

STATE OF CALIFORNIA

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION
320 W. 4th Street, Suite 200, Los Angeles

FACT SHEET
WASTE DISCHARGE REQUIREMENTS
for
METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA
(Foothill Feeder Power Plant)

NPDES Permit No.: CA0059641
Public Notice No.: 05-011

FACILITY ADDRESS

31849 North Lake Hughes Road
Castaic, CA 91384

FACILITY MAILING ADDRESS

P.O. Box 54153
Los Angeles, CA 90054
Contact: John Clark
Telephone: (213) 217-5504

I. Public Participation

The California Regional Water Quality Control Board, Los Angeles Region (Regional Board) is considering the issuance of waste discharge requirements (WDRs) that will serve as a National Pollutant Discharge Elimination System (NPDES) permit for the above-referenced facility. As an initial step in the WDR process, the Regional Board staff has developed tentative WDRs. The Regional Board encourages public participation in the WDR adoption process.

A. Written Comments

The staff determinations are tentative. Interested persons are invited to submit written comments concerning these tentative WDRs. Comments should be submitted either in person or by mail to:

Executive Officer
California Regional Water Quality Control Board
Los Angeles Region
320 West 4th Street, Suite 200
Los Angeles, CA 90013

Written comments regarding this revised tentative Order must be submitted to the Regional Board staff no later than 5 p.m. on April 15, 2005, in order to be evaluated by Board staff and included in the Board's agenda folder. The Regional Board chair may exclude from the record written materials received after this date. (See Cal. Code Regs., tit. 23, § 648.4.). Timely submittal of written comments is encouraged to ensure that all comments are accurately and fully included in the

administrative record, that Board staff is able to provide timely review, and that Regional Board members have sufficient time to give full consideration to the comments and issues raised. Comments received after the requested date may result in delay in consideration of the tentative Order.

B. Public Hearing

The Regional 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: May 5, 2005
Time: 9:00 a.m.
Location: Board Room, Metropolitan Water District of Southern California, 700 N. Alameda Street, Los Angeles, California

Interested persons are invited to attend. At the public hearing, the Regional 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.swrcb.ca.gov/rwqcb4> where you can access the current agenda for changes in dates and locations.

C. Waste Discharge Requirements Appeals

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

State Water Resources Control Board
ATTN: Elizabeth Miller Jennings, Senior Staff Counsel
1001 I Street, 22nd Floor
Sacramento, CA 95814

D. Information and Copying

The Report of Waste Discharge (ROWD), related documents, tentative effluent limitations and special conditions, comments received, and other information are on file and may be inspected at 320 West 4th Street, Suite 200, Los Angeles, California 90013, at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged through the Los Angeles Regional Board by calling (213) 576-6600.

E. 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 Board, reference this facility, and provide a name, address, and phone number.

II. Introduction

Metropolitan Water District of Southern California, Foothill Feeder Power Plant (hereinafter FFPP or Discharger) discharges wastewater under WDRs and a NPDES permit contained in Order No. 98-066 (NPDES Permit No. CA0059641). Order No. 98-066 expired on September 10, 2003.

FFPP filed a Report of Waste Discharge (ROWD) on January 23, 2003 and applied for renewal of its WDRs and NPDES permit for discharge of wastes to surface waters. The tentative Order is the reissuance of the WDRs and the NPDES permit for discharges from FFPP. Three NPDES permit compliance evaluation inspections (CEI) were conducted at FFPP on June 8, 1999, June 15, 2000, and September 4, 2003. The CEI conducted on September 4, 2003 also served as a site visit to observe operations, verify conditions, and collect additional data to develop permit limitations and conditions.

III. Description of Facility and Waste Discharge

FFPP operates a hydroelectric generating station located at 31849 North Lake Hughes Road, (approximately 2,000 feet southwest of the crest of Castaic dam), Castaic, Los Angeles County, California. Source water for power generation is taken from Castaic Lake. Approximately 300 million gallons per day (mgd) of Castaic Lake water is used to generate turbines for converting hydraulic energy to electrical energy. A portion of the source water is filtered before being used for lubrication purposes at FFPP. Water from the facility is then conveyed to the Metropolitan Water District Jensen Water Treatment Plant for treatment and distribution as domestic/potable water.

The Order permits discharge of wastewaters from the facility to Castaic Lake Afterbay through Discharge Serial No. 001 (Latitude 34° 30' 52" North, Longitude 118° 36' 29" West). Castaic Lake Afterbay is tributary to the Santa Clara River via Castaic Lagoon and Castaic Creek. The receiving waters are waters of the United States. The Regional Board and the United States Environmental Protection Agency (U.S. EPA) have classified the FFPP facility as a major discharge.

On April 15, 2005, the Discharger requested that the wastewater discharged to Castaic Lake Afterbay should be increased to 135,000 gallons per day of single pass, non-contact, cooling water, and pilot valves leakages.

According to the previous Order (Order No. 98-066), discharged wastewater includes filter backwash, lubricating water (from the turbine ring seals, inlet and outlet valves, and pressure control valves), domestic water pipeline flushing for maintenance purposes, and water quality instrumentation wastes (e.g., water passed through a turbidimeter). All domestic wastes from the facility are discharged to the community sanitary sewer system.

The discharge through Discharge Serial No. 001, as reported by the Discharger in the permit renewal application, is summarized below:

Pollutant (units)	Daily Maximum
Flow (gallons per minute)	98,000
pH (standard units)	8.12
Temperature (winter) (°C)	13
Temperature (summer) (°C)	15
Total Suspended Solids (TSS) (mg/L)	Not detected
Biochemical Oxygen Demand (BOD) (mg/L) ¹	Not detected
Chemical Oxygen Demand (COD) (mg/L)	15
Total Organic Carbon (TOC) (mg/L)	2.4
Ammonia (mg/L)	Not detected
Arsenic (µg/L)	2.7
Copper (µg/L)	7.6
Zinc (µg/L)	2.0

¹ 5-day BOD at 20 °C

All other toxic pollutants were reported in the permit application as “non-detect” or “believed absent”.

Effluent limitations contained in the previous Order (No. 98-066) for FFPP Discharge Serial No. 001 and representative monitoring data are presented in the following Table. Monitoring data for Discharge Serial No. 001 are shown for October 1998 to September 2002.

Pollutant (units)	Discharge Limitations		Range of Reported Values ¹
	30-Day Average	Daily Maximum	Discharge Serial 001
Flow (gallons per day)	----	----	22,000 – 123,000 ²
pH (standard units)	----	----	7.87 – 9.00
Temperature (°C)	----	----	11 - 20
Settleable Solids (mL/L)	0.1	0.3	ND
Turbidity (NTU)	50	150	6 – 0.51
TSS (mg/L)	50	150	ND – 3
Oil and Grease (mg/L)	10	15	ND – 2
BOD (mg/L) ³	20	60	ND – 2
Chlorine Residual (mg/L)	--	0.1	0 – 0.07
Acute Toxicity (% survival)	4		100

¹ ND = not detected

² A flow of 4,464 gpd in November 2001 and a high flow of 258,000 gpd in June 2002 are excluded from the analysis as they do not represent normal plant operations as reported by the facility. The low flow in November 1998 was due to plant maintenance and the high flow in June 2002 was due to hydroelectric unit backflushing.

³ 5-day BOD at 20 °C

⁴ Average survival in effluent for any three consecutive 96-hour static or continuous flow bioassay tests shall be at least 90%, with no single test producing less than 70% survival.

The available effluent monitoring data indicate that the Discharger did not exceed the 30-day average or the maximum daily effluent limitations in the previous Order for any of the regulated pollutants. No violations were observed during the compliance evaluation inspections conducted on June 8, 1999, June 15, 2000, and September 4, 2003. The discharge flow between October 1998 and September 2002 varied between 22,000 gallons per day (gpd) and 123,000 gpd of single pass, non-contact, cooling water, and pilot valves leakages.

IV. Applicable Plans, Policies, Laws, and Regulations

The requirements contained in the proposed Order are based on the requirements and authorities contained in the following:

1. The federal Clean Water Act (CWA). The federal Clean Water Act requires that any point source discharges of pollutants to a water of the United States must be done in conformance with an NPDES permit. NPDES permits establish effluent limitations that incorporate various requirements of the CWA designed to protect water quality.
2. Code of Federal Regulations, Title 40 (40 CFR) – Protection of Environment, Chapter I, Environmental Protection Agency, Subchapter D, Water Programs, Parts 122-125 and Subchapter N, Effluent Guidelines. These CWA regulations provide effluent limitations for certain dischargers and establish procedures for NPDES permitting, including how to establish effluent limitations for certain pollutants discharged by FFPP.
3. On June 13, 1994, the Regional Board adopted a revised *Water Quality Control Plan for the Coastal Watersheds of Los Angeles and Ventura Counties* (Basin Plan). The Basin Plan contains water quality objectives and beneficial uses for inland surface waters and for the Pacific Ocean. Water quality objectives include narrative and numeric water quality criteria for several chemicals and parameters. The immediate receiving water bodies for the permitted discharge covered by this permit are Castaic Lake Afterbay, Castaic Lagoon, Castaic Creek, and Santa Clara River. Castaic Lake is tributary to Santa Clara River via Castaic Creek. The Basin Plan contains beneficial uses and water quality objectives for Castaic Lake Afterbay, Castaic Lagoon, Castaic Creek and Santa Clara River. The beneficial uses are listed below.

Castaic Lagoon

Existing Uses: Municipal and domestic supply; industrial service supply; industrial process supply; agricultural supply; ground water recharge; freshwater replenishment; hydropower generation; water contact recreation; non-contact water recreation; warm freshwater habitat; and wildlife habitat.

Castaic Creek

Existing Uses: Non-contact water recreation; wildlife habitat; preservation of rare and endangered species.

Intermittent Uses: Municipal and domestic supply; industrial service supply; industrial process supply; agricultural supply; ground water recharge; water contact recreation; and warm freshwater habitat.

Potential Uses: Freshwater replenishment.

Santa Clara River

Existing Uses: Industrial service supply; industrial process supply; agricultural supply; ground water recharge; freshwater replenishment; water contact recreation; non-contact water recreation; warm freshwater habitat; wildlife habitat; preservation of rare and endangered species; and wetland habitat.

Potential Uses: Municipal and domestic supply.

4. Ammonia Basin Plan Amendment. The 1994 Basin Plan provided water quality objectives for ammonia to protect aquatic life, in Tables 3-1 through Tables 3-4. However, those ammonia objectives were revised on April 25, 2002, by the Regional Board with the adoption of Resolution No. 2002-011, *Amendment to the Water Quality Control Plan for the Los Angeles Region to Update the Ammonia Objectives for Inland Surface Waters (Including Enclosed Bays, Estuaries and Wetlands) with Beneficial Use Designations for Protection of Aquatic Life*. The ammonia Basin Plan amendment was approved by the State Board, the Office of Administrative Law, and U.S. EPA on April 30, 2003, June 5, 2003, and June 19, 2003, respectively. Although the revised ammonia water quality objectives may be less stringent than those contained in the 1994 Basin Plan, they are still protective of aquatic life and are consistent with U.S. EPA's 1999 ammonia criteria update.
5. The State Water Resources Control Board (State 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 temperature objectives for inland surface waters.
6. On May 18, 2000, the U.S. EPA promulgated numeric criteria for priority pollutants for the State of California [known as the *California Toxics Rule* (CTR) and codified as 40 CFR section 131.38 (40 CFR 131.38)]. In the CTR, U.S. EPA promulgated criteria that protect the general population at an incremental cancer risk level of one in a million (10^{-6}), for all priority toxic pollutants regulated as carcinogens. The CTR also allows for a schedule of compliance not to exceed five years from the date of permit renewal for an existing discharger if the Discharger demonstrates that it is infeasible to promptly comply with final

effluent limitations derived from the CTR criteria. The compliance provisions in the CTR sunset on May 18, 2005. After which time, SIP compliance schedule provisions allow compliance schedules which may not extend beyond five years from issuance, or past May 1, 2011, whichever is sooner.

7. On March 2, 2000, State Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP). The SIP was effective on April 28, 2000, with respect to the priority pollutant criteria promulgated for California by the U.S. EPA through National Toxics Rule (NTR) and to the priority pollutant objectives established by the Regional Boards in their basin plans, with the exception of the provision on alternate test procedures for individual discharges that have been approved by the U.S. EPA Regional Administrator. The alternate test procedures provision was effective on May 22, 2000. The SIP was effective on May 18, 2000, with respect to the priority pollutant criteria promulgated by the U.S. EPA through the CTR. The SIP requires the dischargers' submittal of data sufficient to conduct the determination of priority pollutants requiring water quality-based effluent limitations (WQBELs) and to calculate the effluent limitations. The CTR criteria for the protection of aquatic freshwater organisms or human health for consumption of organisms or the California Department of Health Services recommended maximum contaminant levels specified in Title 22 of the California Code of Regulations, whichever is more stringent, are applicable to discharge through Discharge Serial No. 001 to Castaic Lake Afterbay.
8. 40 CFR 122.44(d)(1)(vi)(A) requires the establishment of numeric effluent limitations to attain and maintain applicable narrative water quality criteria to protect the designated beneficial uses. Where numeric water quality objectives have not been established in the Basin Plan, 40 CFR 122.44(d) specifies that WQBELs may be set based on U.S. EPA criteria and supplemented, where necessary, by other relevant information to attain and maintain narrative water quality criteria to fully protect designated beneficial uses.
9. State and Federal antibacksliding and antidegradation policies require that Regional Board take actions to protect the water quality of a water body and to ensure that the waterbody will not be further degraded. The antibacksliding provisions are specified in sections 402(o) and 303(d)(4) of the CWA and in 40 CFR 122.44(l). Those provisions require a reissued permit to be as stringent as the previous permit with some exceptions where effluent limitations may be relaxed.
10. Effluent limitations are established in accordance with sections 301, 304, 306, and 307 of the federal CWA, and amendments thereto. These requirements, as they are met, will maintain and protect the beneficial uses of Castaic Lake Afterbay, Castaic Lagoon, Castaic Creek and Santa Clara River.
11. Existing waste discharge requirements are contained in the previous Order No. 98-066, adopted by the Regional Board on September 14, 1998. In some cases, permit conditions (effluent limitations and other special conditions) established in the existing waste discharge

requirements have been carried over to this permit.

V. Regulatory Basis for Effluent Limitations

The CWA requires point source discharges to control the amount of conventional, nonconventional, and toxic pollutants that are discharged into the waters of the United States. The control of the discharge of pollutants is established through NPDES permits that contain effluent limitations. The CWA establishes two principal bases for effluent limitations.

First, dischargers are required to meet technology-based effluent limitations that reflect the best controls available considering costs and economic impact. Second, they are required to meet WQBELs that are developed to protect applicable designated uses of the receiving water.

The CWA requires that technology-based effluent limitations be established based on several levels of control:

- Best practicable treatment control technology (BPT) is based on the average of the best performance by plants within an industrial category or subcategory. BPT standards apply to toxic, conventional, and nonconventional pollutants.
- Best available technology economically achievable (BAT) represents the best existing performance of treatment technologies that are economically achievable within an industrial point source category. BAT standards apply to toxic and nonconventional pollutants.
- Best conventional pollutant control technology (BCT) is a standard for the control from existing industrial point sources of conventional pollutants including BOD, TSS, fecal coliform, pH, and oil and grease. The BCT standard is established after considering the “cost reasonableness” of the relationship between the cost of attaining a reduction in effluent discharge and the benefits that would result, and also the cost effectiveness of additional industrial treatment beyond BPT.
- New source performance standards (NSPS) that represent the best available demonstrated control technology standards. The intent of NSPS guidelines is to set limitations that represent state-of-the-art treatment technology for new sources.

The CWA requires U.S. EPA to develop effluent limitations, guidelines and standards (ELGs) representing application of BPT, BCT, BAT, and NSPS. Section 402(a)(1) of the CWA and 40 CFR 125.3 of the NPDES regulations authorize the use of best professional judgement (BPJ) to derive technology-based effluent limitations on a case-by-case basis where ELGs are not available for certain industrial categories and/or pollutants of concern.

If a reasonable potential exists to exceed water quality standards for pollutants in a discharge, WQBELs are also required under 40 CFR 122.44(d)(1)(i). WQBELs are established after

determining that technology-based limitations are not stringent enough to ensure that state water quality standards are met for the receiving water. WQBELs are based on the designated use of the receiving water, water quality criteria necessary to support the designated uses, and the state's antidegradation policy. For discharges to inland surface waters, enclosed bays, and estuaries, the SIP establishes specific implementation procedures for determining reasonable potential and establishing WQBELs for priority pollutant criteria promulgated by U.S. EPA through the CTR and NTR, as well as the Basin Plan.

There are several other specific factors affecting the development of limitations and requirements in the proposed Order. These are discussed as follows:

A. Pollutants of Concern

The CWA requires that any pollutant that may be discharged by a point source in quantities of concern must be regulated through an NPDES permit. Further, the NPDES regulations and SIP require regulation of any pollutant that (1) causes; (2) has the reasonable potential to cause; or (3) contributes to the exceedance of a receiving water quality criteria or objective. The SIP includes provisions for priority pollutant criteria promulgated by U.S. EPA in the CTR and NTR, and for those priority pollutants outlined in the Basin Plan.

As reported in the permit renewal application, the wastewater discharged to Castaic Lake Afterbay through Discharge Serial No. 001 consists of single pass non-contact raw water and pilot valves leakages. The wastewater includes filter backwash, lubricating water (from the turbine ring seals, inlet and outlet valves, and pressure control valves), domestic water pipeline flushing for maintenance purposes, and water quality instrumentation wastes. For this wastewater discharge, settleable solids, turbidity, and TSS are pollutants of concern because materials may be present in the source water that may contribute solids and these materials may become concentrated throughout the process. Oil and grease and BOD are also considered pollutants of concern in the discharge because there may be materials in the industrial use of water that has leaked through turbine shaft seals that may contribute oil and grease and BOD to the discharge. The previous Order established effluent limitations for these pollutants. Effluent limitations for these parameters have been established in this permit.

Water is filtered before being used for lubrication purposes. Changes in temperature and dissolved oxygen levels may adversely affect aquatic life in receiving waters, and therefore are pollutants of concern for water discharges from this facility. Consistent with the Basin Plan, effluent limitations for these pollutants are added in the proposed Order.

B. Technology-Based Effluent Limitations

Effluent guidelines have not been established for non-contact cooling water and other wastewater discharges from hydropower generation facilities. Effluent limitations for conventional pollutants (TSS, oil and grease) and nonconventional pollutants (settleable solids, turbidity, and toxicity) have been carried over from the previous Order.

C. Water Quality-Based Effluent Limitations

As specified in 40 CFR 122.44(d)(1)(i), permits are required to include WQBELs for toxic pollutants (including toxicity) that are or may be discharged at levels which cause, have reasonable potential to cause, or contribute to an excursion above any state water quality standard. The process for determining reasonable potential and calculating WQBELs when necessary is intended to protect the designated uses for the receiving water as specified in the Basin Plan, and achieve applicable water quality objectives and criteria (that are contained in other state plans and policies, or U.S. EPA water quality criteria contained in the CTR and NTR). The specific procedures for determining reasonable potential, and if necessary for calculating WQBELs, are contained in the SIP.

The CTR contains both saltwater and freshwater criteria. According to 40 CFR 131.38(c)(3), freshwater criteria apply at salinities of 1 part per thousand (ppt) and below at locations where this occurs 95 percent or more of the time; saltwater criteria apply at salinities of 10 ppt and above at locations where this occurs 95 percent or more of the time; and at salinities between 1 and 10 ppt the more stringent of the two apply. The receiving waters are Castaic Lake Afterbay, Castaic Lagoon, Castaic Creek, and Santa Clara River, which are freshwater, inland surface waters. The CTR criteria for the protection of aquatic freshwater organisms or human health for consumption of organisms or the California Department of Health Services recommended maximum contaminant levels specified in Title 22 of the California Code of Regulations, whichever is more stringent, apply to discharges to these receiving waters.

Some water quality criteria are hardness and pH dependent. The Discharger provided hardness and pH data for the receiving water as part of their required CTR monitoring. A hardness of 170 mg/L was reported for the receiving water. The reported pH values ranged from 8.41 to 8.46 standard units. The reported hardness value and the lowest pH value, representing the most conservative approach for establishing criteria, were used for evaluation of reasonable potential.

VI. Derivation of Effluent Limitations

A. Reasonable Potential Analysis (RPA)

The Regional Board conducts a reasonable potential analysis for each priority pollutant with an applicable criterion or objective to determine if a WQBEL is required in the permit. The Regional Board analyzes effluent data to determine if a pollutant in a discharge has a

reasonable potential to cause or contribute to an excursion above a state water quality standard. For all parameters that have a reasonable potential, numeric WQBELs are required. The RPA considers water quality objectives outlined in the CTR, NTR, as well as the Basin Plan. To conduct the RPA, the Regional Board must identify the maximum observed effluent concentration (MEC) for each pollutant, based on data provided by the Discharger.

Section 1.3 of the SIP provides the procedures for determining reasonable potential to exceed applicable water quality criteria and objectives. The SIP specifies three triggers to complete a RPA:

- 1) Trigger 1 – If the MEC is greater than or equal to the CTR water quality criteria or applicable objective (C), a limitation is needed.
- 2) Trigger 2 – If $MEC < C$ and background water quality (B) $> C$, a limitation is needed.
- 3) Trigger 3 – If other related information such as CWA 303(d) listing for a pollutant, discharge type, compliance history, etc. indicates that a WQBEL is required.

Sufficient effluent and ambient data are needed to conduct a complete RPA. If data are not sufficient, the Discharger will be required to gather the appropriate data for the Regional Board to conduct the RPA. Upon review of the data, and if the Regional Board determines that WQBELs are needed to protect the beneficial uses, the permit will be reopened for appropriate modification.

The Regional Board issued a letter on February 25, 2002 that required FFPP to monitor for priority pollutants regulated in the CTR. The RPA was performed for the priority pollutants for which effluent data are available. Data for priority pollutants regulated in the CTR are available for the second and fourth quarters of 2002 for Discharge Serial No. 001, as a result of monitoring requested by the Regional Board in a letter dated February 25, 2002. Based on the RPA, there is reasonable potential to exceed water quality standards for dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene for the discharge through Discharge Serial No. 001. Refer to Attachment A for a summary of the RPA.

B. *Calculating WQBELs*

If a reasonable potential exists to exceed applicable water quality criteria or objectives, then a WQBEL must be established in accordance with one or more of the three procedures contained in Section 1.4 of the SIP. These procedures include:

- 1) If applicable and available, use of the wasteload allocation (WLA) established as part of a total maximum daily load (TMDL).
- 2) Use of a steady-state model to derive MDELs and average monthly effluent limitations (AMELs).

- 3) Where sufficient effluent and receiving water data exist, use of a dynamic model, which has been approved by the Regional Board.

The procedure based on the steady-state model, available in Section 1.4 of the SIP, was used to derive the WQBELs for benzo(a)anthracene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene for the discharge through Discharge Serial No. 001. Attachment A shows the calculations for derivation of the effluent limitations for benzo(a)anthracene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene.

C. *Impaired Water Bodies in 303 (d) List*

Section 303(d) of the CWA 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 Board plans to develop and adopt TMDLs that will specify WLAs for point sources and load allocations (LAs) for non-point sources, as appropriate.

The U.S. EPA approved the State's 2002 303(d) list of impaired water bodies on July 25, 2003. Certain receiving waters in the Los Angeles and Ventura County watersheds do not fully support beneficial uses and therefore have been classified as impaired on the 2002 303(d) lists and have been scheduled for TMDL development.

Castaic Lake Afterbay, Castaic Lagoon, and Castaic Creek are located in the northeastern portion of the Los Angeles Basin in the Santa Clara River watershed. Castaic Lake Afterbay is tributary to Santa Clara River via Castaic Lagoon and Castaic Creek. The 2002 State Board's California 303(d) List does not classify Castaic Lake Afterbay, Castaic Lagoon, or Castaic Creek as impaired. According to the 2002 303(d) list, the Santa Clara River is impaired in Reach 3 for ammonia and chlorides. However, these pollutants are not known to be present in the discharge from the FFPP. In addition, Reach 3 of the Santa Clara River is located at a significant distance downstream from FFPP through several unimpaired water bodies and reaches. All other impaired reaches of the Santa Clara River are located upstream of the convergence point of Castaic Creek. Therefore, the Regional Board does not believe that discharges from the FFPP will contribute to impairments in the Santa Clara River, if the effluent limits have been met.

D. *Whole Effluent Toxicity*

Whole effluent toxicity (WET) protects the 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 or 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 measures mortality, reproduction, and growth.

The Basin Plan specifies a narrative objective for toxicity, requiring that all waters be maintained free of toxic substances in concentrations that are lethal to or produce other detrimental response on aquatic organisms. Detrimental response includes but is not limited to decreased growth rate, decreased reproductive success of resident or indicator species, and/or significant alterations in population, community ecology, or receiving water biota. In accordance with the Basin Plan, acute toxicity limitations dictate that the average survival in undiluted effluent for any three consecutive 96-hour static or continuous flow bioassay tests shall be at least 90%, with no single test having less than 70% survival. The existing permit contains acute toxicity limitations and monitoring requirements. The results of acute toxicity analyses for Discharge Serial Nos. 001 indicate 100% survival. Consistent with Basin Plan requirements, the proposed Order includes acute toxicity limitations and monitoring requirements.

In addition to the Basin Plan requirements, Section 4 of the SIP states that a chronic toxicity effluent limitation is required in permits for all discharges that will cause, have the reasonable potential to cause, or contribute to chronic toxicity in receiving waters. Therefore, in accordance with the SIP, the Discharger will be required to conduct chronic toxicity testing in order to determine reasonable potential and establish WQBELs as necessary. In addition, the Order includes a chronic testing trigger hereby defined as an exceedance of 1.0 toxic units chronic (TU_c) in a critical life stage test for 100% effluent. (The monthly median for chronic toxicity of 100% effluent shall not exceed 1.0 TU_c in a critical life stage test.) If the chronic toxicity of the effluent exceeds 1.0 TU_c , the Discharger will be required to immediately implement accelerated chronic toxicity testing according to Monitoring and Reporting Program No. CI-6743 (MRP), Item IV.D.1. If the results of two of the six accelerated tests exceed 1.0 TU_c , the Discharger shall initiate a toxicity identification evaluation (TIE).

VII. Specific Rationale for Each Numerical Effluent Limitation

Section 402(o) of the Clean Water Act and 40 CFR 122.44(l) require that effluent limitations standards or conditions in reissued permits be at least as stringent as those in the existing permit. Further, in compliance with section 122.45(d), permit limitations shall be expressed, unless impracticable, as both AMELs and MDELs.

The Regional Board has determined that settleable solids, turbidity, TSS, oil and grease, and BOD are likely present in the discharge from the FFPP facility through Discharge Serial No. 001. These parameters are regulated under the previous Order. Since there have not been any process changes since the last permit issuance, these pollutants are still expected to be in the discharge, and therefore it is reasonable to regulate them in the proposed Order. Thus, effluent limitations have been established for these pollutants, and have been carried over from the previous permit. However, MDELs for turbidity and TSS in the proposed Order

are revised to 75 mg/L to be consistent with similar permits recently issued by the Regional Board. In addition, because the BOD₅20C is an indicator of the potential for a receiving water body to become depleted in oxygen, limits are included in NPDES permits. Water with high BOD₅20C and no means for rapidly replenishing the oxygen becomes depleted in oxygen and may become anaerobic and will not support aquatic life. Generally, a BOD₅20C of 5 mg/L in a slow-moving stream may be enough to produce anaerobic conditions.

Because indeno(1,2,3-cd)pyrene shows reasonable potential to cause or contribute to an excursion above a water quality standard, effluent limitations for this pollutant are added in the proposed Order for the discharge through Discharge Serial No. 001. For dibenzo(a,h)anthracene and indeno(1,2,3-cd)pyrene, AMELs and MDELs are established in accordance with the requirements contained in the SIP and are based on the applicable water quality criteria contained in the CTR. The effluent limitations for dibenzo(a,h)anthracene and indeno(1,2,3-cd)pyrene are lower than the recommended Minimum Level (ML). In accordance with Section 2.4.5 of the SIP, because concentrations below MLs are considered unquantifiable, a result of below the ML represents compliance with the limitations for these pollutants.

The previous Order does not establish mass-based effluent limitations. Generally, mass-based limitations ensure that proper treatment, and not dilution, is employed to comply with the final effluent concentration limitations. The Regional Board has determined that mass-based limitations are not required for FFPP because the facility is not treating their effluent and dilution is not occurring. Therefore, concentration-based effluent limitations are most appropriate for the discharge from this facility.

Also, effluent limitations of temperature, dissolved oxygen, and pH are added in the proposed Order. The temperature effluent limitation is based on the *Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays of California (Thermal Plan)*. Effluent limitations for pH and dissolved oxygen are based on the Basin Plan requirement to protect the beneficial uses of receiving water. The effluent limitation for toxicity is carried over from the previous permit to protect the beneficial uses of the receiving water, and is based on the Basin Plan. Effluent limitations for discharges through Discharge Serial No. 001 (Latitude 34° 30' 52" N, Longitude 118° 36' 29" W) established in the proposed Order are shown in the Table below.

Pollutant	Units	Discharge Limitations		Rationale ¹
		Average Monthly	Maximum Daily	
pH	standard units.	Between 6.5 and 8.5		BP
Temperature	°F	86 ²		TP
Dissolved Oxygen	mg/L	5 ³		BP
Settleable Solids	ml/L	0.1	0.3	E
Turbidity	NTU	50	75	E
Total Suspended Solids (TSS)	mg/L	50	75	E
Oil and Grease	mg/L	10	15	E

Biochemical Oxygen Demand (BOD) ⁴	mg/L	---	10	BPJ
Dibenzo(a,h)anthracene ⁵	µg/L	0.0044	0.0088	CTR, SIP
Indeno(1,2,3-cd)pyrene ^{5,6}	µg/L	0.0044	0.0088	CTR, SIP
Acute Toxicity	% survival	7		BP

¹ BP = Basin Plan, TP = Thermal Plan, SP = Standard Provision, BPJ = Best Professional Judgment, E= Existing permit limitation, C= Calculated from concentration and flow, CTR = California Toxics Rule, SIP = State Implementation Policy.

² This value represents an instantaneous maximum value, not to be exceeded at any time.

³ The dissolved oxygen content of the effluent shall not be depressed below 5 mg/L at any time and the median dissolved oxygen concentration for any three consecutive months shall not be less than 80 percent of the dissolved oxygen content at saturation.

⁴ 5-day Biochemical Oxygen Demand at 20 °C

⁵ The limitation is lower than the approved analytical method minimum level (ML) of 0.05 µg/L for indeno(1,2,3-cd)pyrene, and 0.1 µg/L for dibenzo(a,h)anthracene. Any values reported below the ML will be considered in compliance.

⁶ Limitations are applicable after June 10, 2007. The interim limitations described in Section VIII below are applicable from the date of adoption of the Order through June 10, 2007.

⁷ Average survival in effluent for any three consecutive 96-hour static or continuous flow bioassay tests shall be at least 90%, with no single test producing less than 70 % survival.

VIII. Compliance Schedule

A review of available effluent monitoring data submitted by the Discharger, revealed the Discharger is unable to consistently comply with effluent limitations established in the proposed Order for indeno(1,2,3-cd)pyrene through Discharge Serial No. 001. Hence, interim limitations have been prescribed for indeno(1,2,3-cd)pyrene. As a result, the proposed Order contains a compliance schedule that allows the Discharger up to 2 years to comply with the final effluent limitations. Within 1 year after the effective date of the Order, the Discharger must prepare and submit a compliance plan that describes the steps that will be taken to ensure compliance with applicable limitations.

40 CFR 131.38(e) provides conditions under which interim effluent limitations and compliance schedules may be issued. The SIP allows inclusion of an interim limitation with a specific compliance schedule included in a NPDES permit for priority pollutants if the limitation for the priority pollutant is CTR-based. Because the CTR-based effluent limitations for indeno(1,2,3-cd)pyrene through Discharge Serial No. 001 appear infeasible for the Discharger to achieve at this time, and interim limitation for this pollutant is contained in this proposed Order.

The SIP requires that the Regional Board establish other interim requirements such as requiring the discharger to develop a pollutant minimization plan (PMP) and/or source control measures and participate in the activities necessary to achieve the final effluent limitations. These interim limitations shall be effective until June 10, 2007, after which, the Discharger shall demonstrate compliance with the final effluent limitations.

Pursuant to the SIP (Section 2.2.1, Interim Requirements under a Compliance Schedule),

when compliance schedules are established in an Order, interim limitations must be included based on current treatment facility performance or existing permit limitations, whichever is more stringent to maintain existing water quality. Benzo(a)anthracene and dibenzo(a,h)anthracene were detected in the ambient receiving water samples collected in the second quarter of 2002 and were not detected in the effluent; therefore, it is presumed the Discharger can comply with the established WQBELs. Thus, interim effluent limitations are not established for benzo(a)anthracene and dibenzo(a,h)anthracene. Indeno(1,2,3-cd)pyrene was detected in the effluent in one of the two effluent samples collected in the second and fourth quarter of 2002. Because the previous Order did not contain effluent limitations for indeno(1,2,3-cd)pyrene and sufficient data were not available for statistical analysis, the corresponding MEC was used as a basis for the interim effluent limitations for indeno(1,2,3-cd)pyrene. It should be noted that the Board may take appropriate enforcement actions if interim limitations and requirements are not met.

From the effective date of the proposed Order until June 10, 2007, the discharge through Discharge Serial No. 001 (Latitude 34° 30' 52" N, Longitude 118° 36' 29" W) in excess of the following is prohibited:

Pollutant (units)	Units	Maximum Daily Interim Effluent Limitation Discharge Serial No. 001 (to Castaic Lake Afterbay)	Rationale ¹
Indeno(1,2,3-cd)pyrene	µg/L	1.9	MEC

¹MEC = Maximum effluent concentration

According to the SIP, pollution prevention measures may be particularly appropriate for priority pollutants where there is evidence that beneficial uses are being impacted. Indeno(1,2,3-cd)pyrene can cause adverse human health impacts. Because the RPA determined that indeno(1,2,3-cd)pyrene could exceed the applicable criteria, this permit requires that the Discharger develop and implement a PMP for indeno(1,2,3-cd)pyrene. Described in detail in section 2.4.5.1 of the SIP, pollution minimization includes: monitoring for potential sources of the pollutants, periodic monitoring, control strategy, control measure implementation, and an annual status report sent to the Regional Board.

The Discharger also will be required to develop and implement a compliance plan that will identify the measures that will be taken to reduce the concentrations of indeno(1,2,3-cd)pyrene in their discharge. This plan should evaluate options to achieve compliance with the revised permit limitations. These options can include evaluation, modification, and/or proper operation and maintenance of the existing water cooling, distribution, and treatment system at FFPP.

IX. Monitoring Requirements

The proposed Order carries over the monitoring requirements from the previous permit, and

adds new monitoring requirements. The existing MRP requires monthly monitoring of total waste flow, pH, and temperature; quarterly monitoring for settleable solids, turbidity, TSS, oil and grease, and BOD; and annual monitoring for acute toxicity. In addition, the Regional Board issued a 13267 letter on February 25, 2002 requiring effluent and receiving water monitoring for priority pollutants regulated in the CTR. As stated previously, two sets of data were available for review.

A. Effluent Monitoring

The proposed Order, like the previous permit, requires monitoring for the discharge of wastewater from the facility to Castaic Lake Afterbay through Discharge Serial No. 001 (Latitude 34° 30' 52" N, Longitude 118° 36' 29" W).

The proposed Order carries over the previous permit requirements for monthly monitoring for total waste flow, pH, and temperature; and annual monitoring for acute toxicity. Monthly monitoring of dissolved oxygen and quarterly monitoring for benzo(a)anthracene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene are established in the proposed Order to determine compliance with effluent limitations. The Discharger has not exceeded the effluent limitations for settleable solids, turbidity, TSS, oil and grease, and BOD, and further, to be consistent with monitoring requirements established for similar facilities, the proposed Order establishes semi-annual monitoring for settleable solids, turbidity, TSS, oil and grease, and BOD.

The SIP states that the Regional Board will require periodic monitoring for pollutants for which criteria or objectives apply and for which no effluent limitations have been established. Accordingly, the Regional Board is requiring that the Discharger conduct effluent monitoring of the CTR priority pollutants. Details of the monitoring requirements for CTR priority pollutants are discussed in Section IX.C.

Because temperature, dissolved oxygen, pH, and other physical properties could be altered enroute to the discharge point, the proposed Order requires effluent monitoring for Discharge Serial No. 001 shall be conducted at the designated sampling location (sample tap at Discharge Serial 001 sump). Section III of the MRP contains the effluent monitoring program for NPDES Discharge Serial No. 001 (Latitude 34° 30' 52" N, Longitude 118° 36' 29" W) from the facility to Castaic Lake Afterbay.

B. Receiving Water Monitoring

According to the SIP, the Discharger is required to monitor the receiving water for the CTR priority pollutants, to determine reasonable potential. Accordingly, the Regional Board is requiring that the Discharger conduct receiving water monitoring of the CTR priority pollutants. Details of the monitoring requirements for CTR priority pollutants are discussed in Section IX.C.

Further, quarterly monitoring for pH, dissolved oxygen, dissolved sulfide, and ammonia is required to determine compliance with receiving water limitations established in Section I.C.4 of the proposed Order.

FFPP is also required to perform general observations of the receiving water when discharges occur and report the observations in the quarterly monitoring report. The receiving water monitoring program shall consist of periodic surveys of receiving water and shall include studies of those physical-chemical characteristics of the receiving water that may be impacted by the discharge.

Receiving Water Observations. General observations of the receiving water shall be made at each discharge point on a monthly basis and shall be reported in the quarterly monitoring report. If no discharge occurred during the observation period, this shall be reported.

Observations shall be descriptive where applicable, such that colors, approximate amounts, or types of materials are apparent. The following observations shall be made:

- Time, and date of monitoring;
- Weather conditions;
- Color of water;
- Appearance of oil films or grease, or floatable materials;
- Extent of visible turbidity or color patches;
- Description of odor, if any, of the receiving water; and
- Presence and activity of California Least Tern and California Brown Pelican.

C. *Intake Water Monitoring*

The Discharger is required to monitor the intake water prior to entry into the power plant to provide data to characterize the influent. According to Section 1.4.4 of the SIP, the Regional Board may provide intake water credit to the Discharger by considering priority pollutants in intake water when establishing WQBELs. In order to assess the viability of giving intake water credit to the facility, the Regional Board is requiring that the Discharger conduct intake water monitoring of the priority pollutants listed in Section VII of the M&RP.

D. *Effluent, Receiving Water, and Intake Water Monitoring for Reasonable Potential Determination*

As stated previously, the Regional Board issued a letter to FFPP requesting monitoring for the priority pollutants regulated in the CTR. The SIP requires that the Regional Boards require periodic monitoring of effluent and receiving water for pollutants for which criteria or objectives apply and for which no effluent limitations have been established. Accordingly, the Regional Board is requiring that the Discharger conduct effluent and receiving water monitoring of the priority pollutants as listed in Section VII of the MRP. Effluent samples

shall be collected at Discharge Serial No. 001. Receiving water samples shall be collected upstream of the effluent discharge point in the receiving water outside the influence of the discharge; where feasible, receiving water samples should be collected 50 feet upstream from the point of discharge into Castaic Lake Afterbay.

Further, in order to assess the viability of giving intake water credit to the facility, the Regional Board is requiring that the Discharger conduct intake water monitoring for the priority pollutants listed in Section VII of the MRP. Intake samples should be collected as close as possible to the point of intake water and should not exceed 5 feet from the intake water point.

Sampling shall occur at the following locations:

- Intake water location: As close as possible to the point of intake water and should not exceed 5 feet from the intake water point.
- Effluent discharge point: Discharge Serial No. 001 (Latitude 34° 30' 52" North, Longitude 118° 36' 29" West), prior to entry into the receiving water.
- Receiving water: The monitoring location shall be outside the influence of the discharge; where possible, at least 50 feet from the discharge location into the receiving water (Castaic Lake Afterbay).

Details of the monitoring requirements, including the names of priority pollutants to be analyzed, sample type, and monitoring frequency, are discussed in Section VII of the MRP.

2,3,7,8-TCDD Monitoring

In accordance with Section 3 of the SIP, the Discharger is also required to conduct effluent and receiving water monitoring for the presence of the 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD or Dioxin) congeners. Also, in order to assess the viability of giving intake water credit to the facility, TCDD monitoring is required for the intake water. The monitoring shall be a grab sample twice during the permit term (once during the 2nd year of the permit and once during the 4th year). The SIP requires monitoring for 2,3,7,8-TCDD and the 16 congeners listed in Section VI of the MRP. The Discharger is required to calculate Toxic Equivalence (TEQ) for each congener by multiplying its analytical concentration by the appropriate Toxicity Equivalence Factors (TEF) provided in Section VI of the MRP.