State of California
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION
320 West 4th Street, Suite 200, Los Angeles

FACT SHEET
ORDER NO. R4-2003-0151
WASTE DISCHARGE REQUIREMENTS
FOR
VENTURA COUNTY WATERWORKS DISTRICT NO. 1
(Moorpark Wastewater Treatment Plant)

NPDES No. CA0063274
Public Notice No.: R4-2003-0151

FACILITY ADDRESS
Moorpark Wastewater Treatment Plant
9550 Los Angeles Avenue
Moorpark, CA 93021
Telephone: (805) 582-9601

FACILITY MAILING ADDRESS
Ventura County Waterworks District No. 1
P.O. Box 250
Moorpark, CA 93020
Contact: Reddy Pakala
Telephone: (805) 584-4830

I. Public Participation

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

A. Written Comments

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

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

To be fully responded to by staff and considered by the Regional Board, written comments should be received at the Regional Board offices by 5:00 p.m. on November 17, 2003.

B. Public Hearing

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

Date: **December 4, 2003**
Time: **9:00 a.m.**
Location: The City of Simi Valley, Council Chmabers
2929 Tapo Canyon Road
Simi Valley, California

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

Please be aware that dates and venues may change. Our web address is www.swrcb.ca.gov/rwqcb4 where you can access the current agenda for changes in dates and locations.

C. Information and Copying

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

D. Register of Interested Persons

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

E. Waste Discharge Requirements Appeals

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

State Water Resources Control Board
Office of Chief Counsel
ATTN: Elizabeth Miller Jennings
P.O. Box 100, 1001 I Street
Sacramento, CA 95812

II. BACKGROUND

Ventura County Waterworks District No. 1 (hereinafter VCWD or Discharger) discharges tertiary-treated wastewater, from its Moorpark Wastewater Treatment Plant (Moorpark WTP) located in Moorpark, to Arroyo Las Posas, a water of the United States. On January 6, 2003, VCWD filed a Report of Waste Discharge (ROWD) and applied to the Regional Board for renewal of its waste discharge requirements (WDR) and NPDES permit to discharge tertiary-treated wastewater.

III. PURPOSE OF ORDER

This NPDES Permit regulates the discharge of treated wastewater from the Moorpark WTP. This discharge was previously permitted by Waste Discharge Requirements in Order No. 00-049, adopted by this Regional Board on April 13, 2000. Order No. 00-049 also serves as a permit under the National Pollutant Discharge Elimination System (NPDES No. CA0063274). Order No. 00-049 has an expiration date of December 10, 2003. This Order is a reissuance of waste discharge requirements that have been revised to reflect current wastewater treatment processes and to include additional findings, effluent limitations, prohibitions, updated standard provisions, and an expanded monitoring and reporting program.

IV. FACILITY AND TREATMENT PROCESS DESCRIPTION

VCWD owns and operates the Moorpark WTP that is located at 9550 Los Angeles Avenue, Moorpark, California. The Moorpark WTP receives wastewater from the City of Moorpark. The wastewater is a mixture of domestic and industrial wastewater. The latter is pretreated pursuant to 40 CFR Part 403 prior to discharge to the sewers. The Moorpark WTP serves an approximate population of 33,300 people.

The Moorpark WTP was designed to provide secondary treatment to 3.0 million gallons per day (mgd) of wastewater, and tertiary treatment to 1.5 mgd of secondary treated effluent. Under normal conditions, the Moorpark WTP discharges secondary treated effluent to on-site percolation/evaporation ponds under Waste Discharge Requirements contained in Order No. 00-048, adopted by this Regional Board on April 13, 2000. During wet weather, when the flow exceeds the percolation capacity, the Moorpark WTP further provides tertiary treatment (filtration and disinfection/dechlorination) to a portion of the secondary treated effluent for discharge into Arroyo Las Posas.

The United States Environmental Protection Agency (USEPA) and the Regional Board have classified the Moorpark WTP as a major discharger. It has a Threat to Water Quality and Complexity Rating of 1-A, pursuant to CCR Section 2200.

The Moorpark WTP has been undergoing a two-phase upgrade and expansion. The plant was originally designed to provide secondary treatment to 3.0 million gallons per day (mgd) of wastewater, and tertiary treatment to 1.5 mgd of secondary treated effluent. The Phase I plant upgrade was completed and has been in operation since July 2001. It included conversion of the aeration/polishing ponds secondary treatment system to an

activated sludge process, and the construction of a solids dewatering facility, solar sludge drying beds, and a dewatered cake storage pad. The Phase I upgrade did not change the plant's design capacity.

The upgraded primary and secondary treatment systems consist of an in-channel screening (Aqua Guard® screens), grit removal, Biolac® extended aeration system, and secondary clarification. Secondary treated effluent is discharged to 30 onsite percolation/evaporation ponds. Waste sludge is either dewatered using a belt press or dried in sludge drying beds before being hauled away for land application to an approved facility.

Tertiary treatment system consists of chemical flocculation, gravity settling, up-flow Dynasand® filtration, and disinfection using sodium hypochlorite solution. During wet weather, when the flow exceeds the percolation and reclamation capacity, the disinfected tertiary treated effluent is dechlorinated prior to discharging into Arroyo Las Posas, which is tributary to Mugu Lagoon.

Currently, VCWD is proceeding with the Phase II plant upgrades that include increasing the secondary treatment capacity to 5 mgd by expanding the Biolac® extended aeration system, providing nitrogen removal, increasing the pumping capacity of the sewer lift station, and expanding the tertiary treatment capacity to 3 mgd. In addition, VCWD intends to improve the solids handling capacity, convert the plant water system to recycled water, improve reliability with additional stand-by power capacity, and increase the building space for laboratory and operations.

Water Recycling Facility. VCWD constructed and is operating a recycled water distribution system, consisting of recycled water storage, pumping facilities, and distribution pipelines, to provide tertiary treated and disinfected recycled water directly to end-users. The production, distribution and reuse of recycled water for direct, non-potable applications are presently regulated under Water Recycling Requirements (WRR) Order No. R4-2002-0028, adopted by this Board on January 24, 2002. Implementation of a water recycling program will reduce the likelihood or amount of tertiary treated wastewater discharged into Arroyo Las Posas during wet weather.

Storm Water Management. VCWD does not treat storm water runoff at the Moorpark WTP, except for stormwater infiltration and inflows in the sewer and stormwater that traverses the treatment tanks. It has developed a Storm Water Pollution Prevention Plan (SWPPP) for storm water flows at the facility that do not enter the treatment system.

V. DISCHARGE OUTFALL AND RECEIVING WATER DESCRIPTION

The Moorpark WTP normally discharges secondary treated effluent into a series of on-site evaporation/ percolation ponds. However, when the flow exceeds the percolation capacity (as during rainy periods), up to 1.5 mgd of secondary treated wastewater is diverted for tertiary treatment prior to discharge into Arroyo Las Posas, through Discharge Serial No. 001 (Latitude 34°16'00", Longitude 118°56'00"). Arroyo Las Posas is tributary to Mugu Lagoon, and is part of the Calleguas Creek Watershed Management

Area. Mugu Lagoon is one of the few remaining salt marshes in California located along the Pacific Flyway.

The Ventura County Flood Control District channelized portions of Calleguas Creek to convey and control floodwater, and to prevent damage to homes located adjacent to the creek. Calleguas Creek is a water of the United States that conveys floodwater and urban runoff, along with treated water. The Arroyo Las Posas is unlined near the point of discharge. Groundwater recharge occurs incidentally, in these unlined areas of Arroyo Las Posas and Calleguas Creek where the underlying sediments are highly transmissive to water as well as pollutants.

Notwithstanding that segments located further downstream of the discharge are concrete-lined, the watershed supports a diversity of wildlife. Threatened and endangered species such as the peregrine falcon, least tern, light-footed clapper rail, and the brown pelican are found in Calleguas Creek and Mugu Lagoon.

VI. DISCHARGE QUALITY DESCRIPTION

Prior to the plant Phase I upgrade, VCWD was not able to the meet effluent turbidity limit of 5 NTU contained in Order No. 00-049. Therefore, together with the issuance of Order No. 00-049, the Regional Board also issued to VCWD a Time Schedule Order No. 00-050 (TSO) that required VCWD comply with the turbidity limit by September 1, 2002. During the Phase I plant upgrade period, VCWD was required to comply with the interim turbidity limit of 8 NTU prescribed in the TSO. VCWD has completed the construction of Phase I upgrade and has been operating the upgraded plant since July 2001. Effluent monitoring data for turbidity from October 2001 to March 2002 range from 0.2 to 3.95 NTU which consistently met the effluent turbidity limit.

After the completion of the Phase I plant upgrade in July 2001, the Moorpark WTP only discharged the tertiary-treated effluent to Arroyo Las Posas from October 2001 to March 2002. The characteristics of the wastewater discharged, based on monitoring data during this discharging period, are as follows in Table 1. (Note: The "<" symbol indicates that the pollutant was not detected (ND) at that concentration level.)

Table 1
Effluent Characteristics

CTR# [1]	Constituent	Unit	Average or median [2]	Maximum	Minimum
	Flow	mgd	1.5	1.5	1.42
	pH	pH units	7.1	7.6	6.7
	Temperature	°F	67	76	61
	BOD_5 20°C	mg/L	< 2	3.1	< 2
	BOD % removal	%	99.4	99.7	98.9
	Total suspended solids	mg/L	< 1	4.4	< 1
	TSS % removal	%	99.5	99.8	98.9
	Settleable solids	ml/L	< 0.1	< 0.1	< 0.1

CTR# [1]	Constituent	Unit	Average or median [2]	Maximum	Minimum
	Total coliform	MPN per 100 ml	< 1.1	> 23	< 1.1
	Fecal coliform	MPN per 100 ml	< 1.1	23	< 1.1
	Residual chlorine	mg/L	< 0.1	< 0.1	< 0.1
	Total dissolved solids	mg/L	578	616	560
	Chloride	mg/L	141	167	112
	Sulfate	mg/L	138	162	113
	Boron	mg/L	0.54	0.6	0.43
	Total Phosphate	mg/L	0.41	0.83	< 0.05
	Turbidity	NTU	0.47	3.95	0.16
	Oil and grease	mg/L	< 5	< 5	< 3
	Fluoride	mg/L	0.11	0.17	< 0.1
	MBAS	mg/L	0.1	0.1	< 0.2
	Ammonia-N	mg/L	0.16	0.5	< 0.2
	Organic-N	mg/L	1.08	5.7	< 0.5
	Nitrate-N	mg/L	5.32	10.4	2.12
	Nitrite-N	mg/L	< 0.05	< 0.05	< 0.05
	Total Nitrogen	mg/L	6.53	11.73	2.82
	Chronic toxicity	TUc	1.00	1.00	1.00
	Acute toxicity	% survival	95	100	90
1	Antimony	µg/L	0.5	0.7	< 0.5
2	Arsenic	µg/L	1.4	2.4	1.1
3	Beryllium (Be)	µg/L	< 0.5	< 0.5	< 0.5
4	Cadmium	µg/L	0.2	0.3	0.2
5a	Chromium-III	µg/L	1.0	1.8	< 0.5
5b	Chromium VI (Cr-VI)	µg/L	< 0.05	< 0.05	< 0.05
6	Copper	µg/L	4.3	7	2.5
7	Lead	µg/L	0.6	0.9	0.5
8	Mercury	µg/L	< 0.2	< 0.2	< 0.2
9	Nickel	µg/L	2.2	3.4	1.6
10	Selenium(Se)	µg/L	< 2	< 2	< 2
11	Silver	µg/L	< 0.2	0.4	< 0.2
12	Thallium(Ti)	µg/L	< 1	< 1	< 1
13	Zinc	µg/L	54	58	50
14	Cyanide(CN)	µg/L	< 5	< 5	< 5
15	Asbestos	--	--	--	--
16	TCDD	µg/L	--	< 0.0015	< 0.00034
17	Acrolein	µg/L	< 2	< 2	< 2
18	Acrylonitrile	µg/L	< 2	< 2	< 2
19	Benzene	µg/L	< 0.5	< 0.5	< 0.5
20	Bromoform	µg/L	< 0.5	1.9	< 0.5
21	Carbon Tetrachloride	µg/L	< 0.5	< 0.5	< 0.5

CTR# [1]	Constituent	Unit	Average or median [2]	Maximum	Minimum
22	Chlorobenzene	µg/L	< 0.5	< 0.5	< 0.5
23	Dibromochloromethane	µg/L	7.8	13.3	3.6
24	Chloroethane	µg/L	< 0.5		
25	2-Chloroethyl vinyl ether	µg/L	< 1		
26	Chloroform	µg/L	24.8	43.7	6.5
27	Bromodichloromethane	µg/L	15.3	29.5	3.4
28	1,1 Dichloroethane	µg/L	< 0.5	< 0.5	< 0.5
29	1,2 Dichloroethane	µg/L	< 0.5	< 0.5	< 0.5
30	1,1 Dichloroethylene	µg/L	< 0.5	< 0.5	< 0.5
31	1,2 Dichloropropane	µg/L	< 0.5	< 0.5	< 0.5
32	1,3 Dichloropropylene	µg/L	< 0.5	< 0.5	< 0.5
33	Ethylbenzene	µg/L	< 0.5	< 0.5	< 0.5
34	Methyl Bromide	µg/L	< 0.5	< 0.5	< 0.5
35	Chloromethane	µg/L	< 0.5	< 0.5	< 0.5
36	Methylene Chloride	µg/L	< 0.5	< 0.5	< 0.5
37	1,1,2,2 Tetrachloroethane	µg/L	< 0.5	< 0.5	< 0.5
38	Tetrachloroethylene	µg/L	< 0.5	< 0.5	< 0.5
39	Toluene	µg/L	< 0.5	< 0.5	< 0.5
40	1,2-Trans Dichloroethylene	µg/L	< 0.5	< 0.5	< 0.5
41	1,1,1 Trichloroethane	µg/L	< 0.5	< 0.5	< 0.5
42	1,1,2 Trichloroethane	µg/L	< 0.5	< 0.5	< 0.5
43	Trichloroethylene	µg/L	< 0.5	< 0.5	< 0.5
44	Vinyl Chloride	µg/L	< 0.5	< 0.5	< 0.5
45	2 Chlorophenol	µg/L	< 5	< 5	< 5
46	2,4 Dichlorophenol	µg/L	< 5	< 5	< 5
47	2,4 Dimethylphenol	µg/L	< 2	< 2	< 2
48	2-Methyl-4,6-Dinitrophenol	µg/L	< 5	< 5	< 5
49	2,4 Dinitrophenol	µg/L	< 5	< 5	< 5
50	2-Nitrophenol	µg/L	< 10	< 10	< 10
51	4-Nitrophenol	µg/L	< 10	< 10	< 10
52	3-Methyl-4-Chlorophenol	µg/L	< 1	< 1	< 1
53	Pentachlorophenol	µg/L	< 5	< 5	< 5
54	Phenol	µg/L	< 1	< 1	< 1
55	2,4,6 Trichlorophenol	µg/L	< 10	< 10	< 10
56	Acenaphthene	µg/L	< 1	< 1	< 1
57	Acenaphthylene	µg/L	< 10	< 10	< 10
58	Anthracene	µg/L	< 10	< 10	< 10
59	Benzidine	µg/L	< 5	< 5	< 5
60	Benzo (a) Anthracene	µg/L	< 5	< 5	< 5
61	Benzo (a) Pyrene	µg/L	<10	<10	<10
62	Benzo (b) Fluoranthene	µg/L	< 10	< 10	< 10
63	Benzo (g,h,i) Perylene	µg/L	< 5	< 5	< 5

CTR# [1]	Constituent	Unit	Average or median [2]	Maximum	Minimum
64	Benzo (k) Fluoranthene	µg/L	< 10	< 10	< 10
65	Bis (2-Chloroethoxyl) methane	µg/L	< 5	< 5	< 5
66	Bis(2-Chloroethyl) ether	µg/L	< 1	< 1	< 1
67	Bis(2-Chloroisopropyl) ether	µg/L	< 2	< 2	< 2
68	Bis(2-Ethylhexyl) phthalate	µg/L	< 5	9.5	< 5
69	4-Bromophenyl phenyl ether	µg/L	< 5	< 5	< 5
70	Butyl benzyl phthalate	µg/L	< 10	< 10	< 10
71	2-Chloronaphthalene	µg/L	< 10	< 10	< 10
72	4-Chlorophenyl phenyl ether	µg/L	< 5	< 5	< 5
73	Chrysene	µg/L	< 10	< 10	< 10
74	Dibenzo(a,h)-anthracene	µg/L	< 10	< 10	< 10
75	1,2 Dichlorobenzene	µg/L	< 0.5	< 0.5	< 0.5
76	1,3 Dichlorobenzene	µg/L	< 0.5	< 0.5	< 0.5
77	1,4 Dichlorobenzene	µg/L	< 0.5	< 0.5	< 0.5
78	3,3' Dichlorobenzidine	µg/L	< 5	< 5	< 5
79	Diethyl phthalate	µg/L	< 2	< 2	< 2
80	Dimethyl phthalate	µg/L	< 2	< 2	< 2
81	di-n-Butyl phthalate	µg/L	< 10	< 10	< 10
82	2,4 Dinitrotoluene	µg/L	< 5	< 5	< 5
83	2,6 Dinitrotoluene	µg/L	< 5	< 5	< 5
84	di-n-Octyl phthalate	µg/L	< 10	< 10	< 10
85	1,2 Diphenylhydrazine	µg/L	< 1	< 1	< 1
86	Fluoranthene	µg/L	< 1	< 1	< 1
87	Fluorene	µg/L	< 10	< 10	< 10
88	Hexachlorobenzene	µg/L	< 1	< 1	< 1
89	Hexachlorobutadiene	µg/L	< 1	< 1	< 1
90	Hexachloro-cyclopentadiene	µg/L	< 5	< 5	< 5
91	Hexachloroethane	µg/L	< 1	< 1	< 1
92	Indeno(1,2,3,cd)-pyrene	µg/L	< 10	< 10	< 10
93	Isophorone	µg/L	< 1	< 1	< 1
94	Naphthalene	µg/L	< 1	< 1	< 1
95	Nitrobenzene	µg/L	< 1	< 1	< 1
96	N-Nitrosodimethyl amine	µg/L	< 5	< 5	< 5
97	N-Nitroso-di-n-propyl amine	µg/L	< 5	< 5	< 5
98	N-Nitrosodiphenyl amine	µg/L	< 1	< 1	< 1
99	Phenanthrene	µg/L	< 5	< 5	< 5
100	Pyrene	µg/L	< 10	< 10	< 10
101	1,2,4 Trichlorobenzene	µg/L	< 5	< 5	< 5
102	Aldrin	µg/L	< 0.005	< 0.005	< 0.005
103	Alpha-BHC	µg/L	< 0.004	< 0.004	< 0.004
104	beta-BHC	µg/L	< 0.005	< 0.005	< 0.005
105	gamma-BHC	µg/L	< 0.02	< 0.02	< 0.02

CTR# [1]	Constituent	Unit	Average or median [2]	Maximum	Minimum
106	delta-BHC	µg/L	< 0.005	< 0.005	< 0.005
107	Chlordane	µg/L	< 0.1	< 0.1	< 0.1
108	4,4'-DDT	µg/L	< 0.05	< 0.05	< 0.05
109	4,4'-DDE	µg/L	< 0.05	< 0.05	< 0.05
110	4,4'-DDD	µg/L	< 0.01	< 0.01	< 0.01
111	Dieldrin	µg/L	< 0.01	< 0.01	< 0.01
112	Alpha-Endosulfan	µg/L	< 0.02	< 0.02	< 0.02
113	Beta-Endosulfan	µg/L	< 0.01	< 0.01	< 0.01
114	Endosulfan Sulfate	µg/L	< 0.05	< 0.05	< 0.05
115	Endrin	µg/L	< 0.01	< 0.01	< 0.01
116	Endrin Aldehyde	µg/L	< 0.01	< 0.01	< 0.01
117	Heptachlor	µg/L	< 0.01	< 0.01	< 0.01
118	Heptachlor Epoxide	µg/L	< 0.01	< 0.01	< 0.01
119	PCB 1016	µg/L	< 0.5	< 0.5	< 0.5
To	PCB 1221	µg/L	< 0.5	< 0.5	< 0.5
125	PCB 1232	µg/L	< 0.5	< 0.5	< 0.5
	PCB 1242	µg/L	< 0.5	< 0.5	< 0.5
	PCB 1248	µg/L	< 0.5	< 0.5	< 0.5
	PCB 1254	µg/L	< 0.5	< 0.5	< 0.5
	PCB 1260	µg/L	< 0.5	< 0.5	< 0.5
126	Toxaphene	µg/L	< 0.5	< 0.5	< 0.5

Footnotes
[1] This number corresponds to the compound number found in Table 1 of CTR. It is simply the order in which the 126 priority pollutants were listed in 40 CFR, Section 131.38(b)(1).
[2] When a data set contains nondetected data, the median value of the data set is reported.

The Attachment R1 contains a more extensive statistical analysis of effluent priority pollutant data.

VII. APPLICABLE LAWS, PLANS, POLICIES AND REGULATIONS

A. Federal Water Pollution Control Act (CWA). The federal Clean Water Act (CWA) provides that no person may discharge pollutants from a point source into a water of the United States, except in conformance with an NPDES permit. NPDES permits establish effluent limitations that incorporate various requirements of the CWA designed to protect and enhance water quality. CWA Section 402 authorizes the USEPA or states with an approved NPDES program to issue NPDES permits. The State of California has an approved NPDES program.

Effluent limitations and toxic effluent standards are established pursuant to Section 301 (Effluent Limitations), Section 302 (Water Quality-Related Effluent Limitations), Section 303 (Water Quality Standards and Implementation Plans),

Section 304 (Information and Guidelines [Effluent]), Section 305 (Water Quality Inventory), Section 307 (Toxic and Pretreatment Effluent Standards), and Section 402 (NPDES) of the CWA. The CWA and amendments thereto are applicable to the discharges herein.

B. ***Basin Plan.*** The Board adopted a revised *Water Quality Control Plan, Los Angeles Region: Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties* (Basin Plan) on June 13, 1994, amended on January 27, 1997, by Regional Board Resolution No. 97-02. This updated and consolidated plan represents the Board's master water quality control planning document and regulations. The revised Basin Plan was approved by the State Board and the State of California Office of Administrative Law (OAL) on November 17, 1994, and February 23, 1995, respectively. The Basin Plan (i) designates beneficial uses for surface and groundwaters, (ii) sets narrative and numeric objectives that must be attained or maintained to protect the designated (existing and potential) beneficial uses and conform to the state and federal antidegradation policies, and (iii) includes implementation provisions, programs, and policies to protect all waters in the Region. In addition, the Basin Plan incorporates (by reference) all applicable State and Regional Board plans and policies and other state pertinent water quality policies and regulations. The 1994 Basin Plan was prepared to be consistent with all applicable State and Regional Board plans and policies adopted from 1994 and earlier. This Order implements the plans, policies and provisions of the Board's Basin Plan.

C. ***Sources of Drinking Water Policy***. On May 19, 1988, the State Board adopted Resolution No. 88-63, *Sources of Drinking Water (SODW) Policy*, which established a policy that all surface and ground waters, with limited exemptions, are suitable or potentially suitable for municipal and domestic supply. To be consistent with State Board's SODW policy, on March 27, 1989, the Regional Board adopted Resolution No. 89-03, *Incorporation of Sources of Drinking Water Policy into the Water Quality Control Plans (Basin Plans) – Santa Clara River Basin (4A)/ Los Angeles River Basin (4B).*

D. ***Potential Municipal and Domestic Supply (P* MUN).*** Consistent with Regional Board Resolution No. 89-03 and State Board Resolution No. 88-63, in 1994 the Regional Board conditionally designated all inland surface waters in Table 2-1 of the 1994 Basin Plan as existing, intermittent, or potential for Municipal and Domestic Supply (MUN). However, the conditional designation in the 1994 Basin Plan included the following implementation provision: "no new effluent limitations will be placed in Waste Discharge Requirements as a result of these [potential MUN designations made pursuant to the SODW policy and the Regional Board's enabling resolution] until the Regional Board adopts [a special Basin Plan Amendment that incorporates a detailed review of the waters in the Region that should be exempted from the potential MUN designations arising from SODW policy and the Regional Board's enabling resolution]." On February 15, 2002, the USEPA clarified its partial approval (May 26, 2000) of the 1994 Basin Plan amendments and acknowledged that the conditional designations do not

currently have a legal effect, do not reflect new water quality standards subject to USEPA review, and do not support new effluent limitations based on the conditional designations stemming from the SODW Policy until a subsequent review by the Regional Board finalizes the designations for these waters. This permit is designed to be consistent with the existing Basin Plan.

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

F. ***Title 22 of the California Code of Regulations***. The California Department of Health Services established primary and secondary maximum contaminant levels (MCLs) for inorganic, organic, and radioactive contaminants in drinking water. These MCLs are codified in Title 22, California Code of Regulations (Title 22). The Basin Plan (Chapter 3) incorporates Title 22 primary MCLs by reference. This incorporation by reference is prospective including future changes to the incorporated provisions as the changes take effect. Title 22 primary MCLs have been used as bases for effluent limitations in WDRs and NPDES permits to protect the groundwater recharge beneficial use when that receiving groundwater is designated as MUN. Also, the Basin Plan specifies that "Ground waters shall not contain taste or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses." Therefore the secondary MCLs, which are limits based on aesthetic, organoleptic standard, are also incorporated into this permit to protect groundwater quality.

Groundwater Recharge. Sections of Arroyo Las Posas, near the Moorpark WTP discharge point, are designated for GWR. Similarly, sections of Calleguas Creek downstream of the existing Discharge Serial No. 001 are also designated for GWR. Surface waters from Arroyo Las Posas and Calleguas Creeks enter the Pleasant Valley and the Oxnard Plain Groundwater Basins. Since ground water from these basins is used to provide drinking water to people in local areas, Title 22-based limits are needed to protect that drinking water supply. By limiting the contaminants in the Moorpark WTP discharges, the amount of pollutants entering the surface waters and groundwater basins are correspondingly reduced. Once groundwater basins are contaminated, it may take years to clean up, depending on the pollutant. Compared to surface water pollution, investigations and remediation of groundwater are often more difficult, costly, and extremely slow. For these reasons Title 22-based limits will remain in the NPDES permit to protect the GWR use and the MUN use in the ultimate receiving ground water.

G. ***Beneficial Uses***. The designated beneficial uses in the Basin Plan for the Conejo Creek, Calleguas Creek, and Mugu Lagoon:

1. The beneficial uses of the receiving surface waters are:

Arroyo Las Posas - Hydro Unit 403.62

Existing: ground water recharge, freshwater replenishment, contact and non-contact water recreation, warm freshwater habitat, and wildlife habitat;

Potential: municipal and domestic supply, industrial process supply, industrial service supply, agricultural supply, cold freshwater habitat;

Calleguas Creek - Hydro Unit 403.12

Existing: industrial service supply, industrial process supply, agricultural supply, ground water recharge, contact and non-contact water recreation, warm freshwater habitat, and wildlife habitat;

Potential: municipal and domestic supply;

The potential MUN beneficial use for the water body is consistent with Regional Board Resolution 89-03; however the Regional Board has only conditionally designated the MUN beneficial uses and at this time cannot establish effluent limitations designed to protect the conditional designation.

Calleguas Creek - Hydro Unit 403.11

Existing: agricultural supply, groundwater recharge, freshwater replenishment, contact and non-contact water recreation, warm freshwater habitat, cold freshwater habitat, wildlife habitat, rare, threatened or endangered species, and wetland habitat;

Potential: municipal and domestic supply;

The potential MUN beneficial use for the water body is consistent with Regional Board Resolution 89-03; however the Regional Board has only conditionally designated the MUN beneficial uses and at this time cannot establish effluent limitations designed to protect the conditional designation.

Calleguas Creek Estuary - Hydro Unit 403.11

Existing: non-contact water recreation, commercial and sport fishing, estuarine habitat, wildlife habitat, rare, threatened or endangered species, migration of aquatic organisms, spawning, reproduction, and/or early development, and wetland habitat;

Potential: navigation, water contact recreation;

Mugu Lagoon - Hydro Unit 403.11

Existing: navigation, non-contact water recreation, commercial and sport fishing, estuarine habitat, marine habitat, wildlife habitat, preservation of biological habitats, rare, threatened or endangered species, migration of aquatic organisms, spawning, reproduction, and/or early development, shellfish harvesting, and wetland habitat.

Potential: water contact recreation;

2. The beneficial uses of the receiving ground waters are:

Las Posas Valley (Ventura Central Basin) – DWR Basin No. 4-8

South and North Las Posas Area
Existing- municipal and domestic supply, industrial service supply; industrial process supply; and, agricultural supply.

Pleasant Valley (Ventura Central Basin) - DWR Basin No. 4-6

Confined aquifers:
Existing- municipal and domestic supply, industrial service supply; industrial process supply; and, agricultural supply.

Unconfined aquifers:
Existing- industrial service supply; industrial process supply; and, agricultural supply;
Potential- municipal and domestic supply.

Oxnard Plain (Ventura Central Basin) - DWR Basin No. 4-4

Confined aquifers:
Existing- municipal and domestic supply, industrial service supply; industrial process supply; and, agricultural supply.

Unconfined aquifers:
Existing- municipal and domestic supply; and, agricultural supply;
Potential- industrial service supply.

Oxnard Forebay:
Existing- municipal and domestic supply, industrial service supply; industrial process supply; and, agricultural supply.

H. Antidegradation Policy. On October 28, 1968, the State Board adopted Resolution No. 68-16*, Maintaining High Quality Water*, which established an antidegradation policy for State and Regional Boards. Similarly, the CWA (section 304(d)(4)(B)) and USEPA regulations (40 CFR section 131.12) require all NPDES permitting actions to be consistent with the federal antidegradation policy.

I. *California Toxics Rule (CTR).* The USEPA promulgated the CTR criteria that became effective on May 18, 2000 (codified as 40 CFR section 131.38). The CTR established water quality criteria for priority toxic pollutants in California's inland surface waterways. The CTR also provides for schedules 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 the CTR criteria. The human health criteria for carcinogens in the CTR is based on an incremental cancer risk level of one in a million (10^{-6}). USEPA recognizes that adoption of criteria at a different risk factor is outside of the scope of the CTR. However, States have the discretion to adopt water quality criteria that result in a higher risk level, if the chosen risk level has been demonstrated to adequately protect the most highly exposed subpopulation, and all necessary public outreach participation has been conducted. This demonstration has not been conducted in California. Further, information that is available on highly exposed subpopulations in California supports the need to protect the general population at the 10^{-6} level. The discharger may undertake a study, in accordance with the procedures set forth in Chapter 3 of USEPA's Water Quality Standards Handbook: Second Edition (EPA-823-B-005a, August 1994) to demonstrate that a different risk level is more appropriate for discharges subject to this Order. Upon completion of the study, the State Board and Regional Board will review the results and determine if the risk level proposed is more appropriate. In the mean time, the State will continue using a 10^{-6} risk level, as it has done historically, to protect the population against carcinogenic pollutants.

J. *State Implementation Plan (SIP).* Anticipating USEPA's promulgation of the CTR, the State Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (also known as the State Implementation Plan or SIP) on March 2, 2000. The SIP was amended by Resolution No. 2000-30, adopted on April 26, 2000, and the Office

of Administrative Law approved the SIP on April 28, 2000. The SIP applies to discharges of toxic pollutants to inland surface waters, enclosed bays and estuaries of California which are subject to regulation under the State's Porter-Cologne Water Quality Control Act (Division 7 of the Water Code) and the Clean Water Act. The policy provides for the following:

1. implementation procedures for the priority pollutant criteria promulgated by USEPA through the CTR and for the priority pollutant objectives established by Regional Water Quality Control Boards (RWQCBs) in their Basin Plans;
2. monitoring requirements for priority pollutants with insufficient data to determine reasonable potential;
3. monitoring requirements for 2,3,7,8–TCDD equivalents; and,
4. chronic toxicity control.

K. ***Watershed Approach.*** This Regional Board has been implementing a Watershed Management Approach (WMA) to address water quality protection in the Los Angeles Region, as detailed in the Watershed Management Initiative (WMI). The WMI is designed to integrate various surface and ground water regulatory programs while promoting cooperative, collaborative efforts within a watershed. It is also designed to focus limited resources on key issues and use sound science. Information about the Calleguas Creek Watershed and other watersheds in the region can be obtained from Regional Board's web site at *http://www.swrcb.ca.gov/rwqcb4/* and clicking on the word "watersheds". The WMA emphasizes cooperative relationships between regulatory agencies, the regulated community, environmental groups, and other stakeholders in the watershed to achieve the greatest environmental improvements with the resources available.

Pursuant to this Regional Board's watershed initiative framework, the Calleguas Creek Watershed Management Area was the targeted watershed for fiscal year 2001-2002. However, the NPDES permit renewals were re-scheduled so that provisions of the CTR and SIP could be incorporated into the permits.

L. ***303(d) Listed Pollutants.*** On July 25, 2003, USEPA approved the State's 2003 list of impaired waterbodies prepared pursuant to CWA 303(d). The list (hereinafter referred to as the 303(d) list) identifies waterbodies where water quality standards are not expected to be met after the implementation of technology-based effluent limitations on point sources (water quality-limited waterbodies).

Arroyo Las Posas, Calleguas Creek, Mugu Lagoon, and its tributaries are on the 303(d) list for the following pollutants/stressors, from point and non-point sources:

Calleguas Creek Reach 6 (Lewis Somis Road to Moorpark Freeway (23)) -
Hydrologic Unit 403.62

- Ammonia, Chloride, DDT (in sediment), Fecal coliform, Nitrate and Nitrite, Nitrate as Nitrate, Sedimentation/Siltation, Sulfates, Total dissolved solids.

Calleguas Creek Reach 3 (Petro Road upstream to confluence with Conejo Creek) - Hydrologic Unit 40.12

- Chloride, Nitrate and Nitrite, Sedimentation/Siltation, Total dissolved solids.

Calleguas Creek Reach 2 (Estuary to Potrero Road) -- Hydrologic Unit 403.12

- Ammonia, Chem A (pesticides and lubricants in fish tissue), Chlordane (in fish tissue), Dissolved copper, DDT, DDT (in fish tissue and sediment), Endosulfan (in fish tissue), Fecal coliform, Nitrogen, PCBs (in fish tissue), Sediment toxicity, Sedimentation/Siltation, and Toxaphene (in fish tissue and sediment).

Calleguas Creek Reach 1 (Mugu Lagoon) -- Hydrologic Unit 403.11

- Chlordane (in fish tissue), Copper, DDT (in fish tissue and sediment), Endosulfdan (in fish tissue), Mercury, Nickel, Nitrogen, PCBs (in fish tissue), Sediment toxicity, Sedimentation/Siltation, and Zinc.

M. ***Total Maximum Daily Loads.*** A Total Maximum Daily Load (TMDL) is a determination of the amount of a pollutant from point, nonpoint, and natural background sources, with a margin of safety, that may be discharged to a water quality-limited water body. The regulatory requirements for TMDL are codified in 40 CFR section 130.7. Section 303(d) of the CWA requires that TMDLs must be developed for the pollutants of concern which impact the water quality of water bodies on the 303(d) list. Under the March 23, 1999, amended consent decree between the USEPA and Heal the Bay, et al., (Case No. C 98-4825 SBA, *Heal the Bay, Santa Monica Bay Keeper, et al. v. Browner, et.al.),* TMDLs for chloride in Calleguas Creek must be completed by March 2002; nutrients by March 2002; pesticides, historic pesticides, and PCBs by March 2005; and metals by 2006. The remaining TMDLs, such as sulfates are tentatively scheduled for completion in the 2003/2004 fiscal year.

Chloride TMDL and Chloride Limits. On March 22, 2002, the consent decree deadline for the establishment of a chloride TMDL, USEPA Region 9 established the Calleguas Creek Total Maximum Daily Load for chloride. Subsequently, on October 17, 2002, the State Board adopted Order WQO 2002-0017, in the matter of the petition of the City of Simi Valley, City of Thousand Oaks, Camarillo Sanitary District, Camrosa Water District, and Ventura County Waterworks District No. 1, which provided a stay, maintaining the 190 mg/L chloride interim effluent limitation of prior Regional Board resolutions and contained in the existing NPDES permits (Order No. 00-049 for the Moorpark WTP), for the aforementioned POTWs. Following the adoption of NPDES Order No. 2003-XXXX, and concurrent rescission of Order No. 00-049, the Discharger may file a stipulation for Future Order Issuing Stay, which would modify Order No. WQO 2002-0017, extending the

190 mg/L chloride stay for the duration of NPDES Order No. 2003-XXXX. Consistent with the State Board's stay, upon expiration of the stay, the accompanying Order or its successors may be reopened and modified to include appropriate final effluent limits for chloride.

Nitrogen Compounds and Related Effects TMDL. On October 24, 2002, the Regional Board adopted Resolution No. 2002-017, Amendment to the Basin Plan for the Los Angeles Region to Include a TMDL for Nitrogen Compounds and Related Effects in Calleguas Creek (Nitrogen Compounds and Related Effects TMDL). The State Board, the Office of Administrative Law, and USEPA approved the Nitrogen Compounds and Related Effects TMDL on March 19, 2003, June 5, 2003, and June 20, 2003, respectively.

VIII. REGULATORY BASIS FOR EFFLUENT LIMITS AND DISCHARGE REQUIREMENTS

A. ***Water Quality Objectives and Effluent Limits.*** Water Quality Objectives (WQOs) and effluent limitations in this permit are based on:

- The plans, policies and water quality standards (beneficial uses + objectives + antidegradation policy) contained in the 1994 *Water Quality Control Plan, Los Angeles Region: Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties*, as amended, including chemical constituent limitations established by incorporating the California Code of Regulations, Title 22, maximum contaminant levels designed to protect the existing drinking water use of the receiving groundwaters;
- California Toxics Rule (40 CFR 131.38);
- The State Board's "Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California" (the State Implementation Plan or SIP);
- USEPA Regions 9 & 10 Guidance for Implementing Whole Effluent Toxicity Programs Final May 31, 1996;
- USEPA Whole Effluent Toxicity (WET) Control Policy July 1994;
- Applicable Federal Laws and Regulations
  - Federal Clean Water Act, and
  - 40 CFR sections 122 125, and 131, among others; and,
- Best professional judgment (pursuant to 40 CFR section 122.44).

Where numeric effluent limitations have not been established in the Basin Plan, 40 CFR Part 122.44(d) specifies that water quality based effluent limits may be set based on USEPA criteria and supplemented where necessary by other relevant information to attain and maintain narrative water quality criteria to fully protect designated beneficial uses.

B. USEPA regulations, policy, and guidance documents upon which Best Professional Judgment (BPJ) was developed may include in part:

- Inspectors Guide for Evaluation of Municipal Wastewater Treatment Plants, April 1979 (EPA/430/9-79-010);
- Fate of Priority Pollutants in Publicly Owned Treatment Works Pilot Study, October 1979 (EPA-440/1-79-300);

- Technical Support Document for Water Quality Based Toxics Control, March 1991 (EPA-505/ 2-90-001); and,
- USEPA NPDES Permit Writers' Manual, December 1996 (EPA-833-B-96-003).

C. ***Mass and Concentration Limits.*** 40 CFR section 122.45(f)(1) requires that except under certain conditions, all permit limits, standards, or prohibitions be expressed in terms of mass units. 40 CFR section 122.45(f)(2) allows the permit writer, at its discretion, to express limits in additional units (e.g., concentration units). The regulations mandate that, where limits are expressed in more than one unit, the permittee must comply with both.

Generally, mass-based limits ensure that proper treatment, and not dilution, is employed to comply with the final effluent concentration limits. Concentration-based effluent limits, on the other hand, discourage the reduction in treatment efficiency during low-flow periods and require proper operation of the treatment units at all times. In the absence of concentration-based effluent limits, a permittee would be able to increase its effluent concentration (i.e., reduce its level of treatment) during low-flow periods and still meet its mass-based limits. To account for this, this permit includes mass and concentration limits for some constituents; however, the mass-based limits are inappropriate during wet weather flows when plant flows may exceed design capacity. Therefore, during storm events when flows exceed design capacity, only concentration-based limits are applicable.

D. **Maximum Daily Effluent Limitations.** Pursuant to 40 CFR section 122.45(d)(2), for a POTW's continuous discharges, all permit effluent limitations, standards, and prohibitions, including those necessary to achieve water quality standards, shall, unless impracticable, be stated as average weekly and average monthly discharge limitations. It is impracticable to only include average weekly and average monthly effluent limitations for certain pollutants in the permit, because a single daily discharge of certain pollutants, in excess amounts, can cause violations of water quality objectives. The effects of certain pollutants on aquatic organisms are often rapid. For many pollutants, an average weekly or average monthly effluent limitation alone is not sufficiently protective of beneficial uses. As a result, maximum daily effluent limitations, as referenced in 40 CFR section 122.45(d)(1), are included in the permit for certain constituents as discussed in the Fact Sheet accompanying this Order.

E. ***Pretreatment*****.** Under contract with VCWD, Ventura Regional Sanitation District (VRSD) developed and implemented a USEPA approved industrial wastewater Pretreatment Program for the Moorpark WTP. After the VRSD contract ended, VCWD has implemented its own Pretreatment Program for the Moorpark WTP. Currently, this pretreatment program is under staff review at Regional Board.

F. ***Sewage Sludge.*** To implement CWA section 405(d), on February 19, 1993, USEPA promulgated 40 CFR Part 503 to regulate the use and disposal of municipal sewage sludge. This Order implements the regulations and it is the

responsibility of the Discharger to comply with said regulations, which are enforceable by USEPA.

G. ***Storm Water.*** CWA section 402(p), as amended by the Water Quality Act of 1987, requires NPDES permits for storm water discharges. Pursuant to this requirement, in 1990, USEPA promulgated 40 CFR section 122.26 that established requirements for storm water discharges under an NPDES program. To facilitate compliance with federal regulations, on November 1991, the State Board issued a statewide general permit, General NPDES Permit No. CAS000001 and Waste Discharge Requirements for Discharges of Storm Water Associated with Industrial Activities. This permit was amended in September 1992 and reissued on April 17, 1997 in State Board Order No. 97-03-DWQ.

General NPDES permit No. CAS000001 is applicable to storm water discharges from the Moorpark WTP's premises. VCWD filed a Notice of Intent to comply with the requirements of the general permit. VCWD developed and currently implements a Storm Water Pollution Prevention Plan (SWPPP), to comply with the State Board's Order No. 97-03-DWQ. In the near future, VCWD plans to capture 100% of the stormwater runoff from the biosolids area and contain it within the treatment plant.

H. ***Federal Water Pollution Control Act (CWA).*** Numeric and narrative effluent limitations are established pursuant to Section 301 (Effluent Limitations), Section 302 (Water Quality-Related Effluent Limitations), Section 303 (Water Quality Standards and Implementation Plans), Section 304 (Information and Guidelines [Effluent]), Section 305 (Water Quality Inventory), Section 307 (Toxic and Pretreatment Effluent Standards), and Section 402 (NPDES) of the CWA. The CWA and amendments thereto are applicable to the discharges herein.

I. **Antibacksliding** Antibacksliding provisions are contained in Sections 303(d)(4) and 402(o) of the CWA, and in 40 CFR Part 122.44(l). Those provisions require a reissued permit to be as stringent as the previous permit with some exceptions. Section 402(o) of the CWA establishes express statutory language prohibiting the backsliding of effluent limitations. It consists of the following three parts:

1. Section 402(o)(1) prohibits (subject to exceptions in section 303(d)(4) and/or 402(o)(2)) the relaxation of effluent limitations for two situations:

   a When a permittee seeks to revise a technology-based effluent limitation based on BPJ to reflect a subsequently promulgated effluent guideline which is less stringent; and
   b When a permittee seeks relaxation of an effluent limitation, which is based upon a State treatment standard or water quality standard.

2. Section 402(o)(2) outlines specific exceptions to the general prohibition against establishment of less stringent effluent limitations. Codified in the

NPDES regulations at 40 CFR 122.44(l), Section 402(o)(2) provided that the establishment of less stringent limits may be allowed where:

a There have been material and substantial alterations or additions to the permitted facility which justify this relaxation;
b 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;
c Technical mistakes or mistaken interpretations of the law were made in issuing the permit under Section 402(a)(1)(b);
d Good cause exists due to events beyond the permittee's control (e.g., acts of God) and for which there is no reasonably available remedy;
e The permit has been modified under 40 CFR 122.62, or a variance has been granted; or
f The permittee has installed and properly operated and maintained required treatment facilities, but still has been unable to meet the permit limitations (relaxation may only be allowed to the treatment levels actually achieved).

Although the statute identified six exceptions where effluent limitations may be relaxed, the language specifically stated that exceptions "c" and "e" (as listed above) do not apply to water quality-based effluent limitations. Thus, exceptions c & e would only apply to technology-based effluent limitations derived using best professional judgement.

3. Section 402(o)(3) prohibits the relaxation of effluent limitations in all cases if a revised effluent limitation would result in a violation of applicable effluent limitation guidelines or water quality standards, including antidegradation requirements. Thus, even if any of the antibacksliding exceptions outlined in either the statute or regulations are applicable and met, Section 402(o)(3) acts as a floor and restricts the extent to which effluent limitations may be relaxed. This requirement affirms existing provisions of the CWA that require limits, standards, and conditions to ensure compliance with applicable technology-based limits and water quality standards.

J. ***Applicable Water Quality Objectives***. 40 CFR Part 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 use.

The Basin Plan includes narrative and numeric WQOs. The CTR promulgates numeric aquatic life criteria for 23 priority toxic pollutants and numeric human health criteria for 57 priority toxic pollutants. A compliance schedule provision in the SIP authorizes the State to issue schedules of compliance for new or revised NPDES permit limits based on the federal criteria when certain conditions are met.

Where numeric water quality objectives have not been established in the Basin Plan, 40 CFR Part 122.44(d) specifies that water quality based effluent limits may be set based on USEPA criteria and supplemented, where necessary, by other relevant information to attain and maintain narrative water quality criteria to fully protect designated beneficial uses.

K. ***Types of Pollutants.*** For CWA regulatory purposes, pollutants are grouped into three general categories under the NPDES program: conventional, toxic, and non-conventional. By definition, there are five conventional pollutants (listed in 40 CFR 401.16): 5-day biochemical oxygen demand, total suspended solids, fecal coliform, pH, and oil and grease. Toxic or "priority" pollutants are those defined in Section 307(a)(1) of the CWA (and listed in 40 CFR 401.12 and 40 CFR 423, Appendix A) and include metals and man-made organic compounds. Non-conventional pollutants are those which do not fall under either of the two previously described categories and include such parameters as ammonia, nitrogen, phosphorous, chemical oxygen demand, and whole effluent toxicity, etc.

L. ***Technology Based Limits for Municipal Facilities (POTWs).*** Technology based effluent limits require a minimum level of treatment for industrial/municipal point sources based on currently available treatment technologies while allowing the Discharger to use any available control techniques to meet the effluent limits. The 1972 CWA required POTWs to meet performance requirements based on available wastewater treatment technology. Section 301 of the CWA established a required performance level - referred to as "secondary treatment" - that all POTWs were required to meet by July 1, 1977. More specifically, Section 301(b)(1)(B) of the CWA required that USEPA develop secondary treatment standards for POTWs as defined in Section 304(d)(1). Based on this statutory requirement, USEPA developed national secondary treatment regulations, which are specified in 40 CFR 133. These technology based regulations apply to all POTWs and identify the minimum level of effluent quality attainable by secondary treatment in terms of five-day biochemical oxygen demand, total suspended solids, and pH.

M. ***Water Quality Based Effluent Limits (WQBELs)***. Water quality-based effluent limits are designed to protect the quality of the receiving water by ensuring that State water quality standards are met by discharges from an industrial/municipal point source. If, after technology-based effluent limits are applied, a point source discharge will cause, have the reasonable potential to cause, or contribute to an exceedance of an applicable water quality criterion, then 40 CFR section 122.44(d)(1) requires that the permit contain a WQBEL. Although the CWA establishes explicit technology-based requirements for POTWs, Congress did not exempt POTWs from additional regulation to protect water quality standards. As a result, POTWs are also subject to WQBELs. Applicable water quality standards for Arroyo Las Posas, Calleguas Creek, and Mugu Lagoon are contained in the Basin Plan and CTR, as described in previous findings.

N. ***Water Quality Based Effluent Limits for Toxic Pollutants.*** Toxic substances are regulated in this permit by water quality based effluent limitations derived from the 1994 Basin Plan, the CTR, and/or best professional judgment (BPJ) pursuant to Part 122.44. If a discharge causes, has a reasonable potential to cause, or contribute to a receiving water excursion above a narrative or numeric objective within a State water quality standard, federal law and regulations, as specified in 40 CFR 122.44(d)(1)(i), and in part, the SIP, require the establishment of WQBELs that will protect water quality. As documented in the fact sheet, pollutants exhibiting reasonable potential in the discharge, authorized in this Order, are identified in the Reasonable Potential Analysis (RPA) section and have final effluent limits.

O. ***Basis for Effluent Limits for 303(d) Listed Pollutants.*** For 303(d) listed pollutants, the Regional Board plans to develop and adopt total maximum daily loads (TMDLs) which will specify wasteload allocations (WLAs) for point sources and load allocations (LA) for non-point sources, as appropriate. Following the adoption of TMDLs by the Regional Board, NPDES permits will be issued, and where appropriate, reopened to include effluent limits consistent with the assumptions of the TMDL, based on applicable WLAs. In the absence of a TMDL, the permits will include water quality-based effluent limitations derived as provided in the CTR, SIP (if applicable), and other applicable guidance using best professional judgement. These effluent limits are applied at the end-of-pipe.

P. ***Ammonia and Other Nitrogen Compounds limits.*** The *Nitrogen Compounds and Related Effects* TMDL adopted by the Regional Board on October 24, 2002, includes waste load allocations for ammonia (NH_3), nitrite as nitrogen (NO_2–N), nitrate as nitrogen (NO_3–N), and total nitrogen (NO_2–N + NO_3–N). The TMDL authorizes interim limits (expressed as interim waste allocations) for total nitrogen (NO_3-N + NO_2-N). The interim waste load allocation applies until four years after the effective date of the TMDL. In addition, the Nutrient TMDL authorized, at the discretion of the Regional Board, interim limits for ammonia extending until no later than October 24, 2004, for POTWs that are not able to achieve immediate compliance with the ammonia waste load allocation. Since the Moorpark WTP was able to comply with TMDL waste load allocations for ammonia, nitrite as nitrogen, nitrate as nitrogen, and total nitrogen, the interim limits for these nitrogen compounds are not specified in the permit. Once the *Nitrogen Compounds and Related Effects TMDL* is approved by USEPA and become effective, the TMDL waste load allocations will become final effluent limits for these nitrogen compounds.

The ammonia objectives in the 1994 Basin Plan were revised by Regional Board Resolution No. 2002-011, adopted on April 25, 2002, to be consistent with the 1999 USEPA update on ammonia criteria. Regional Board Resolution No. 2002-011 was approved by State Board, OAL, and USEPA on April 30, 2003, June 5, 2003, and June 19, 2003, respectively and is now in effect. The final effluent limitation for ammonia prescribed in this Order are based on the revised ammonia criteria and apply at the end of pipe.

This Order does not contain a statistically derived water quality based effluent limitation (WQBEL) for ammonia. Instead, the ammonia limit was taken directly from the Basin Plan Tables. This was done to prevent backsliding issues that might arise from the Ammonia Basin Plan Amendment (Resolution No. R02-011) adopted by the Regional Board on April 25, 2002. The Amendment updates the ammonia objectives in the 1994 Basin Plan with the 1999 USEPA criteria. The criteria for ammonia in the 1994 Basin Plan Tables are more stringent than the recently adopted ammonia criteria in the Ammonia Basin Plan Amendment.

IX. REASONABLE POTENTIAL ANALYSIS

As specified in 40 CFR section 122.44(d)(1)(i), permits are required to include limits for all pollutants "which the Director (defined as the Regional Administrator, State Director, or authorized representative in 40 CFR section 122.2) determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard."

A. Using the method described in the TSD, the Regional Board has conducted Reasonable Potential Analyses (RPA) for:

1. Chronic Toxicity - Chronic Toxicity effluent data is summarized in Table A1 of the accompanying Fact Sheet. The Discharger's effluent demonstrated no chronic toxicity during the last permit cycle. However, given the nature of the discharge and the type of facility, the Discharge has reasonable potential to contribute to an exceedance of the Basin Plan narrative chronic toxicity water quality objective. Based on this information, the Regional Board has determined that there is a reasonable potential that the discharge will cause toxicity in the receiving water and, consistent with SIP section 4, the Order contains a narrative effluent limitation for Chronic Toxicity. The circumstances warranting a numeric Chronic Toxicity effluent limitation were reviewed by the State Water Resources Control Board (State Board) in SWRCB/OCC Files A-1496 & A-1496(a) [Los Coyotes/Long Beach Petitions]. On September 16, 2003, the State Board adopted Order No. WQO 2003-0012, deferring the numeric chronic toxicity effluent limitation issue until the adoption of Phase II of the SIP, and replaced the numeric chronic toxicity effluent limitation with a narrative effluent limitation for the time being.

2. Ammonia, Other Nitrogen Species, MBAS, and Oil and Grease - RPA was conducted for Ammonia, Nitrate plus Nitrite as Nitrogen, Nitrite Nitrogen, MBAS, and Oil and Grease (Table A3 of the accompanying Fact Sheet) using the Discharger's effluent data from their self monitoring reports. Effluent data are summarized in Table A1 of the accompanying Fact Sheet. Temperature and pH effluent data is summarized in Table A2 of the accompanying Fact Sheet. The RPA compares the projected maximum receiving water concentrations, derived from effluent data, with the Basin Plan water quality objectives (WQOs). Based on this analysis, the Regional Board has determined that there is a reasonable potential that the discharge

will cause or contribute to an exceedance of the Basin Plan WQOs and, consistent with 40 CFR 122.44(d), the Order contains numeric effluent limitations for Nitrate plus Nitrite as Nitrogen, MBAS, and Oil and Grease. Since Ammonia, Nitrite, and Nitrate are three species representing three major oxidation states of nitrogen in the effluent, in the event of inadequate nitrification, Ammonia and Nitrite may become the dominate species in the effluent. Therefore, the inclusion of limitations for Ammonia as nitrogen and Nitrite as nitrogen is needed even though there is no reasonable potential for these two compounds.

B. Using the method described in the SIP, the Regional Board has conducted Reasonable Potential Analyses (RPA) using the discharger's effluent data contained in Table D. The RPA compares the effluent data with water quality objectives in the Basin Plan and CTR.

1. ***Reasonable Potential Determination.*** The RPA (per the SIP) involves identifying the observed maximum pollutant concentration in the effluent (MEC) for each constituent based on the effluent concentration data. There are three tiers to determining reasonable potential. If any of the following three tiers is triggered, then reasonable potential exists:

   a For the first tier, the MEC is compared with the lowest applicable Water Quality Objective (WQO), which has been adjusted for pH, hardness and translator data, if appropriate. If the MEC is greater than the (adjusted) WQO, then there is reasonable potential for the constituent to cause or contribute to an excursion above the WQO and a WQBEL is required. However, if the pollutant was not detected in any of the effluent samples and all of the reported detection limits are greater than or equal to the WQO, proceed with Tier 2. The Regional Board exercised its discretion in identifying all available, valid, relevant, representative data and information in accordance with SIP Section 1.2 (page 8).

   b For the second tier, if the MEC is less than the adjusted WQO, then the observed maximum ambient background concentration (B) for the pollutant is compared with the adjusted WQO. If B is greater than the adjusted WQO, then a WQBEL is required. If B is less than the WQO, then a limit is only required under certain circumstances to protect beneficial uses. If a constituent was not detected in any of the effluent samples and all of the detection limits are greater than or equal to the adjusted WQO, then the ambient background water quality concentration is compared with the adjusted WQO. The Regional Board exercised its discretion in identifying all available, applicable ambient background data in accordance with SIP Section 1.4.3 (page 16).

c For the third tier, other information is used to determine RPA, such as the current CWA 303(d) List. Section 1.3 of the SIP describes the type of information that can be considered in Tier 3.

For all parameters that have reasonable potential to cause or contribute to an exceedance of a WQO/criteria, numeric WQBELs are required. Section 1.4, Step 5 of the SIP (page 8) states that maximum daily effluent limitations (MDELs) shall be used for POTWs in place of average weekly limitations. WQBELs are based on CTR, USEPA water quality criteria, and Basin Plan objectives.

If the data are unavailable or insufficient to conduct an RPA for a pollutant, or if all reported detection limits of the pollutant in the effluent are greater than or equal to the WQO, the Regional Board will establish interim requirements, in accordance with Section 2.2.2 of the SIP, that require additional monitoring for the pollutant in place of a WQBEL. Upon completion of the required monitoring, the Regional Board shall use the gathered data to conduct a RPA and determine if a WQBEL is required. However, if Tier 1 or Tier 3 triggered reasonable potential for a pollutant, then the lack of receiving water data for Tier 2 evaluation would not inhibit the establishing WQBELs in the permit.

A numeric limit has not been prescribed for a toxic constituent if it has been determined that it has no reasonable potential to cause or contribute to excursions of water quality standards. However, a narrative limit to comply with all water quality objectives is provided in *Standard Provisions* for the priority pollutants which have no available numeric criteria.

2. ***RPA Data.*** The RPA was based on effluent monitoring data for October 2001 through March 2003, and interim monitoring results for July 2001 through December 2002, and February 2003. Table R1 of the fact sheet summarizes the RPA, lists the constituents, and where available, the lowest, adjusted WQO, the MEC, the "Reasonable Potential" result, and the limits from the previous permit.

Metals Water Quality Objective. For metals, the lowest applicable Water Quality Objective (WQO) was expressed as total recoverable, and where applicable, adjusted for hardness. A spreadsheet (Table R2) was used to calculate the total recoverable CTR criteria. Hardness values from samples collected in the receiving water upstream of the discharge point were averaged and used to determine the appropriate CTR WQO for those hardness-dependent metals. However individual harness values greater than 400 mg/L were capped at 400 prior to calculating the average hardness. This is consistent with the preamble to the CTR, contained in federal register Section E.f. *Hardness* (p.31692), 40 CFR Part 131.

Interim Monitoring Requirements. In accordance with the SIP, the Regional Board may impose interim monitoring requirements upon the Discharger, so that the Discharger obtains adequate ambient, background water data for priority pollutants upstream of the discharge point as well as suitable effluent data. The Executive Officer directed the Discharger to begin an interim monitoring program for the duration of 18 months, beginning July 2001. The Discharger collected the eighteen required samples and reported the results quarterly to the Regional Board. After additional information is gathered, Regional Board staff will conduct RPA once again, to determine if additional numeric limitations are necessary. Section 1.3, Step 8, of the SIP authorizes the Regional Board to use the gathered data to conduct RPA, as outlined in Steps 1 through 7, and determine if a water quality-based effluent limitation is required.

A reopener provision is included in this Order that allows the permit to be reopened to allow the inclusion of new numeric limitations for any constituent that exhibits reasonable potential to cause or contribute to exceedance of applicable water quality objectives.

For some priority pollutants, the applicable water quality objectives are below the levels that current technology can measure. Section 2.4.5 of the SIP discusses how compliance will be determined in those cases. The Discharger should work with the laboratory to lower detection levels to meet applicable and reliable detection limits; follow procedures set forth in 40 CFR Part 136; and, report the status of their findings in the annual report. During the term of the permit, if and when monitoring with lowered detection limits shows any of the priority pollutants at levels exceeding the applicable WQOs, the discharger will be required to initiate source identification and control for the particular pollutant. Appendix 4 of the SIP lists the minimum levels and laboratory techniques for each constituent.

The numeric limitations contained in this Order are intended to protect and maintain existing, intermittent, and potential beneficial uses of the receiving waters. Environmental benefits provided by these limitations are reasonable and necessary.

3. When reasonable potential exists, WQBELs are calculated, following procedures in SIP. However if the pollutant has an MCL, Regional Board staff compares the calculated WQBEL with the MCL-based WQBEL and selects the more stringent of the two as the limit.

C. The following toxic pollutants exhibited reasonable potentials to exceed their respective most stringent water quality objective or criterion, therefore, WQBELS are prescribed in this Order: bis(2-ethylhexyl)phthalate, cyanide, copper, mercury, selenium, beta-BHC and gamma-BHC(lindane). WQBELS for bis(2-

ethylhexyl)phthalate is based on Title 22, CCR MCLs, and the others are based on the CTR criteria.

D. The existing permit has limits which were based on the Inland Surface Water Plan (ISWP). As the ISWP was rescinded, the limits are not retained for these pollutants unless there is reasonable potential.

X. WASTE DISCHARGE REQUIREMENTS

On the basis of the preliminary staff review and application of state and federal authorities, the Board proposes to renew the permit.

Numeric chronic toxic trigger is based on the Basin Plan narrative water quality objective for toxic constituents, "All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in, human, plant, animal, or aquatic life"; on the CTR; and, the interpretation of the Basin Plan narrative criteria using USEPA's 304(a) nationally recommended water quality criteria. For toxic constituents that have no reasonable potential to cause or contribute to excursions of water quality objectives, no numerical limitations are prescribed.

Pursuant to 40 CFR 122.45(d)(1) and (2), daily maximum limitations are included in the permit. It is impracticable to only include average weekly and average monthly effluent limitations in the permit, because a single daily discharge of a pollutant, in excess amounts, can cause violations of water quality objectives. The effects of pollutants on aquatic organisms are often rapid. For many pollutants, an average weekly or average monthly effluent limitation alone is not sufficiently protective of beneficial uses.

Furthermore, Section 1.4 of the SIP requires the step-by-step procedure to "adjust" or convert CTR numeric criteria into Average Monthly Effluent Limitations (AMELs) and Maximum Daily Effluent Limitations (MDELs), for toxics.

- Step 3 of Section 1.4 of the SIP (page 6) lists the statistical equations that adjust CTR criteria for effluent variability.

- Step 5 of Section 1.4 of the SIP (page 8) lists the statistical equations that adjust CTR criteria for averaging periods and exceedance frequencies of the criteria/objectives. This section also reads, "For this method only, maximum daily effluent limitations shall be used for publicly-owned treatment works (POTWs) in place of average weekly limitations.

Table R1 summarizes the results of RPA and the AMELs and MDELs for priority pollutants.

Pursuant to 40 CFR 122.45(f), mass-based limits are included in the tentative permit, in addition to concentration-based limits.

The numeric limitations contained in this Order are intended to protect and maintain existing and potential beneficial uses of the receiving waters.

A. Effluent Limitations:

1. Limits for conventional and non-conventional pollutants:

Constituent	Units	Discharge Limitations		
		Daily Maximum[1]	Weekly Average[2]	Monthly Average[2]
BOD_5 20°C	mg/L	45	30	20
	lbs/day[3]	560	380	250
Suspended solids	mg/L	45	30	15
	lbs/day[3]	560	380	190
Settleable solids	ml/L	0.3	--	0.1
Oil and grease	mg/L	15	--	10
	lbs/day[3]	190	--	130
Total residual chlorine	mg/L	0.1[4]	--	--
Total dissolved solids	mg/L	--	--	850
	lbs/day[3]	--	--	10,600
MBAS[5]	mg/L	--	--	0.5
	lbs/day[3]	--	--	6.3
Chloride	lbs/day	2,200 [6]	--	--
	lbs/day	1,600 [7]	--	--
Sulfate	mg/L	--	--	250
	lbs/day[3]	--	--	3,100
Boron	mg/L	--	--	1.0
	lbs/day[3]	--	--	13
Fluoride	mg/L	--	--	1.2
	lbs/day[3]	--	--	15
Total inorganic nitrogen (Nitrate + nitrite as nitrogen)	mg/L	32.01 [8]	--	31.5 [8]
	mg/L	--	--	9.0 [9]
Total ammonia	mg/L	--	--	2.63 [10]
Nitrite-N (as N)	mg/L	--	--	0.9 [11]

Footnotes:

[1] The daily maximum effluent concentration limit shall apply to both flow weighted 24-hour composite samples and grab samples, as specified in the Monitoring and Reporting Program (Attachment T).

[2] Average Monthly Discharge Limitation means the highest allowable average of daily discharge over a calendar month, calculated as the sum of all daily discharges measures during that month divided by the number of days on which monitoring was performed.

Average Weekly Discharge Limitation means the highest allowable average of daily discharge over a calendar week, calculated as the sum of all daily discharges measures during that week divided by the number of days on which monitoring was performed

[3] The mass emission rates are based on the plant design flow rate of 1.5 mgd.

[4] Based on results of continuous monitoring, total residual chlorine concentration of up to 0.3 mg/L, at the point in the treatment train immediately following dechlorination, shall not be considered violations of this requirement provided the total duration of such excursions do not exceed 15 minutes during any 24-hour period. Peaks in excess of 0.3 mg/L lasting less than one minute shall not be considered a violation of this requirement.

[5] Unlined reaches of Arroyo Las Posas downstream of the discharge points are designated with the beneficial use of groundwater recharge (GWR) in the Basin Plan. In order to protect the underlying drinking water basins, this Title 22-based limit is prescribed.

[6] This is the waste load allocation (WLA) under routine conditions, according to the Chloride TMDL promulgated by USEPA on March 22, 2002.

[7] This is the waste load allocation (WLA) under drought conditions, according to the Chloride TMDL promulgated by USEPA on March 22, 2002.

[8] This is the interim limit for nitrate plus nitrite as nitrogen, according to the Nutrient TMDL for Calleguas Creek, Resolution 2002-017, *Amendment to the Water Quality Control Plan for the Los Angeles Region to Include a TMDL for Nitrogen Compounds and Related Effects in Calleguas Creek* (*Nitrogen Compounds and Related Effects TMDL)* adopted by the Regional Board on October 24, 2002 and approved by USEPA on June 20, 2003. Resolution 2002-017 allows four years from the effective date of the *Nitrogen Compounds and Related Effects* TMDL for the application of this interim limit. Since the Discharger completed the plant upgrade in July 2001, the interim limit for nitrate plus nitrite as nitrogen will end on December 10, 2004.

[9] This is the waste load allocation, according to the *Nitrogen Compounds and Related Effects TMDL* adopted by the Regional Board on October 24, 2002 and approved by USEPA on June 20, 2003. This limit becomes effective December 10, 2004, and will supercede any previously applicable effluent limitations for Total Inorganic Nitrogen.

[10] This is the waste load allocation for ammonia, according to the *Nitrogen Compounds and Related Effects* TMDL adopted by the Regional Board on October 24, 2002, and approved by USEPA on June 20, 2003. This limitation will apply on the effective date of this Order (i.e., 50 days after December 4, 2003).

[11] This is the waste load allocation, according to the *Nitrogen Compounds and Related Effects TMDL* adopted by the Regional Board on October 24, 2002, and approved by USEPA on June 20, 2003. This limitation will apply on the effective date of this Order (i.e., 50 days after December 4, 2003).

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2. Basis for conventional and non-conventional pollutants:

a *Biochemical Oxygen Demand (BOD) and Suspended solids*

Biochemical oxygen demand (BOD) is a measure of the quality of the organic matter in the water and, therefore, the water's potential for becoming depleted in dissolved oxygen. As organic degradation takes place, bacteria and other decomposers use the oxygen in the water for respiration. Unless there is a steady supply of oxygen to the system, the water will quickly become depleted of oxygen. Adequate dissolved oxygen levels are required to support aquatic life. Depressions of dissolved oxygen can lead to anaerobic conditions resulting in odors, or, in extreme cases, in fish kills.

40 CFR Part 133 describes the minimum level of effluent quality attainable by secondary treatment, for BOD and suspended solids, as:

- the 30-day (monthly) average shall not exceed 30 mg/L, and
- the 7-day (weekly) average shall not exceed 45 mg/L.

In addition to having mass-based and concentration-based effluent limitations for BOD and suspended solids, the Moorpark WTP also has a percent removal requirement for these two constituents. In accordance with 40 CFR sections 133.102(a)(3) and 133.102(b)(3), the 30-day (monthly) average percent removal shall not be less than 85 percent. Percent removal is defined as a percentage expression of the removal efficiency across a treatment plant for a given pollutant parameter, as determined from the 30-day (monthly) average values of the raw wastewater influent pollutant concentrations to the facility and the 30-day (monthly) average values of the effluent pollutant concentrations for a given time period.

Moorpark WTP provides tertiary treatment using up-flow Dynasand filtration. Effluent limitations for BOD and suspended solids are based on the requirements of tertiary treated water as prescribed in the similar permit.

b *Oil and grease*

Oil and grease are not readily soluble in water and form a film on the water surface. Oily films can coat birds and aquatic organisms, impacting respiration and thermal regulation, and causing death. Oil and grease can also cause nuisance conditions (odors and taste), are aesthetically unpleasant, and can restrict a wide variety of beneficial uses. The limits for oil and grease are based on the Basin Plan (page 3-11) narrative, "Waters shall not contain oils, greases, waxes, or other materials in concentrations that result in a visible film or coating on the surface of the water or on objects in the water, that cause nuisance, or that otherwise adversely affect beneficial uses."

The numeric limits are empirically based on concentrations at which an oily sheen becomes visible in water. It is impracticable to use a 7-day (weekly) average limitation, because spikes that occur under a 7-day average scheme could cause a visible oil sheen. A 7-day average scheme would not be sufficiently protective of beneficial uses. The monthly average and the daily maximum limits cannot be removed because none of the exceptions under the Antibacksliding Policy apply.

c *Settleable solids*

Excessive deposition of sediments can destroy spawning habitat, blanket benthic (bottom dwelling) organisms, and abrade the gills of larval fish. The limits for settleable solids are based on the Basin Plan (page 3-16) narrative, "Waters shall not contain suspended or settleable material in concentrations that cause nuisance or adversely affect beneficial uses." The numeric limits are empirically based on results obtained from the settleable solids 1-hour test, using an Imhoff cone.

It is impracticable to use a 7-day (weekly) average limitation, because short-term spikes of settleable solid levels that would be permissible under a 7-day average scheme would not be adequately protective of all beneficial uses. The monthly average and the daily maximum limits cannot be removed because none of the exceptions under the Antibacksliding Policy apply. The monthly average and daily maximum limits were both included in the previous permit and the Moorpark WTP has been able to meet both limits.

d *Residual chlorine*

Disinfection of wastewater with chlorine produces a chlorine residual. Chlorine and its reaction products are toxic to aquatic life. The limit for residual chlorine is based on the Basin Plan (page 3-9) narrative, "Chlorine residual shall not be present in surface water discharges at concentrations that exceed 0.1 mg/L and shall not persist in receiving waters at any concentration that causes impairment of beneficial uses."

It is impracticable to use a 7-day (weekly) average or a 30-day (monthly) average limitation, because it is not as protective of the beneficial uses as the daily maximum limitation. Chlorine is very toxic to aquatic life and short-term exposures of chlorine may cause fish kills.

e *Total Dissolved Solids, Sulfate, Boron and Nitrogen*

High levels of dissolved solids renders water useless for many beneficial uses. Elevated levels of boron affect agricultural use (especially citrus). The limits for total dissolved solids, sulfate, boron and nitrogen, defined as the sum of nitrate-nitrogen plus nitrite-nitrogen, are based on the Basin Plan Table 3-8 (page 3-12) for Calleguas Creek above Potrero Road.

It is practicable to express the limits for total dissolved solids, sulfate, boron and nitrogen as a monthly average, since these pollutants are not expected to cause acute effects on beneficial uses. Maximum limits for total dissolved solids, sulfate and boron were included in

the previous permit and the Moorpark WTP has been able to meet these limits.

Chloride

Chloride is 303(d) listed in Reach 6 (Lewis Somis Road to Moorpark Freeway (23)) of the Calleguas Creek. Since chloride has reasonable potential to cause or contribute to an excursion of a water quality objective, a water quality-based effluent limitation is required in order to be protective of the water quality objective. The limit for chloride must be met at the end-of pipe, since the water body is impaired for chloride. The limit for chloride is based on the TMDL chloride waste load allocation for the Moorpark WTP. As the Moorpark WTP's discharge may not be able to meet the prescribed limit at all times especially after the plant Phase II upgrade that will increase the tertiary treatment capacity to 3.0 mgd, an interim limit of 190 mg/L is established. The Moorpark WTP is required to develop PMP and to reduce chloride levels in the effluent.

f *Fluoride*

The limit for fluoride is based on the Basin Plan Table 3-6 (page 3-9). It is practicable to express the limit as a monthly average, since fluoride is not expected to cause acute effects on beneficial uses. A maximum limit for fluoride was included in the previous permit and the Moorpark WTP has been able to meet this limit.

g *Methylene Blue Active Substances (MBAS)*

The MBAS procedure tests for the presence of anionic surfactants (detergents) in surface and ground waters. Surfactants disturb the water surface tension, which affects insects and can affect gills in aquatic life. The MBAS can also impart an unpleasant soapy taste to water, as well as cause scum and foaming in waters, which impact the aesthetic quality of both surface and ground waters.

Given the nature of the facility (a POTW) which accepts domestic washwater into the sewer system and treatment plant, and the characteristics of the wastes discharged, the discharge has reasonable potential to exceed both the numeric MBAS water quality objective (WQO) and the narrative WQO for prohibition of floating material such as foams and scums. Therefore an effluent limitation is required.

In self monitoring reports submitted to the Regional Board under MRP requirements, the Discharger has been able to meet MBAS limitation of 0.5 mg/L. The 0.5 mg/L concentration (which has been determined to be protective of beneficial uses and the aesthetic quality of waters), is based on the Department of Health Services' secondary drinking water standard, and on the Basin Plan WQO (p.3-11) which reads, "Waters shall not have MBAS concentrations

greater than 0.5 mg/L in waters designated MUN." While the wastewater from this POTW is not directly discharged into a MUN designated surface water body, it will percolate into unlined reaches of the Calleguas Creek [via ground water recharge designated beneficial use (GWR)] to ground water designated for MUN beneficial use. In addition, the Basin Plan states that "Ground water shall not contain taste or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses." Therefore, the secondary MCL should be the MBAS limit for this discharge to protect ground water recharge and the MUN use of the underlying ground water, while also protecting surface waters from exhibiting scum or foaming.

Since the Basin Plan objective is based on a secondary drinking water standard, it is practicable to have a monthly average limitation in the permit.

h *Total ammonia*

Ammonia is 303(d) listed in Reach 6 of the Calleguas Creek. Since ammonia has reasonable potential to cause or contribute to an excursion of a water quality objective, a water quality-based effluent limitation is required in order to be protective of the water quality objective.

Monitoring data from October 2001 to March 2002 indicated that the Moorpark WTP has been able to meet the ammonia limits.

Since the USEPA approved the *Nitrogen Compounds and Related Effects TMDL* on June 20, 2003, the waste load allocation become final effluent limitation for ammonia on the effective date of this Order.

i *Coliform*

Total and fecal coliform bacteria are used to indicate the likelihood of pathogenic bacteria in surface waters. Given the nature of the facility, a wastewater treatment plant, pathogens are likely to be present in the effluent in cases where the disinfection process is not operating adequately. As such, the permit contains the following technology-based effluent limitations for coliform:

- the median number of coliform organisms at some point in the treatment process must not exceed 2.2 per 100 milliliters, and
- the number of coliform organisms must not exceed 23 per 100 milliliters in more than one sample within any 30-day period.

These limits for coliform must be met at the point of the treatment train immediately following disinfection. The Calleguas Creek Estuary is 303(d) listed for fecal coliform in the water column. The

disinfection process reduces the likelihood of having pathogens in the effluent. The effluent monitoring data for coliform are reported as less than 1.1 MPN/100 mL at all times. It is not likely that the 303(d) listing of coliform is due to the discharge of treated effluent from the Discharger. Therefore, the technology-based effluent limitation is also protective of water quality.

j *pH*

The hydrogen ion activity of water (pH) is measured on a logarithmic scale, ranging from 0 to 14. While the pH of "pure" water at 25°C is 7.0, the pH of natural waters is usually slightly basic due to the solubility of carbon dioxide from the atmosphere. Minor changes from natural conditions can harm aquatic life. The effluent limitation for pH which reads, "The pH of the wastes discharged shall at all times be within the range of 6.5 to 8.5," is taken from the Basin Plan (page 3-15) which reads, "The pH of inland surface waters shall not be depressed below 6.5 or raised above 8.5 as a result of waste discharge.

k *Turbidity*

Turbidity is an expression of the optical property that causes light to be scattered in water due to particulate matter such as clay, silt, organic matter, and microscopic organisms. Turbidity can result in a variety of water quality impairments. The effluent limitation for turbidity is based on the requirements for filtered wastewater in accordance with section 60301 of Title 22, California Code of Regulations.

l *Radioactivity*

Radioactive substances are generally present in natural waters in extremely low concentrations. Mining or industrial activities increase the amount of radioactive substances in waters to levels that are harmful to aquatic life, wildlife, or humans. The effluent limitation for radioactivity which reads, "Radioactivity of the wastes discharged shall not exceed the limits specified in Title 22, Chapter 15, Article 5, Section 64443, of the California Code of Regulations, or subsequent revisions," is based on the Basin Plan (page 3-15).

3. *Toxicity*

Reasonable potential exists for toxicity. As such, the permit contains effluent limitations for toxicity. The toxicity limitations are based on:

- the Basin Plan objectives (page 3-16 and 3-17);
- USEPA Regions 9 & 10 Guidance for Implementing Whole Effluent Toxicity Programs Final May 31, 1996; and,
- USEPA Whole Effluent Toxicity (WET) Control Policy July 1994.

Acute Toxicity Limitation:
The Discharger may test for acute toxicity by using USEPA's *Methods for Measuring the Acute Toxicity of effluent and Receiving Waters to Freshwater and Marine Organisms*, October 2002, (EPA /821-R-02-012).

a The acute toxicity of the effluent shall be such that: (i) the average survival in the undiluted effluent for any three (3) consecutive 96-hour static or continuous flow bioassay tests shall be at least 90%, and (ii) no single test producing less than 70% survival.

b If any acute toxicity bioassay test result is less than 90% survival, the Discharger shall conduct six additional tests over a six-week period. The Discharger shall ensure that they receive results of a failing acute toxicity test within 24 hours of completion of the test and the additional tests shall begin within 3 business days of receipt of the result. If the additional tests indicate compliance with acute toxicity limitation, the Discharger may resume regular testing. However, if the results of any two of the six accelerated tests are less than 90% survival, then the Discharger shall begin a Toxicity Identification Evaluation (TIE). The TIE shall include all reasonable steps to identify the sources of toxicity. Once the sources are identified, the Discharger shall take all reasonable steps to reduce toxicity to meet the objective.

c If any two out of the initial test and the additional six acute toxicity bioassay tests results are less than 70% survival, the Discharger shall immediately begin a TIE.

d The Discharger shall conduct acute toxicity monitoring as specified in Monitoring and Reporting Program (MRP) No. 7513.

Chronic Toxicity Limitation and Requirements:

a The chronic toxicity of the effluent shall be expressed and reported in toxic units, where:

$$TU_c = \frac{100}{NOEC}$$

The No Observable Effect Concentration (NOEC) is expressed as the maximum percent effluent concentration that causes no observable effect on test organisms, as determined by the results of a critical life stage toxicity test.

b There shall be no chronic toxicity in the effluent discharge.

c If the chronic toxicity of the effluent exceeds the monthly median of 1.0 TU_c, the Discharger shall immediately implement accelerated chronic toxicity testing according to MRP No. 7513, Section VI.D.2.d. If any three out of the initial test and the six accelerated tests results exceed 1.0 TU_c, the Discharger shall initiate a TIE and implement the Initial Investigation TRE Workplan.

d The Discharger shall conduct chronic toxicity monitoring as specified in MRP No. 7513.

e This permit may be reopened to include effluent limitations for pollutants found to be causing chronic toxicity and to include numeric chronic toxicity effluent limitations based on the direction from the State Water Resources Control Board or failure of the City to comply fully with the TRE/TIE requirements.

4. Basis for Priority Pollutants:

Limits for priority pollutants:

CTR # [1]	Constituent	Units	Discharge Limitations	
			Monthly Average	Daily Maximum [2]
8	Mercury [3]	µg/L	0.05 [5] [b]	0.10 [5] [b]
		lbs/day [4]	0.00063	0.0013
10	Selenium [3]	µg/L	4.1 [5] [a]	8.1 [5] [a]
		lbs/day [4]	0.051	0.10
68	Bis(2-Ethylhexyl)Phthalate	µg/L	4 [6]	--
		lbs/day [4]	0.050	--

Footnotes:

[1] This number corresponds to the compound number found in Table 1 of CTR. It is simply the order in which the 126 priority pollutants were listed in 40 CFR, Section 131.38 (b)(1).

[2] The daily maximum effluent concentration limit shall apply to both flow weighted 24-hour composite samples and grab samples, as specified in the Monitoring and Reporting Program.

[3] Concentration expressed as total recoverable.

[4] The mass emission rates are based on the plant design flow rate of 1.5 mgd.

[5] RPA triggered limits based on CTR/SIP

[6] RPA triggered limit based on Title 22 MCL because it is more stringent than the proposed CTR-based limit

[a] Based on most stringent CTR criteria [Criterion Continuous Concentration (CCC)] for the protection of freshwater aquatic life. To arrive at the calculated limitation, the CTR CCC was adjusted according to SIP Section 1.4.
Federal Register Vol. 65, No. 97, page 31689, discusses the basis for the aquatic life criteria in the CTR. The Criterion Maximum Concentration (CMC), a short term concentration limit, and the Criterion Continuous Concentration (CCC), a four day concentration limit, are designed to provide protection of aquatic life and its uses from acute and chronic toxicity to animals and plants. The criteria are intended to identify average pollutant concentrations which will produce water quality generally suited to maintenance of aquatic life and designated uses while restricting the duration of excursions over the average so that total exposures will not cause unacceptable adverse effects.
Federal Register Vol. 65, No. 97, page 31691, discusses how the CCC is intended to be the highest concentration that could be maintained indefinitely in a water body without causing an unacceptable effect on an aquatic community or its uses.

[b] Based on most stringent CTR criteria for the protection of human health from consumption of organisms only. To arrive at the calculated limitation, the CTR criterion was adjusted according to SIP Section 1.4.

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5. Mixing zones and dilution credits are not used:

Mixing zone and dilution credits were not allowed in the calculation of the WQBELs in this Order. While the 1994 Basin Plan and the 2000 SIP provide for mixing zones on a case by case basis, there are criteria that have to be complied with before a mixing zone is allowed. One of the criteria in the Basin Plan is that, for rivers and streams, the mixing zone cannot extend more than 250 feet downstream of the discharge point. The Basin Plan also points out that for most inland streams in the region, upstream flows are minimal and mixing zones are usually not appropriate. In calculating year-round mixing zone and dilution credits, the SIP requires the use of critical stream flow data for acute (1Q10) and chronic (7Q10) aquatic life criteria. 1Q10 is the lowest flow that occurs for one day and 7Q10 is the average low flow that occurs for seven consecutive days, with statistical frequencies of once every 10 years.

Board staff visited the vicinity of the reach of the Calleguas Creek where the Moorpark WTP's discharge occurs and determined mixing zone and dilution credit are not appropriate for their discharge because of the following:

a There are no extensive flow information available at a location immediately upstream of the discharge point to be considered for mixing zone studies (1Q10 and 7 Q 10 data).

b Board staff also observed that no rapid mixing occurs at the confluence of the discharge and the river, indicative of an incomplete mixing zone.

c The receiving water primarily consists of discharges from various sources and POTWs as well as rising groundwater, thus limiting its ability to assimilate additional wastes.

d Reaches of the , at the discharge point and downstream (estuary), are included in the 303(d) list of impaired water bodies for a number of constituents.

e No report or study for mixing zones has been submitted to the Regional Board.

6. Example calculation: Selenium

Is a limit required? What is RPA?
From Table R, *Reasonable Potential Analysis and Limit Derivation*, we determined that Reasonable Potential Analysis (RPA) = Yes, therefore a limit is required. It is triggered by the detection of selenium at 25 mg/L in the receiving water.

Step 1 – Identify applicable water quality criteria.
From California Toxics Rule (CTR), we can obtain the Criterion Maximum Concentration (CMC) and the Criterion Continuous Concentration (CCC). Freshwater Aquatic Life Criteria for some metals are expressed as a function of total hardness (mg/L) in the water body and as a function of the water-effect ratio, WER, (CTR page 31717, (b)(2)). The following equations shall be used for the calculation of $CMC_{(d)}$ and $CCC_{(d)}$ for those metals.

$$CMC_{(d)} = WER \times CF \times (\exp \{m_A [\ln(hardness)] + b_A\})$$

$$CCC_{(d)} = WER \times CF \times (\exp \{m_C [\ln(hardness)] + b_C\})$$

where: exp = the base e exponential function
WER = 1
hardness = 400 mg/L (from monitoring data)
m_A = 0.9422 (CTR pg. 31713, Table 1 to paragraph (b)(2))
b_A = -1.700 (CTR pg. 31713, Table 1 to paragraph (b)(2))
m_C = 0.8545 (CTR pg. 31713, Table 1 to paragraph (b)(2))
b_C = -1.702 (CTR pg. 31713, Table 1 to paragraph (b)(2))
CF = 0.960 (CTR pg. 31717, Table 2 to paragraph (b)(2))

The freshwater $CMC_{(d)}$ and $CCC_{(d)}$ calculated above are expressed in terms of the dissolved fraction of the metal in the water column. To

calculate the total recoverable CMC and CCC the dissolved fraction criteria is divided by the conversion factor, CF:

CMC = $CMC_{(d)}$/CF
CCC = $CCC_{(d)}$/CF

For selenium, criteria are not affected by hardness. Criteria can be obtained directly from CTR table.

CMC = none
CCC = 5 µg/L

Step 2 – Calculate effluent concentration allowance (ECA).
ECA = Criteria in CTR, since no dilution is allowed.

ECA acute = none
ECA chronic = 5 µg/L

Step 3 – Determine long-term average (LTA) discharge condition.

a Calculate CV:
CV = Standard Deviation / Mean
= 0.6

CV is set to equal to 0.6 since the number of data points is less than 10.

b Find the ECA Multipliers from SIP Table 1 (page 7), or by calculating them using equations on SIP page 6.
When CV = 0.6, then:
ECA Multiplier acute = 0.321 and
ECA Multiplier chronic = 0.527.

LTA acute = ECA acute x ECA Multiplier acute
= none x 0.321 = no value

LTA chronic = ECA chronic x ECA Multiplier chronic
= 5 µg/L x 0.527 = 2.635 µg/L

Step 4 – Select the lowest LTA.
Since no value for LTA acute acut, lowest LTA = 2.635 µg/L

Step 5 – Calculate the Average Monthly Effluent Limitation (AMEL) and Maximum Daily Effluent Limitation (MDEL) for AQUATIC LIFE.

a. Find the LTA multipliers from SIP Table 2 (page 9) or by calculating them using equations in the SIP page 8. You need to know CV and n (frequency of sample collection per month). If effluent

samples are collected 4 times a month or less, then n = 4. CV was determined to be 0.6 in a previous step.
AMEL Multiplier = 1.55
MDEL Multiplier = 3.11

b. AMEL aquatic life = lowest LTA (from Step 4) x AMEL Multiplier
= 2.635 µg/L x 1.55 = 4.08 µg/L

c. MDEL aquatic life = lowest LTA (from Step 4) x MDEL Multiplier
= 2.635 µg/L x 3.11 = 8.19 µg/L

Step 6 – Find the Average Monthly Effluent Limitation (AMEL) and Maximum Daily Effluent Limitation (MDEL) for HUMAN HEALTH.

a. Find multipliers: given CV = 0.6 and n = 4.
For AMEL human health, there is no multiplier.
The MDEL/AMEL human health multiplier = 2.01

b. AMEL human health organisms only = ECA = Not Applicable, no CTR criteria avilable.

Step 7 – Compare the AMELs for Aquatic life and Human health and select the lowest. Compare the MDELs for Aquatic life and Human health and select the lowest.

a. Lowest AMEL = 4.08 (4.1)µg/L (Based on Aquatic life protection)

b. Lowest MDEL = 8.19 (8.2) µg/L (Based on Aquatic life protection)

7. A numerical limit has not been prescribed for a toxic constituent if it has been determined that it has no reasonable potential to cause or contribute to excursions of water quality standards. A narrative limit to comply with all water quality objectives is provided in *Standard Provisions* for the priority pollutants, which have no available numeric criteria.

8. The numeric limitations contained in Order No. R4-2003-0151 were derived using best professional judgement and are based on applicable state and federal authorities, and as they are met, will be in conformance with the goals of the aforementioned water quality control plans, and water quality criteria; and will protect and maintain existing and potential beneficial uses of the receiving waters.

XI. COMPLIANCE DETERMINATION

A. Dischargers shall be deemed out of compliance with an effluent limitation if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reported minimum level (ML).

B. ***Pollution Minimization Program***. The Discharger shall be required to develop a Pollutant Minimization Program (PMP), in accordance with Section 2.4.5.1 of the SIP, when there is evidence that the priority pollutant is present in the effluent above an effluent limitation and either:

1. A sample result is reported as detected but not quantified (DNQ) and the effluent limitation is less than the reported ML; or,

2. A sample result is reported as non-detect (ND) and the effluent limitation is less than the method detection limit (MDL).

   Examples of evidence that the priority pollutant is present in the effluent above an effluent limitation are:

   - sample results reported as when the effluent limitation is less than the MDL;
   - sample results from analytical methods more sensitive than those methods included in the permit in accordance with Sections 2.4.2 or 2.4.3;
   - presence of whole effluent toxicity;
   - health advisories for fish consumption; or,
   - results of benthic or aquatic organism tissue sampling.

3. If a sample result, or the arithmetic mean or median of multiple sample results, is below the reported ML, and there is evidence that the priority pollutant is present in the effluent above an effluent limitation and the Discharger conducts a PMP (as described in Section 2.4.5.1 of the SIP), the Discharger shall not be deemed out of compliance.

4. The goal of the PMP is to reduce all potential sources of a priority pollutant(s) through pollution minimization (control) strategies, including pollution prevention measures as appropriate, to maintain the effluent concentration at or below the WQBEL.

XII. MONITORING AND REPORTING PROGRAM

The Discharger will be required to conduct monitoring of influent, effluent, and receiving waters in conformance with Monitoring and Reporting Program No. CI-7513 (Attachment T). The monitoring and reporting program is designed to ensure compliance with the applicable provisions of this Order, and where necessary, to collect information necessary to conduct future reasonable potential analysis for CTR constituents.