State Of California
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

FACT SHEET
WASTE DISCHARGE REQUIREMENTS
FOR
WEST BASIN MUNICIPAL WATER DISTRICT
(West Basin Water Recycling Facility)
(Title 22 Recycled Water)

FILE NO. 94-062
PUBLIC NOTICE NO. 01-XXX

I. INTRODUCTION

West Basin Municipal Water District (West Basin or Producer) owns and operates the West Basin Water Recycling Facility (Recycling Facility) at 1935 Hughes Way, El Sengundo, California. The Recycling Facility provides tertiary treatment to a portion of the secondary treated wastewater (Hyperion effluent) from the City of Los Angeles Hyperion Treatment Plant (Hyperion) and produces up to 30 million gallons per day (mgd) of disinfected tertiary recycled water, that meets Title 22 California Code of Regulations standards for industrial uses and landscape irrigation. The production and use of the recycled Title 22 water are regulated under Water Recycling Requirements contained in Order No. 94-113, adopted by this Regional Board on October 31, 1994, as amended by Order No. 97-070 and Order No. 98-084, adopted by this Regional Board on May 12, 1997, and November 2, 1998, respectively.

West basin has filed a report of material change with the Regional Board for its Phase III Expansion of building a new Boiler Feedwater treatment train and applied for the revision of the existing waste discharge requirements for the Title 22 recycled water.

FACILITY ADDRESS	MAILING ADDRESS
1935 Hughes Way	17140 S. Avalon Blvd. Suite 210
El Segundo, CA 90245	Carson, CA 90746
Contact: Lucia M. McGovern	General Manager: Darryl G. Miller
Phone No.: (310) 660-6245	Phone No.: (310) 217-2411

II. DESCRIPTION OF FACILITY

The Recycling Facility is currently designed to produce up to 37.5 million gallons per day (mgd) of recycled water. The Recycling Facility consists of two separate treatment plants: One train that produces recycled water for landscape and agricultural irrigation, and for industrial application is referred to as the Title 22 Plant. The other that produces recycled water for barrier injection along the coastal reaches of aquifers to mitigate seawater intrusion is referred to as the Barrier Plant.

Currently, the Title 22 Plant can produce up to 30 mgd of disinfected tertiary recycled water that meets Title 22 California Code of Regulations standards (hereinafter Title 22 recycled water). The Title 22 Plant treatment process consists of coagulation,

flocculation, monomedia anthracite coal filtration, and chlorine disinfection. In 1997 Phase II Expansion, the capacity of the Title 22 Plant was increased form 15 mgd to 30 mgd of recycled water.

The Barrier Plant has a design capacity of up to 7.5 mgd of product water. The Barrier Plant provides advanced treatment to a portion of Hyperion effluent using two parallel treatment schemes with three reverse osmosis (RO) treatment trains. Each treatment train has a design capacity of 2.5 mgd. Treatment trains 1 and 2 use pre-decarbonation, lime clarification, recarbonation, multi-media filtration, RO, post-decarbonation, pH stabilization, and chlorine disinfection. Treatment train 3 uses microfiltration, RO, post-decarbonation, chlorine disinfection, and pH adjustment. Recycled water produced by Barrier Plant is regulated under separate permit.

West Basin is constructing a third treatment system that will be known as the Boiler Feedwater treatment train in its Phase III Expansion. Up to 6 mgd of Hyperion effluent will be fed into the Boiler Feedwater treatment train, which will produce about 4.32 mgd of high purity (low- and high-pressure) boiler feedwater for use in the Chevron Refinery's boilers. The low-pressure stream will produce up to 1.73 mgd of recycled water using: microfiltration, RO, post-decarbonation, and softening. The high-pressure stream will produce up to 2.59 mgd of recycled water using: microfiltration, 1st pass RO, post-decarbonation, and 2nd pass RO. The low- and high-pressure boiler feedwater will be delivered to the Chevron Refinery using two newly constructed parallel pipelines in April 2001.

III. DESCRIPTIONS OF DISCHARGE

A. The characteristics of Title 22 recycled water, based on data submitted in the 2000 Annual monitoring reports, are as follows:

Constituent	Unit	Annual Average	Maximum
Daily flow	mgd	15.34	19.07
pH (daily grab)	pH units	7.1	7.2
Turbidity (continuous)			
Ave. time/day > 10 NTU	minutes	0	0
Ave time/day > 5 NTU	minutes	0	0
Daily average	NTU	2.03	2.30
Concentration-time (chlorination)			
Daily average	mg-min/L	671	1302
Average minimum	mg-min/L	519	1056
Average maximum	mg-min/L	889	1636
Chlorine residual (continuous)			
Average minimum	mg/L	5.5	6.2
Average maximum	mg/L	7.9	9.6
Total coliform (daily grab)	MPN/100ml	0.01	0.1
Total suspended solids (weekly)	mg/L	0.8	2.5
Monthly maximum	mg/L	2	5
BOD (weekly)	mg/L	0.1	1
Settleable solids (weekly)	ml/L	<0.1	<0.1

Oil and grease (monthly)	mg/L	<3	<3
Total dissolved solids (monthly)	mg/L	672	750
Chloride (monthly)	mg/L	159	186
Sulfate (monthly)	mg/L	115	130
Boron (monthly)	mg/L	0.6	0.7
Ammonia as N (quarterly)	mg/L	29	32
Nitrate as N (quarterly)	mg/L	0.8	2.0
Nitrite as N (quarterly)	mg/L	0.2	0.7
Total organic carbon (Quarterly)	mg/L	11	12-
Arsenic	mg/L	0.0035	0.004
Chromium	mg/L	0.02	0.03
Nickel	mg/L	0.015	0.02
Cyanide	mg/L	0.090	0.110
Halomethanes	µg/L	9.1	11.5
1,4-Dichlorobenzene	µg/L	1.8	2.0
Tetrachloroethylene	µg/L	1.8	2.0
Methylene chloride	µg/L	1.9	2.5
Toluene	µg/L	0.2	0.4
N-nitrosodimethylamine	µg/L	1	3
Bis(2-Ethylhexyl)phthalate	µg/L	2.3	4.0
Di-n-butyl phthalate	µg/L	<0.4	0.4
Diethyl phthalate	µg/L	0.2	0.9
4,4'-DDT	µg/L	<0.02	0.02
Endosulfan sulfate	µg/L	<0.02	0.03
gamma BHC	µg/L	0.02	0.08

Other priority pollutants were reported as nondetect.

B. The quality of the RO treated boiler feedwater is expected to be similar to that of the Barrier product water since same treatment processes are employed. Based on data in the 2000 Annual Barrier Project monitoring report, the characteristics of the boiler feedwater may be as follows:

Constituent	Unit	Concentration
Turbidity	NTU	0.08
pH	pH units	6.0-8.0
Total coliform	MPN/100ml	<2
Total suspended solids	mg/L	<1
BOD	mg/L	--
Settleable solids	ml/L	<0.1
Oil and grease	mg/L	<3
Total dissolved solids	mg/L	113
Total hardness as $CaCO_3$	mg/L	60
Total alkalinity as $CaCO_3$	mg/L	59
Boron	mg/L	0.46
Ammonia as N	mg/L	3.0
Nitrate as N	mg/L	1.0

Nitrite as N	mg/L	0
Total organic carbon	mg/L	0.6
Chloride	mg/L	27
Sulfate	mg/L	3.0
Halomethanes	µg/L	3.9
1,4-Dichlorobenzene	µg/L	0.5
Methylene chloride	µg/L	1

Other priority pollutants will not be detected in the boiler feedwater.

IV. USE OF RECYCLED WATER

A. The Title 22 recycled water was used for irrigation and industrial purposes. West Basin Title 22 Plant produced a total of 5,724 million gallons in 2000. There was a total of 148 users connected to the recycled water distribution system. The largest users were the Chevron Nitrification Plant, the Mobil Nitrification Plant and Mobil boiler, and the British Petroleum (Arco) Refinery. The newly constructed Boiler Feed treatment train will produce high purity recycled water for the Chevron El Sengundo Refinery's high-pressure and low-pressure boiler.

B. Up to one million gallons per day of nitrified Title 22 recycled water may be used for the injection into the Old Dune Sand aquifer for the Chevron's Liquids Hydrocarbon Recovery Program. In 1998, the Chevron's proposal of injecting recycled water instead of potable water into aquifer was not accepted by the DOHS because of the MUN beneficial use for the groundwater underlying Chevron Refinery. In 2000, the *Basin Plan* was revised by the Regional Board to de-designate the groundwater beneath the Chevron Refinery for MUN beneficial use. Since the condition has been met, Chevron may begin to inject recycled water into aquifer after the revision of the existing waste discharge requirements contained in Order No. 97-113.

V. BASIS FOR THE PROPOSED WATER RECYCLING REQUIREMENTS

A. Beneficial Uses

On June 13, 1994, this Regional Board adopted a revised *Water Quality Control Plan, Los Angeles Region: Basin Plan for the Coast Watersheds of Los Angeles and Ventura Counties (Basin Plan).* The Basin Plan contains beneficial uses and water quality objectives for groundwater within the West Coast Basin hydrologic area.

The beneficial uses of groundwater in the West Coast Basin are municipal and domestic supply, industrial service supply, industrial process supply, and agricultural supply.

B. Statutes, Rules, and Regulations Applicable to Discharge

1. Water Recycling Criteria (Title 22, Division 4, California Code of Regulations), effective December 2, 2000.

2. California Drinking Water Standards (California Domestic Water Quality and Monitoring Regulations, Title 22, California Code of Regulations).

3. Water quality objectives for groundwater are implemented according to the *Water Quality Control Plan, Los Angeles Region: Basin Plan for the Coast Watersheds of Los Angeles and Ventura Counties (Basin Plan),* adopted June 13, 1994.

C. The following table shows the recycled water limitations and the specific rationales for each of the numerical limitations.

Conventional Treated Title 22 Recycled Water

Constituent	Unit	Maximum Limitations	Basis for Limits
pH	pH unit	between 6.5 - 8.5	Basin Plan
$BOD_5 20^oC$	mg/L	20	Previous Order
Oil and grease	mg/L	10	Previous Order
Suspended solids	mg/L	20	Previous Order
Settleable solids	ml/L	0.2	Previous Order
Total organic carbon	mg/L	20	Title 22, CCR
Total dissolved solids	mg/L	800	Basin Plan
Chloride	mg/L	250	Basin Plan
Sulfate	mg/L	250	Basin Plan
Boron	mg/L	1.5	Basin Plan
Nitrate+Nitrite as N	mg/L	10	Primary MCL
Turbidity	NTU	2 (24-h average) >5 (less than 5 % of time in 24 hours) No more than 10	Water Recycling Criteria
Coliform	MPN	2.2 (7-day median) > 23 (less than one sample in 30 days) No more than 240	Water Recycling Criteria

RO Treated Boiler Feed Recycled Water

Constituent	Unit	Maximum Limitations	Basis for Limits
Coliform	MPN	23 (7-day median) >240 (less than one sample in 30 days)	Water Recycling Criteria

VI. RECYCLED WATER MONITORING

To monitor the quality of recycled water, the following monitoring programs are proposed in the tentative Water Recycling Requirements:

A. Monitoring Program for the Conventional Treated Title 22 Recycled Water

constituent	Proposed Minimum Frequency of Analysis	Existing Order No. 94-113
Total waste flow	continuous	same
Turbidity [1]	continuous	same
Chlorine residual [2]	continuous	same
pH	daily	same
Coliform [3]	daily	same
Suspended solids	weekly	same
$BOD_5 20^oC$	weekly	same
Settleable solids	weekly	same
Oil and grease	monthly	same
Total dissolved solids	monthly	same
Chloride	monthly	same
Boron	monthly	same
Sulfate	monthly	same
Nitrate nitrogen	quarterly	same
Nitrite nitrogen	quarterly	same
Ammonia nitrogen	quarterly	same
Total organic carbon	quarterly	same
Hexavalent chromium	quarterly	not required
Priority pollutants	quarterly	same
Radioactivity	annually	same

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1. Turbidity shall be continuously monitored and recorded at a point after final filtration. The average value recorded each day, the amount of time that 5 NTU is exceeded, and the incident of exceeding 10 NTU, if any, shall be reported.

2. Chlorine residual shall be continuously monitored and recorded at a point after the final chlorine contact tank. The minimum and maximum values shall be reported.

3. Samples shall be obtained subsequent to the chlorination process.

B. Monitoring Program for RO Treated Boiler Feedwater

Two sampling stations shall be established for the low-pressure and the high-pressure boiler feedwater, respectively. The following shall constitute the monitoring program for the boiler feedwater:

constituent	Proposed Minimum Frequency of Analysis	Existing Order No. 94-113
Total waste flow	continuous	not required
Turbidity [4]	continuous	not required
pH	weekly	not required
Coliform	weekly	not required
Priority pollutants[5]	annually	not required
Radioactivity	annually	not required

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4. Turbidity shall be continuously monitored and recorded at a point after microfiltration. The average value recorded each day, the amount of time that 0.2 NTU is exceeded, and the incident of exceeding 0.5 NTU, if any, shall be reported.

5. These analyses shall be conducted for the low-pressure and the high-pressure boiler feedwater at the first year after the effective date of the Order. If the first analysis of the high-pressure boiler feedwater indicates complete compliance with the requirements, only the low-pressure boiler feedwater shall be analyzed thereafter.

VII. WRITTEN COMMENTS

Regional Board staff requests written comments on the tentative Water Recycling Requirements by March 20, 2001. This will give staff time to review and consider the comments, respond to them, and include the comments and response in the Board's agenda folder. Written comments received after March 20, 2000, will be submitted, ex agenda, to the Board for their consideration. Comments should be submitted either in person, by mail or faxed to:

Winnie D. Jesena
California Regional Water Quality Control Board
Los Angeles Region
320 W. 4th Street, Suite 200
Los Angeles, CA 90013

Fax Number: (213) 576-6660

VIII. PUBLIC HEARING

The Board will consider the tentative Water Recycling Requirements during a public hearing on the following date, time and place:

Date: March 29, 2001
Time: 9:00 a.m.
Location The Richard M. Chambers U.S. Court of Appeals Building
125 South Grand Avenue
Pasadena, California

Interested parties and persons are invited to attend.

At the public hearing, the Board will hear any testimony, if any, pertinent to the discharge and tentative requirements. Oral testimony will be heard; however, for accuracy of the record, all important testimony should be in writing

IX. WASTE DISCHARGE REQUIREMENTS APPEALS

Pursuant to California Water Code Section 13320, an aggrieved party may seek review of the final Waste Discharge Requirements by filing a petition with the State Water Resources Control Board (SWRCB). A petition must be sent to the SWRCB, P.O. Box 100, 901 P. Street, Sacramento, CA 95812, within 30 days of adoption of the Waste Discharge Requirements.

X. INFORMATION AND COPYING

Copies of the tentative NPDES permit and other documents relative to this tentative permit is available at the Regional Board office for inspection and copying by appointment scheduled between the hours of 10:00 a.m. and 4:00 p.m., Monday through Friday, excluding holidays. For appointment, please call Cindy Flores at (213) 576-6633.

XI. REGISTER OF INTERESTED PERSONS

Any person interested in being placed in the mailing list for information regarding these requirements should write to the Regional Board. Attention: Vilma Correa.