

STATE OF CALIFORNIA

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

**FACT SHEET**  
**AMENDING THE WASTE DISCHARGE REQUIREMENTS AND NPDES PERMIT**  
**For**  
**CITY OF LOS ANGELES, DEPARTMENT OF WATER AND POWER**  
**(Castaic Power Plant)**

NPDES Permit No.: CA0055824  
Public Notice No.: 10-050

FACILITY ADDRESS

37700 Templin Highway  
Castaic, CA 91384

FACILITY MAILING ADDRESS

111 North Hope Street, Room 1213  
Los Angeles, CA 90012  
Contact: Katherine Rubin  
Telephone: (213) 367-0436

**I. Public Participation**

The California Regional Water Quality Control Board, Los Angeles Region (Regional Water Board) is considering the issuance of an amendment to the waste discharge requirements (WDRs) and National Pollutant Discharge Elimination System (NPDES) permit for City of Los Angeles Department of Water and Power, Castaic Power Plant. The Regional Water Board staff has developed the proposed amendments to the WDRs. The Regional Water Board encourages public participation in the adoption process.

**A. Notification of Interested Parties**

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

## **B. Written Comments**

The staff determinations are tentative. Interested persons are invited to submit written comments concerning these tentative amendments to the WDRs. Comments should be submitted either in person or by mail to the Executive Office at the Regional Water Board at:

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

To be fully responded to by staff and considered by the Regional Water Board, written comments must be received at the Regional Water Board offices by 5:00 p.m. on September 13, 2010.

## **C. Public Hearing**

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

Date: October 7, 2010  
Time: 9:00 a.m.  
Location: City of Simi Valley City Council Chambers  
2929 Tapo Canyon Road  
Simi Valley, California.

Interested persons are invited to attend. At the public hearing, the Regional Water Board will hear testimony, if any, pertinent to the discharge, amendment to the 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/losangeles/> where you can access the current agenda for changes in dates and locations.

## **D. Nature of Hearing**

This will be a formal adjudicative hearing pursuant to section 648 et seq. of title 23 of the California Code of Regulations. Chapter 5 of the California Administrative Procedure Act (commencing with section 11500 of the Government Code) will not apply to this proceeding.

*Ex Parte Communications Prohibited:* As a quasi-adjudicative proceeding, no board member

may discuss the subject of this hearing with any person, except during the public hearing itself. Any communications to the Regional Board must be directed to staff.

#### **E. Parties to the Hearing**

The following are the parties to this proceeding:

##### **1. The applicant/permittee**

Any other persons requesting party status must submit a written or electronic request to staff not later than 20 business days before the hearing. All parties will be notified if other persons are so designated.

#### **F. Public Comments and Submittal Evidence**

Persons wishing to comment upon or object to the tentative amendment to the waste discharge requirements, or submit evidence for the Board to consider, are invited to submit them in writing to the above address. To be evaluated and responded to by staff, included in the Board's agenda folder, and fully considered by the Board, written comments must be received no later than close of business September 13, 2010. Comments or evidence received after that date will only be included in administrative record with express approval of the Chair during the hearing, only upon a showing of good cause, and only if it will not prejudice any other party or regional board staff. Additionally, if the Board receives only supportive comments, the permit may be placed on the Board's consent calendar, and approved without an oral testimony.

#### **G. Hearing Procedure**

The meeting, in which the hearing will be a part of, will start at 9:00 a.m. Interested persons are invited to attend. Staff will present the matter under consideration, after which oral statements from parties or interested persons will be heard. For accuracy of the record, all important testimony should be in writing. The Board will include in the administrative record written transcriptions of oral testimony that is actually presented at the hearing. Oral testimony may be limited to 3 minutes maximum or less for each speaker, depending on the number of persons wishing to be heard. Parties or persons with similar concerns or opinions are encouraged to choose one representative to speak. At the conclusion of testimony, the Board will deliberate in open or close session, and render a decision.

Parties or persons with special procedural requests should contact staff. Any procedure not specified in this hearing notice will be waived pursuant to section 648(d) of title 23 of the California Code of Regulations. Objections to any procedure to be used during this hearing must be submitted in writing not later than close of business 15 days prior to the date of the hearing. Procedural objections will not be entertained at the hearing.

If there should not be a quorum on the scheduled date of this meeting, all cases will be

automatically continued to the next scheduled meeting November 4, 2010. A continuance will not extend any time set forth herein.

#### **H. Waste Discharge Requirements Petitions**

Any person aggrieved by this action of the Regional Board may petition the State Water Board to review the action in accordance with Water Code section 13320 and California Code of Regulations, title 23, sections 2050 and following. The State Water Board must *receive* the petition by 5:00 p.m., 30 days after the date of this Order, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the Internet at:

[http://www.waterboards.ca.gov/public\\_notices/petitions/water\\_quality](http://www.waterboards.ca.gov/public_notices/petitions/water_quality) or will be provided upon request.

The mailing address of the State Water Board is the following:

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

#### **I. Information and Copying**

The Report of Waste Discharge (ROWD), related documents, tentative amendment to the MRP of the waste discharge requirements, comments received, and other information are on file and may be inspected at 320 West 4<sup>th</sup> 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 Water Board by calling (213) 576-6600.

#### **J. 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.

#### **K. Additional Information**

Requests for additional information or questions regarding this order should be directed to Rosario Aston at (213) 576-6653.

## **II. Introduction**

The City of Los Angeles Department of Water and Power, Castaic Power Plant (hereinafter Castaic or Discharger) discharges wastewater under waste discharge requirements (WDRs) and National Pollutant Discharge Elimination System (NPDES) permit contained in Order No. 98-020 (NPDES Permit No. CA0055824). Order No. 98-020 expired on February 10, 2003.

Castaic filed a Report of Waste Discharge (ROWD) on August 12, 2002, and applied for renewal of its WDRs and NPDES permit for discharge of wastes to surface waters. Castaic submitted an amendment to the ROWD on March 13, 2007, to include the backwash water discharges from the facility's potable water system. An NPDES permit compliance evaluation inspection was conducted on January 16, 2003. The permit compliance evaluation inspection also served as a site visit to observe operations, verify conditions, and collect additional data to develop permit limits and conditions. The Regional Water Board adopted Order No. R4-2007-0025 on May 3, 2007, for discharge of wastes from the Castaic Power Plant (Facility). This Order also serves as a permit under an NPDES program.

The Discharger is also covered under separate requirements for discharge of domestic sewage by means of a subsurface disposal system (septic tanks/leach field).

On May 11, 2010, the Discharger submitted the "Castaic Dieldrin Source Study" (Source Study) to this Regional Water Board to comply with the requirements stipulated in Order No. R4-2007-0025. The Source Study described the following: (1) dieldrin uses; (2) the sites historical land uses; (3) sampling and testing of sediment and water samples from the Castaic Power Plant, areas surrounding the facility, and areas upstream of the facility; and (4) review of pesticide application and data from State Water Projects and tributary waterbodies. It also included site maps, source study analytical reports, and the chain of custody. The Source Study indicated that the results of all soil/sediment analyses for dieldrin were non-detect. The review of the historical usage indicated that no pesticides containing dieldrin were purchased or used by the Facility. In a letter dated May 24, 2010, the Discharger requested that the Pollution Minimization Plan (PMP) requirement for dieldrin stipulated in Order No. R4-2007-0025 be considered fulfilled and deleted from the monitoring program because the Source Study has been performed. Furthermore, the Discharger also requested that all remaining quarterly monitoring for dieldrin be reduced to annually because of the results of the study. This Fact Sheet described the rationale for amending the WDR.

## **III. Description of Facility and Waste Discharge**

Castaic operates a hydroelectric generating station located at 37700 Templin Highway (approximately five miles east of Interstate 5), Castaic, Los Angeles County, California. The Facility provides peak-load power, generated by the movement of water from Pyramid Lake down a gradient (through a 7.2-mile long tunnel and penstocks) to turn seven turbines, with eventual discharge to Elderberry Forebay. Approximately 2.6 billion gallons per day (gpd) of water from Pyramid Lake is transferred to Elderberry Forebay during the production of electrical energy.

Source water is taken from Pyramid Lake. During off-peak hours, water is pumped back from Elderberry Forebay to Pyramid Lake. Other uses for water at the Castaic Power Plant include generator cooling, turbine cooling, and industrial uses (i.e., fire suppression system and floor wash down activities).

This Order permits discharges of cooling water and other wastewaters from the facility. According to the previous Order (Order No. 98-020) and the permit renewal application, Castaic Power Plant discharges up to 13.2 million gpd of wastewater to Elderberry Forebay. The following Table shows the sources and uses of cooling water and wastewaters at the facility.

Source	Use(s)	Volume
Elderberry Forebay	Units 1 – 6 generator cooling	11,700,000 gpd
	Units 1 – 6 turbine cooling	739,200 gpd
	Industrial water plant (industrial and domestic use, compressor cooling)	702,900 gpd
	Seal drain sump	3,000 gpd
	Draft tubes and dewatering sump	3,000 gpd
Pyramid Lake	Unit 7 generator cooling	94,300 gpd
	Gallery drain sump	2,000 gpd
	Draft tubes and dewatering sump	1,000 gpd
Ground Water	Gallery drain sump	100 gpd
Total		13,245,500 gpd

The wastewater discharged to Elderberry Forebay consists of the following:

Generator and turbine cooling water - Units 1, 2, 3, 4, 5, and 6	12,402,000 gpd
Air Compressor after-cooling water	691,200 gpd
Generator cooling water – Unit 7	94,300 gpd
Mechanical turbine shaft seals - Units 1, 2, 3, 4, 5, and 6	37,200 gpd
Draft tubes dewatering sump water	4,000 gpd
Compressor after coolers cooling water	3,000 gpd
Seal drain sump water	3,000 gpd
Industrial use water	2,200 gpd
Gallery drain sump water	2,100 gpd
Air compressor after coolers cooling water	500 gpd
Backwash water from potable water system	1200 to 1500 gpd
<u>Total discharge</u>	<u>13,241,000 gpd</u>

A location map is provided as Figure 1. A water flow diagram for the Castaic Power Plant is provided as Figure 2.

There are ten wastewater discharge streams to Elderberry Forebay. They are discussed below.

*Waste Streams 1 through 6: Units 1,2,3,4,5, and 6 Generator Cooling.* The generator and turbine cooling water for power generating Units 1 – 6 is non-contact cooling water, which is discharged through underwater discharge points to Elderberry Forebay without treatment. There

is no designated Discharge Serial Number for these waste streams because of the location of the discharge points.

*Waste Stream 7: Unit 7 Tailrace.* The wastewater discharge from Unit 7 tailrace (discharge channel) is composed of Unit 7 generator cooling water, industrial use water, and air compressor after cooler cooling water. The generator and after cooler cooling systems are closed systems that use non-contact cooling water. The industrial use water comes from sprinkler and fire suppressant systems and floor wash down water. Unit 7 tailrace wastewater is discharged to Elderberry Forebay without treatment. The proposed Order designates Discharge Serial No. 003 for this waste stream.

*Waste Stream 8: Oil-Water Separator.* As water passes over the turbines to generate power, some water leaks through the surrounding mechanical turbine shaft seals. This water is collected via drains throughout the facility and channeled to a floor drain sump. A portion (500 gpd) of the industrial use water, used for sprinkler and fire suppression systems and floor wash down water, is also directed to the floor drain sump. Water from the floor drain sump passes through an oil-water separator prior to discharge to Elderberry Forebay. The total flow through the oil-water separator is 37,700 gpd. This is the only treated discharge to Elderberry Forebay. The proposed Order designates Discharge Serial No. 004 for this waste stream.

*Waste Stream 9: Combined Discharge from Additional Cooling, Sump, and Industrial Use Waters.* The remaining discharge is composed of wastewaters from compressor coolers and after cooler, industrial use, and seal drain, gallery drain, and dewatering sumps. Castaic Power Plant uses compressed air to build pressure in the draft tubes in order to prime the pumps used to pump water from Elderberry Forebay back to Pyramid Lake. The compressed air and water is then released to a dewatering sump. A gallery drain sump is used as a drain system for the penstocks (intake tunnel). A seal drain sump collects water that leaks through the rubber seals connecting the three parts of the building. Water from the dewatering sump, gallery drain sump, and seal drain sump combines with non-contact cooling water from the compressor coolers and compressor after cooler and 1,500 gpd of industrial use water for discharge to Elderberry Forebay without treatment. The proposed Order designates Discharge Serial No. 005 for this waste stream.

*Waste Stream 10: Backwash water from potable water system.* The facility has a domestic water system designed to provide up to 100,000 gallons of potable water for the Plant's personnel use. The potable water system draws water from the Plant's penstocks. The water is treated primarily for the removal of solids via the addition of sediment-binding flocculants and the subsequent retention of this sediment in the system's clarifying units. The system is then pressurized, chlorinated, and delivered as potable supply. To maintain the delivery of high quality potable water and to remove the build up of the sediment on the filter, backwash procedure is routinely exercised. During the backwash cycle, water from the first of two pressurized reservoirs (called hydropneumatic tank I) is isolated from the system mainline and pumped in reverse to the backwash inlet of either of the two clarifier treatment systems designated for clean out (one system must remain online to provide potable water). The clarifier systems consist of a rough filter tank and a fine filter tank to remove the sediment material from the water treatment system.

The material goes to two in-series 2000 gallon settling tanks and after a sufficient settling period, supernatant (backwash water) is discharged to Elderberry Forebay. The collected solids remaining in the tanks are removed and disposed of in accordance with the federal, state, and local regulations. The backwash discharge event may occur three to four times a week at 1,200 to 1,500 gallons per event, depending on the turbidity level of the raw water. The proposed Order designates Discharge Serial No. 006 for this waste stream.

Approximately 1.1 billion gpd of water is pumped from Elderberry Forebay back to Pyramid Lake during off-peak hours through Discharge Serial No. 001 (Latitude 34°38'49", Longitude 118°45'43"). An additional 1.5 billion gpd of water from Elderberry Forebay is released downstream to Castaic Lake for recharge purposes through Discharge Serial No. 002 (Latitude 34°33'34", Longitude 118°37'53"). The water discharged from Elderberry Forebay to Pyramid Lake and Castaic Lake via Discharge Serials 001 and 002, respectively, receives no treatment. Pyramid Lake is tributary to the Santa Clara River via Piru Creek and Lake Piru. Castaic Lake is tributary to the Santa Clara River via Castaic Creek.

The Regional Water Board and the United States Environmental Protection Agency (U.S. EPA) have classified the Castaic Power Plant facility as a major discharge.

Effluent data for Discharge Serial Nos. 001 and 002 presented in the permit renewal application are summarized in the following Table:

Constituent, units	Discharge Serial No. 001		Discharge Serial No. 002	
	Maximum Daily	Long Term Average	Maximum Daily	Long Term Average
Biochemical oxygen demand (BOD), mg/L	2	2	2	0.7
BOD, kg/day	10,155	7,241	9,072	2,571
Chemical oxygen demand (COD), mg/L	29	14	36	30
COD, kg/day	146,678	50,685	163,289	132,238
Total organic carbon (TOC), mg/L	7.8	7.2	8.4	5.8
TOC, kg/day	39,451	26,066	38,101	21,305
Total suspended solids (TSS), mg/L	2.9	2.4	4.6	2.8
TSS, kg/day	14,668	8,689	20,865	10,285
Ammonia (as N), mg/L	0.2	0.2	0.2	0.2
Ammonia (as N), kg/day	1,012	724	907	735
Flow	1,337	957	1,199	971
Temperature (W/S), °C	10/19.6	10.5/19.0	10/18.5	10.5/17.9
pH	8.24	7.62 (min.)	8.1	7.7 (min.)
Color, lum	100.5	100.1	100.8	100.6
Nitrate-Nitrite (as N), mg/L	0.93	0.68	0.57	0.41
Nitrate-Nitrite (as N), kg/day	4,704	2,462	2,585	1,506
Nitrogen, Total Organic, mg/L	0.34	0.11	0.45	0.15
Nitrogen, Total Organic, kg/day	1,720	410	2,042	551
Oil and Grease, mg/L	1.0	0.9	1.0	0.6
Oil and Grease, kg/day	5,058	3,258	4,537	2,204
Phosphorus, mg/L	0.2	0.1	0.11	0.1
Phosphorus, kg/day	1,012	362	499	367



Constituent, units	Discharge Serial No. 001		Discharge Serial No. 002	
	Maximum Daily	Long Term Average	Maximum Daily	Long Term Average
Sulfate, mg/L	59	51	59	56
Sulfate, kg/day	298,414	184,637	NR	205,704

NR = Not Reported

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

Effluent limits contained in the Order No. 98-020 for Castaic Discharge Serial Nos. 001 and 002 and the oil-water separator and representative monitoring data are presented in the Table below. The Order No. 98-020 considered Elderberry Forebay to be a component of Castaic Power Plant. Thus, under the previous Order, there is no designated outfall associated with the discharges to Elderberry Forebay. However, this Order designates three new discharge points (Discharge Serial Nos. 003, 004, 005, and 006), associated with the discharges to Elderberry Forebay.

Monitoring data for Discharge Serial Nos. 001 and 002 for January 1996 to March 2002 are listed in the following Table. Data for the oil-water separator from March 1996 to March 2002 are also shown in the Table.

Constituent (units)	Discharge Limitations		Range of Reported Values		
	30-Day Average	Daily Maximum	Discharge 001	Discharge 002	Oil-Water Separator
Settleable solids (ml/L)	0.1	0.3	ND	ND	--
Suspended solids (mg/L)	50	150	ND – 28	ND – 10.6	--
Turbidity (NTU)	5	25	1 – 21	0.8 – 8.2	--
Oil and grease (mg/L) <sup>1</sup>	10	15	--	--	ND – 3
BOD <sub>5</sub> 20°C (mg/L) <sup>1</sup>	--	10	--	--	ND – 17
PCBs (ng/L)	--	14	NR <sup>2</sup>	NR <sup>2</sup>	--
Acute Toxicity (% survival)	3		100 <sup>4</sup>	100 <sup>4</sup>	--

<sup>1</sup> These limits apply only to the effluent from the oil/water separator. The Discharger collects samples for these two constituents at the oil-water separator.

<sup>2</sup> A statement that no PCBs were used and/or stored in the facility was submitted with each discharge monitoring report in lieu of the analyses.

<sup>3</sup> 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.

<sup>4</sup> Acute toxicity data available for March 2000 and August 2001 only.

ND = not detected

NR = not reported

The available effluent monitoring data indicate that the Discharger exceeded the maximum daily effluent limitation in Order No. 98-020 for BOD of 10 mg/L in July 1998 (17 mg/L). The Discharger has not exceeded the maximum daily effluent limitations for any other constituent. According to the January 2003 compliance evaluation inspection report, the Discharger did not appear to adequately preserve the oil and grease samples.

The previous Order requires the Discharger to monitor acute toxicity on an annual basis for Discharge Serial Nos. 001 and 002. The existing Monitoring and Reporting Program (No. CI-6112) states that toxicity testing could be discontinued if two consecutive analyses indicated compliance with effluent limitations. The available effluent monitoring data include acute toxicity monitoring results for only two years of the 5-year permit term (2000 and 2001). These data indicate that the Discharger was in compliance with the acute toxicity requirements contained in the previous Order (No. 98-020) for those two years.

In an attachment to the permit renewal application, the Discharger requested that monitoring requirements for temperature be removed from the permit. The Regional Water Board has retained monitoring requirements for temperature to determine compliance with effluent limitations. The Discharger also requested that PCBs be removed from the monitoring program. The rationale for keeping PCB monitoring is addressed in Section VII of the Fact Sheet.

As stated previously, the previous Order did not designate individual Discharge Serial locations associated with the discharges to Elderberry Forebay. Elderberry Forebay is a water of the United States and tributary to Castaic Lake. The Water Quality Control Plan for the Los Angeles Region lists beneficial uses for the Elderberry. To protect the beneficial uses of the receiving waters, the Regional Water Board determined the effluent limitations are appropriately applied to discharges from the facility to Elderberry Forebay and to water pumped from Elderberry Forebay to Pyramid Lake, as well as to water released from Elderberry Forebay to Castaic Lake (downstream). As discussed in Section VII, the proposed Order establishes effluent limits for discharge waste streams to Elderberry Forebay: 1) discharges from Unit 7 tailrace (Discharge Serial No. 003); 2) discharges from the oil-water separator (Discharge Serial No. 004); 3) the combined discharge from the compressor coolers and after cooler, industrial use, and seal drain, gallery drain, and dewatering sumps (Discharge Serial No. 005); and discharges of backwash water from the potable water system (Discharge Serial No. 006).

#### **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 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 limits for certain dischargers and establish procedures for NPDES permitting, including how to establish effluent limits for certain pollutants discharged by Castaic Power Plant.

3. On June 13, 1994, the Regional Water 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. The Basin Plan contains the following beneficial uses and water quality objectives for Elderberry Forebay:

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; wildlife habitat; rare, threatened, or endangered species; spawning, reproduction, and/or early development.

The Basin Plan contains the following beneficial uses and water quality objectives for Castaic Lake:

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; wildlife habitat; rare, threatened, or endangered species; spawning, reproduction, and/or early development.

Intermittent uses: cold freshwater habitat.

The Basin Plan contains the following beneficial uses and water quality objectives for Pyramid Lake:

Existing uses: municipal and domestic supply; industrial service supply; industrial process supply; agricultural supply; ground water recharge; hydropower generation; water contact recreation; non-contact water recreation; warm freshwater habitat; cold freshwater habitat; wildlife habitat; rare, threatened, or endangered species.

Potential uses: freshwater replenishment.

#### **Applicability of NPDES Program to Hydroelectric Facilities**

4. In *National Wildlife Federation v. Consumer Power Co.*, 862 F.2d 580, 28 ERC 1572 (6<sup>th</sup> Circuit, 1988), environmental plaintiffs sought to impose NPDES permit requirements on a hydroelectric facility that drew water from lake Michigan into a man-made impoundment above a dam and generated power by discharging the lake water back into the Lake through the dam's turbines. 862 F.2d at 581-582. The facility operation caused fish entrainment and mortality. The 6<sup>th</sup> Circuit ruled that the operator did not need an NPDES permit in that situation. *Id.* At 581, 590. Yet, in its ruling, the 6<sup>th</sup> Circuit decision, specifically

recognized that the introduction of pollutants, such as from oil/water separator, to these waters would make the facility subject to the NPDES program. Id at 586.

5. In *Arizona Department of Water Quality v. Bureau of reclamation Glen Canyon Dam and Power Plant*, Notice of Violation, Case ID #31682, the USEPA opined that a hydroelectric facility that discharges wastewater from floor drains from maintenance areas, seal water leakage, drainage from under the penstock, drainage from oil/water separators, and other pollutants is subject to the permitting requirements of the Clean Water Act.

#### **Ammonia Basin Plan Amendment.**

6. 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 Water 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.
7. 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.
8. 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 § 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 5 years from the date of permit renewal for an existing discharger if the Discharger demonstrates that it is infeasible to promptly comply with effluent limitations derived from the CTR criteria.
9. 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 Water 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 WQBELs and to calculate the effluent limitations. The CTR criteria for fresh water or human health for consumption of water and organisms, whichever is more stringent, are applicable to discharges to Elderberry Forebay, Castaic Lake, and Pyramid Lake.

10. **Compliance Schedule and Interim Requirements.** Section 2.1 of the SIP provides that, based on a discharger's request and demonstration that it is infeasible for an existing discharger to achieve immediate compliance with an effluent limitation derived from a CTR criterion, compliance schedules may be allowed in an NPDES permit. Unless an exception has been granted under section 5.3 of the SIP, a compliance schedule may not exceed 5 years from the date that the permit is issued or reissued, nor may it extend beyond 10 years from the effective date of the SIP (or May 17, 2010) to establish and comply with CTR criterion-based effluent limitations. Where a compliance schedule for a final effluent limitation exceeds 1 year, the Order must include interim numeric limitations for that constituent or parameter. Where allowed by the Los Angeles Region Basin Plan, compliance schedules and interim effluent limitations or discharge specifications may also be granted to allow time to implement a new or revised water quality objective. Order No. R4-2007-0025 included compliance schedule and interim effluent limitation for dieldrin. It also included interim effluent limitations for copper, lead, zinc, and dichlorobromomethane. The Discharger conducted a Source Study for dieldrin (completed on May 2010) to satisfy the requirements of the Compliance Plan in Order No. R4-2007-0025. The Source Study indicated that the results of the analyses for all water samples taken from the Plant' discharge points, adjacent areas, and local waters tributary to the Castaic Facility were non-detect for dieldrin. In addition, the interim effluent limitation for dieldrin expired on May 17, 2010. The interim effluent limitations for copper, lead, zinc, and dichlorobromomethane on June 3, 2009. Therefore, the proposed amendment Order does not include compliance schedules and interim effluent limitations.
11. 40 CFR section 122.44(d)(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 section 122.44(d) specifies that water quality-based effluent limits (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.
12. State and Federal antibacksliding and antidegradation policies require that Regional Water Board 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 section 402(o) and 303(d)(4) of the CWA and in the Title 40 of the Code of Federal Regulations (40 CFR), section 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.

13. 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 Elderberry Forebay, Pyramid Lake, and Castaic Lake.
14. Existing waste discharge requirements contained in Board Order No. 98-020, adopted by the Regional Water Board on March 2, 1998. In some cases, permit conditions (effluent limits 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 water quality-based effluent limitations (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 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 judgment (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.

For cooling water discharges from the six main generators, the Unit 7 tailrace, and the compressor coolers, suspended solids, settleable solids, and turbidity 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. Order No. 98-020 established effluent limits for these pollutants, but stipulated that the effluent limits did not apply during periods of storm runoff. This provision has been removed from this permit because storm runoff is likely to cause an increase in the presence of these pollutants in Elderberry Forebay and thus exacerbate any concentration of these pollutants that takes place during the generating process. Thus, effluent limitations for these parameters have been established in the permit, and have been carried over from the previous Order, with the exception that they are always applicable, even during periods of rainfall.

Biochemical oxygen demand (BOD) and oil and grease are considered pollutants of concern in the discharge from the oil-water separator because there may materials in the industrial use wastewater and water that has leaked through turbine shaft seals that may contribute BOD and oil and grease to the discharge. Effluent limitations for BOD and oil and grease have been carried over from the previous Order.

Temperature and dissolved oxygen (DO) may be parameters of concern for cooling water discharges from the six main generators (Units 1-6) and the Unit 7 tailrace, and the combined discharge from the compressor coolers and after cooler, industrial use, and seal drain, gallery drain, and dewatering sumps due to potential temperature changes during the system cooling process. However, because there are not sufficient data to characterize dissolved oxygen levels in the discharges, this Order does not establish effluent limitations for DO, but requires monitoring.

Raw water from penstock may contain settleable solids, and total suspended solids. During the filtration process, these constituents may settle in the filter tanks, and during the filter backwash process may become loosened from filter surfaces, and therefore, may be present in the discharge of backwash water. These constituents are considered pollutants of concern. The penstock water may also contribute to turbidity, and biochemical oxygen demand; therefore, they are also considered pollutants of concern. Since the water system is chlorinated, there is potential for residual chlorine to be present in the discharge of backwash water. Thus, effluent limitations for discharges of backwash water were established for biochemical oxygen demand, turbidity, oil and grease, methylene blue activated substances, settleable solids, suspended solids, pH, and residual chlorine. Furthermore, effluent limitations are established for copper, lead, zinc, and dichlorobromomethane (bromodichloromethane) because these pollutants were detected in the analytical results reported in the ROWD and are considered pollutants of concern.

#### **B. Technology-Based Effluent Limits**

Effluent guidelines have not been established for cooling water and other wastewater discharges from hydropower generation facilities. Technology-based effluent limitations for conventional pollutants (TSS, oil and grease, and BOD) and nonconventional pollutants (settleable solids, and turbidity) have been carried over from the previous Order, and are based on objectives set forth in the Basin Plan rather than technology-based requirements.

#### **C. Water Quality-Based Effluent Limits**

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 Elderberry Forebay, Pyramid Lake, and Castaic Lake, inland surface waters. The CTR criteria for fresh water or human health for consumption of water and organisms, whichever is more stringent, apply to discharges to these receiving waters.

## VI. Derivation of Effluent Limitations

### A. Reasonable Potential Analysis (RPA)

The Regional Water Board staff 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 Water Board staff 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 Water Board must identify the maximum observed effluent concentration (MEC) for each constituent, 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 limit is needed.
- 2) Trigger 2 – If  $MEC < C$  and background water quality (B)  $> C$ , a limit 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 Water Board to conduct the RPA. Upon review of the data, and if the Regional Water Board determines that WQBELs are needed to protect the beneficial uses, the permit will be reopened for appropriate modification.

The RPA was performed for the priority pollutants for which effluent data were available. Data for priority pollutants regulated in the CTR are available for the period from June 2002 through October 2003 for Discharge Serial Nos. 001 and 002, as a result of monitoring requested by the Regional Water Board.

Based on the RPA, there is reasonable potential to exceed water quality standards for dieldrin for the discharge through Discharge Serial No. 001. Thus, effluent limitation has been established for dieldrin for the discharge through Discharge Serial No. 001.

The previous versions (dated May 12, 2004, and October 30, 2006) of the tentative Order and Fact Sheet of this permit indicated that bis(2-ethylhexyl)phthalate showed reasonable potential to exceed water quality standards for discharges through Discharge Serial Nos. 001 and 002. However, based on the new information submitted by LADWP to this Regional Water Board on March 7, 2007, indicating that the pumpback sample result for the bis(2-ethylhexyl)phthalate analysis on the sample collected on October 30, 2003, was compromised because of the occurrence of contamination on the testing laboratory's sample blank. The result of the method blank concentration for bis(2-ethylhexyl)phthalate is 4 µg/L, which is greater than the sample concentration of 3 µg/L. Therefore, the permit does not prescribed effluent limitations for bis(2-ethylhexyl)phthalate for the discharges through Discharge Serial Nos. 001 and 002. The permit requires the Discharger to continue to monitor this pollutant including the remaining priority pollutants to provide data to evaluate reasonable potential in the future.

The data submitted as part of the amendment to the ROWD on March 13, 2007, showed reasonable potential to exceed WQBELs for copper, lead, zinc, and dichlorobromomethane for discharges through Discharge Serial No. 006. Therefore, effluent limitations for copper, lead, zinc, and dichlorobromomethane for Discharge Serial No. 006 are prescribed based on the California Toxic Rule (CTR).

The permit also requires the Discharger to conduct monitoring for receiving water for priority pollutants annually to provide data for conduction of RPA in the future.

#### **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 of 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 maximum daily effluent limitations (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 Water Board.

**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 Water 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.

Pyramid Lake, Elderberry Forebay, and Castaic Lake are located in the northeastern portion of the Los Angeles Basin in the Santa Clara River watershed. Pyramid Lake is tributary to the Santa Clara River via Piru Creek; Elderberry Forebay is tributary to Castaic Lake, which is tributary to the Santa Clara River via Castaic Creek. The 2002 State Board's California 303(d) List does not classify Pyramid Lake, Elderberry Forebay, Castaic Lake, Piru Creek, 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 Castaic Power Plant. In addition, Reach 3 of the Santa Clara River is a significant distance downstream from Castaic Power Plant through several unimpaired water bodies and reaches. All other impaired reaches of the Santa Clara River are upstream of the convergence point of Castaic Creek and Piru Creek.

**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. The existing permit contains acute toxicity limitations and monitoring requirements. As stated previously, the existing Monitoring and Reporting Program allowed for discontinuation of toxicity testing if two consecutive analyses indicate compliance with effluent limitations. The results of acute toxicity analyses for Discharge Serial Nos. 001 and 002 show 100% survival. However, as mentioned previously, results of annual acute

toxicity analyses for Castaic Power Plant are available only for 2000 and 2001, because testing was discontinued.

The Regional Water Board has removed the acute toxicity limitations for Discharge Serial Nos. 001 and 002, but has established acute toxicity monitoring requirements at new Discharge Serial Nos. 003, 004, 005, and 006 to determine if the individual discharges to Elderberry Forebay contribute to acute toxicity. Further, the Discharger has provided data that indicate 100% survival in 100% effluent for discharges from Discharge Serial Nos. 001 and 002. However, acute toxicity limitation was established for discharges from Discharge Serial No. 006 because of the nature of processes (i.e., chlorination) and the presence of toxic pollutants (copper, lead, zinc, and bromodichloromethane) in the backwash water as reported in the ROWD.

## **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. The Regional Water Board has determined that settleable solids, suspended solids, turbidity, oil and grease, and BOD are likely present in discharges from the Castaic facility. These parameters are regulated under the previous Order No. 98-020. 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 this Order. Thus, effluent limitations have been established for these pollutants, and have been carried over from the previous permit. However, the discharge points to which these limitations apply have been modified, as discussed below.

The effluent limitation for polychlorinated biphenyls (PCBs) in the previous Order has been removed. This effluent limitation (14 ng/L daily maximum) was based on the Basin Plan, is equal to the human health criterion in the CTR, and is subject to the anti-backsliding and anti-degradation provisions in Sections 402(o) and 303(d)(4) of the Clean Water Act. Section 402(o)(2) of the Clean Water Act provides exceptions to the anti-backsliding provisions for specific circumstances, including where “new information (other than revised regulations, guidance, or test methods) is available that was not available at the time of permit issuance which would have justified a less stringent effluent limitation.” The Regional Water Board believes that this exception applies.

Section 303(d)(4)(B) of the Clean Water Act applies to “attainment waters” (where the water quality meets or exceeds levels necessary to protect the designated uses). Under Section 303(d)(4)(B), WQBELs may only be relaxed where the action is consistent with the State’s anti-degradation policy. The State Board has adopted the *Statement of Policy with Respect to Maintaining High Quality Water in California (Antidegradation Policy)*, which states that any actions that can adversely affect water quality in all surface and ground waters must be consistent with the maximum benefit to the people of the state, must not unreasonably affect present and anticipated beneficial use of such water, and must not result in water quality less than that prescribed in water quality plans and policies. The Regional Water Board believes that

removal of the PCB effluent limit from the permit is consistent with these objectives.

The Monitoring and Reporting Program for the previous Order No. 98-020 allows that “a statement that no PCBs were used and/or stored in the facility may be submitted in lieu of the analyses.” Such a statement was included in quarterly effluent monitoring reports submitted by Castaic from January 1996 through March 2002. The statement indicates “all polychlorinated biphenyl-containing material was removed from the facility by September 10, 1988.” All PCB-containing materials have been removed and the Discharger does not intend to use or store PCBs in the future. Furthermore, none of the receiving waters is impaired by PCBs. Therefore, the Regional Water Board does not find that there is reasonable potential that PCBs will be present in the discharge at levels that would cause or contribute to an excursion of water quality standards in the receiving water.

Although the Regional Water Board believes that the removal of this effluent limit will not result in a violation of applicable water quality standards, the proposed Monitoring and Reporting Program requires monitoring for PCBs one time during the permit term. If the results of this monitoring indicate that the effluent from Castaic contains PCBs in excess of the objectives included in the Basin Plan, the Order may be re-opened to include effluent limits for PCBs.

The previous Order No. 98-020 included effluent limitations for discharges to Pyramid Lake via Discharge Serial No. 001 and to Castaic Lake via Discharge Serial No. 002. However, there were no effluent limits established to wastewater discharges to Elderberry Forebay. Since Elderberry Forebay is a water of the United States with designated beneficial uses in the Water Quality Control Plan for the Los Angeles Region as specified in Section IV.3 of this Fact Sheet, this Order establishes effluent limits for wastewater discharges to Elderberry Forebay for the four waste streams, and designates new Discharge Serial Numbers for these waste streams. The new Discharge Numbers are: 1) Discharge Serial No. 003: discharges from Unit 7 tailrace; 2) Discharge Serial No. 004: discharges from the oil-water separator; 3) Discharge Serial No. 005: the combined discharge from the compressor coolers and after cooler, industrial use, and seal drain, gallery drain, and dewatering sumps; and 4) Discharge Serial No. 006: discharges of backwash water from potable water system. Order No. R4-2007-0025 included effluent limits to the aforementioned four discharges to Elderberry Forebay. Elderberry Forebay is a water of the United States and tributary to Castaic Lake. Therefore, the Regional Water Board determined the effluent limitations are appropriately applied to discharges from the facility to Elderberry Forebay (directly downstream) and to water pumped from Elderberry Forebay to Pyramid Lake as well as to water released from Elderberry Forebay to Castaic Lake (downstream) to protect the beneficial uses of the receiving waters.

Effluent limits for the discharges of generator cooling water for Units 1 – 6 have not been established because these discharges occur deep underwater and an outfall is not easily accessible and a representative sample cannot be obtained safely. In addition, the Regional Water Board believes that the combined effluent monitoring data from the other three waste streams discharges to Elderberry Forebay (Unit 7 tailrace, oil-water separator, and combined discharge from compressor coolers and after cooler, industrial use, and seal drain, gallery drain, and dewatering sumps), and the discharges from Elderberry Forebay to Pyramid Lake and

Castaic Lake may help to identify any potential problems caused by the discharge of generator non-contact cooling water for Units 1 – 6. The proposed Order establishes monitoring requirements for temperature and dissolved oxygen for the discharge from Elderberry Forebay to Castaic Lake (Discharge Serial No. 002) to characterize the discharge from Units 1 - 6.

The effluent limitations in the proposed Order for settleable solids, suspended solids, turbidity, oil and grease, and BOD (shown in the Table below) are based on the limits specified in Castaic’s previous Order. An effluent limitation has been established for dieldrin for discharge through Discharge Serial No. 001 because it showed reasonable potential to exceed the water quality standard.

Effluent limitations are established in the proposed Order to: 1) discharges due to off-peak pumping from Elderberry Forebay to Pyramid Lake through Discharge Serial No. 001 (Latitude 34°38’49”, Longitude 118°45’43”); 2) release to Castaic Lake through Discharge Serial 002; 3) discharges of non-contact cooling water and industrial use water from the Unit 7 tailrace to Elderberry Forebay through Discharge Serial No. 003; 4) discharges of non-contact cooling water, industrial use water and other wastewaters from the combined discharge from compressor coolers and after coolers, industrial use, and seal drain, gallery drain, and dewatering sumps to Elderberry Forebay through discharge Serial No. 005. These effluent limitations are as follows:

Constituent (units)	Discharge Limitations		Rationale <sup>1</sup>
	Monthly Average	Daily Maximum	
pH (s.u.)	Between 6.5 and 8.5	Between 6.5 and 8.5	BP
Temperature (deg. F)	86	86	BP, BPJ
Settleable solids (ml/L)	0.1	0.3	E
Suspended solids (mg/L)	50	150	E
Turbidity <sup>2</sup> (NTU)	5	25	E
Dieldrin <sup>3</sup> (µg/L)	0.00014	0.00028	CTR, SIP

<sup>1</sup> BP = Basin Plan Objectives are instantaneous maximum concentrations of pollutants that when not exceeded are protective of the beneficial uses of the particular water body. They are generally set at the level required to protect the most sensitive beneficial use or at an even lower level based on antidegradation principles.

E= Existing permit limit.

BPJ = Best Professional Judgement (BPJ) is the method used by permit writers to develop technology-based NPDES permit conditions on a case-by-case basis using all reasonably available and relevant data. BPJ limits are established in cases where effluent limitation guidelines are not available for a particular pollutant of concern. Authorization for BPJ limits is found under section 401(a)(1) of the Clean Water Act and under 40 CFR 125.3.

CTR = California Toxic Rule. CTR-based number for the protection of aquatic organisms. The average monthly limit is derived as a continuous criteria concentration (CCC) and equals the highest concentration of a pollutant to which aquatic life can be exposed for an extended period of time (4 days) without deleterious effects. The maximum daily limit is derived as a criteria maximum concentration (CMC) and equals the highest concentration of a pollutant to which aquatic life can be exposed for a short period of time without deleterious effects.

SIP = State Implementation Policy

<sup>2</sup> During periods of storm runoff where natural turbidity is between 0 and 50 NTU (nephelometric turbidity units), increases shall not exceed 20%. Where natural turbidity is greater than 50 NTU, increases shall not exceed 10%.

<sup>3</sup> Dieldrin: Effluent limitation is applicable to Discharge Serial No. 001, only.

Effluent limitations are established in this Order to discharges from the oil-water separator to Elderberry Forebay (industrial use water and leakage from mechanical turbine shaft seals for Units 1 – 6) through Discharge Serial No. 004, as follows:

Constituent (units)	Discharge Limitations		Rationale <sup>1</sup>
	Monthly Average	Daily Maximum	
pH (s.u.)	Between 6.5 and 8.5	Between 6.5 and 8.5	BP
Temperature (deg. F)	86	86	BP, BPJ
Oil and Grease (mg/L)	10	15	E
BOD <sub>5</sub> 20 °C (mg/L)	--	10	E

<sup>1</sup> BP = Basin Plan Objectives are instantaneous maximum concentrations of pollutants that when not exceeded are protective of the beneficial uses of the particular water body. They are generally set at the level required to protect the most sensitive beneficial use or at an even lower level based on antidegradation principles.

E= Existing permit limit.

BPJ = Best Professional Judgement (BPJ) is the method used by permit writers to develop technology-based NPDES permit conditions on a case-by-case basis using all reasonably available and relevant data. BPJ limits are established in cases where effluent limitation guidelines are not available for a particular pollutant of concern. Authorization for BPJ limits is found under section 401(a)(1) of the Clean Water Act and under 40 CFR 125.3.

Effluent limitations are established for the discharge of backwash water from the potable water system to Elderberry Forebay through Discharge Serial No. 006, as follows:

Constituent (units)	Discharge Limitations		Rationale <sup>1</sup>
	Monthly Average	Daily Maximum	
pH (s.u.)	Between 6.5 and 8.5	Between 6.5 and 8.5	BP
Temperature (deg. F)	86	86	BP, BPJ
Settleable solids (ml/L)	0.1	0.3	E
Suspended solids (mg/L)	50	150	E
Turbidity (NTU)	5	25	E
Residual chlorine (mg/L)	--	0.1	BP
Oil and Grease (mg/L)	10	15	E
BOD <sub>5</sub> 20 °C (mg/L)	--	10	E
Methylene blue activated substances (MBAS) (mg/L)	--	0.5	BP
Copper (µg/L) <sup>2</sup>	9.33	14	CTR
Lead (µg/L) <sup>2</sup>	3.18	81.65	CTR
Zinc (µg/L) <sup>2</sup>	120	120	CTR
Dichlorobromomethane (µg/L)	--	0.56	CTR
Acute Toxicity	<sup>3</sup>		BP

<sup>1</sup> BP = Basin Plan Objectives are instantaneous maximum concentrations of pollutants that when not exceeded

are protective of the beneficial uses of the particular water body. They are generally set at the level required to protect the most sensitive beneficial use or at an even lower level based on antidegradation principles.

E= Existing permit limit.

BPJ = Best Professional Judgement (BPJ) is the method used by permit writers to develop technology-based NPDES permit conditions on a case-by-case basis using all reasonably available and relevant data. BPJ limits are established in cases where effluent limitation guidelines are not available for a particular pollutant of concern. Authorization for BPJ limits is found under section 401(a)(1) of the Clean Water Act and under 40 CFR 125.3.

CTR = California Toxic Rule. CTR-based number for the protection of aquatic organisms. The average monthly limit is derived as a continuous criteria concentration (CCC) and equals the highest concentration of a pollutant to which aquatic life can be exposed for an extended period of time (4 days) without deleterious effects. The maximum daily limit is derived as a criteria maximum concentration (CMC) and equals the highest concentration of a pollutant to which aquatic life can be exposed for a short period of time without deleterious effects.

<sup>2</sup> Discharge limitations for these are expressed as total recoverable.

<sup>3</sup> Acute toxicity limitation is the average survival 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 and Interim Limitations

Not Applicable

## IX. Monitoring Requirements

This Order carries over some monitoring requirements from the previous permit, eliminates some monitoring requirements from the previous permit, and establishes some new monitoring requirements. The existing Monitoring and Reporting Program (*M&RP*) requires monthly monitoring of total waste flow, quarterly monitoring for temperature, pH, settleable solids, suspended solids, and turbidity. The *M&RP* also required quarterly monitoring for oil and grease and BOD in the discharge from the oil-water separator. The *M&RP* included annual monitoring for PCBs, and a provision allowing "A statement that no PCBs were used and/or stored in the facility may be submitted in lieu of the analyses." Further, annual monitoring for acute toxicity was required, but the *M&RP* provided that "This test may be discontinued if two consecutive results are in compliance with the limitations."

### A. Effluent Monitoring

This Order requires monitoring for three waste streams that were included in the previous permit: 1) Discharge Serial No. 001 from Elderberry Forebay to Pyramid Lake (Latitude 33°38'49", Longitude 118°45'43"); 2) Discharge Serial No. 002 from Elderberry Forebay to Castaic Lake (Latitude 34°33'34", Longitude 118°37'53"); and 3) discharges from the oil-water separator to Elderberry Forebay (Discharge Serial No. 004). This Order also establishes monitoring requirements for three waste streams that were not included in the



requirements of the previous permit: 1) Discharge Serial No. 003: combined discharges of Unit 7 generator cooling water, industrial use water, and air compressor after cooler water from the Unit 7 tailrace to Elderberry Forebay (95,000 gpd maximum flow); 2) Discharge Serial No. 005: the combined discharges of compressor cooling water, industrial use water, compressor after cooler water, seal drain sump water, gallery drain sump water, and dewatering sump water to Elderberry Forebay (704,800 gpd maximum flow); and 3) Discharge Serial No. 006: discharge of backwash water from the potable water system to Elderberry Forebay (1,200 to 1,500 gallons per discharge event). The additional monitoring requirements for Discharge Serial Nos. 003, 005 and 006 are established to determine compliance with effluent limitations applied at the revised discharge locations and to provide effluent characterization data.

Discharge Serial No. 001:

For regulated parameters, this Order carries over the previous permit requirements for quarterly monitoring of settleable solids, suspended solids, and turbidity, for Discharge Serial No. 001. This Order also carries over from the previous permit requirements for monthly monitoring of total waste flow and quarterly monitoring requirements for temperature. Quarterly monitoring for dissolved oxygen is required for Discharge Serial No. 001. The Discharger conducted the "Castaic Dieldrin Source Study" in December 2006 and was completed in the first week of May 2010 to comply with requirements in Order No. R4-2007-0025. The Source Study included the identification of the sources of dieldrin, sampling and testing of soil/sediment and water samples from the Castaic Power Plant, areas surrounding the facility, and areas upstream of the facility. It also included the review of pesticide application and data from State Water Projects and tributary waterbodies. The Source Study indicated that the results of the analyses for all water samples taken from the Plant' discharge points, adjacent areas, and local waters tributary to the Castaic Facility were non-detect for dieldrin. It also indicated that the results of all soil/sediment analyses were non-detect. Sampling (water samples, soil/sediment samples) was performed during summer months and winter month (December) from December 2006 through September 2009. The Discharger also reviewed the Facility's historical pesticides usage including the chemical inventory and purchasing record from 1974. The review of the historical usage indicated that no pesticides containing dieldrin were purchased or used by the Facility. Based on the Source Study submitted, the monitoring frequency for dieldrin has been changed from quarterly to annually.

Annual monitoring is required for dieldrin for discharges from Discharge Serial No. 001, to determine compliance with effluent limitations. Further, for the first year of the permit term, the Discharger is required to monitor bis(2-ethylhexyl)phthalate in quarterly basis, and then annually for the remainder of the permit term.

This Order requires that sampling for effluent monitoring for Discharge Serial No. 001 shall be conducted at the point of discharge to Pyramid Lake. Under the previous *M&RP*, the Discharger had been sampling and monitoring at the pumping point. This location is functionally equivalent. The following shall constitute the effluent monitoring program for

NPDES Discharge Serial No. 001 from Elderberry Forebay to Pyramid Lake:

Constituent	Units	Type of Sample	Sampling Frequency	Basis
Total waste flow	gal/day	----	Daily	E
pH	standard units	Grab	Weekly	N <sup>1</sup>
Temperature	° F	Grab	Weekly	E
Dissolved oxygen	mg/L	Grab	Weekly	N <sup>1</sup>
Settleable solids	ml/L	Grab	Quarterly	E
Suspended solids	mg/L	Grab	Quarterly	E
Turbidity	NTU	Grab	Quarterly	E
Bis(2-ethylhexyl)phthalate	µg/L	Grab	Quarterly <sup>1</sup>	N <sup>1</sup>
Dieldrin	µg/L	Grab	Annually	N <sup>2</sup>
PCBs	µg/L	Grab	Once during year 1 of permit term	N <sup>1</sup>
Remaining Priority Pollutants <sup>2,3</sup>	µg/L	Grab	Annually	N <sup>1</sup>

E = Existing monitoring requirements that are carried over.

N<sup>1</sup> = New monitoring requirements to determine their presence and quantity in the discharge.

N<sup>2</sup> = New monitoring requirements to determine compliance with effluent limitations.

<sup>1</sup> Quarterly monitoring is required for the first year of the permit term, after which the frequency is reduced to annual.

<sup>2</sup> All metals shall be reported as total recoverable.

<sup>3</sup> The Discharger must monitor the effluent for the presence of the 17 congeners of 2,3,7,8-TCDD listed in Attachment A, twice during the permit term (once during the 2<sup>nd</sup> year of the permit and once during the 4<sup>th</sup> year). You must report for each congener the analytical results of the effluent monitoring, including the quantifiable limit and the Method Detection Limit (MDL), and the measured or estimated concentration. The Discharger must multiply each measured or estimated congener concentration by its respective Toxicity Equivalent Factors (TEFs) and report the sum of these values.

Discharge Serial Nos. 002:

During the first year of the permit term, the Discharger was required quarterly monitoring for bis(2-ethylhexyl)phthalate and dieldrin, and then annually for the remainder of the permit term. The following shall constitute the effluent monitoring program for discharges through Discharge Serial No. 002; water released from Elderberry Forebay to Castaic Lake:

Constituent	Units	Type of Sample	Sampling Frequency	Basis
Total waste flow	gal/day	----	Daily	E
pH	standard units	Grab	Weekly	N <sup>1</sup>
Temperature	° F	Grab	Weekly	E
Dissolved oxygen	mg/L	Grab	Weekly	N <sup>1</sup>
Settleable solids	ml/L	Grab	Quarterly	E
Suspended solids	mg/L	Grab	Quarterly	E
Turbidity	NTU	Grab	Quarterly	E
Bis(2-ethylhexyl)phthalate	µg/L	Grab	Quarterly <sup>1</sup>	N <sup>1</sup>
Dieldrin	µg/L	Grab	Quarterly <sup>1</sup>	N <sup>1</sup>

E = Existing monitoring requirements that are carried over.

N<sup>1</sup> = New monitoring requirements to determine their presence and quantity in the discharge.

<sup>1</sup> Quarterly monitoring is required for the first year of the permit term, after which the frequency is reduced to annual.

Discharge Serial No. 003:

Discharge Serial No. 003 is a new designation for the discharges from the Unit 7 tailrace to Elderberry Forebay. The sampling location for this discharge point is located at the Elderberry Forebay because of safety reason. The previous Order did not include monitoring requirements for this waste stream. This Order establishes quarterly monitoring requirements for settleable solids, suspended solids, and turbidity, and annual monitoring of acute toxicity for discharge from Discharge Serial No. 003. In addition, this Order establishes the following monitoring requirements: monthly monitoring of total waste flow and quarterly monitoring of temperature, pH, and dissolved oxygen. Further, for the first year of Order No. R4-2007-0025, the Discharger is required to perform quarterly monitoring for dieldrin and bis(2-ethylhexyl)phthalate, and then annually for the remainder of the permit term. Since there are no data to determine reasonable potential for bis(2-ethylhexyl)phthalate and dieldrin at Discharge Serial No. 003, and these parameters are pollutants of concern in the discharge, quarterly monitoring during the first term of the permit was justified to provide data to perform the RPA for bis(2-ethylhexyl)phthalate and dieldrin. The Regional Water Board may reopen the permit to determine RPA and establish WQBELs for bis(2-ethylhexyl)phthalate and dieldrin, as necessary.

The following shall constitute the effluent monitoring program for discharges through Discharge Serial No. 003 to Elderberry Forebay:

Constituent	Units	Type of Sample	Sampling Frequency	Basis
Total waste flow	gal/day	----	Daily	N <sup>1</sup>
pH	standard units	Grab	Weekly	N <sup>1</sup>
Temperature	° F	Grab	Weekly	N <sup>1</sup>
Dissolved oxygen	Mg/L	Grab	Weekly	N <sup>1</sup>
Settleable solids	Ml/L	Grab	Quarterly	N <sup>2</sup>
Suspended solids	Mg/L	Grab	Quarterly	N <sup>2</sup>
Turbidity	NTU	Grab	Quarterly	N <sup>2</sup>
PCBs	µg/L	Grab	Once during year 1 of permit term	N <sup>1</sup>
Bis(2-ethylhexyl)phthalate	µg/L	Grab	Quarterly <sup>1</sup>	N <sup>1</sup>
Dieldrin	µg/L	Grab	Quarterly <sup>1</sup>	N <sup>1</sup>
Acute toxicity	% survival	Grab	Annually <sup>2</sup>	N <sup>1</sup>
Remaining Priority Pollutants <sup>3,4</sup>	µg/L	Grab	Annually	N <sup>1</sup>

N<sup>1</sup> = New monitoring requirements to determine their presence and quantity in the discharge.

N<sup>2</sup> = New monitoring requirements to determine compliance with effluent limitations.

<sup>1</sup> Quarterly monitoring is required for the first year of the permit term, after which the frequency is reduced to annual.

<sup>2</sup> Acute toxicity: Monitoring shall be conducted in accordance with Section IV of the M&RP No. CI-6112.

<sup>3</sup> All metals shall be reported as total recoverable.

<sup>4</sup> The Discharger must monitor the effluent for the presence of the 17 congeners of 2,3,7,8-TCDD listed in Attachment A, twice during the permit term (once during the 2<sup>nd</sup> year of the permit and once during the 4<sup>th</sup> year). You must report for each congener the analytical results of the effluent monitoring, including the quantifiable limit and the Method Detection Limit (MDL), and the measured or estimated concentration. The Discharger must multiply each measured or estimated congener concentration by its respective Toxicity Equivalent Factors (TEFs) and report the sum of these values.

Discharge Serial No. 004:

Discharge Serial No. 004 represents discharges from the oil-water separator. This Order carries over from the previous Order quarterly monitoring requirements for BOD, and oil and grease. Further, this Order establishes quarterly monitoring of pH, temperature, settleable solids, suspended solids, and turbidity. In addition, during the first year of the permit term, the Discharger was required quarterly monitoring for bis(2-ethylhexyl)phthalate and dieldrin, and then annually for the remainder of the permit term.

The following shall constitute the effluent monitoring program for discharges from Discharge Serial No. 004 (oil-water separator):

Constituent	Units	Type of Sample	Sampling Frequency	Basis
Total waste flow	Gal/day	----	Monthly	N
Oil and grease	mg/L	Grab	Quarterly	E
BOD <sub>5</sub> 20 °C	mg/L	Grab	Quarterly	E
pH	Standard units	Grab	Quarterly	N
Temperature	° F	Grab	Quarterly	N
Settleable solids	ml/L	Grab	Quarterly	N
Suspended solids	mg/L	Grab	Quarterly	N
Turbidity	NTU	Grab	Quarterly	N
PCBs	µg/L	Grab	Once during year 1 of permit term	N
Bis(2-ethylhexyl)phthalate	µg/L	Grab	Quarterly <sup>1</sup>	N
Dieldrin	µg/L	Grab	Quarterly <sup>1</sup>	N
Acute toxicity	% survival	Grab	Annually <sup>2</sup>	N
Remaining Priority Pollutants <sup>3,4</sup>	µg/L	Grab	Annually	N

E = Existing monitoring requirements that are carried over.

N = New monitoring requirements to determine their presence and quantity in the discharge.

<sup>1</sup> Quarterly monitoring is required for the first year of the permit term, after which the frequency is reduced to annual.

<sup>2</sup> Acute toxicity: Monitoring shall be conducted in accordance with Section IV of the *M&RP* No. CI-6112.

<sup>3</sup> All metals shall be reported as total recoverable.

<sup>4</sup> The Discharger must monitor the effluent for the presence of the 17 congeners of 2,3,7,8-TCDD listed in Attachment A, twice during the permit term (once during the 2<sup>nd</sup> year of the permit and once during the 4<sup>th</sup> year). You must report for each congener the analytical results of the effluent monitoring, including the quantifiable limit and the Method Detection Limit (MDL), and the measured or estimated concentration. The Discharger must multiply each measured or estimated congener concentration by its respective Toxicity Equivalent Factors (TEFs) and report the sum of these values.

Discharge Serial Nos. 005:

Discharge Serial No. 005 is a new designation for the discharges from the combined discharge from the compressor coolers and after cooler, industrial use, and seal drain, gallery drain, and dewatering sumps to Elderberry Forebay. The previous Order did not include monitoring requirements for this waste stream. This Order establishes quarterly monitoring requirements for settleable solids, suspended solids, and turbidity, and annual monitoring of acute toxicity for discharge from Discharge Serial No. 005. In addition, this Order establishes the following monitoring requirements: monthly monitoring of total waste flow and quarterly monitoring of temperature, pH, and dissolved oxygen. Further, for the

first year of Order No. R4-2007-0037, the Discharger was required quarterly monitoring for dieldrin and bis(2-ethylhexyl)phthalate, and then annually for the remainder of the permit term. Since there are no data to determine reasonable potential for bis(2-ethylhexyl)phthalate and dieldrin at Discharge Serial No. 003, and these parameters are pollutants of concern in the discharge, quarterly monitoring during the first term of the permit was justified to provide data to perform the RPA for bis(2-ethylhexyl)phthalate and dieldrin. The Regional Water Board may reopen the permit to determine RPA and establish WQBELs for bis(2-ethylhexyl)phthalate and dieldrin, as necessary.

This Order requires that sampling for effluent monitoring for the combined discharges from the compressor coolers and after cooler, industrial use, and seal drain, gallery drain, and dewatering sumps shall be conducted at a point after the combination of wastewaters from the compressor coolers, industrial uses, compressor after cooler, seal drain sump, gallery drain sump, and dewatering sump. The following shall constitute the effluent monitoring program for discharges through Discharge Serial No. 005 to Elderberry Forebay:

Constituent	Units	Type of Sample	Sampling Frequency	Basis
Total waste flow	gal/day	----	Daily	N <sup>1</sup>
pH	standard units	Grab	Weekly	N <sup>1</sup>
Temperature	° F	Grab	Weekly	N <sup>1</sup>
Dissolved oxygen	Mg/L	Grab	Weekly	N <sup>1</sup>
Settleable solids	Ml/L	Grab	Quarterly	N <sup>2</sup>
Suspended solids	Mg/L	Grab	Quarterly	N <sup>2</sup>
Turbidity	NTU	Grab	Quarterly	N <sup>2</sup>
PCBs	µg/L	Grab	Once during year 1 of permit term	N <sup>1</sup>
Bis(2-ethylhexyl)phthalate	µg/L	Grab	Quarterly <sup>1</sup>	N <sup>1</sup>
Dieldrin	µg/L	Grab	Quarterly <sup>1</sup>	N <sup>1</sup>
Acute toxicity	% survival	Grab	Annually <sup>2</sup>	N <sup>1</sup>
Remaining Priority Pollutants <sup>3,4</sup>	µg/L	Grab	Annually	N <sup>1</sup>

N<sup>1</sup> = New monitoring requirements to determine their presence and quantity in the discharge.

N<sup>2</sup> = New monitoring requirements to determine compliance with effluent limitations.

<sup>1</sup> Quarterly monitoring is required for the first year of the permit term, after which the frequency is reduced to annual.

<sup>2</sup> Acute toxicity: Monitoring shall be conducted in accordance with Section IV of the *M&RP* No. CI-6112.

<sup>3</sup> All metals shall be reported as total recoverable.

<sup>4</sup> The Discharger must monitor the effluent for the presence of the 17 congeners of 2,3,7,8-TCDD listed in Attachment A, twice during the permit term (once during the 2<sup>nd</sup> year of the permit and once during the 4<sup>th</sup> year). You must report for each congener the analytical results of the effluent monitoring, including the quantifiable limit and the Method Detection Limit (MDL), and the measured or estimated concentration. The Discharger must multiply each measured or estimated congener concentration by its respective Toxicity Equivalent Factors (TEFs) and report the sum of these values.

Discharge Serial Nos. 006:

Discharge Serial No. 006 is a new designation for the discharges of backwash water from the potable water system to Elderberry Forebay. The previous Order did not include monitoring requirements for this waste stream. This Order establishes quarterly monitoring requirements for oil and grease, BOD, pH, temperature, settleable solids, suspended solids, and turbidity, residual chlorine, methylene blue activated substances, copper, lead,

zinc, and dichlorobromomethane to determine compliance with the effluent limitation. In addition, monthly monitoring of total waste flow and annual monitoring of acute toxicity are also required in this Order.

The following shall constitute the effluent monitoring program for discharges through Discharge Serial No. 006 to Elderberry Forebay:

Constituent	Units	Type of Sample	Sampling Frequency	Basis
Total waste flow	gal/day	----	Daily	N
Oil and grease	mg/L	Grab	Quarterly	N <sup>1</sup>
BOD <sub>5</sub> 20 °C	mg/L	Grab	Quarterly	N <sup>1</sup>
pH	Standard units	Grab	Quarterly	N <sup>1</sup>
Temperature	° F	Grab	Quarterly	N <sup>1</sup>
Settleable solids	ml/L	Grab	Quarterly	N <sup>1</sup>
Suspended solids	mg/L	Grab	Quarterly	N <sup>1</sup>
Turbidity	mg/L	Grab	Quarterly	N <sup>1</sup>
Residual chlorine	mg/L	Grab	Quarterly	N <sup>1</sup>
Methylene blue activated substances (MBAS)	mg/L	Grab	Quarterly	N <sup>1</sup>
Copper <sup>1</sup>	µg/L	Grab	Quarterly	N <sup>1</sup>
Lead <sup>1</sup>	µg/L	Grab	Quarterly	N <sup>1</sup>
Zinc <sup>1</sup>	µg/L	Grab	Quarterly	N <sup>1</sup>
Dichlorobrometnane	µg/L	Grab	Quarterly	N <sup>1</sup>
Acute Toxicity	% survival	Grab	Annually <sup>2</sup>	N <sup>1</sup>
Remaining Priority Pollutants <sup>1,3</sup>	µg/L	Grab	Annually	N <sup>1</sup>

N = New monitoring requirements to determine the quantity of the discharge.

N<sup>1</sup> = New monitoring requirements to determine compliance with effluent limitations.

<sup>1</sup> All metals shall be reported as total recoverable.

<sup>2</sup> Acute toxicity: Monitoring shall be conducted in accordance with Section IV of the *M&RP* No. CI-6112.

<sup>3</sup> The Discharger must monitor the effluent for the presence of the 17 congeners of 2,3,7,8-TCDD listed in Attachment A, twice during the permit term (once during the 2<sup>nd</sup> year of the permit and once during the 4<sup>th</sup> year). You must report for each congener the analytical results of the effluent monitoring, including the quantifiable limit and the Method Detection Limit (MDL), and the measured or estimated concentration. The Discharger must multiply each measured or estimated congener concentration by its respective Toxicity Equivalent Factors (TEFs) and report the sum of these values

In lieu of the quarterly monitoring requirement for PCBs in the previous Order, this Order requires monitoring for PCBs at Discharge Serial Nos. 001, 003, 004, and 005. If the results of the PCB monitoring indicate that PCBs are being discharged from this facility in excess of the water quality objectives established in the Basin Plan, the Regional Water Board may reopen the Order to re-establish effluent limits for PCBs. This Order removes the provision that the Discharger may provide a statement that no PCBs are used or stored at the facility in lieu of the PCB analysis.

The SIP states that the Regional Water Board will require periodic monitoring for pollutants

for which criteria or objectives apply and for which no effluent limitations have been established. This permit will combine the periodic reporting requirements of the SIP with the existing permit monitoring requirements. The Regional Water Board is requiring, as part of the Monitoring and Reporting Program, that the Discharger conduct annual effluent monitoring for the priority pollutants (except for 2,3,7,8-TCDD) for which there are no effluent limitations established in the permit, for Discharge Serial Nos. 001, 003, 004, 005, and 006.

**B. Receiving Water and TCDD Monitoring for Reasonable Potential Determination**

As stated previously, the Regional Water Board issued a letter to Castaic requesting monitoring for the priority pollutants regulated in the CTR; data are available for the period from June 2002 through October 2003, and were used in the RPA. The SIP states that the Regional Water Boards will require periodic monitoring for pollutants for which criteria or objectives apply and for which no effluent limitations have been established.

The Regional Water Board is requiring, as part of the Monitoring and Reporting Program, that the Discharger conduct receiving water monitoring for the priority pollutants annually.

If, for safety reasons, a sample cannot be obtained during a sampling period, a sample shall be obtained at the first safe opportunity, and the reason for the delay shall be included in the report. Further, the Discharger must analyze pH and hardness of the receiving water concurrent with the analysis for the priority pollutants.

The required monitoring frequency and type of sample for pH, hardness, and toxic pollutants are listed below.

Constituent	Units	Type of Sample	Monitoring Frequency
pH	standard units	Grab	Annually
Hardness (as CaCO <sub>3</sub> )	mg/L	Grab	Annually
PAHs	µg/L	Grab	Annually
Antimony	µg/L	Grab	Annually
Arsenic <sup>1</sup>	µg/L	Grab	Annually
Beryllium	µg/L	Grab	Annually
Cadmium <sup>1</sup>	µg/L	Grab	Annually
Chromium (III) <sup>1</sup>	µg/L	Grab	Annually
Chromium (VI) <sup>1</sup>	µg/L	Grab	Annually
Copper <sup>1</sup>	µg/L	Grab	Annually
Lead <sup>1</sup>	µg/L	Grab	Annually
Mercury	µg/L	Grab	Annually
Nickel <sup>1</sup>	µg/L	Grab	Annually
Selenium	µg/L	Grab	Annually
Silver <sup>1</sup>	µg/L	Grab	Annually
Thallium	µg/L	Grab	Annually
Zinc <sup>1</sup>	µg/L	Grab	Annually
Cyanide	µg/L	Grab	Annually
Asbestos	Fibers/L	Grab	Annually
Acrolein	µg/L	Grab	Annually

Constituent	Units	Type of Sample	Monitoring Frequency
Acrylonitrile	µg/L	Grab	Annually
Benzene	µg/L	Grab	Annually
Bromoform	µg/L	Grab	Annually
Carbon tetrachloride	µg/L	Grab	Annually
Chlorobenzene	µg/L	Grab	Annually
Chlorodibromomethane	µg/L	Grab	Annually
Chloroethane	µg/L	Grab	Annually
2-Chloroethylvinyl ether	µg/L	Grab	Annually
Chloroform	µg/L	Grab	Annually
Dichlorobromomethane	µg/L	Grab	Annually
1,1-Dichloroethane	µg/L	Grab	Annually
1,2-Dichloroethane	µg/L	Grab	Annually
1,1-Dichloroethylene	µg/L	Grab	Annually
1,2-Dichloropropane	µg/L	Grab	Annually
1,3-Dichloropropylene	µg/L	Grab	Annually
Ethylbenzene	µg/L	Grab	Annually
Methyl bromide	µg/L	Grab	Annually
Methyl chloride	µg/L	Grab	Annually
Methylene chloride	µg/L	Grab	Annually
1,1,2,2-Tetrachloroethane	µg/L	Grab	Annually
Tetrachloroethylene	µg/L	Grab	Annually
Toluene	µg/L	Grab	Annually
1,2-Trans-dichloroethylene	µg/L	Grab	Annually
1,1,1-Trichloroethane	µg/L	Grab	Annually
1,1,2-Trichloroethane	µg/L	Grab	Annually
Trichloroethylene	µg/L	Grab	Annually
Vinyl chloride	µg/L	Grab	Annually
2-Chlorophenol	µg/L	Grab	Annually
2,4-Dichlorophenol	µg/L	Grab	Annually
2,4-Dimethylphenol	µg/L	Grab	Annually
2-Methyl-4,6-Dinitrophenol	µg/L	Grab	Annually
2,4-Dinitrophenol	µg/L	Grab	Annually
2-Nitrophenol	µg/L	Grab	Annually
4-Nitrophenol	µg/L	Grab	Annually
3-Methyl-4-Chlorophenol	µg/L	Grab	Annually
Pentachlorophenol	µg/L	Grab	Annually
Phenol	µg/L	Grab	Annually
2,4,6-Trichlorophenol	µg/L	Grab	Annually
Acenaphthene	µg/L	Grab	Annually
Acenaphthylene	µg/L	Grab	Annually
Anthracene	µg/L	Grab	Annually
Benidine	µg/L	Grab	Annually
Benzo(a)Anthracene	µg/L	Grab	Annually
Benzo(a)Pyrene	µg/L	Grab	Annually
Benzo(b)Fluoranthene	µg/L	Grab	Annually
Benzo (g,h,i)Perylene	µg/L	Grab	Annually
Benzo(k)Fluoranthene	µg/L	Grab	Annually
Bis (2-Chloroethoxy)Methane	µg/L	Grab	Annually
Bis(2-Chloroethyl)Ether	µg/L	Grab	Annually
Bis (2-Chloroisopropyl)Ether	µg/L	Grab	Annually



Constituent	Units	Type of Sample	Monitoring Frequency
4-Bromophenyl Phenyl Ether	µg/L	Grab	Annually
Butylbenzyl Phthalate	µg/L	Grab	Annually
2-Chloronaphthalene	µg/L	Grab	Annually
4-Chlorophenyl Phenyl Ether	µg/L	Grab	Annually
Chrysene	µg/L	Grab	Annually
Dibenzo(a,h)Anthracene	µg/L	Grab	Annually
1,2-Dichlorobenzene	µg/L	Grab	Annually
1,3-Dichlorobenzene	µg/L	Grab	Annually
1,4-Dichlorobenzene	µg/L	Grab	Annually
3,3'-Dichlorobenzidine	µg/L	Grab	Annually
Diethyl Phthalate	µg/L	Grab	Annually
Dimethyl Phthalate	µg/L	Grab	Annually
Di-n-Butyl Phthalate	µg/L	Grab	Annually
2,4-Dinitrotoluene	µg/L	Grab	Annually
2,6-Dinitrotoluene	µg/L	Grab	Annually
Di-n-Octyl Phthalate	µg/L	Grab	Annually
1,2-Diphenylhydrazine	µg/L	Grab	Annually
Fluoranthene	µg/L	Grab	Annually
Fluorene	µg/L	Grab	Annually
Hexachlorobenzene	µg/L	Grab	Annually
Hexachlorobutadiene	µg/L	Grab	Annually
Hexachlorocyclopentadiene	µg/L	Grab	Annually
Hexachloroethane	µg/L	Grab	Annually
Indeno(1,2,3-cd)Pyrene	µg/L	Grab	Annually
Isophorone	µg/L	Grab	Annually
Naphthalene	µg/L	Grab	Annually
Nitrobenzene	µg/L	Grab	Annually
N-Nitrosodimethylamine	µg/L	Grab	Annually
N-Nitrosodi-n-Propylamine	µg/L	Grab	Annually
N-Nitrosodiphenylamine	µg/L	Grab	Annually
Phenanthrene	µg/L	Grab	Annually
Pyrene	µg/L	Grab	Annually
1,2,4-Trichlorobenzene	µg/L	Grab	Annually
Aldrin	µg/L	Grab	Annually
alpha-BHC	µg/L	Grab	Annually
beta-BHC	µg/L	Grab	Annually
gamma-BHC	µg/L	Grab	Annually
delta-BHC	µg/L	Grab	Annually
Chlordane	µg/L	Grab	Annually
4,4'-DDT	µg/L	Grab	Annually
4,4'-DDE	µg/L	Grab	Annually
4,4'-DDD	µg/L	Grab	Annually
Dieldrin	µg/L	Grab	Annually
alpha-Endosulfan	µg/L	Grab	Annually
beta-Endosulfan	µg/L	Grab	Annually
Endosulfan Sulfate	µg/L	Grab	Annually
Endrin	µg/L	Grab	Annually
Endrin Aldehyde	µg/L	Grab	Annually
Heptachlor	µg/L	Grab	Annually
Heptachlor Epoxide	µg/L	Grab	Annually

Constituent	Units	Type of Sample	Monitoring Frequency
PCBs – sum <sup>2</sup>	µg/L	Grab	Annually
Toxaphene	µg/L	Grab	Annually

<sup>1</sup> Measured as total recoverable.

<sup>2</sup> PCBs sum refers to sum of PCB Aroclors 1016, 1221, 1232, 1242, 1248, 1254, and 1260.

In accordance with Section 3 of the SIP, the Discharger is also required to conduct effluent/receiving water monitoring for the presence of the 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD or Dioxin) congeners. The monitoring shall be a grab sample twice during the permit term (once during the 2<sup>nd</sup> year of the permit and once during the 4<sup>th</sup> year). The SIP requires monitoring for 2,3,7,8-TCDD and the 16 congeners listed in the table below. 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 below.

Congeners	TEF
2,3,7,8-tetra CDD	1.0
1,2,3,7,8-penta CDD	1.0
1,2,3,4,7,8-hexa CDD	0.1
1,2,3,6,7,8-hexa CDD	0.1
1,2,3,7,8,9-hexa CDD	0.1
1,2,3,4,6,7,8-hepta CDD	0.01
Octa CDD	0.0001
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
1,2,3,4,7,8-hexa CDF	0.1
1,2,3,6,7,8-hexa CDF	0.1
1,2,3,7,8,9-hexa CDF	0.1
2,3,4,6,7,8-hexa CDF	0.1
1,2,3,4,6,7,8-hepta CDF	0.01
1,2,3,4,7,8,9-hepta CDF	0.01
Octa CDF	0.0001

The Discharger may submit priority pollutants data as results of the analyses of water samples collected from Pyramid Lake by the Department of Water Resources (DWR), the Metropolitan Water District (MWD), and/or other entities acting in behalf of agencies collecting data as required in the NPDES program, in lieu of conducting the receiving water monitoring of the priority pollutants listed above. The laboratory analytical data shall include applicable analytical methods used, minimum levels, method detection limits, quality assurance/quality control (QA/QC) data, chain of custody, including but not limited to data and time of sampling, sample identification, and name of person who performed sampling, date of analysis, name of person who performed analysis, copy of laboratory certification, and a perjury statement executed by the person responsible for the laboratory.

**C. *Receiving Water Monitoring***

In addition to the requirements for monitoring the receiving water described in (B) above, Castaic will be required to perform general observations of the receiving water when discharges occur and report the observations in the quarterly monitoring report. The Regional Water Board in assessing potential impacts of future discharges will use data from these observations. 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 are required:

- 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.