by Catalog No. 172.19/2:W29/2, Stock No. S/N 24003-0027.)
 - 3. Flow Measurement in Open Channels and Closed Conduits, U.S. Department of Commerce, National Bureau of Standards, NBS Special Publication 484, October 1977, 982 pp. (Available in paper copy or microfiche from National Technical Information Services (NTIS) Springfield, VA 22151. Order by NTIS No. PB-273 535/5ST.)
 - 4. NPDES Compliance Sampling Manual, U.S. Environmental Protection Agency, Office of Water Enforcement, Publication MCD-51, 1977, 140 pp. (Available from the General Services Administration (8FFS), Centralized Mailing Lists Services, Building 41, Denver Federal Center, CO 80225.)

- D. 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 to ensure continued accuracy of the devices.
- E. Monitoring results, including noncompliance, shall be reported at intervals and in a manner specified in this MRP.
- F. Unless otherwise specified by this MRP, all monitoring shall be conducted according to test procedures established at 40 CFR 136, *Guidelines Establishing Test Procedures for Analysis of Pollutants*. All analyses shall be conducted using the lowest practical quantitation limit achievable using the specified methodology. Where effluent limitations are set below the lowest achievable quantitation limits, pollutants not detected at the lowest practical quantitation limits will be considered in compliance with effluent limitations. Analysis for toxics listed by the California Toxics Rule shall also adhere to guidance and requirements contained in the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (2005)*. Analyses for toxics listed in Table B of the California Ocean Plan (2005) shall adhere to guidance and requirements contained in that document.

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	Monitoring Location Name	Monitoring Location Description
---	INF-001	Influent wastewater prior to treatment and following all significant inputs to the collection system or to the headworks of untreated wastewater, upstream of any in-plant return flows, where representative samples of wastewater influent can be obtained.
001	EFF-001	Location where representative sample of effluent discharged through the ocean outfall can be collected, after treatment and before contact with receiving water.
---	RSW – A	Receiving water at the Point of Santa Cruz at the 30-ft depth contour
---	RSW – C	Receiving water at the surf at old outfall line at the 30-ft depth contour
---	RSW – E	Receiving water 610 meters west of the outfall line crossing the beach at the 30-ft depth contour
---	RSW – F	Receiving water at the Natural Bridges State Beach at the 30-ft depth contour
---	RSW – G	Receiving water at Terrace Point at the 30-ft depth contour
---	RSW – H	Receiving water 1,180 meters upcoast of Terrace Point at the 30-ft depth contour
---	RSW – I	Receiving water, 2,080 meters upcoast of Terrace Point at the 30-ft depth contour
	BIO-001	The last point in the biosolids handling process where representative samples of residual solids from the treatment process can be obtained.

III. INFLUENT MONITORING REQUIREMENTS**A. Monitoring Location INF - 001**

1. The Discharger shall monitor influent to the facility at Monitoring Location INF – 001 in accordance with the following schedule.

Table E-2. Influent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency
Daily Flow	MGD	Metered	Daily
Instantaneous Flow	MGD	Metered	Daily
Maximum Daily Flow	MGD	Metered	Daily
Mean Daily Flow	MGD	Calculated	Monthly
Mean Daily pH	pH units	Metered	Daily
Maximum Daily pH	pH units	Metered	Daily
Minimum Daily pH	pH units	Metered	Daily
TOC	mg/L	24-hr Composite	Weekly
TSS	mg/L	24-hr Composite	Weekly
Ocean Plan Table B Constituents	Units per Table B	24-hr Composite	Annually ^[1]
Pretreatment Requirements ^[2]	--	--	--

^[1] Annual influent samples shall be collected according to the following schedule: October 2010, September 2011, August 2012, July 2013, and June 2014.

^[2] See Sections VI.C.5.b. of this Order.

IV. EFFLUENT MONITORING REQUIREMENTS**A. Monitoring Location EFF - 001**

1. The Discharger shall monitor effluent at Monitoring Location EFF – 001 in accordance with the following schedule.

Table E-3. Effluent Monitoring at EFF - 001

Parameter	Units	Sample Type	Minimum Sampling Frequency
Daily Flow	MGD	Metered	Daily
Instantaneous Flow	MGD	Metered	Daily
Maximum Daily Flow	MGD	Metered	Daily
Mean Daily Flow	MGD	Calculated	Monthly
pH	pH units	Metered	Daily
Total & Fecal Coliform ^{[2],[3]}	MPN/100mL	Grab	Weekly ^[1]
Enterococci Organisms ^{[2],[4]}	MPN/100mL	Grab	Weekly ^[1]
Temperature	° F	---	Twice Weekly
TOC ^[5]	mg/L	24-hr Composite	Every sixth day
TSS	mg/L	24-hr Composite	Every sixth day
Settleable Solids	mL/L/hr	Grab	Twice Weekly
Chlorine Residual ^[6]	mg/L	Grab	Continuous
Turbidity	NTUs	Grab	Monthly

Parameter	Units	Sample Type	Minimum Sampling Frequency
Oil and Grease	mg/L	Grab	Monthly
Ammonia	mg/L	Grab	Monthly
Nitrate (as N)	mg/L	Grab	Monthly
Urea	mg/L	Grab	Monthly
Silicate	mg/L	Grab	Monthly
Total Phenolic Compounds	µg/L	Grab	Quarterly (Jan/Apr/Jul/Oct)
Acute Toxicity ^[7]	TUa	24-hr composite	Quarterly (Jan/Apr/Jul/Oct)
Chronic Toxicity ^[7]	TUc	24-hr composite	Quarterly (Jan/Apr/Jul/Oct)
Total Sulfides	mg/L	Grab	Quarterly (Jan/Apr/Jul/Oct)
Ocean Plan Table B Metals ^[8]	µg/L	24-hr composite	Semiannually ^[9]
Ocean Plan Table B Pollutants ^[10]	µg/L	24-hr composite	Semiannually ^[9]

^[1] Total coliform, fecal coliform, and enterococcus effluent monitoring apply if the Executive Officer concludes from a bacterial assessment (V.A.1 of the Order) that the discharge consistently exceeds the Receiving Water Limitation of the Order.

^[2] For all bacterial analyses, sample dilutions should be performed so the range of bacterial density values extends from 200 to 160,000 /100 mL. The detection methods used for each analysis shall be reported with the results of the analysis.

^[3] Detection methods used for coliforms (total and fecal) shall be those presented in Table 1A of 40 CFR PART 136 (revised edition of May 14, 1999), unless alternate methods have been approved in advance by USEPA pursuant to 40 CFR Part 136.

^[4] 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, or any improved method determined by the Regional Board to be appropriate.

^[5] The Executive Officer of the CRWQCB has determined that the discharger demonstrated that there was an adequately robust statistical correlation between TOC and BOD₅ at this facility and has approved the reporting of TOC to meet the technology based effluent limitation for BOD₅, as allowed by 40 CFR 133. A detailed discussion of the approved correlation is provided in the Fact Sheet (Attachment F).

^[6] The City of Santa Cruz wastewater effluent shall be monitored continually for total chlorine residual when chlorine disinfection is occurring. The City shall review continuous monitoring strip charts and submit a summary (chlorine residual daily range, and daily average) to the Regional Board with monthly monitoring reports. Grab samples for compliance with effluent limits may be collected at the last accessible measurement location before discharge to the ocean.

^[7] Whole effluent acute and chronic toxicity monitoring shall be conducted according to the requirements established in section V of this Monitoring and Reporting Plan.

^[8] Those twelve metals (Sb, As, Cd, Cr⁺³, Cr⁺⁶, Cu, Pb, Hg, Ni, Se, Ag, and Zn) with applicable water quality objectives established by Table B of the Ocean Plan. Analysis shall be for total recoverable metals.

^[9] Semi-annual sampling shall be conducted according to the following schedule: April and September 2011, March and August 2012, February and July 2013, January and June 2014, and January and June 2015.

^[10] To determine if the discharger's Table B pollutants comply with effluent limitations, the Discharger shall sample the effluent using the high volume water sampling (HVWS) method employed by CCLEAN or another HVWS method, where applicable, provided the sample analytical method has been validated by USEPA to be in accordance with a 40 CFR 136, or as allowed per the Implementation Provisions in section III.C.5.b of the Ocean Plan.

TABLE E-4: Effluent Monitoring of Remaining Priority Pollutants at EFF-001¹

Remaining Priority Pollutants			
Volatile Organic Compounds	Units	Sample type	Min. Analysis Frequency
Bromoform	µg/L	24-hr Composite ²	Semiannually
Chloroethane	µg/L	24-hr Composite ²	Semiannually
2-Chloroethyl Vinyl Ether	µg/L	24-hr Composite ²	Semiannually
1,1-Dichloroethane	µg/L	24-hr Composite ²	Semiannually
Trans-1,2-Dichloro-Ethylene	µg/L	24-hr Composite ²	Semiannually
1,2-Dichloropropane	µg/L	24-hr Composite ²	Semiannually
1,3-Dichloro-Propylene	µg/L	24-hr Composite ²	Semiannually
Methyl Bromide	µg/L	24-hr Composite ²	Semiannually
Methyl Chloride	µg/L	24-hr Composite ²	Semiannually
Methylene Chloride	µg/L	24-hr Composite ²	Semiannually
Acid Extractable Compounds	µg/L	24-hr Composite ²	Semiannually
P-Chloro-M-Cresol	µg/L	24-hr Composite ²	Semiannually
2-Chlorophenol	µg/L	24-hr Composite ²	Semiannually
2,4-Dichlorophenol	µg/L	24-hr Composite ²	Semiannually
2,4-Dimethylphenol	µg/L	24-hr Composite ²	Semiannually
4,6-Dinitro-O-Cresol	µg/L	24-hr Composite ²	Semiannually
2-Nitrophenol	µg/L	24-hr Composite ²	Semiannually
4-Nitrophenol	µg/L	24-hr Composite ²	Semiannually
Pentachlorophenol	µg/L	24-hr Composite ²	Semiannually
Phenol	µg/L	24-hr Composite ²	Semiannually
Base-Neutral Compounds	µg/L	24-hr Composite ²	Semiannually
Acenaphthene	µg/L	24-hr Composite ²	Semiannually
Acenaphthylene	µg/L	24-hr Composite ²	Semiannually
Anthracene	µg/L	24-hr Composite ²	Semiannually
Benzo (A) Anthracene	µg/L	24-hr Composite ²	Semiannually
Benzo (A) Pyrene	µg/L	24-hr Composite ²	Semiannually
3,4-Benzo-Fluoranthene	µg/L	24-hr Composite ²	Semiannually
Benzo (ghi) Perylene	µg/L	24-hr Composite ²	Semiannually
Benzo (K) Fluoranthene	µg/L	24-hr Composite ²	Semiannually
4-Bromophenyl Phenyl Ether	µg/L	24-hr Composite ²	Semiannually
Butyl Benzyl Phthalate	µg/L	24-hr Composite ²	Semiannually
2-Chloronaphthalene	µg/L	24-hr Composite ²	Semiannually
4-Chlorophenyl Phenyl Ether	µg/L	24-hr Composite ²	Semiannually
Chrysene	µg/L	24-hr Composite ²	Semiannually
Di-N-Octyl Phthalate	µg/L	24-hr Composite ²	Semiannually
Dibenzo (A,H) Anthracene	µg/L	24-hr Composite ²	Semiannually
1,4-Dichlorobenzene	µg/L	24-hr Composite ²	Semiannually
2,6-Dinitrotoluene	µg/L	24-hr Composite ²	Semiannually
Fluorene	µg/L	24-hr Composite ²	Semiannually
Indeno (1,2,3-CD) Pyrene	µg/L	24-hr Composite ²	Semiannually
Naphthalene	µg/L	24-hr Composite ²	Semiannually
Phenanthrene	µg/L	24-hr Composite ²	Semiannually

Remaining Priority Pollutants			
Volatile Organic Compounds	Units	Sample type	Min. Analysis Frequency
Pyrene	µg/L	24-hr Composite ²	Semiannually
1,2,4,-Trichlorobenzene	µg/L	24-hr Composite ²	Semiannually

1. The Discharger shall concurrently monitor the pollutants and whole effluent acute and chronic toxicity once in the dry season and once in the wet season each year.
2. The Discharger shall utilize the high volume water sampling (HVWS) method employed by the CCLEAN program for compliance determination of the Table B pollutants and other pollutants, when appropriate, provided the subsequent analytical methods are in accordance with 40 CFR 136 or as allowable per the Implementation Provisions for Table B contained in section III.C.5.b of the Ocean Plan.

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

A. Acute Toxicity

Compliance with the acute toxicity limitation shall be determined using a USEPA-approved protocol as provided in 40 CFR 136 (*Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, Fifth Edition, U.S. EPA Office of Water, EPA-821-R-02-012 (2002) or the latest edition).

Acute Toxicity (TU_a) = 100/96-hr LC 50.

LC 50 (percent waste giving 50% survival of test organisms) shall be determined by 96-hour static or continuous flow bioassay techniques using standard marine test species as specified in EPA-821-R-02-012 and as noted in the following table.

Table E-5. Approved Tests - Acute Toxicity

Species	Scientific Name	Effect	Test Duration
shrimp	<i>Holmesimysis costata</i>	survival	48 or 96 hours
shrimp	<i>Mysidopsis bahia</i>	survival	48 or 96 hours
silversides	<i>Menidia beryllina</i>	survival	48 or 96 hours
sheepshead minnow	<i>Cyprinodon variegatus</i>	survival	48 or 96 hours

If the effluent is to be discharged to a marine or estuarine system (e.g., salinity values in excess of 1,000 mg/L) originates from a freshwater supply, salinity of the effluent must be increased with dry ocean salts (e.g., FORTY FATHOMS[®]) to match salinity of the receiving water. This modified effluent shall then be tested using marine species.

Reference toxicant test results shall be submitted with the effluent sample test results. Both tests must satisfy the test acceptability criteria specified in EPA-821-R-02-012. If the test acceptability criteria are not achieved or if toxicity is detected, the sample shall be retaken and retested within 5 days of the failed sampling event. The retest results shall be reported in accordance with EPA-821-R-02-012 (chapter on report preparation) and the results shall be attached to the next monitoring report.

When it is not possible to measure the 96-hour LC 50 due to greater than 50 percent survival of the test species in 100 percent waste, the toxicity concentration shall be calculated by the expression:

$$TU_a = [(\log(100 - S))/1.7] \quad \text{Where } S = \text{percentage survival in 100\% waste.}$$

If $S > 99$, TU_a shall be reported as zero.

When toxicity monitoring finds acute toxicity in the effluent above the limitation established by the Order, the Discharger shall immediately resample the effluent, if the discharge is continuing, and retest for acute toxicity. Results of the initial failed test and any toxicity monitoring results subsequent to the failed test shall be reported as soon as reasonable to the Executive Officer (EO). The EO will determine whether to initiate enforcement action, whether to require the Discharger to implement toxicity reduction evaluation (TRE) requirements, or to implement other measures.

B. Chronic Toxicity

The presence of chronic toxicity shall be estimated as specified in *Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms*, EPA-821/600/R-95/136; *Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms*, EPA-600-4-91-003; *Procedures Manual for Conducting Toxicity Tests developed by the Marine Bioassay Project*, SWRCB 1996, 96-1WQ; and/or *Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms*, EPA/600/4-87-028 or subsequent editions.

Chronic toxicity measures a sub lethal effect (e.g., reduced growth or reproduction) to experimental test organisms exposed to an effluent compared to that of the control organisms.

$$\text{Chronic Toxicity (TU}_c\text{)} = 100/\text{NOEL}$$

The no observed effect concentration (NOEC) is the maximum tested concentration in a medium which does not cause known adverse effects upon chronic exposure in the species in question (i.e. the highest effluent concentration to which organisms are exposed in a chronic test that causes no observable adverse effects on the test organisms; e.g., the highest concentration of a toxicant to which the values for the observed responses are not statistically significantly different from the controls). Examples of chronic toxicity include but are not limited to measurements of toxicant effects on reproduction, growth, and sublethal effects that can include behavioral, physiological, and biochemical effects.

In accordance with the 2005 Ocean Plan, Appendix III, *Standard Monitoring Procedures*, the Discharger shall use the critical life stage toxicity tests specified in the table below to measure TU_c . Other species or protocols will be added to the list after State Water board review and approval.

A minimum of three test species with approved test protocols shall be used to measure compliance with the toxicity limitation. If possible, the test species shall include a fish,

an invertebrate, and an aquatic plant. After a screening period of no fewer than three tests, monitoring can be reduced to the most sensitive species. Dilution and control water should be obtained from an unaffected area of the receiving waters. The sensitivity to the test organisms to a reference toxicant shall be determined concurrently with each bioassay test and reported with the test results.

Note: If the Discharger has already performed the screening described above, then the Discharger may continue using the identified most sensitive species for chronic toxicity testing without re-screening of three species. If an alternative species is proposed to be used for chronic toxicity testing, the Discharger shall perform the screening and include the proposed test species as one of those species screened.

Table E-6. Approved Tests—Chronic Toxicity

Species	Test	Tier ^[1]	Reference ^[2]
Giant kelp, <i>Macrocystis pyrifera</i>	percent germination; germ tube length	1	a, c
Red abalone, <i>Haliotis rufescens</i>	abnormal shell development	1	a, c
Oyster, <i>Crassostrea gigas</i> ; mussels, <i>Mytilus spp.</i>	abnormal shell development; percent survival	1	a, c
Urchin, <i>Strongylocentrotus purpuratus</i> ; sand dollar, <i>Dendraster excentricus</i>	percent normal development	1	a, c
Urchin, <i>Strongylocentrotus purpuratus</i> ; sand dollar, <i>Dendraster excentricus</i>	percent fertilization	1	a, c
Shrimp, <i>Homesimysis costata</i>	percent survival; growth	1	a, c
Shrimp, <i>Mysidopsis bahia</i>	percent survival; fecundity	2	b, d
Topsmelt, <i>Atherinops affinis</i>	larval growth rate; percent survival	1	a, c
Silverside, <i>Menidia beryllina</i>	larval growth rate; percent survival	2	b, d

^[1] First tier methods are preferred for compliance monitoring. If first tier organisms are not available, the Discharger can use a second tier test method following approval by the Regional Water Board.

^[2] Protocol References:

- a. Chapman, G.A., D.L. Denton, and J.M. Lazorchak. 1995. Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms. U.S. EPA Report No. EPA/600/R-95/136.
- b. Klemm, D.J., G.E. Morrison, T.J. Norberg-King, W.J. Peltier, and M.A. Heber. 1994. Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Marine and Estuarine Organisms. U.S. EPA Report No. EPA-600-4-91-003.
- c. SWRCB 1996. Procedures Manual for Conducting Toxicity Tests Developed by the Marine Bioassay Project. 96-1WQ.
- d. Weber, C.I., W.B. Horning, I.I., D.J. Klemm, T.W. Nieheisel, P.A. Lewis, E.L. Robinson, J. Menkedick and F. Kessler (eds). 1998. Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms. EPA/600/4-87/028. National Information Service, Springfield, VA.

Dilution and control waters shall be obtained from an area of the receiving waters, typically upstream, which is unaffected by the discharge. Standard dilution water can be used, if the receiving water itself exhibits toxicity or if approved by the Regional Water Board. If the dilution water used in testing is different from the water in which the test organisms were cultured, a second control sample using culture water shall be tested.

If the effluent is to be discharged to a marine or estuarine system (e.g., salinity values in excess of 1,000 mg/L) originates from a freshwater supply, salinity of the effluent must be increased with dry ocean salts (e.g., FORTY FATHOMS[®]) to match salinity of the receiving water. This modified effluent shall then be tested using marine species.

For this discharge, the presence of chronic toxicity at more than 85 TUc shall trigger the Toxicity Reduction Evaluation (TRE) requirement of this Order (Section VI.C.2.a).

C. Toxicity Reporting

1. The Discharger shall include a full report of toxicity test results with the regular monthly monitoring report and include the following information.
 - a. toxicity test results,
 - b. dates of sample collection and initiation of each toxicity test, and
 - c. acute and/or chronic toxicity discharge limitations (or value).
2. Toxicity test results shall be reported according to the appropriate guidance - *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition, U.S. EPA Office of Water, EPA-821-R-02-012 (2002)* or the latest edition, or *Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, EPA-821-R-02-012 (2002)* or subsequent editions.
3. If the initial investigation TRE workplan is used to determine that additional (accelerated) toxicity testing is unnecessary, these results shall be submitted with the monitoring report for the month in which investigations conducted under the TRE workplan occurred.
4. Within 14 days of receipt of test results exceeding the chronic toxicity discharge limitation, the Discharger shall provide written notification to the Executive Officer of:
 - a. Findings of the TRE or other investigation to identify the cause(s) of toxicity,
 - b. Actions the Discharger has taken/will take, to mitigate the impact of the discharge and to prevent the recurrence of toxicity. When corrective actions, including TRE, have not been completed, a schedule under which corrective actions will be implemented, or the reason for not taking corrective action, if no action has been taken.

When corrective actions, including a TRE, have not been completed, a schedule under which corrective actions will be implemented, or the reason for not taking corrective action, if no action has been taken, will be completed.

VI. LAND DISCHARGE MONITORING REQUIREMENTS

This section of the standardized permit is not applicable to the City of Santa Cruz.

VII. RECLAMATION MONITORING REQUIREMENTS

The Discharger shall comply with applicable State and local monitoring requirements regarding the production and use of reclaimed wastewater, including requirements established by the Department of Health Services at title 22, sections 60301 - 60357 of the California Code of Regulations, Water Recycling Criteria.

VIII. RECEIVING WATER MONITORING REQUIREMENTS – SURFACE WATER AND GROUNDWATER

A. Central Coast Long-Term Environmental Assessment Network (CCLEAN)

1. The Discharger shall participate in the implementation of the CCLEAN Regional Monitoring Program to fulfill receiving water compliance monitoring requirements and support the following CCLEAN Program objectives.
 - a. Obtain high-quality data describing the status and long-term trends in the quality of nearshore waters, sediments, and associated beneficial uses.
 - b. Determine whether nearshore waters and sediments are in compliance with the Ocean Plan.
 - c. Determine sources of contaminants to nearshore waters.
 - d. Provide legally defensible data on the effects of wastewater discharges in nearshore waters.
 - e. Develop a long-term database on trends in the quality of nearshore waters, sediments, and associated beneficial uses.
 - f. Ensure that the nearshore component database is compatible with other regional monitoring efforts and regulatory requirements.
 - g. Ensure that nearshore component data are presented in ways that are understandable and relevant to the needs of stakeholders.

General components of the first phase of the CCLEAN Program are outlined in the following table. The CCLEAN Quality Assurance Project Plan (QAPP) for each year will be submitted for staff approval prior to initiation of CCLEAN sampling. A detailed technical study design description, including specific location of sampling sites, a description of the specific contents of the CCLEAN Annual Report, shall be provided as a component of the CCLEAN QAPP. Any year-to-year modifications to the program (including implementation of subsequent program phases) shall be identified in this document.

Table E-7. CCLEAN Monitoring Requirements

Sampling Sites	Parameters Sampled at Each Site	Frequency of Sampling	Applicable Water-Quality Stressors	Program Objectives
Water Sampling				
Four outfall sites (Santa Cruz, Watsonville, Monterey, Carmel) in effluent	30-day flow proportioned samples using automated pumping equipment, high volume water sampling techniques for: 1) persistent organic pollutants including polybrominated diphenyl ethers (PBDE), and 2) single grabs for polyfluorinated compounds (PFCs).	Twice per year (wet season and dry season)	Persistent Organic Pollutants, PFCs,	d
Four outfall sites (Santa Cruz, Watsonville, Monterey, Carmel) in effluent	Grab samples for ammonia, silica, orthophosphate, urea, nitrate, turbidity, suspended sediment, temperature, conductivity, and pH	Monthly	Nutrients Suspended Sediments	d
Four outfall sites (Santa Cruz, Watsonville, Monterey, Carmel) in effluent	Integrative biological assessment of endocrine disrupting compounds	To be determined by July 1, 2008	Endocrine disrupting compounds	d
30-ft contour sites for each major discharge and sites sampled for AB 411	Grabs for total and fecal coliform, enterococcus ^[1]	Monthly	Pathogens	a, b, c, d
Two ambient sites in Monterey Bay	30-day time-integrated samples using automated pumping equipment, high-volume water sampling techniques for persistent organic pollutants including PBDEs; 2) single grabs for PFCs, 3) duplicate grabs of ammonia, silica, orthophosphate, urea, nitrate, turbidity, suspended sediment, fecal coliform, total coliform, enterococcus, temperature, conductivity, and ph both at deployment and pickup	Twice per year (wet season and dry season)	Persistent Organic Pollutants Nutrients Suspended Sediments Pathogen indicators PFCs	a,b,e
Sediment Sampling				
Four depositional sites and four background sites along 80-m contour	Single samples for benthic infauna, persistent organic pollutants including PBDE, total organic carbon and grain size	Annually	Persistent Organic Pollutants (and effects of)	a, b
Mussel Sampling				
5 rocky intertidal sites	One composite of 30-40 mussels for persistent organic pollutants including PBDE, PFCs, total and fecal coliform, and enterococcus	Annually (wet season)	Persistent Organic Pollutants Pathogens	a, b, c

B. Bacteria Monitoring – Monitoring Locations RSW-A through I

Bacteria monitoring shall be conducted to assess bacteriological conditions in areas used for body contact recreation (e.g., swimming) and to assess conditions of aesthetics for general recreation use (e.g., picnicking, boating). Bacteria monitoring shall be conducted along the 30-foot contour at Monitoring Locations RSW-A, RSW-C, RSW-E, RSW-F, RSW-G, RSW-H, and RSW-I. Latitude and longitude shall be recorded and reported for all monitoring locations for each monitoring event.

Bacteria monitoring shall include observations of wind (direction and speed), weather (e.g., cloudy, sunny, rainy), sea state, longshore currents (e.g., direction), and tidal conditions (e.g., slack, high, or low tide). Observations of water discoloration, floating oil and grease, turbidity, odor, material of sewage origin in the water or on the beach, and temperature shall be recorded and reported. Bacteria monitoring shall be conducted as indicated by the following table.

Table E-8. Bacteria Monitoring Schedule

Parameter	Units	Sampling Station	Sampling Frequency
Total and Fecal Coliform Bacteria ^{1,2}	MPN/100ml	RSW-A, C, E, F, G, H, and I	Monthly ⁴
Enterococcus Bacteria ³	MPN/100ml	RSW-A, C, E, F, G, H, and I	Monthly ⁴
Surf Conditions	Narrative	RSW-A, C, E, F, G, H, and I	Monthly ⁴
Ocean Current Direction	Narrative	RSW-A, C, E, F, G, H, and I	Monthly ⁴

[1] For all bacterial analyses, sample dilutions shall be performed so the range of values extends from 2 to 16,000 MPN/100ml. The detection methods used for each analysis shall be reported with the results of the analysis.

[2] Detection methods used for total and fecal coliform shall be those presented in the most recent edition of *Standard Methods for the Examination of Water and Wastewater* or any improved method determined by the Regional Board (and approved by EPA) to be appropriate. [

[3] Detection methods used for enterococcus shall be those presented in EPA publication EPA 600/4-85/076, *Test Methods for Escherichia coli and Enterococci in Water by Membrane Filter Procedure*, or any improved method determined by the Regional Board (and approved by EPA) to be appropriate.

[4] Sampling interval shall be monthly for 30-foot depth contour stations, with more frequent sampling, at 5 times in a 30-day period (as described in CCLEAN, 9/25/2000, Section 2.4.2), triggered when samples exceed 1000 / 100 mL for total coliform, 400 / 100 mL for fecal coliform, or 104 / 100 mL for Enterococcus at any 30-foot depth contour station. Within 48 hours of the triggering event, the more frequent sampling shall be initiated at all 30-foot depth contour stations and shore stations. Sampling shall continue at this increased frequency until the geometric mean of the most recent 5 samples from each station fall below 1000 / 100 mL for total coliform, 200 / 100 mL for fecal coliform, or 104 / 100 mL for Enterococcus, as appropriate for the bacterial indicator that triggered the increased sampling.

IX. OTHER MONITORING REQUIREMENTS

A. Biosolids Monitoring, Notification and Reporting

1. Biosolids Monitoring

- a. Biosolids shall be tested for the metals required in 40 CFR 503.16 (for land application) or Section 503.26 (for surface disposal), using the methods in *Test*

Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846), as required in 503.8(b)(4), at the following minimum frequencies:

Volume (dry metric tons) ¹	Sampling and Analysis Frequency ²
0-290	once per year
290-1500	once per quarter
1500-15000	once per 60 days
> 15000	once per month

^[1] For accumulated, previously untested biosolids, the Permittee shall develop a representative sampling plan, including number and location of sampling points, and collect representative samples.

^[2] Test results shall be expressed in mg pollutant per kg biosolids on a 100% dry weight basis. Biosolids to be land applied shall be tested for organic-N, ammonium-N, and nitrate-N at the frequencies required above.

- b. Prior to land application, the Permittee shall demonstrate that the biosolids meet Class A or Class B pathogen reduction levels by one of the methods listed in 40 CFR 503.32. Prior to disposal in a surface disposal site, the Permittee shall demonstrate that the biosolids meet Class B levels or shall ensure that the site is covered at the end of each operating day. If pathogen reduction is demonstrated using a "Process to Significantly/Further Reduce Pathogens", the Permittee shall maintain daily records of the operating parameters used to achieve this reduction. If pathogen reduction is demonstrated by testing for fecal coliforms and/or pathogens, samples must be drawn at the frequency in 11(a) above. For fecal coliform, at least seven grab samples must be drawn during each monitoring event and a geometric mean calculated from these seven samples.
- c. For biosolids that are land applied or placed in a surface disposal site, the Permittee shall track and keep records of the operational parameters used to achieve Vector Attraction Reduction requirements in 40 CFR 503.33(b).
- d. Class 1 facilities (facilities with pretreatment programs or others designated as Class 1 by the Regional Administrator) and Federal facilities with greater than five million gallons per day (MGD) influent flow shall sample biosolids for pollutants listed under Section 307(a) of the Clean Water Act (as required in the pretreatment section of the permit for POTW's with pretreatment programs). Class 1 facilities and Federal facilities greater than five MGD shall test dioxins/dibenzofurans using a detection limit of less than one pg/g at the time of their next priority pollutant scan if they have not done so within the past five years, and once per five years thereafter.
- e. The biosolids shall be tested annually, or more frequently if necessary, to determine hazardousness in accordance 40 CFR 261.
- f. If biosolids are placed in 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.

- g. Biosolids placed in a municipal landfill shall be tested by the Paint Filter Liquids Test (EPA Method 9095) at the frequency in 11 (a) above or more often if necessary to demonstrate that there are no free liquids.

2. Biosolids Notification

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

- a. Notification of non-compliance: The Permittee shall notify USEPA Region 9, the Central Coast Regional Board, and the Regional Board located in the region where the biosolids are used or disposed, of any non-compliance within 24 hours if the non-compliance may seriously endanger health or the environment. For other instances of non-compliance, the Permittee shall notify USEPA Region 9 and the affected Regional Boards of the non-compliance in writing within five working days of becoming aware of the non-compliance. The Permittee shall require their biosolids management contractors to notify USEPA Region 9 and the affected Regional Boards of any non-compliance within the same time-frames. See Attachment C for Regional Board contact information.
- b. If biosolids are shipped to another State or to Indian Lands, the Permittee must send 60 days prior notice of the shipment to the permitting authorities in the receiving State or Indian Land (the USEPA Regional Office for that area and the State/Indian authorities).
- c. For land application: Prior to reuse of any biosolids from this facility to a new or previously unreported site, the Permittee shall notify USEPA and Regional Board. The 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. The plan shall include a description of the crops or vegetation to be grown, proposed loading rates and determination of agronomic rates. If any biosolids within a given monitoring period do not meet 40 CFR 503.13 metals concentration limits, the Permittee (or its contractor) must pre-notify USEPA, and determine the cumulative metals loading at that site to date, as required in Section 503.12.
- d. The Permittee shall notify the applier of all the applier's requirements under 40 CFR 503, including the requirement that the applier certify that the management practices, site restrictions, and any applicable vector attraction reduction requirements have been met. The Permittee shall require the applier to certify at the end of 38 months following application of Class B biosolids that the harvesting restrictions in effect for up to 38 months have been met.
- e. For surface disposal: Prior to disposal to a new or previously unreported site, the Permittee shall notify USEPA and the Regional Board. The notice shall include description and topographic map of the proposed site, depth to groundwater, whether the site is lined or unlined, site operator, site owner, and any state or local permits. The notice shall describe procedures for ensuring public access and grazing restrictions for three years following site closure. The notice shall

include a groundwater monitoring plan or description of why groundwater monitoring is not required.

3. Biosolids Reporting

The Permittee shall submit an annual biosolids report to the USEPA Region 9 Biosolids Coordinator and Regional Board by February 19 of each year for the period covering the previous calendar year. The report shall include:

- a. The amount of biosolids generated during the reporting period, in dry metric tons, and the amount accumulated from previous years;
- b. Results of all pollutant and pathogen monitoring required in Item 12 above and the Monitoring and Reporting Program of this Order. Results must be reported on a 100% dry weight basis for comparison with 40 CFR 503 limits;
- c. Descriptions of pathogen reduction methods and vector attraction reduction methods, including supporting time and temperature data, and certifications, as required in 40 CFR 503.17 and 503.27;
- d. Names, mailing addresses, and street addresses of persons who received biosolids for storage, further treatment, disposal in a municipal waste landfill, or for other use or disposal methods not covered above, and volumes delivered to each.
- e. For land application sites, the following information must be submitted by the Permittee, unless the Permittee requires its biosolids management contractors to report this information directly to the USEPA Region 9 Biosolids Coordinator:
 - (1) Locations of land application sites (with field names and numbers) used that calendar year, size of each field applied to, applicator, and site owner;
 - (2) Volumes applied to each field (in wet tons and dry metric tons), nitrogen applied, calculated plant available nitrogen;
 - (3) Crop planted, dates of planting and harvesting;
 - (4) For any biosolids exceeding 40 CFR 503.13 Table 3 metals concentrations: the locations of sites where applied and cumulative metals loading at that site to date;
 - (5) Certifications of management practices in Section 503.14; and
 - (6) Certifications of site restrictions in Section 503(b)(5).
- f. For surface disposal sites:
 - (1) Locations of sites, site operator, site owner, size of parcel on which disposed;
 - (2) Results of any required groundwater monitoring;

- (3) Certifications of management practices in Section 503.24; and
- (4) For closed sites, date of site closure and certifications of management practices for the three years following site closure.
- g. For all biosolids used or disposed at the Permittee's facilities, the site and management practice information and certification required in Sections 503.17 and 503.27; and
- h. For all biosolids temporarily stored, the information required in Section 503.20 required to demonstrate temporary storage.

Reports shall be submitted to:

Regional Biosolids Coordinator
USEPA (WTR-7)
75 Hawthorne St.
San Francisco, CA 94105-3901

Executive Officer
Central Coast Regional Water Quality Control Board
895 Aerovista Place, Suite 101
San Luis Obispo, CA 93455-5411

- i. All the requirements of 40 CFR 503 and 23 CCR 15 are enforceable by the USEPA and this Regional Board whether or not the requirements are stated in an NPDES permit or any other permit issued to the discharger.

B. Pretreatment Monitoring and Reporting

By February 1st of each year, the Discharger shall submit an annual report to the Regional Board, State Board, and USEPA describing the Discharger's pretreatment activities over the previous calendar year. In the event that the Discharger is not in compliance with any conditions or requirements of this permit affected by the pretreatment program, including any noncompliance with pretreatment audit or compliance inspection requirements, then the Discharger shall also include the reasons for noncompliance and state how and when the Discharger shall comply with such conditions and requirements. This report shall contain, but not be limited to, the following information:

1. A summary of analytical results from representative, flow-proportioned, 24-hour composite samples of the plant's influent and effluent for those pollutants USEPA has identified under Section 307(a) of the CWA which are known or suspected to be discharged by industrial users. The Discharger is not required to sample and analyze for asbestos until USEPA promulgates an applicable analytical technique under 40 CFR Part 136.
2. The biosolids analyzed shall be a composite sample of a minimum of twelve discrete sub-samples (grab samples) taken at equal time intervals over a typical dewatering operational period, and from the last representative point in the solids handling process before disposal (e.g., from the dewatered biosolids conveyor belt). The

biosolids sampling period shall be coordinated with annual influent sampling to compensate for the facility's solids detention time and provide samples representative of the associated 24-hour influent composite sampling period. Wastewater and biosolids sampling and analysis shall be performed a minimum of annually and not less than the frequency specified in the required monitoring program for the treatment facility. The Discharger shall also provide any influent, effluent, or sludge monitoring data for non-priority pollutants which the Discharger believes may be causing or contributing to interference, pass-through, or adversely impacting sludge quality. Sampling and analysis shall be performed in accordance with the techniques prescribed in 40 CFR Part 136 and amendments thereto.

3. A discussion of upset, interference, or pass-through incidents, if any, at the POTW which the Discharger knows or suspects were caused by industrial users of the POTW system. The discussion shall include the reasons why the incidents occurred, corrective actions taken and, if known, the name and address of the industrial user(s) responsible. Discussions shall also include a review of applicable pollutant limitations to determine whether any additional limitations or changes to existing requirements may be necessary to prevent pass-through, interference, or noncompliance with sludge disposal requirements.
4. The cumulative number of industrial users that the Discharger has notified regarding Baseline Monitoring Reports, and the cumulative number of industrial user responses.
5. An updated list of the Discharger's industrial users, including their names and addresses, or a list of deletions and additions keyed to a previously submitted list. The Discharger shall provide a brief explanation for each deletion. The list shall identify the industrial users subject to Federal Categorical Standards by specifying which set(s) of standards are applicable. The list shall indicate which categorical industries, or specific pollutants from each industry, are subject to local limitations that are more stringent than the Federal Categorical Standards. The Discharger shall also list the non-categorical industrial users that are subject only to local discharge limitations. The Discharger shall characterize the compliance status of each industrial user by employing the following descriptions:
 - a. In compliance with Baseline Monitoring Report requirements (where applicable);
 - b. Consistently achieving compliance;
 - c. Inconsistently achieving compliance;
 - d. Significantly violated applicable pretreatment requirements as defined by 40 CFR 403.8(f)(2)(vii);
 - e. On a schedule to achieve compliance (include the date final compliance is required);
 - f. Not achieving compliance and not on a compliance schedule; or
 - g. The Discharger does not know the industrial user's compliance status.

6. A quarterly report describing the compliance status of any industrial user characterized by descriptions in Items 4(c) through (g) above shall be submitted to the Regional Board, State Board, and USEPA. The report shall identify the specific compliance status of each applicable industrial user. This quarterly reporting requirement shall commence upon issuance of this Order and Permit. Quarterly reports shall be submitted May 1, August 1, November 1, and February 1 (the fourth quarterly report may be incorporated in the annual report). Quarterly reports shall briefly describe POTW compliance with audit/pretreatment compliance inspection requirements. If none of the aforementioned conditions exist, at a minimum, a letter indicating that all industries are in compliance and no violations or changes to the pretreatment program have occurred during the quarter must be submitted.
7. A summary of inspection and sampling activities conducted by the Discharger during the past year to gather information and data regarding industrial users. The summary shall include:
 - a. Names and addresses of the industrial users subject to surveillance by the Discharger and an explanation of whether they were inspected, sampled, or both, and the frequency of these activities at each user; and
 - b. Conclusions or results from the inspection or sampling of each industrial user.
8. A summary of compliance and enforcement activities during the past year. The summary shall include names and addresses of the industrial users affected by the following actions:
 - a. Warning letters or notices of violation regarding the industrial users' apparent noncompliance with Federal Categorical Standards or local discharge limitations. For each industrial user, identify whether the apparent violation concerned the Federal Categorical Standards or local discharge limitations;
 - b. Administrative Orders regarding the industrial users' noncompliance with Federal Categorical Standards or local discharge limitations. For each industrial user, identify whether the violation concerned the Federal Categorical Standards or local discharge limitations;
 - c. Civil actions regarding the industrial users' noncompliance with Federal Categorical Standards or local discharge limitations. For each industrial user, identify whether the violation concerned the Federal Categorical Standards or local discharge limitations;
 - d. Criminal actions regarding the industrial user's noncompliance with Federal Categorical Standards or local discharge limitations. For each industrial user, identify whether the violation concerned Federal Categorical Standards or local discharge limitations;
 - e. Assessment of monetary penalties. For each industrial user, identify the amount of the penalties;
 - f. Restriction of flow to the POTW; or

- g. Disconnection from discharge to the POTW.
9. Description of any significant changes in operating the pretreatment program which differ from the information in the Discharger's Approved POTW Pretreatment Program, including but not limited to changes concerning: the program's administrative structure; local industrial discharge limitations; monitoring program or monitoring frequencies; legal authority or enforcement policy; funding mechanisms; resource requirements; or staffing levels.
10. A summary of the annual pretreatment budget, including the costs of pretreatment program functions and equipment purchases.
11. A summary of public participation activities to involve and inform the public.
12. A description of any changes in biosolids disposal methods and a discussion of any concerns not described elsewhere in the report.

Reports shall be signed by a principal executive officer, ranking elected official, or other duly authorized employee if such employee is responsible for overall operation of the POTW. Signed copies of these reports shall be submitted to the USEPA and the State at the following addresses:

California Regional Water Quality Control Board
Central Coast Region
895 Aerovista Lane, Suite 101
San Luis Obispo, CA 93401

State Water Resources Control Board
Regulation Unit
P.O. Box 100
Sacramento, CA 95812-0100

US EPA, Region 9
Clean Water Act Compliance Office
75 Hawthorne Street
(WTR-7)
San Francisco, CA 94105-3901

C. Infiltration/Inflow and Spill Prevention Program Reporting Requirements

The Discharger shall provide an annual report, by **February 1st of each year** describing the development of the Infiltration/Inflow Spill Prevention Program and permit compliance over the previous calendar year as specified in Section VI.C.2.c. of this Order. The reports shall be of sufficient content as to enable the Regional Board to determine compliance with all requirements.

D. Outfall Inspection

At least once per year (in the same month annually), the Discharger shall conduct a dye dilution study to visually inspect the entire outfall structure to determine whether there are

leaks, potential leaks, or malfunctions. This inspection shall be collected along the outfall pipe/diffuser system from landfall to its ocean terminus. In addition, at least once per year (in the same month annually), an outfall inspection will be conducted to check the structural integrity and possible external blockage of ports by sand and/or silt deposition. The two inspections may be conducted together or in different months in order to optimize the underwater conditions and visibility for conducting each inspection. Results of the outfall inspections shall be reported in the applicable annual report.

X. 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.

B. Self Monitoring Reports (SMRs)

1. The Discharger must submit Self-Monitoring Reports (SMRs) electronically using the State Water Board's California Integrated Water Quality System (CIWQS) Program Web site (<http://www.waterboards.ca.gov/ciwqs/index.html>).
2. The Discharger shall report in the SMR the results for all monitoring specified in this MRP under sections III through IX. The Discharger shall submit monthly SMRs including the results of all required monitoring using USEPA-approved test methods or other test methods specified in this Order. If the Discharger monitors any pollutant more frequently than required by this Order, the results of this monitoring shall be included in the calculations and reporting of the data submitted in the SMR.
3. 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	Monitoring Period Begins On ...	Monitoring Period	SMR Due Date
Continuous	December 9, 2010	All	First day of the second month following the month of sampling (e.g., reports for sampling conducted in January are due no later than March 1 st)
Hourly	December 9, 2010	Hourly	Submit with monthly SMR
Daily	December 9, 2010	(Midnight through 11:59 PM) or any 24-hour period that reasonably represents a calendar day for purposes of sampling.	Submit with monthly SMR
Weekly	Sunday following permit effective date or on permit effective date if on a Sunday	Sunday through Saturday	Submit with monthly SMR

Sampling Frequency	Monitoring Period Begins On ...	Monitoring Period	SMR Due Date
Monthly	First day of calendar month following permit effective date or on permit effective date if that date is first day of the month	1 st day of calendar month through last day of calendar month	Submit with monthly SMR
Quarterly	Closest of January 1, April 1, July 1, or October 1 following (or on) permit effective date	January 1 through March 31 April 1 through June 30 July 1 through September 30 October 1 through December 31	Submit with next monthly SMR
Semiannually	Closest of January 1 or July 1 following (or on) permit effective date	January 1 through June 30 July 1 through December 31	Submit with next monthly SMR
Annually	January 1 following (or on) permit effective date	January 1 through December 31	Submit with Annual Report

4. Reporting Protocols. The Discharger shall report with each sample result the applicable reported Minimum Level (ML) and the current Method Detection Limit (MDL), as determined by the procedure in Part 136.

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 as well as the words "Estimated Concentration" (may be shortened to "Est. Conc."). 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 (\pm 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. Dischargers are to 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.

5. The Discharger shall submit SMRs in accordance with the following requirements:

- a. 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 CIWQS. If 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.
- b. In the SMR, the Discharger shall clearly identify violations of the WDRs and 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.
- d. An Annual Self Monitoring Report shall be due on February 1 following each calendar year and shall include:
 - All data required by this MRP for the corresponding monitoring period, including appropriate calculations to verify compliance with effluent limitations.
 - A discussion of any incident of non-compliance and corrective actions taken.

C. Discharge Monitoring Reports (DMRs)

- 1. As described in Section X.B.1 above, at any time during the term of this permit, the State or Regional Water Board may notify the Discharger to electronically submit SMRs that will satisfy federal requirements for submittal of Discharge Monitoring Reports (DMRs). Until such notification is given, the Discharger shall submit DMRs in accordance with the requirements described below.
- 2. DMRs must be signed and certified as required by the standard provisions (Attachment D). The Discharge shall submit the original DMR and one copy of the DMR to the address listed below.

Standard Mail	Fedex/UPS/Other Private Carriers
State Water Resources Control Board Division of Water Quality c/o DMR Processing Center PO Box 100 Sacramento, CA 95812-1000	State Water Resources Control Board Division of Water Quality c/o DMR Processing Center 1001 I Street, 15 th Floor Sacramento, CA 95814

- 3. All discharge monitoring results must be reported on the official USEPA pre-printed DMR forms (EPA Form 3320-1). Forms that are self-generated or modified cannot be accepted.

D. Other Reports

- 1. The Discharger shall report the results of any special monitoring, TREs, or other data or information that results from the Special Provisions, section VI. C, of the Order. The Discharger shall submit such reports with the first monthly SMR scheduled to be submitted on or immediately following the report due date.

ATTACHMENT F – FACT SHEET

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ATTACHMENT F – FACT SHEET

As described in section II of the Order, this Fact Sheet includes the legal requirements and technical rationale that serve as the basis for the requirements of this Order.

This Order 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 that are specifically identified as “not applicable” have been determined not to apply to this Discharger. Sections or subsections of this Order 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	3 440102001
Discharger	City of Santa Cruz
Name of Facility	Wastewater Treatment Facility
Facility Address	110 California Street
	Santa Cruz, CA 95060
	Santa Cruz County
Facility Contact, Title and Phone	Dan Seidel, Plant Superintendent, (831) 420-6044
Authorized Person to Sign and Submit Reports	Dan Seidel, Plant Superintendent, (831) 420-6044
Mailing Address	110 California Street, Santa Cruz, CA 95060
Billing Address	110 California Street, Santa Cruz, CA 95060
Type of Facility	POTW
Major or Minor Facility	Major
Threat to Water Quality	1
Complexity	A
Pretreatment Program	Yes
Reclamation Requirements	None
Facility Permitted Flow	17 MGD (average dry weather flow)
Facility Design Flow	17 MGD (average dry weather flow)
	81 MGD (peak wet weather flow)
Watershed	NA
Receiving Waters	Pacific Ocean (Monterey Bay)
Receiving Water Type	Ocean Water

- A. The City of Santa Cruz is the owner and operator of a wastewater treatment plant, which treats domestic, commercial, and industrial wastewaters collected from the City of Santa Cruz and areas of the Santa Cruz County Sanitation District. The City of Scotts Valley adds its treated wastewater to the Discharger’s effluent for combined disposal. The plant also treats dry weather flows from Neary Lagoon, septage from unsewered areas, and grease trap pumping.

For the purposes of this Order, references to the “discharger” or “Permittee” in applicable federal and state laws, regulations, plans, or policy are held to be equivalent to references to the Discharger herein.

- B.** The facility discharges wastewater to Monterey Bay, waters of the United States, and is currently regulated by Order R3-2005-0003, which was adopted on May 12, 2005 and expired on May 12, 2010. The terms and conditions of the current Order will be automatically continued and remain in effect until new Waste Discharge Requirements and a National Pollutant Discharge Elimination System (NPDES) permit are adopted pursuant to this Order.
- C.** The Discharger filed a Report of Waste Discharge and submitted an application for renewal of its Waste Discharge Requirements (WDRs) and NPDES permit on February 18, 2010. A site visit was conducted on March 9, 2010, to observe operations and collect additional data to develop permit limitations and conditions.

II. FACILITY DESCRIPTION

A. Description of Wastewater and Biosolids Treatment or Controls

The City of Santa Cruz owns and operates a wastewater collection, treatment, and disposal system which provides sewerage service for the City of Santa Cruz and areas of the Santa Cruz County Sanitation District. The City of Scotts Valley adds its treated wastewater to the Discharger’s effluent for combined disposal. The collection system comprises 185 miles of gravity sanitary sewer lines, 4.2 miles of forced main, and 54 pump stations, all of which discharge untreated municipal waste water to the treatment plant. The plant also treats dry weather flows from Neary Lagoon, septage from unsewered areas, and grease trap pumping. The Wastewater Treatment Plant’s design, average dry weather treatment capacity is 17 MGD, with a design peak wet weather treatment capacity of 81 MGD. In 2009, average monthly influent flow ranged from 8.1 to 13.9 MGD and averaged 9.2 MGD. Average monthly effluent flow ranged between 7.1 and 12.5 MGD and averaged 8.1 MGD.

Treatment at the Santa Cruz Wastewater Treatment Plant is currently accomplished by screening, aerated grit removal, primary sedimentation, biological tower trickling filters, solids contact stabilization (activated sludge), and secondary clarification, and disinfection with ultraviolet light. Biosolids are processed by anaerobic digestion, then belt filter press dewatering. Stabilized solids are transported to the San Joaquin Valley and used for land application. Methane gas produced by anaerobic digestion is used to generate power and heat the digesters at the treatment plant. Treated wastewater is discharged through a 12,250-foot outfall/diffuser system to Monterey Bay.

B. Discharge Points and Receiving Waters

Discharge of secondary treated wastewater currently occurs approximately one mile from the shoreline in Monterey Bay at a depth of approximately 100 feet. The diffuser section of the outfall system is 424 feet in length with 54, 4-inch diffuser ports and provides a minimum initial dilution of 139 to1 (parts seawater:parts effluent), a figure that has been

used by Central Coast Water Board staff to determine the need for water quality-based effluent limitations, and to calculate those limitations if required.

C. Summary of Existing Requirements and Effluent Characterization

Effluent limitations contained in the existing Order for discharges from Discharge Point 001 and representative monitoring data for Monitoring Location EFF-001, for the term of the previous Order, are presented in the following tables.

Table F-2. Historic Effluent Limitations, Discharge Point 001

Parameter	Units	Effluent Limitations		
		Average Monthly	Average Weekly	Daily Maximum
CBOD ₅	mg/L	25	40	--
	lb/day	3,000	4,500	--
Total Suspended Solids (TSS)	mg/L	30	45	--
	lb/day	4,255	6,380	10,635
BOD ₅ and TSS	percent	Removal by treatment shall not be less than 85 percent		
Oil & Grease	mg/L	25	40	75
	lb/day	3,550	4,255	10,635
Settleable Solids	mL/L	1.0	1.5	3.0
Turbidity	NTU	75	100	225
pH	pH Units	6.0 – 9.0		
Total Coliforms ^[1]	CFU/100 mL	--	--	139,000
Fecal Coliforms ^[1]	CFU/100 mL	--	--	27,800
Enterococcus ^[1]	CFU/100 mL	--	--	4,890
Ocean Plan Table B Pollutants	varies	Effluent limitations were established for all Table B pollutants based upon water quality objectives established in the 2001 Ocean Plan and a minimum initial dilution of 139 to 1		

^[1] Total coliform, fecal coliform, and enterococcus effluent limitations applied only if the Executive Officer concludes from a bacterial assessment that the discharge consistently exceeded Receiving Water Limitations established by MRP No. R3-2005-003.

Table F-3. Effluent Characterization – 2005-2009

	Units	Monthly Minimum	Monthly Maximum	Monthly Average
Effluent Flow	MGD	6.5	19	10
BOD ₅	mg/L	2.8	25	17
TSS	mg/L	2.6	8.9	4.5
Oil & Grease	mg/L	< 5	5.2	< 5
Turbidity	NTU	1.8	5.7	3.0
pH	pH units	6.8	7.2	7.1
Settleable Solids	mLs/L	< 0.05	0.070	< 0.05

Source: City of Santa Cruz Wastewater Treatment Facility, POTW Annual Reports from 2005 through 2009.

D. Compliance Summary

The Discharger experienced two incidents of noncompliance during the 2005 through 2009 period. These two discharge violations were:

On June 23, 2005, an effluent sample analyzed for Total coliform had a result of 125,000 MPN/100 mL. The single sample maximum effluent limit for this parameter was 100,000 MPN/100 mL.

The monthly average BOD₅ removal efficiency was 84.04% for the month of May 2006, violating the limitation of a minimum of 85% removal.

E. Planned Changes

There are no significant operational or physical changes anticipated during the term of the Order for the wastewater treatment plant.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

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

A. Legal Authorities

This Order is issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. Environmental Protection Agency (USEPA) and chapter 5.5, division 7 of the California Water Code (commencing with section 13370). It shall serve as an NPDES permit for point source discharges from this facility to surface waters. This Order also serves as Waste Discharge Requirements (WDRs) pursuant to article 4, chapter 4, division 7 of the Water Code (commencing with section 13260).

B. California Environmental Quality Act (CEQA)

Pursuant to Water Code section 13389, this action to adopt an NPDES permit is exempt from the provisions of CEQA, Public Resources Code sections 21100 - through 21177.

C. State and Federal Regulations, Policies, and Plans

1. Water Quality Control Plans. The Central Coast Regional Water Quality Control Board (Central Coast Water Board) has adopted a *Water Quality Control Plan for the Central Coast Region* (the Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for receiving waters within the Region. To address ocean waters, the Basin Plan incorporates by reference the *Water Quality Control Plan for Ocean Waters of California* (the Ocean Plan), which was adopted in 1972 and amended in 1978, 1983, 1988, 1990, 1997, 2000, and 2005. The most recent amendment to the Ocean Plan was adopted by the State Water Resources Control Board (the State Water Board) on April 21, 2005 and became effective on February 14, 2006.

The Basin Plan implements State Water Board Resolution No. 88-63, which establishes State policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply (MUN). Because of very high levels of total dissolved solids (TDS) in the Pacific Ocean, including Monterey Bay, the receiving waters for discharges from the Santa Cruz Wastewater Treatment Facility meet an exception to Resolution No. 88-63, which precludes waters with TDS levels greater than 3,000 mg/L from the MUN designation. Beneficial uses established by the Basin Plan and the Ocean Plan for the Pacific Ocean, including Monterey Bay are described in section II. H of the Order.

Requirements of this Order implement the Basin Plan and Ocean Plan.

- 2. Thermal Plan.** The State Water Board adopted a *Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Water and Enclosed Bays and Estuaries of California* (Thermal Plan) on May 18, 1972, and amended this plan on September 18, 1975. This plan contains the following temperature objective for existing discharges to enclosed bays and coastal waters of California.

Elevated temperature waste discharges shall comply with limitations necessary to assure protection of beneficial uses.

The Ocean Plan defines elevated temperature wastes as:

Liquid, solid, or gaseous material discharged at a temperature higher than the natural temperature of receiving water.

- 3. California Ocean Plan.** The State Water Board adopted the *Water Quality Control Plan for Ocean Waters of California, California Ocean Plan* (Ocean Plan) in 1972 and amended it in 1978, 1983, 1988, 1990, 1997, 2000, and 2005. The State Water Board adopted the latest amendment on April 21, 2005 and it became effective on February 14, 2006. The Ocean Plan is applicable, in its entirety, to point source discharges to the Pacific Ocean.
- 4. 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. [65 Fed. Reg. 24641 (April 27, 2000), codified at 40 CFR 131.21] 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.
- 5. Antidegradation Policy.** NPDES regulations at 40 CFR 131.12 require that State water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16, which incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that the existing quality of waters be maintained unless degradation is justified

based on specific findings. The Central Coast 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 provisions of 40 CFR 131.12 and State Water Board Resolution No. 68-16.

- 6. Anti-Backsliding Requirements.** CWA Sections 402 (o) (2) and 303 (d) (4) and NPDES regulations at 40 CFR 122.44 (l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions where limitations may be relaxed.

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

CWA section 303 (d) requires states to identify specific water bodies where water quality standards are not expected to be met after implementation of technology-based effluent limitations on point sources. For all 303 (d) listed water bodies and pollutants, the Regional Water Board must develop and implement TMDLs (Total Maximum Daily Loads) that will specify WLAs (Waste Load Allocations) for point sources and Load Allocations for non-point sources.

The State's 2006 303 (d) list of impaired water bodies, which was approved by USEPA in July 2003, identifies the South Monterey Bay coastline as impaired by metals and pesticides and Monterey Harbor as impaired by metals and unknown toxicity. The main body of Monterey Bay is not identified as 303 (d) impaired and the outfall for this discharge is not located where it can impact these listed 303 (d) water bodies.

E. Other Plans, Policies and Regulations

- 1. Discharges of Stormwater.** Stormwater runoff from rainfall which falls upon the wastewater treatment plant and which may be exposed to on-site pollutant sources is routed to the facility's headworks for treatment. This permit therefore regulates all stormwater discharges at this facility and complies with federal regulations regarding stormwater management.
- 2. Statewide General Waste Discharge Requirements for Sanitary Sewer Systems (State Water Board Order No. 2006-0003-DWQ).** This General Order, adopted on May 2, 2006, is applicable to all "federal and state agencies, municipalities, counties, districts, and other public entities that own or operate sanitary sewer systems greater than one mile in length that collect and/or convey untreated or partially treated wastewater to a publicly owned treatment facility in the State of California." The purpose of the General Order is to promote the proper and efficient management, operation, and maintenance of sanitary sewer systems and to minimize the occurrences and impacts of sanitary sewer overflows. This Order requires the Discharger to seek coverage under the General Order, if applicable, and comply with its requirements.

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 United States. The

control of pollutants discharged is established through effluent limitations and other requirements in NPDES permits. NPDES regulations establish two principal bases for effluent limitations. At 40 CFR 122.44 (a) permits are required to include applicable technology-based limitations and standards; and at 40 CFR 122.44 (d) permits are required to 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. When numeric water quality objectives have not been established, but a discharge has the reasonable potential to cause or contribute to an excursion above a narrative criterion, WQBELs may be established using one or more of three methods described at 40 CFR 122.44 (d) - 1) WQBELs may be established using a calculated water quality criterion derived from a proposed State criterion or an explicit State policy or regulation interpreting its narrative criterion; 2) WQBELs may be established on a case-by-case basis using U.S. EPA criteria guidance published under CWA Section 304 (a); or 3) WQBELs may be established using an indicator parameter for the pollutant of concern.

A. Discharge Prohibitions

1. Discharge Prohibition III. A (Discharge to the Pacific Ocean at a location other than as described by the Order at 36° 56' 08" N. Latitude, 122° 04' 08" W. Longitude is prohibited). This prohibition is retained from the previous permit.
2. Discharge Prohibition III. B (Discharges in a manner, except as described by the Order are prohibited). Because limitations and conditions of the Order have been prepared based on specific information provided by the Discharger and specific wastes described by the Discharger, the limitations and conditions of the Order do not adequately address waste streams not contemplated during drafting of the Order. To prevent the discharge of such waste streams that may be inadequately regulated, the Order prohibits the discharge of any waste that was not described by to the Regional Water Board during the process of permit reissuance.
3. Discharge Prohibition III. C (Discharges of radiological, chemical, or biological warfare agent or high level radioactive waste to the Ocean is prohibited). This prohibition restates a discharge prohibition established in section III. H of the Ocean Plan.
4. Discharge Prohibition III. D (Federal law prohibits the discharge of sludge by pipeline the Ocean. The discharge of municipal or 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, without further treatment, directly to the Ocean or to a waste stream that discharges to the Ocean, is prohibited.) This prohibition reflects the prohibition in Chapter III. H of the Ocean Plan.
5. Discharge Prohibition III. E (The overflow or bypass of wastewater from the Discharger's collection, treatment, or disposal facilities and the subsequent discharge of untreated or partially treated wastewater, except as provided for in Attachment D, Standard Provision I.G. (Bypass), is prohibited). The discharge of untreated or partially treated wastewater from the Discharger's collection, treatment, or disposal facilities represents an unauthorized bypass pursuant to 40 CFR 122.41

(m) or an unauthorized discharge, which poses a threat to human health and/or aquatic life, and therefore, is explicitly prohibited by the Order.

B. Technology-Based Effluent Limitations

1. Scope and Authority

NPDES regulations at 40 CFR 122.44 (a) require that permits include applicable technology-based limitations and standards. Where the USEPA has not yet developed technology based standards for a particular industry or a particular pollutant, CWA Section 402 (a) (1) and USEPA regulations at 40 CFR 125.3 authorize the use of best professional judgment (BPJ) to derive technology-based effluent limitations on a case-by-case basis. When BPJ is used, the permit writer must consider specific factors outlined at 40 CFR 125.3.

Limitations based on the minimum level of effluent quality attainable by secondary treatment are established at 40 CFR 133. The Secondary Treatment Regulation includes the following limitations applicable to all publicly owned treatment works (POTWs).

Table F-4. Secondary Treatment Requirements

Parameter	Effluent Limitation		
	30-Day Avg	7-Day Avg	Percent Removal ^[1]
BOD ₅	30 mg/L	45 mg/L	85
CBOD ₅ ^[1]	25 mg/L	40 mg/L	85
TSS	30 mg/L	45 mg/L	85
pH	6.0 – 9.0		---

^[1] At the option of the permitting authority, effluent limitations for CBOD₅ may be substituted for those limitations specified for BOD₅.

40 CFR 133.104 allows an analysis of total organic carbon (TOC) for BOD₅, if a sufficient long-term correlation between BOD and TOC has been demonstrated. In October 2006, the City of Santa Cruz submitted results from a least squares regression using 49 TOC measurements versus 49 corresponding paired measurements for BOD₅ taken between November 2005 and September 2006. The resulting equation is:

$$y = 0.4141x + 4.3937$$

where:

$$y = \text{TOC, mg/L}$$

$$x = \text{BOD}_5, \text{ mg/L}$$

The correlation coefficient (r^2) for the above relationship equals 0.9532 or 95% which supports close correlation between the effluent TOC ratio and the effluent BOD₅ concentration. Substituting the technology based effluent limits for BOD₅ shown in Table F-4 into this equation and solving for TOC results in a concentration of 16.8 mg/L TOC for the 30-day average and 23 mg/L for the 7-day average.

To obtain a minimum 85% removal efficiency for BOD, the Discharger compares the influent BOD to the effluent BOD, as derived from the equation.

In addition to the federal technology-based effluent limitations, the State Water Board, in Table A of the Ocean Plan, has established technology-based requirements, applicable to all POTWs, for oil and grease, suspended and settleable solids, turbidity, and pH.

2. Applicable Technology-Based Effluent Limitations

The following table summarizes technology-based effluent limitations established by the Order.

Table F-5. Summary of Technology-Based Effluent Limitations

Parameter	Units	Effluent Limitations		
		Average Monthly	Average Weekly	Maximum Daily
TOC ^[1]	mg/L	17	23	--
	lbs/day	2,412	3,263	--
TSS ^[2]	mg/L	30	45	75
	lbs/day	4,255	6,380	10,635
Oil & Grease	mg/L	25	40	75
	lbs/day	3,550	5675	10,635
Settleable Solids	mL/L/hr	1.0	1.5	3.0
Turbidity	NTUs	75	100	225
pH	pH units	6.0 – 9.0 at all times		

^[1] The average monthly percent removal of TOC shall not be less than 53%.

^[2] The average monthly percent removal of TSS shall not be less than 85%.

All technology-based limitations are retained from the previous permit and are required by NPDES regulations at 40 CFR 133 and/or Table A of the Basin Plan. Limitations for CBOD₅ has been substituted by limitations for TOC as allowed at 40 CFR 133.104. Mass-based limitations for TOC, TSS, and oil and grease are based on a discharge rate of 17.0 MGD.

C. Water Quality-Based Effluent Limitations (WQBELs)

1. Scope and Authority

NPDES regulations at 40 CFR 122.44 (d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards, including numeric and narrative objectives within a standard.

The process for determining “reasonable potential” and calculating WQBELs, when necessary, is intended to protect the designated uses of receiving waters as specified in the Basin and Ocean Plans, and achieve applicable water quality objectives and criteria that are contained in the Basin Plan and in other applicable

State and federal rules, plans, and policies, including applicable water quality criteria from the Ocean Plan.

Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective for the pollutant, WQBELs must be established in accordance with the requirements of 40 CFR 122.44 (d) (1) (vi), 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.

2. Applicable Beneficial Uses and Water Quality Criteria and Objectives

Beneficial uses for ocean waters of the Central Coast Region are established by the Basin Plan and Ocean Plan and are described by Findings H and I, respectively, of Section II of the Order.

Water quality criteria applicable to ocean waters of the Region are established by the Ocean Plan, which includes water quality objectives for bacterial characteristics, physical characteristics, chemical characteristics, biological characteristics, and radioactivity. The water quality objectives from the Ocean Plan are incorporated as receiving water limitations into this Order. In addition, Table B of the Ocean Plan contains numeric water quality objectives for 83 toxic pollutants for the protection of marine aquatic life and human health. Pursuant to NPDES regulations at 40 CFR 122.44 (d) (1), and in accordance with procedures established by the Ocean Plan (2005), the Central Coast Water Board has performed a reasonable potential analysis (RPA) to determine the need for effluent limitations for the Table B toxic pollutants.

3. Determining the Need for WQBELs

Procedures for performing a Reasonable Potential Analysis (RPA) for ocean dischargers are described in Section III. C. and Appendix VI of the Ocean Plan. In general, the procedure is a statistical method that projects an effluent data set while taking into account the averaging period of water quality objectives, the long term variability of pollutants in the effluent, limitations associated with sparse data sets, and uncertainty associated with censored data sets. The procedure assumes a lognormal distribution of the effluent data set, and compares the 95th percentile concentration at 95 percent confidence of each Table B pollutant, accounting for dilution, to the applicable water quality criterion. The RPA results in one of three following endpoints.

Endpoint 1 – There is “reasonable potential.” An effluent limitation must be developed for the pollutant. Effluent monitoring for the pollutant, consistent with the monitoring frequency in Appendix III (Ocean Plan), is required.

- Endpoint 2 - There is no “reasonable potential.” An effluent limitation is not required for the pollutant. Appendix III (Ocean Plan) effluent monitoring is not required for the pollutant; the Regional Board, however, may require occasional monitoring for the pollutant or for whole effluent toxicity as appropriate.
- Endpoint 3 - The RPA is inconclusive. Monitoring for the pollutant or whole effluent toxicity testing, consistent with the monitoring frequency in Appendix III (Ocean Plan), is required. An existing effluent limitation for the pollutant shall remain in the permit, otherwise the permit shall include a reopener clause to allow for subsequent modification of the permit to include an effluent limitation if the monitoring establishes that the discharge causes, has the reasonable potential to cause, or contribute to an excursion above a Table B water quality objective.

The State Water Resources Control Board has developed a reasonable potential calculator, which is available at:

<http://www.waterboards.ca.gov/plnspols/docs/oplans/rpcalc.zip>.

The calculator (RPcalc 2.0) was used in the development of this Order and considers several pathways in the determination of reasonable potential.

a. First Path

If available information about the receiving water or the discharge supports a finding of reasonable potential without analysis of effluent data, the Central Coast Water Board may decide that WQBELs are necessary after a review of such information. Such information may include: the facility or discharge type, solids loading, lack of dilution, history of compliance problems, potential toxic effects, fish tissue data, 303 (d) status of the receiving water, or the presence of threatened or endangered species or their critical habitat, or other information.

b. Second Path

If any pollutant concentration, adjusted to account for dilution, is greater than the most stringent applicable water quality objective, there is reasonable potential for that pollutant.

c. Third Path

If the effluent data contains 3 or more detected and quantified values (i.e., values that are at or above the ML), and all values in the data set are at or above the ML, a parametric RPA is conducted to project the range of possible effluent values. The 95th percentile concentration is determined at 95 percent confidence for each pollutant, and compared to the most stringent applicable water quality objective to determine reasonable potential. A parametric analysis assumes that the range of possible effluent values is distributed

lognormally. If the 95th percentile value is greater than the most stringent applicable water quality objective, there is reasonable potential for that pollutant.

d. Fourth Path

If the effluent data contains 3 or more detected and quantified values (i.e., values that are at or above the ML), but at least one value in the data set is less than the ML, a parametric RPA is conducted according to the following steps.

- (1) If the number of censored values (those expressed as a “less than” value) account for less than 80 percent of the total number of effluent values, calculate the M_L (the mean of the natural log of transformed data) and S_L (the standard deviation of the natural log of transformed data) and conduct a parametric RPA, as described above for the Third Path.
- (2) If the number of censored values account for 80 percent or more of the total number of effluent values, conduct a non-parametric RPA, as described below for the Fifth Path. (A non-parametric analysis becomes necessary when the effluent data are too few, and no assumptions can be made regarding their possible distribution.)

e. Fifth Path

A non-parametric RPA is conducted when the effluent data set contains less than 3 detected and quantified values, or when the effluent data set contains 3 or more detected and quantified values but the number of censored values accounts for 80 percent or more of the total number of effluent values. A non-parametric analysis is conducted by ordering the data, comparing each result to the applicable water quality objective, and accounting for ties. The sample number is reduced by one for each tie, when the dilution-adjusted method detection limit (MDL) is greater than the water quality objective. If the adjusted sample number, after accounting for ties, is greater than 15, the pollutant has no reasonable potential to exceed the water quality objective. If the sample number is 15 or less, the RPA is inconclusive, monitoring is required, and any existing effluent limits in the expiring permit are retained.

For the subject facility, an RPA was conducted using effluent data compiled from monitoring events between July 2005 and December 2009. The effluent data were compiled from pdf versions of Annual Reports for the years 2005 through 2009 downloaded from the City of Santa Cruz Wastewater Treatment Plant website, as well as a spreadsheet, Table B wet and dry seasons 2008 and 2009.xls, made available by the Discharger.

The following tables present results of the RPA, performed in accordance with procedures described by the Ocean Plan for the City of Santa Cruz Wastewater Treatment Plant. The RPA endpoint for each Table B pollutant is identified. As shown in the following tables, the RPA commonly lead to Endpoint 3, meaning

that the RPA is inconclusive, when a majority of the effluent data is reported as ND (not detected). In these circumstances, the Central Coast Water Board concludes that additional monitoring will be required for those pollutants during the term of the reissued permit and existing effluent limits will be retained. Endpoint 2 (effluent limit not required) was concluded for ammonia, arsenic, copper, chromium III, nickel, zinc, and fluoranthene.

Table F-6. RPA Results for Discharges of Secondary Effluent

Table B Pollutant	Most Stringent WQO (µg/L)	No. of Samples	No. of Non-Detects	Max Effluent Conc. (µg/L)	RPA Result, Comment
Objectives for Protection of Marine Aquatic Life					
Ammonia (as N)	600	48	0	47,800	Endpoint 2 – Effluent limitation not required.
Arsenic	8	3	0	2.0	Endpoint 2 – Effluent limitation not required.
Cadmium	1	6	6	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Chlorinated Phenolics	1	1	1	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Chromium (VI)	2	1	1	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Copper	3	6	3	12	Endpoint 2 – Effluent limitation not required.
Cyanide	1				No Effluent Data
Endosulfan (total)	0.009	4	4	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Endrin	0.002	4	4	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
HCH	0.004	3	1	NA	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Lead	2	6	5	30	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Mercury	0.04	3	1	0.042	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Nickel	5	6	3	3.1	Endpoint 2 – Effluent limitation not required.
Non-chlorinated Phenolics	30	1	1	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Selenium	15	3	2	0.80	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Silver	0.7	6	6	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Zinc	20	6	0	74	Endpoint 2 – Effluent limitation not required.
Objectives for Protection of Human Health – Noncarcinogens					
1,1,1-Trichloroethane	540,000				No Effluent Data
2,4-Dinitrophenol	4.0	1	1	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
2-Methyl-4,6-Dinitrophenol	220	1	1	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Acrolein	220	1	1	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.

Table B Pollutant	Most Stringent WQO (µg/L)	No. of Samples	No. of Non-Detects	Max Effluent Conc. (µg/L)	RPA Result, Comment
Antimony	1,200	3	3	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Bis(2-Chloroethoxy)Methane	4.4	1	1	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Bis(2-Chloroisopropyl)Ether	1,200	1	1	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Chlorobenzene	570				No Effluent Data
Chromium (III)	190,000	6	0	50	Endpoint 2 – Effluent limitation not required.
Dichlorobenzenes	5,100				No Effluent Data
Diethyl Phthalate	33,000	1	1	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Dimethyl Phthalate	820,000	1	1	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Di-n-Butyl Phthalate	3,500	1	1	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Ethylbenzene	4,100				No Effluent Data
Fluoranthene	15	5	2	0.0020	Endpoint 2 – Effluent limitation not required.
Hexachlorocyclopentadiene	58	1	1	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Nitrobenzene	4.9	1	1	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Thallium	2	3	3	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Toluene	85,000				No Effluent Data
Tributyltin	0.0014				No Effluent Data
Objectives for Protection of Human Health – Carcinogens					
1,1,2,2-Tetrachloroethane	2.3				No Effluent Data
1,1,2-Trichloroethane	9.4				No Effluent Data
1,1-Dichloroethylene	0.9				No Effluent Data
1,2-Dichloroethane	28				No Effluent Data
1,2-Diphenylhydrazine	0.16				No Effluent Data
1,3-Dichloropropylene	8.9				No Effluent Data
1,4-Dichlorobenzene	18	1	1	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
TCDD Equivalentents	3.9×10^{-9}	8	0	5.0E-06	Endpoint 1 – Effluent limitation required.
2,4,6-Trichlorophenol	0.29	1	1	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
2,4-Dinitrotoluene	2.6	1	1	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
3,3'-Dichlorobenzidine	0.0081				No Effluent Data

Table B Pollutant	Most Stringent WQO (µg/L)	No. of Samples	No. of Non-Detects	Max Effluent Conc. (µg/L)	RPA Result, Comment
Acrylonitrile	0.10				No Effluent Data
Aldrin	2.2E-5	4	4	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Benzene	5.9				No Effluent Data
Benzidine	6.9E-5				No Effluent Data
Beryllium	0.033	3	3	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Bis(2-Chloroethyl)Ether	0.045	1	1	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Bis(2-Ethylhexyl)Phthalate	3.5	1	1	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Carbon Tetrachloride	0.90				No Effluent Data
Chlordane	2.3E-5	5	1	19.29	Endpoint 1 – Effluent limitation required.
Chlorodibromomethane	8.6				No Effluent Data
Chloroform	130				No Effluent Data
DDT (total)	0.00017	5	1	1.575	Endpoint 1 – Effluent limitation required.
Dichlorobromomethane	6.2				No Effluent Data
Dieldrin	0.00004	5	2	5.36	Endpoint 1 – Effluent limitation required.
Halomethanes	130				No Effluent Data
Heptachlor	0.00005	4	1	1.196	Endpoint 1 – Effluent limitation required.
Heptachlor Epoxide	0.00002	5	2	1.7	Endpoint 1 – Effluent limitation required.
Hexachlorobenzene	0.00021	5	2	0.58	Endpoint 1 – Effluent limitation required.
Hexachlorobutadiene	14	1	1	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Hexachloroethane	2.5	1	1	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Isophorone	730	1	1	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Methylene Chloride	450				No Effluent Data
N-Nitrosodimethylamine	7.3	1	1	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
N-Nitrosodi-n-Propylamine	0.38	1	1	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
N-Nitrosodiphenylamine	2.5				No Effluent Data
PAHs (total)	0.0088	2	0	0.0054	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
PCBs	1.9E-5	1	1	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.

Table B Pollutant	Most Stringent WQO (µg/L)	No. of Samples	No. of Non-Detects	Max Effluent Conc. (µg/L)	RPA Result, Comment
Tetrachloroethylene	2.0				No Effluent Data
Toxaphene	0.00021				No Effluent Data
Trichloroethylene	27				No Effluent Data
Vinyl Chloride	36				No Effluent Data

NA indicates that effluent data is not available.

ND indicates that the pollutant was not detected.

Minimum probable initial dilution for this Discharger is 139:1.

Maximum effluent concentrations are as reported by the Discharger and have not been corrected for dilution.

Effluent data used for this RPA were collected from July 2005 to December 2009.

All units are µg/L.

4. WQBEL Calculations

Based on results of the RPA, performed in accordance with methods of the Ocean Plan for discharges to the Pacific Ocean, the Regional Water Board is establishing WQBELs for all Table B pollutants, except ammonia, arsenic, copper, chromium III, nickel, zinc, and fluoranthene. The Regional Water Board is also establishing WQBELs for chlorine and whole effluent, acute and chronic toxicity, which are also pollutants or pollutant parameters identified by Table B of the Ocean Plan.

As described by Section III. C of the Ocean Plan, effluent limits for Table B pollutants are calculated according to the following equation.

$$C_e = C_o + D_m (C_o - C_s)$$

Where ...

C_e = the effluent limitation (µg/L)

C_o = the concentration (the water quality objective) to be met at the completion of initial dilution (µg/L).

C_s = background seawater concentration (µg/L)

D_m = minimum probable initial dilution expressed as parts seawater per part wastewater (here, $D_m = 139$)

For the City of Santa Cruz Wastewater Treatment Plant, the D_m of 139 is unchanged from Order No. R3-2005-0003. Initial dilution is the process that results in the rapid and irreversible turbulent mixing of wastewater with ocean water around the point of discharge. As site-specific water quality data are not available, in accordance with Table B implementing procedures, C_s equals zero for all pollutants, except the following.

Table F-7. Background Concentrations (Cs) - Ocean Plan (Table C)

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

For all other Table B parameters, Cs=0

Using the equation, $C_e = C_o + D_m (C_o - C_s)$, effluent limitations are calculated as follows (effluent limitations for silver, DDT, and chronic toxicity are shown here for example only). Calculated effluent limitations for all Table B pollutants are shown in section IV. A. 2. of the Order rounded to 2 significant digits.

Silver

$$C_e = 0.7 + 139 (0.7 - 0.16) = 76 \text{ µg/L (6-Month Median)}$$

$$C_e = 2.8 + 139 (2.8 - 0.16) = 370 \text{ µg/L (Daily Maximum)}$$

$$C_e = 7 + 139 (7 - 0.16) = 958 \text{ µg/L (Instantaneous Maximum)}$$

DDT

$$C_e = 0.00017 + 139 (0.00017 - 0) = 0.0238 \text{ µg/L (30-Day Average)}$$

Chronic Toxicity

$$C_e = 1 + 139 (1 - 0) = 140 \text{ TUc (Daily Maximum)}$$

5. Whole Effluent Toxicity (WET)

Whole effluent toxicity (WET) limitations protect receiving water quality from the aggregate toxic effect of a mixture of pollutants in the effluent. WET tests measure the degree of response of exposed aquatic test organisms to an effluent. The WET approach allows for protection of the narrative “no toxics in toxic amounts” criterion while implementing numeric criteria for toxicity. There are two types of WET tests - acute and chronic. An acute toxicity test is conducted over a short time period and measures mortality. A chronic toxicity test is conducted over a longer period of time and may measure mortality, reproduction, and growth.

Central Coast Water Board staff have determined that treated wastewater from the Wastewater Treatment Plant has a reasonable potential to cause or contribute to acute and/or chronic toxicity in the discharge. Such a determination is consistent with the RPA procedure of the Ocean Plan which requires consideration of all available information, including the “potential toxic impact of the discharge” to determine if WQBELs are necessary, notwithstanding the statistical procedure with which the RPA is conducted for most pollutants. Because the cumulative effects of various pollutants present at low levels in the discharge are unknown, acute and chronic toxicity limitations are retained from the previous permit.

The Discharger is required to maintain a Toxicity Reduction Evaluation (TRE) workplan, which describes the steps that the Discharger intends to follow in the event that acute and/or chronic toxicity limitations are exceeded. When monitoring measures WET in the effluent above the limitations established by the Order, the Discharger must resample, if the discharge is continuing, and retest. The Central Coast Water Board Executive Officer will then determine whether to initiate enforcement action, whether to require the Discharger to implement a TRE or to implement other measures.

D. Final Effluent Limitations

Final, technology-based and water quality-based effluent limitations established by the Order are discussed in the preceding sections of the Fact Sheet.

1. Satisfaction of Anti-Backsliding Requirements

The Order retains effluent limitations established by the previous permit for CBOD₅, TSS, oil and grease, settleable solids, turbidity, and pH. However, limitations for CBOD₅ have been substituted by limitations for TOC as allowed at 40 CFR 133.104.

The Order also retains most of the effluent limitations from the previous permit for the Ocean Plan Table B toxic pollutants. The Ocean Plan was amended in 2005 to include a procedure for determining “reasonable potential” by characterization of effluent monitoring data. A reasonable potential analysis, using the updated Ocean Plan procedure, resulted in a finding of Endpoint 3 for all Table B pollutants except ammonia, arsenic, copper, chromium (III), nickel, zinc, and fluoranthene, which had an Endpoint 2 and thus do not require an effluent limitation.

2. Satisfaction of Antidegradation Policy

Provisions of the Order are consistent with applicable anti-degradation policy expressed by NPDES regulations at 40 CFR 131.12 and by State Water Board Resolution No. 68-16. The Order does not authorize increases in discharge rates or pollutant loadings, and its limitations and conditions otherwise assure maintenance of the existing quality of receiving waters.

3. Stringency of Requirements for Individual Pollutants

This Order contains both technology-based and water quality-based effluent limitations for individual pollutants. The technology-based effluent limitations consist of restrictions on TOC which has been substituted for CBOD₅; TSS; settleable solids; turbidity; oil and grease; and pH. Restrictions on these pollutants are discussed in section IV. B of the Fact Sheet. This Order’s technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements. In addition, this Order contains effluent limitations more stringent than the minimum, federal technology-based requirements that are necessary to meet water quality standards. These limitations are not more stringent than required by the CWA.

Final, technology and water quality based effluent limitations are summarized in sections IV. B and C of this Fact Sheet.

E. Interim Effluent Limitations

The Order does not establish interim effluent limitations and schedules for compliance with final limitations.

F. Land Discharge Specifications

This section of the standardized permit is not applicable to the City of Santa Cruz Wastewater Treatment Plant.

G. Reclamation Specifications

The Order does not address use of reclaimed wastewater except to require compliance with applicable State and local requirements regarding the production and use of reclaimed wastewater, including those requirements established by the Department of Health Services at title 22, sections 60301 - 60357 of the California Code of Regulations, Water Recycling Criteria.

V. RATIONALE FOR RECEIVING WATER LIMITATIONS**A. Surface Water**

Receiving water quality is a result of many factors, some unrelated to the discharge. This Order considers these factors and is designed to minimize the influence of the discharge on the receiving water. Receiving water limitations within the proposed Order include the receiving water limitations of the previous Order.

B. Groundwater

Groundwater limitations established by the Order include general objectives for ground water established by the Basin Plan for the Central Coast Region.

VI. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

NPDES regulations at 40 CFR 122.48 require that all NPDES permits specify requirements for recording and reporting monitoring results. Water Code sections 13267 and 13383 also authorize the Regional Water Board to require technical and monitoring reports. Rationale for the monitoring and reporting requirements contained in the Monitoring and Reporting Program (MRP), which is presented as Attachment E of this Order, is presented below.

A. Influent Monitoring

In addition to influent flow monitoring, monitoring for TOC and TSS is required to determine compliance with the Order's 85 percent removal requirement for those pollutants.

B. Effluent Monitoring

Effluent monitoring requirements of the previous permit for Discharge Point 001 (the Ocean outfall) are retained in this Order.

C. Whole Effluent Toxicity Testing Requirements

Whole effluent toxicity (WET) limitations protect receiving water quality from the aggregate toxic effect of a mixture of pollutants in the effluent. Acute toxicity testing measures mortality in 100 percent effluent over a short test period, and chronic toxicity testing is conducted over a longer period of time and may measure mortality, reproduction, and/or growth. This Order retains limitations and monitoring requirements for acute and chronic toxicity for Discharge Point 001.

D. Receiving Water Monitoring

1. Surface Water

Requirements to participate in the CCLEAN Regional Monitoring Program and to conduct bacteria monitoring at seven receiving water monitoring stations are retained from the previous permit.

2. Groundwater

Groundwater monitoring requirements are not established by the Order.

E. Other Monitoring Requirements

1. Biosolids/Sludge Monitoring.

Biosolids monitoring requirements are retained from the previous Order.

2. Pretreatment Monitoring.

Pretreatment monitoring requirements are retained from the previous Order.

3. Outfall Inspection.

The Order retains the requirement of the previous permit to conduct annual visual inspections of the outfall and diffuser system and to conduct a dye study to visually inspect the entire outfall structure to determine whether there are leaks, potential leaks, or malfunctions. However, this Order allows the Discharger to conduct these two inspections in different months of the year in order to optimize the conditions observations during each test.

VII. RATIONALE FOR PROVISIONS

A. Standard Provisions

Standard Provisions, which apply to all NPDES permits in accordance with 40 CFR 122.41, and additional conditions applicable to specified categories of permits in accordance with 40 CFR 122.42, are provided in Attachment D to the Order.

NPDES regulations at 40 CFR 122.41 (a) (1) and (b - n) 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. 40 CFR 123.25 (a) (12) allows the State to omit or modify conditions to impose more stringent requirements. In accordance with 40 CFR 123.25, this Order omits federal conditions that address enforcement authority specified in 40 CFR 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 incorporates by reference Water Code section 13387 (e).

B. Special Provisions

1. Reopener Provisions

The Order may be modified in accordance with the requirements set forth at 40 CFR 122 and 124, to include appropriate conditions or limits based on newly available information, or to implement any, new State water quality objectives that are approved by the U.S. EPA. As effluent is further characterized through additional monitoring, and if a need for additional effluent limitations becomes apparent after additional effluent characterization, the Order will be reopened to incorporate such limitations.

2. Special Studies and Additional Monitoring Requirements

a. Toxicity Reduction Requirements

The requirement to perform a Toxicity Reduction Evaluation, if the Acute and Chronic Toxicity limit is exceeded, is retained from Order No. R3-2005-0003. When toxicity monitoring measures acute or chronic toxicity in the effluent above the limitation established by the Order, the Discharger is required to resample and retest, if the discharge is continuing. When all monitoring results are available, the Executive Officer can determine whether to initiate enforcement action, whether to require the Discharger to implement toxicity reduction evaluation (TRE) requirements, or whether other measures are warranted.

b. Bacteria Assessment

Requirements to conduct an assessment of sources of bacteria and to take remedial steps when receiving water limitations for bacteria are exceeded are retained from the previous permit.

c. Infiltration/Inflow and Spill Prevention Program Requirements

Infiltration/inflow and spill prevention program requirements are retained from the previous permit.

3. Best Management Practices and Pollution Prevention

a. Pollutant Minimization Program

The 2005 Ocean Plan established guidelines for the Pollutant Minimization Program (PMP). At the time of the proposed adoption of this Order, no known evidence was available that would require the Discharger to immediately develop

and conduct a PMP. The Central Coast Water Board will notify the Discharger in writing if such a program becomes necessary. The 2005 Ocean Plan PMP language is included to provide guidance in the event that a PMP must be developed and implemented by the Discharger.

4. Construction, Operation, and Maintenance Specifications

This section of the standardized permit is not applicable to the City of Santa Cruz.

5. Special Provisions for Municipal Facilities (POTWs Only)

a. Biosolids Management

Provisions regarding sludge handling and disposal ensure that such activity will comply with all applicable regulations.

40 CFR Part 503 sets forth USEPA's final rule for the use and disposal of biosolids, or sewage sludge, and governs the final use or disposal of biosolids. The intent of this federal program is to ensure that sewage sludge is used or disposed of in a way that protects both human health and the environment.

USEPA's regulations require that producers of sewage sludge meet certain reporting, handling, and disposal requirements. As the USEPA has not delegated the authority to implement the sludge program to the State of California, the enforcement of sludge requirements that apply to the Discharger remains under USEPA's jurisdiction at this time. USEPA, not the Regional Water Board, will oversee compliance with 40 CFR Part 503.

40 CFR Part 503.4 (Relationship to other regulations) states that the disposal of sewage sludge in a municipal solid waste landfill unit, as defined in 40 CFR 258.2, that complies with the requirements in 40 CFR part 258 constitutes compliance with section 405 (d) of the CWA. Any person who prepares sewage sludge that is disposed in a municipal solid waste landfill unit must ensure that the sewage sludge meets the applicable requirements of 40 CFR Part 503.

6. Other Special Provisions

a. Discharges of Stormwater

Stormwater flows from the wastewater treatment process areas are directed to the headworks and discharged with treated wastewater. These stormwater flows constitute all industrial stormwater at this facility and, consequently, this permit regulates all industrial stormwater discharges at this facility along with wastewater discharges.

b. Sanitary Sewer System Requirements

The Order requires coverage by and compliance with applicable provisions of General Waste Discharge Requirements for Sanitary Sewer Systems (State Water Board Order No. 2006-0003-DWQ). This General Permit, adopted on May

2, 2006, is applicable to all “federal and state agencies, municipalities, counties, districts, and other public entities that own or operate sanitary sewer systems greater than one mile in length that collect and/or convey untreated or partially treated wastewater to a publicly owned treatment facility in the State of California.” The purpose of the General Permit is to promote the proper and efficient management, operation, and maintenance of sanitary sewer systems and to minimize the occurrences and impacts of sanitary sewer overflows.

7. Compliance Schedules

The Order does not establish interim effluent limitations and schedules of compliance with final limitations.

VIII. PUBLIC PARTICIPATION

The Central Coast Regional Water Quality Control Board is considering the issuance of waste discharge requirements (WDRs) that will serve as a National Pollutant Discharge Elimination System (NPDES) permit for the City of Santa Cruz Wastewater Treatment Facility. As a step in the WDR adoption process, the Regional Water Board staff has developed tentative WDRs. The Regional Water Board encourages public participation in the WDR adoption process.

A. Notification of Interested Parties

The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge and has provided them with an opportunity to submit their written comments and recommendations.

B. Written Comments

The Central Coast Water Board received one letter regarding the draft Order. David Smith, manager of the NPDES Permits Office for USEPA Region IX, submitted comments to the Central Coast Water Board on October 12, 2010. USEPA’s comments and Central Coast Water Board staff’s response to the comments are summarized below.

USEPA Comment No. 1 Using TOC as a substitute for BOD. According to 40CFR 133.104(b) “Sampling and test procedures,” TOC may be substituted for BOD when a long-term BOD:TOC correlation has been demonstrated. We do not, however, generally support using TOC as an indicator for BOD. In fact, we are unaware of any case where a permit has implemented 40 CFR 133.104(b) to set limits for TOC as a replacement for BOD. The fact sheet does not explain why this discharge would be a special case requiring it to deviate from the nearly universally prescribed BOD limit for POTWs. Please provide a detailed justification for the use of TOC as a substitute for BOD and how this substitution meets secondary treatment requirements.

Staff Response to Comment No. 1

Please see chapter 5 of the NPDES’ Permit Writers Manual at 5.1.3.5 http://www.epa.gov/npdes/pubs/pwm_2010.pdf, for the following:

Substitution of COD or TOC for BOD₅

Chemical oxygen demand (COD) and total organic carbon (TOC) laboratory tests can provide an accurate measure of the organic content of wastewater in a shorter time (i.e., several hours versus five days) than a BOD₅ test. The regulations at 40 CFR 133.104(b) allow a permit writer to set limitations for COD or TOC instead of BOD₅ if a long-term BOD₅:COD or BOD₅:TOC correlation has been demonstrated.

As provided in more detail in Central Coast Water Board staff’s response to Comment No. 2, below, the Discharger’s WWTF laboratory produced over 60 paired BOD and TOC data for each of influent and effluent wastewaters for the period covering November 2005 through November 2006 to satisfy the stipulation for long-term BOD₅:TOC correlation. That correlation study provided the data and graphs as well as the site-specific equation of $TOC = (0.4141 BOD) + 4.3937$.

Other factors that led the Discharger to pursue using TOC instead of BOD included:

1. Analytical considerations. The Discharger has documentation of historic and chronic inability to consistently maintain 20°C at test set up and finish, which is a requirement of BOD₅ analyses. The unstable test temperatures render the analytical results suspect.
2. Resource limitations. The uncontrollable temperatures might have been corrected by an investment of more than \$100,000 to retrofit the laboratory building solely to produce BOD₅ data for compliance purposes, while seeking other options for better process controls.
3. Utility Process Control value. The few hours needed for TOC versus the five days needed for BOD₅ is a critically important asset for this small facility. TOC provides a critically important tool for better process control than BOD₅ at this small facility. The production of data useful for meeting objectives of process control and compliance measurements at reasonable cost was important in the consideration to develop the TOC values for the Central Coast Water Board.

USEPA Comment No. 2 Adequate BOD:TOC correlation is not demonstrated. The formula provided in the fact sheet to describe the relationship between BOD and TOC demonstrates that TOC is a poor indicator of BOD for this discharge. The formula below was derived using 49 pairs of TOC and BOD measurements taken between November 2005 and September 2006 by the City of Santa Cruz: $TOC/BOD = 9.052^* BOD^{-0.9409}$ [Attachment F-Fact Sheet (F-10)]

Using this equation, USEPA staff generated the table below, which formulates TOC values based on corresponding BOD values:

BOD (mg/L)	TOC (mg/L)
30	11.1
45	11.3
200	12.4
1,000	13.6
8,962	15.5*
13,792	15.9*

* 30-day and 7-day averages for TOC in the Draft Permit.

In the range of compliance, 30 and 45 mg/L of BOD (the typical 30-day and 7-day average permit limits, respectively) correlate to 11.1 and 11.3 mg/L of TOC, which is a minimal (0.2 mg/L) difference in TOC.

Staff Response to Comment No. 2

Central Coast Water Board staff agrees that the equation provided in the draft Fact Sheet is incorrect. In October 2010, the Discharger confirmed that it never used the formula noted in the draft Fact Sheet. The Discharger obtained the following data from analyses for BOD₅ and TOC of plant influent and effluent. Least-squares regression of these data provided the equation of the line: $TOC = (0.4141 BOD) + 4.3937$. The Discharger has employed this equation to correlate TOC with BOD since early 2007, as shown in Column No 4 of the Discharger’s monthly monitoring reports. As shown on the plot of the analytical data on Page F-31, the correlation coefficient, R², of the correct TOC:BOD correlation equation is 0.9532, which indicates a close correlation.

WWTF Effluent Load		
	BOD (mg/L)	TOC (mg/L)
11/04/05	20	10.54
11/10/05	20	10.28
11/16/05	26	10.74
11/22/05	33	10.99
11/28/05	15	10.67
12/04/05	22	10.98
12/10/05	22	11.74
12/16/05	27	10.99
12/22/05	20	14.74
12/28/05	12	9.974
01/03/06	11	9.294
01/09/06	14	9.376
01/15/06	12	9.666
01/21/06	12	9.283
01/27/06	23	10.47
02/02/06	11	8.954
02/08/06	12	9.561
02/14/06	11	10.89
02/20/06	20	10.07
02/26/06	15	9.78
03/04/06	5	9.783

03/10/06	8	9.097
03/16/06	13	9.17
03/22/06	10	9.562
03/28/06	12	9.139
04/03/06	18	9.976
04/09/06	9	10.23
04/15/06	5	10.07
04/21/06	17	10.24
04/27/06	14	10.01
05/03/06	21	10.48
05/09/06	23	9.278
05/15/06	31	9.643
05/21/06	26	10.08
05/27/06	23	9.336
06/02/06	10	10.22
06/08/06	6	10.37
06/14/06	14	10.49
06/20/06	18	10.43
06/26/06	20	10.65
07/02/06	14	10.9
07/08/06	19	12.49
07/14/06	18	12.59
07/20/06	15	14.57
07/26/06	12	11.13
08/01/06		
08/07/06	10	11.11
08/13/06	22	12.09
08/19/06	28	11.86
08/25/06	16	12.84
08/31/06	8	12.58
09/06/06	16	14.12
09/12/06	18	11.58
09/18/06	13	11.71
09/24/06	8	10.76
09/30/06	11	11.82
10/06/06	13	12.51
10/12/06	17	11.79
10/18/06	11	11.62
10/24/06	21	11.66
10/30/06	26	11.71
11/05/06	16	10.97
11/11/06	21	10.6
11/04/05	185	74.87

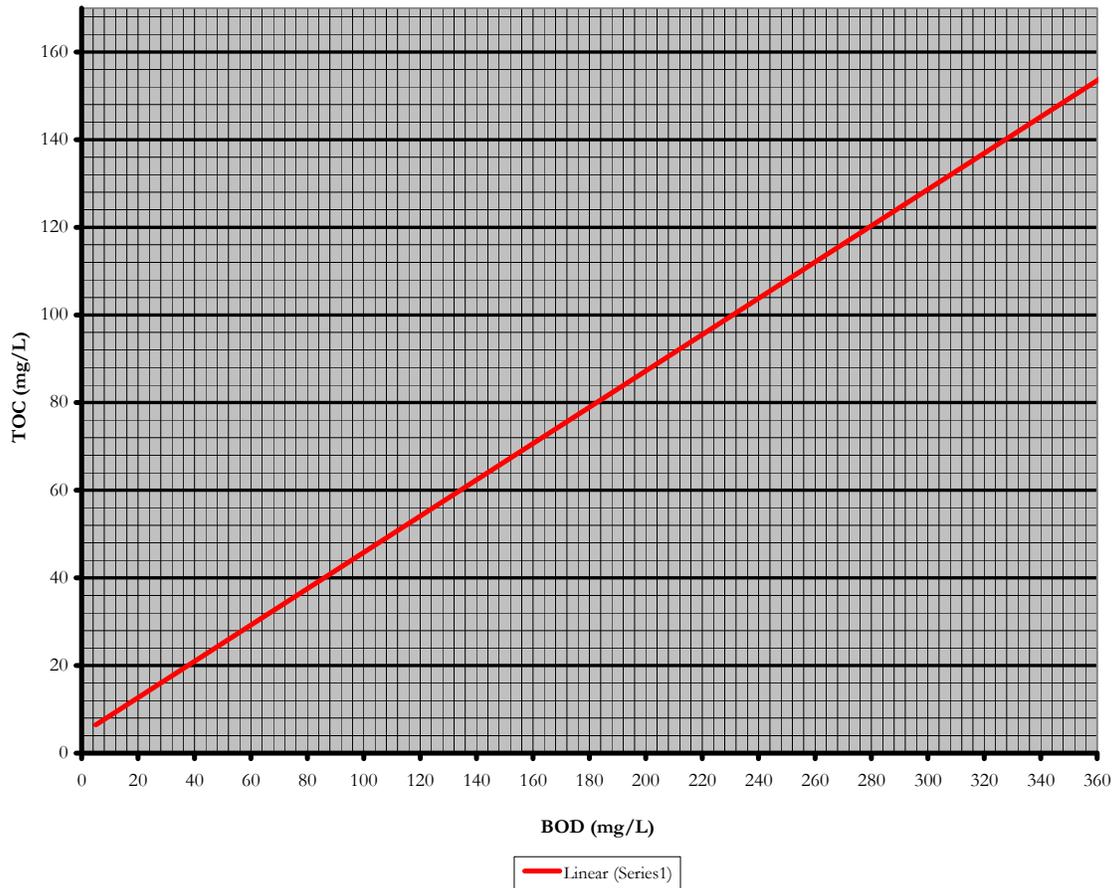
11/10/05	203	87.06
11/16/05	167	89.41
11/22/05	174	56.19
11/28/05	209	95.11
12/04/05	180	63.64
12/10/05	182	96.48
12/16/05	219	102.2
12/22/05	125	43.08
12/28/05	114	45.66
01/03/06	71	30.96
01/09/06	131	56.17
01/15/06	140	44.25
01/21/06	145	45.16
01/27/06	166	80.45
02/02/06	130	66.80
02/08/06	181	87.43
02/14/06	202	88.46
02/20/06	150	68.54
02/26/06	186	78.16
03/04/06	138	66.87
03/10/06	125	47.15
03/16/06	127	58.25
03/22/06	159	72.89
03/28/06	94	49.44
04/03/06	69	31.5
04/09/06	121	49.67
04/15/06	152	58.79
04/21/06	185	82.25
04/27/06	115	50.99
05/03/06	190	86.02
05/09/06	135	60.87
05/15/06	146	75.85
05/21/06	190	93.29
05/27/06	137	55.41

06/02/06	145	67.24
06/08/06	152	70.38
06/14/06	200	107.9
06/20/06	146	61.25
06/26/06	203	90.55
07/02/06	170	82.84
07/08/06	214	101.2
07/14/06	227	116.6
07/20/06	176	101.8
07/26/06	188	97.27
08/01/06	386	129.1
08/07/06	164	79.9
08/13/06	222	92.53
08/19/06	174	56.29
08/25/06	197	75.97
08/31/06	174	77.62
09/06/06	170	84.45
09/12/06	155	54.34
09/18/06	175	72.4
09/24/06	184	100.1
09/30/06	303	112.5
10/06/06	204	85.9
10/12/06	280	112.6
10/18/06	331	158.8
10/24/06	276	117
10/30/06	255	117.5
11/05/06	274	107.3
11/11/06	245	121.8

WWTF BOD to TOC chart for Process Monitoring

$$\text{TOC (mg/L)} = 0.4141(\text{BOD (mg/L)}) + 4.3937$$

$$R^2 = 0.9532$$



Although the City’s laboratory generated several process unit equations for correlating BOD to TOC, the overall site-specific equation is $\text{TOC} = (0.4141 \text{ BOD}) + 4.3937$.

Applying this site-specific equation to the BOD values above, the correct conversion is shown in the table below:

BOD (mg/L)	TOC(mg/L)
30.0	16.8
45.0	23.0
200.0	87.2
1,000.0	418.5
8,962.0	3,715.6
13,792.0	5,715.7

USEPA Comment No. 3 85 percent BOC reduction. Additionally, the secondary treatment regulations at 40 CFR 133.102(a)(3) require a BOD reduction of 85 percent from influent to effluent. According to the formula and table above, a reduction from 200

to 30 mg/L of BOD (an 85% reduction) would correspond to a 12.4 to 11.1 mg/L reduction in TOC: a 10% reduction. The range of TOC values within the range of compliance is not adequately sensitive to changes in BOD. This demonstrates that TOC reduction is not a good measurement of treatment performance for this discharge.

Staff Response to Comment No. 3 To calculate the BOD reduction where TOC measurements are applied, consistent with the secondary treatment stipulation at 40 CFR 133.102(a)(3) for 85% BOD reduction, requires the translation of influent and effluent TOC to their BOD equivalent values for this monthly calculation. Central Coast Water Board staff added the requirement for 85% BOD monthly reduction within the draft NPDES permit.

USEPA Comment No. 4 Derivation of numerical limit for TOC. In summary, USEPA staff noted that the method in the draft Order used to derive effluent limits is incorrect because the equation $TOC/BOD = 9.052 * BOD^{-0.9409}$ is incorrect. Moreover, USEPA staff notes that in standard statistical methods, a standard deviation is never multiplied by a mean; standard deviations are added or subtracted. USEPA staff asked for a more rigorous limit derivation discussion in the fact sheet, consistent with Federal regulatory requirements if a limit for TOC is established as an alternative for BOD in the proposed permit.

Staff Response to Comment No. 4. Central Coast Water Board staff concurs that a TOC limit is not an alternative for a BOD limit and proposes to utilize the direct translation of BOD to TOC and return to using the equation $TOC = (0.4141 BOD) + 4.3937$ in the draft NPDES permit. Hence, staff proposes the 30-day average effluent limitation equivalent to 30 mg/L BOD shall be 17 mg/L as TOC and the 7-day weekly average equivalent to 45 mg/L BOD shall be 23 mg/L as TOC.

C. Public Hearing

The Regional Water Board will hold a public hearing on the tentative WDRs during its regular Board meeting on the following date and time and at the following location:

Date: **December 9, 2010**
Time: **8:30 a.m.**
Location: **Watsonville City Council Chambers**
275 Main Street, Fourth Floor
Watsonville, CA 95076

Interested persons are invited to attend. At the public hearing, the Regional Water Board will hear testimony, if any, pertinent to the discharge, WDRs, and permit. Oral testimony will be heard; however, for accuracy of the record, important testimony should be in writing.

Please be aware that dates and venues may change. Our Web address is <http://www.waterboards.ca.gov/centralcoast/> where you can access the current agenda for changes in dates and locations.

D. Waste Discharge Requirements Petitions

Any aggrieved person may petition the State Water Resources Control Board to review the decision of the Regional Water Board regarding the final WDRs. The petition must be submitted within 30 days of the Regional Water Board's action to the following address:

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

E. Information and Copying

The Report of Waste Discharge (RWD), related documents, tentative effluent limitations and special provisions, comments received, and other information are on file and may be inspected at the address above at any time between 8:0 a.m. and 5:00 p.m., Monday through Friday. Copying of documents may be arranged through the Regional Water Board by calling (805) 549-3147.

F. Register of Interested Persons

Any person interested in being placed on the mailing list for information regarding the WDRs and NPDES permit should contact the Regional Water Board, reference this facility, and provide a name, address, and phone number.

G. Additional Information

Requests for additional information or questions regarding this Order should be directed to Michael Higgins at (805) 542-4649 or MHiggins@waterboards.ca.gov.

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