

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

FACT SHEET

**WASTE DISCHARGE REQUIREMENTS
FOR
COUNTY SANITATION DISTRICTS OF LOS ANGELES COUNTY
(Whittier Narrows Water Reclamation Plant)**

NPDES No. CA0053716
Public Notice No.: R4-2002-027

FACILITY ADDRESS

Whittier Narrows Water Reclamation Plant

301 North Rosemead Boulevard
El Monte, CA 91733

FACILITY MAILING ADDRESS

County Sanitation Districts of Los
Angeles County
1955 Workman Mill Road
Whittier, CA 90601
Contact: Victoria Conway
Telephone: (562) 699-7411

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 August 12, 2002.

The Discharger submitted comments to the Regional Board based on several previous tentative permits mailed to them, the latest version was dated May 16,

May 16, 2002
Revised: August 29, 2002

2002. The Regional Board staff considered those comments, and when appropriate has incorporated them in this tentative.

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: August 29, 2002
Time: 9:00 a.m.
Location: Metropolitan Water District of Southern California Board Room,
700 N. Alameda Street, Los Angeles, California.

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

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
P.O. Box 100, 1001 I Street
Sacramento, CA 95812

II. PURPOSE OF ORDER

County Sanitation Districts of Los Angeles County (hereinafter CSDLAC or Discharger) discharges tertiary-treated wastewater, from its Whittier Narrows Water Reclamation Plant (Whittier Narrows WRP) located in El Monte, to the San Gabriel River, Rio Hondo, and Zone 1 Ditch, waters of the State and the United States; and, to Test Basin 1, a water of

the State. The discharge is regulated under waste discharge requirements contained in Order No. 95-082, adopted by this Regional Board on June 12, 1995. Order No. 95-082 also serves as a permit under the National Pollutant Discharge Elimination System (NPDES No. CA0053716). Order No. 95-082 has an expiration date of May 10, 2000.

Section 122.6 of Title 40 Code of Federal Regulations (40 CFR) and section 2235.4 of Title 23 of the California Code of Regulations (CCR) state that an expired permit continue in force until the effective date of a new permit provided the permittee has timely submitted a complete application for a new permit. On November 15, 1999, CSDLAC filed a Report of Waste Discharge (ROWD) and applied to the Regional Board for reissuance of waste discharge requirements (WDR) and NPDES permit to discharge tertiary-treated wastewater. Therefore, the Discharger's permit has been administratively extended until the Regional Board acts on the new WDR and permit.

The accompanying Order is the reissuance of waste discharge requirements that serves as an NPDES permit for the Whittier Narrows WRP.

III. FACILITY AND TREATMENT PROCESS DESCRIPTION

CSDLAC own and operate the Whittier Narrows WRP, a tertiary wastewater treatment plant located at 301 North Rosemead Boulevard, El Monte, California. Attachment 1 shows the location of the plant. The Whittier Narrows WRP currently receives wastewater from Alhambra, Arcadia, Azusa, Bradbury, City of Industry, Duarte, El Monte, Glendale, Irwindale, La Cañada Flintridge, Los Angeles, Monrovia, Monterey Park, Pasadena, Rosemead, San Gabriel, San Marino, Sierra Madre, South El Monte, South Pasadena, and Temple City. The wastewater is a mixture of domestic and industrial wastewater. The latter is pretreated pursuant to 40 CFR Section 403 prior to discharge to the sewers.

The Whittier Narrows WRP is part of CSDLAC's integrated network of facilities, known as the Joint Outfall System, which includes seven treatment plants. The upstream treatment plants (Whittier Narrows, Pomona, La Cañada, Long Beach, Los Coyotes, and San Jose Creek) are connected to the Joint Water Pollution Control Plant (JWPCP) located in Carson. This system allows for the diversion of influent flows into, or around, each upstream plant, if so desired.

As reported in the ROWD, the Whittier Narrows WRP has a design capacity of 15.0 million gallons per day (mgd) and serves approximately 92,000 people.

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

Treatment at the Whittier Narrows WRP consists of primary sedimentation, activated sludge biological treatment, secondary sedimentation with coagulation, inert media filtration, nitrification and denitrification, chlorination and dechlorination. No facilities are provided for solids processing at the plant. Sewage solids separated from the wastewater are returned to the trunk sewer for conveyance to JWPCP for treatment and disposal. Attachment 2 is a schematic of the Whittier Narrows WRP wastewater flow.

1. *Primary sedimentation.* The main objective of primary sedimentation is to remove solids from the wastewater by gravity. The heavier solids (settleable solids)

precipitate out and are scraped out of the primary sedimentation basin. The lighter solids float to the top and are skimmed off.

2. *Activated sludge.* The activated sludge process is a treatment system in which the incoming wastewater is mixed with existing biological floc (microorganisms, bugs, or activated sludge) in an aeration basin. Activated sludge converts non-settleable and dissolved organic contaminants into biological floc, which can then be removed from the wastewater with further treatment.
3. *Secondary sedimentation with coagulation.* The main objective of secondary sedimentation is to remove biological floc from the wastewater. Chemicals, such as aluminum sulfate (alum), may be added as part of the treatment process to enhance solids removal. Alum causes the biological floc to combine into larger clumps (coagulate). This makes it easier to remove the floc.
4. *Inert media filtration.* The filtration process is used to remove or reduce suspended or colloidal matter from a liquid stream, by passing the water through a bed of graded granular material. Filters remove the solids that the secondary sedimentation process does not remove, thus, improving the disinfection efficiency and reliability.
5. *Chlorination.* Sodium hypochlorite solution is used as a disinfectant in the Whittier Narrows WRP. Disinfectant is added to the treated effluent prior to the filters to destroy bacteria, pathogens and viruses, and to minimize algal growth in the filters. Additional chlorine may be dosed prior to the serpentine chlorine contact chamber.
6. *Dechlorination.* Prior to discharge, sodium bisulfite is added to the treated effluent to remove residual chlorine.
7. *Sludge.* No facilities are provided for solids processed at the plant. All sewage solids separated from the wastewater are returned to the trunk sewer for conveyance to CSDLAC's Joint Water Pollution Control Plant (JWPCP), where treatment and disposal occur, under Order No. 97-090 (NPDES No. CA0053813).

Water Recycling Facility. The Discharger currently recycles nearly all of the treated effluent and plans to continue doing so. The production, distribution, and reuse of recycled water for direct, nonpotable applications are presently regulated under Water Reclamation Requirements (WRR) Order No. 88-107, adopted by this Board on October 24, 1988. Pursuant to California Water Code section 13523, these WRRs were reviewed in 1997 and were readopted without change in Board Order No. 97-072, adopted on May 12, 1997. Under this Board Order, approximately 1% (23.12 million gallons per year) of the treated effluent recycled water is used for irrigation of ornamental plants in a nursery.

Almost all of the remaining recycled water (2,798.7 million gallons per year) is used for groundwater recharge at the Los Angeles County Department of Public Works' San Gabriel River Spreading Grounds and the Rio Hondo Spreading Grounds, under a separate permit (Regional Board Order No. 91-100, adopted September 9, 1991). CSDLAC is promoting additional reuse options for the treated effluent.

As illustrated in the Schematic of Wastewater Flow (Attachment 2) for the Whittier Narrows WRP, the recycled water that is piped for reuse is not dechlorinated to maintain an

adequate level of residual chlorine to prevent/minimize regrowth of bacteria during distribution.

Storm Water Management. CSDLAC does not treat storm water runoff at the Whittier Narrows WRP, 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 that does not enter the treatment system.

IV. **DISCHARGE OUTFALL AND RECEIVING WATER DESCRIPTION**

The Whittier Narrows WRP discharges tertiary-treated municipal and industrial wastewater to the San Gabriel River and Rio Hondo, waters of the United States, above the estuary. Treated effluents are discharged from the plant to surface waters at the following discharge points:

Discharge Serial No. 001: Discharge to San Gabriel River via a point located approximately 700 feet upstream of the Whittier Narrows Dam (approximate coordinates: Latitude 34° 01' 23", Longitude 118° 03' 16"). The treated effluent generally flows down the river to the San Gabriel River Spreading Grounds.

Discharge Serial No. 002: Discharge to the Zone 1 Ditch at a point located approximately 5,500 feet upstream from its juncture with the Rio Hondo (approximate coordinates: Latitude 34° 01' 38", Longitude 118° 03' 26"). The treated effluents enter the Rio Hondo at a point located approximately 4,000 feet upstream of the Whittier Narrows Dam. The treated effluent generally flows down the Rio Hondo to the Rio Hondo Spreading Grounds.

Discharge Serial No. 003: Discharge to Test Basin 1 (approximate coordinates: Latitude 34° 01' 44", Longitude 118° 03' 36") used for the study of using recycled wastewater for groundwater recharge. There has been no discharge through this point since July 31, 1981, and there is no plan to utilize this point in the immediate future.

Discharge Serial No. 004: Discharge directly to Rio Hondo via a 27-inch diameter discharge line located at a point 1,400 feet upstream of San Gabriel Boulevard, above Whittier Narrows Dam (approximate coordinates: Latitude 34° 01' 58", Longitude 118° 04' 09"). The treated effluent generally flows down the Rio Hondo to the Rio Hondo Spreading Grounds.

During dry weather (May 1 – October 31), the primary sources of water flow in San Gabriel River, downstream of the discharge points, are the Whittier Narrows WRP effluent and other NPDES-permitted discharges, including urban runoff conveyed through the municipal separate storm sewer systems (MS4). Storm water and dry weather urban runoff from MS4 are regulated under an NPDES permit, *Waste Discharge Requirements for Municipal Storm Water and Urban Runoff Discharges within the County of Los Angeles* (LA Municipal Permit), NPDES Permit No. CAS004001.

The Los Angeles County Flood Control District channelized portions of the San Gabriel River to convey and control floodwater, and to prevent damage to homes located adjacent to the river. Although not its main purpose, the San Gabriel River conveys treated wastewater along with floodwater, and urban runoff. The San Gabriel River is unlined near

the points of discharge. Groundwater recharge occurs both incidentally and through separate water reclamation requirements (WRR) for groundwater recharge, in these unlined areas of the San Gabriel River where the underlying sediments are highly transmissive to water as well as pollutants. Water Replenishment District recharges the Rio Hondo and San Gabriel Spreading Grounds, located in the Montebello Forebay, with water purchased from CSDLAC's Whittier Narrows, Pomona, and San Jose Creek WRPs, under WRR Order No. 91-100, adopted by the Board on September 9, 1991.

Notwithstanding that segments located further downstream of the discharge are concrete-lined, the watershed supports a diversity of wildlife, particularly an abundance of avian species such as the *Least Bell's Vireo*, *Tricolored Blackbird*, and *California Gnatcatcher*. Aquatic life, such as fish, invertebrates, and algae exist in the San Gabriel River Watershed.

V. DISCHARGE QUALITY

From July 1995 to December 2001, the Discharger's discharge monitoring reports showed the following:

- treated wastewater average annual flow rate of 9.85 mgd.
- average annual removal rate of 97.84% and >99%, of BOD and total suspended solids, respectively.
- 7-day median and daily maximum coliform values as <1 coliform forming units (CFU) /100 ml in the treated wastewater.

Based on data submitted in the 2000 Annual Summary Report, Table 1 presents the characteristics of the effluent discharged. (The "<" symbol indicates that the pollutant was not detected (ND) at that concentration level.) Attachment D contains more extensive statistical analyses of the effluent priority pollutants data from July 1995 to December 2001.

Table 1

Effluent Characteristics

CTR#	Constituent	Unit	Ave. or Range	Maximum	Minimum
	Flow	mgd	7.53	9.34	3.78
	pH	pH units	7.3	7.5	6.9
	Temperature (Nov. – April) (May – Oct.)	°F	74 winter 79 summer	76 81	72 76
	BOD ₅ 20°C	mg/L	3	6	<2
	Suspended solids	mg/L	<1-<2	<2	<1
	Settleable solids	ml/L	<0.1	<0.1	<0.1
	Total dissolved solids	mg/L	538	560	523
	Chloride	mg/L	94	105	83
	Sulfate	mg/L	96	132	78
	Boron	mg/L	0.47	0.53	0.35
	Total Phosphate	mg/L	2.95	4.1	1.8
	Turbidity	NTU	1.1	1.6	0.8
	Oil and grease	mg/L	<4 -10	10	<4
	Fluoride	mg/L	0.62	0.68	0.49

CTR#	Constituent	Unit	Ave. or Range	Maximum	Minimum
	MBAS	mg/L	<0.1-0.1	0.1	<0.1
	Ammonia-N	mg/L	<0.1-4	4	<0.1
	Organic-N	mg/L	2.1	4.5	1.3
	Nitrate-N	mg/L	6.75	9.45	5.61
	Nitrite-N	mg/L	0.22	0.52	0.07
	Total Nitrogen	mg/L	10.5	13.13	8.96
1	Antimony	µg /L	<0.5-<0.6	<0.6	<0.5
2	Arsenic	µg /L	1.3	1.4	1.0
3	Beryllium	µg /L	<2.5	<2.5	<2.5
4	Cadmium	µg /L	<2-<3	<3	<2
5a	Chromium III				
5b	Chromium VI				
	Total Chromium	µg /L	<10	<10	<10
6	Copper	µg /L	<10	<10	<10
	Iron	µg /L	<50	<50	<50
7	Lead	µg /L	<10	<10	<10
8	Mercury	µg /L	<0.1	<0.1	<0.1
9	Nickel	µg /L	<20	<20	<20
10	Selenium	µg /L	<1-2.3	2.3	<1
11	Silver	µg /L	<10	<10	<10
12	Thallium	µg /L	<1	<1	<1
13	Zinc	µg /L	80	90	70
14	Cyanide	µg /L	<10	<10	<10
16	2,3,4,7-TCDD (Dioxin)	µg /L	<2	<2	<2
17	Acrolein	µg /L	<10	<10	<10
18	Acrylonitrile	µg /L	<10	<10	<10
19	Benzene	µg /L	<0.3- < 0.5	<0.5	<0.3
20	Bromoform	µg /L	<0.5	<0.5	<0.5
21	Carbon tetrachloride	µg /L	<0.5	<0.5	<0.5
22	Chlorobenzene	µg /L	<0.5	<0.5	<0.5
23	Dibromochloromethane	µg /L	<0.5	<0.5	<0.5
24	Chloroethane	µg /L	<0.5- <2.5	<2.5	<0.5
25	2-Chloroethylvinyl ether	µg /L	< 0.5- <1	<1	<0.5
26	Chloroform	µg /L	7.9	14	4
27	Bromodichloromethane	µg /L	<0.5-3	3	<0.5
28	1,1-Dichloroethane	µg /L	< 0.3- <0.5	<0.5	<0.3
29	1,2-Dichloroethane	µg /L	< 0.3- <0.5	<0.5	<0.3
30	1,1-Dichloroethylene	µg /L	< 0.3- <1	<1	<0.3
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	< 0.3-<0.5	<0.5	<0.3
34	Methyl bromide (Bromomethane)	µg /L	<1-<2.5	<2.5	<1
35	Methyl chloride (Chloromethane)	µg /L	<0.5-<1	<1	<0.5
36	Methylene chloride	µg /L	<0.5-<1	<1	<0.5
37	1,1,2,2-Tetrachloroethane	µg /L	< 0.5	<0.5	<0.5
38	Tetrachloroethylene	µg /L	<0.3-<0.5	<0.5	<0.3
39	Toluene	µg /L	<0.3 – 2.4	2.4	<0.3

CTR#	Constituent	Unit	Ave. or Range	Maximum	Minimum
40	1,2-Trans-dichloroethylene	µg /L	< 0.3- <0.5	<0.5	<0.3
41	1,1,1-Trichloroethane	µg /L	<0.5	<0.5	<0.5
42	1,1,2-Trichloroethane	µg /L	< 0.3- <0.5	<0.5	<0.3
43	Trichloroethylene	µg /L	< 0.3- <0.5	<0.5	<0.3
44	Vinyl chloride	µg /L	< 0.3- <0.5	<0.5	<0.3
45	2-Chlorophenol	µg /L	<1	<1	<1
46	2,4-Dichlorophenol	µg /L	<1	<1	<1
47	2,4-Dimethylphenol	µg /L	<1	<1	<1
48	2-Methyl-4,6-dinitrophenol	µg /L	<1	<1	<1
49	2,4-Dinitrophenol	µg /L	<6	<6	<6
50	2-Nitrophenol	µg /L	<1	<1	<1
51	4-Nitrophenol	µg /L	<1	<1	<1
52	3-Methyl-4-chlorophenol	µg /L	<1	<1	<1
53	Pentachlorophenol	µg /L	<1	<1	<1
54	Phenol	µg /L	<1	<1	<1
55	2,4,6-Trichlorophenol	µg /L	<1	<1	<1
56	Acenaphthene	µg /L	<1	<1	<1
57	Acenaphthylene	µg /L	<1	<1	<1
58	Anthracene	µg /L	<1	<1	<1
59	Benzidine	µg /L	<20	<20	<20
60	Benzo(a)anthracene	µg /L	<1	<1	<1
61	Benzo(a)pyrene	µg /L	<0.2	<0.2	<0.2
62	Benzo(b)fluoranthene	µg /L	<1	<1	<1
63	Benzo(g,h,i)perylene	µg /L	<1	<1	<1
64	Benzo(k)fluoranthene	µg /L	<1	<1	<1
65	Bis(2-chloroethoxy)methane	µg /L	<1	<1	<1
66	Bis(2-chloroethyl)ether	µg /L	<1	<1	<1
67	Bis(2-chloroisopropyl)ether	µg /L	<1	<1	<1
68	Bis(2-ethylhexyl)phthalate	µg /L	<1	<1	<1
69	4-Bromophenyl phenyl ether	µg /L	<1	<1	<1
70	Butylbenzyl phthalate	µg /L	<1	<1	<1
71	2-Chloronaphthalene	µg /L	<1	<1	<1
72	4-Chlorophenyl phenyl ether	µg /L	<1	<1	<1
73	Chrysene	µg /L	<1	<1	<1
74	Dibenzo(a,h)anthracene	µg /L	<1	<1	<1
75	1,2-Dichlorobenzene	µg /L	<1	<1	<1
76	1,3-Dichlorobenzene	µg /L	<1	<1	<1
77	1,4-Dichlorobenzene	µg /L	<1	<1	<1
78	3,3'-Dichlorobenzidine	µg /L	<1	<1	<1
79	Diethyl phthalate	µg /L	<1 – 2	2	<1
80	Dimethyl phthalate	µg /L	<1	<1	<1
81	Di-n-butyl phthalate	µg /L	<1	<1	<1
82	2,4-Dinitrotoluene	µg /L	<1	<1	<1
83	2,6-Dinitrotoluene	µg /L	<1	<1	<1
84	Di-n-octyl phthalate	µg /L	<1	<1	<1
85	1,2-Diphenylhydrazine	µg /L	<1	<1	<1
86	Fluoranthene	µg /L	<1	<1	<1

CTR#	Constituent	Unit	Ave. or Range	Maximum	Minimum
87	Fluorene	µg /L	<1	<1	<1
88	Hexachlorobenzene	µg /L	<1	<1	<1
89	Hexachlorobutadiene	µg /L	<1	<1	<1
90	Hexachlorocyclopentadiene	µg /L	<1 - <5	<5	<1
91	Hexachloroethane	µg /L	<1	<1	<1
92	Indeno(1,2,3-cd)pyrene	µg /L	<1	<1	<1
93	Isophrone	µg /L	<1	<1	<1
94	Naphthalene	µg /L	<1	<1	<1
95	Nitrobenzene	µg /L	<1	<1	<1
96	N-Nitrosodimethylamine (NDMA)	µg /L	<1	<1	<1
97	N-Nitrosodi-n-propylamine	µg /L	<1	<1	<1
98	N-Nitrosodiphenylamine	µg /L	<1	<1	<1
99	Phenanthrene	µg /L	<1	<1	<1
100	Pyrene	µg /L	<1	<1	<1
101	1,2,4-Trichlorobenzene	µg /L	<1	<1	<1
102	Aldrin	µg /L	<0.01	<0.01	<0.01
103	alpha-BHC	µg /L	<0.01	<0.01	<0.01
104	beta-BHC	µg /L	<0.01	<0.01	<0.01
105	gamma-BHC (Lindane)	µg /L	0.02	0.02	0.01
106	delta-BHC	µg /L	<0.01	<0.01	<0.01
107	Chlordane	µg /L	<0.05	<0.05	<0.05
108	4,4'-DDT	µg /L	<0.01	<0.01	<0.01
109	4,4'-DDE	µg /L	<0.01	<0.01	<0.01
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	<0.01	<0.01	<0.01
113	beta-Endosulfan	µg /L	<0.01	<0.01	<0.01
114	Endosulfan sulfate	µg /L	<0.1	<0.1	<0.1
115	Endrin	µg /L	<0.01	<0.01	<0.01
116	Endrin aldehyde	µg /L	<0.04	<0.04	<0.04
117	Heptachlor	µg /L	<0.01	<0.01	<0.01
118	Heptachlor epoxide	µg /L	<0.01	<0.01	<0.01
	Polychlorinated biphenyls (PCBs)				
119	Aroclor 1016	µg /L	<0.1	<0.1	<0.1
120	Aroclor 1221	µg /L	<0.1	<0.1	<0.1
121	Aroclor 1232	µg /L	<0.1	<0.1	<0.1
122	Aroclor 1242	µg /L	<0.1	<0.1	<0.1
123	Aroclor 1248	µg /L	<0.1	<0.1	<0.1
124	Aroclor 1254	µg /L	<0.05	<0.05	<0.05
125	Aroclor 1260	µg /L	<0.1	<0.1	<0.1
126	Toxaphene	µg /L	<0.5	<0.5	<0.5

VI. APPLICABLE LAWS PLANS, POLICIES AND REGULATIONS

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

- A. **Federal Clean Water Act.** The federal Clean Water Act (CWA) requires that point source discharges of pollutants to a water of the United States must be done in conformance with an NPDES permit. NPDES permits establish effluent limitations that incorporate various requirements of the CWA designed to protect and enhance water quality.
- 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. The accompanying 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. 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. Beneficial Uses.

1. The designated beneficial uses in the Basin Plan for the San Gabriel River and its contiguous waters are:

San Gabriel River - Hydrologic Unit 405.41

Existing: wildlife habitat.

Intermittent: groundwater recharge, water contact recreation and non-contact recreation, and warm freshwater habitat

Potential: municipal and domestic water supply (MUN).

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

San Gabriel River: Whittier Narrows-Firestone Blvd. - Hydrologic Unit 405.15

Existing: water contact¹ water recreation; non-contact water recreation; wildlife habitat; and rare, threatened, or endangered species.

Intermittent: groundwater recharge, and warm freshwater habitat

Potential: industrial service supply; industrial process supply; and, MUN.

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 use and at this time cannot establish effluent limitations designed to protect the conditional designation.

San Gabriel River: Firestone Boulevard-Estuary - Hydrologic Unit 405.15

Existing: water contact¹ recreation and non-contact water recreation.

Potential: warm freshwater habitat; wildlife habitat; and, MUN.

¹

Although the Los Angeles County Department of Public Works post signs prohibiting access to the Rio Hondo and San Gabriel River, its tributaries and estuary, the public has been observed fishing and wading across the river. There is public access to the San Gabriel River, its tributaries, and estuary through the bike trails that run parallel to the river. Since there is public contact in the receiving water downstream of the discharge, the quality of wastewater discharged to the Rio Hondo and San Gabriel River must be such that no public health hazard is created.

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 use and at this time cannot establish effluent limitations designed to protect the conditional designation.

San Gabriel River Estuary - Hydrologic Unit 405.15

Existing: industrial service supply; navigation; contact and non-contact water recreation; commercial and sport fishing; estuarine habitat; marine habitat; wildlife habitat; rare, threatened, or endangered species; migration of aquatic organism; and spawning, reproduction, and/or early development.

Potential: shellfish harvesting.

Rio Hondo to Spreading Grounds – Hydro Unit 405.15

Existing: water contact¹ recreation and non-contact water recreation, groundwater recharge, and wildlife habitat.

Intermittent: groundwater recharge and wildlife habitat.

Potential: warm freshwater habitat; and, MUN.

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 use and at this time cannot establish effluent limitations designed to protect the conditional designation.

Rio Hondo below Spreading Grounds – Hydrologic Unit 405.15

Existing: water contact¹ recreation and non-contact water recreation, groundwater recharge, and wildlife habitat.

Intermittent: groundwater recharge and wildlife habitat.

Potential: warm freshwater habitat; and, MUN.

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.

Los Angeles River - Hydrologic Unit 405.15

Existing: water contact¹ recreation and non-contact water recreation, groundwater recharge, and warm freshwater habitat.

Potential: industrial process supply, wildlife habitat, and MUN.

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 use and at this time cannot establish effluent limitations designed to protect the conditional designation.

Los Angeles River to Estuary - Hydrologic Unit 405.12

Existing: water contact¹ recreation and non-contact water recreation, groundwater recharge, warm freshwater habitat, marine habitat, wildlife habitat, and rare, threatened, or endangered species.

Potential: MUN, industrial process supply, industrial process supply, migration of aquatic organisms, spawning, reproduction, and/or early development, and shellfish harvesting.

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 use and at this time cannot establish effluent limitations designed to protect the conditional designation.

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

Los Angeles Coastal Plain (Central Basin) – DWR Basin No. 4-11

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

San Gabriel Valley (Main San Gabriel Basin) - DWR Basin No. 4-13

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

F. ***Title 22 of the California Code of Regulations.*** The California Department of Health Services established primary and secondary maximum contaminant levels (MCLs) for a number of chemical and radioactive contaminants. These MCLs can be found in Title 22, California Code of Regulations (Title 22). Chapter 3 of the Basin Plan incorporates Title 22 by reference. Title 22 MCLs have been incorporated into NPDES permits and Non-Chapter 15 WDRs to protect the municipal and domestic supply (MUN) and groundwater recharge (GWR) beneficial uses.

Groundwater Recharge. Sections of the San Gabriel River, near the Whittier Narrows WRP discharge points, are designated as GWR. Surface water from the San Gabriel River enters the Main San Gabriel Valley and the Central Los Angeles Coastal Plain Groundwater Basins. Since ground water from these basins is used to provide drinking water to over one million people, Title 22-based limits are needed to protect that drinking water supply. By limiting the contaminants in the

Whittier Narrows WRP discharges, the amount of pollutants entering the receiving 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.

- G. **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) requires all permitting actions be consistent with the federal antidegradation policy.
- H. **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 water ways. The CTR also provides a schedule of compliance not to exceed 5 years from the date of permit renewal for an existing Discharger if the Discharger demonstrates that it is infeasible to promptly comply with 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 the 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.

Prior to promulgating the criteria, USEPA conducted a costs and benefits analysis. USEPA assessed the potential compliance costs that facilities may incur to meet permit limits based on the CTR. The analysis included capital costs and operation and maintenance costs for end-of-pipe pollution control, indirect source controls, pollution prevention, monitoring, and costs of pursuing alternative methods of compliance. USEPA projected that for publicly owned treatment works (POTWs), the average cost per plant would range between \$61,000 to \$324,000 per year.

CSDLAC submitted comments stating that they would need to spend over \$2 billion on advanced treatment, to comply with the CTR-based effluent limits in the tentative permits mailed out in February 2001. The Regional Board and State Board contracted SAIC to perform an independent analysis of the cost of compliance with the new CTR-based effluent limits (to protect all designated beneficial uses in the Basin Plan, including WRP potential MUN), for the Whittier Narrows WRP and the other

four CSDLAC WRP NPDES permits. SAIC prepared a report in which they concluded that one facility, the Pomona WRP, might require granular activated carbon (GAC) to meet the revised permit limits, but most facilities would likely be able to use process optimization and pollutant minimization programs alone. In no case did SAIC think that some of the more sophisticated and expensive technologies, such as reverse osmosis, would be required. The total cost of compliance with CTR-based limits for each of the WRPs was estimated between \$0.4 and \$1.2 million per year.

- I. **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. This policy provides for the following:
 - a. 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 water quality control plans (Basin Plans);
 - b. monitoring requirements for priority pollutants with insufficient data to determine reasonable potential;
 - c. monitoring requirements for 2,3,7,8-TCDD equivalents; and,
 - d. chronic toxicity control.

- J. **Watershed Approach.** This Regional Board has been implementing a Watershed Management Approach (WMA), to address water quality protection in the Los Angeles Region following the USEPA guidance in *Watershed Protection: A Project Focus* (EPA841-R-95-003, August 1995). The objective of the WMA is to provide a more comprehensive and integrated strategy resulting in water resource protection, enhancement, and restoration while balancing economic and environmental impacts within a hydrologically-defined drainage basin or watershed. 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. The accompanying Order fosters the implementation of this approach by protecting beneficial uses in the watershed and requiring CSDLAC to participate with the Los Angeles and San Gabriel River Watershed Council, and other stakeholders, in the development and implementation of a watershed-wide monitoring program. On January 17, 2001, Regional Board staff gave a presentation before the Watershed Council, discussed components of the tentative NPDES permits for the five CSDLAC WRPs, and requested their future participation in the development of a watershed-wide monitoring program. The watershed-wide monitoring program is expected to be developed within one year from the effective date of the accompanying Order.

The *Los Angeles & San Gabriel Rivers Watershed Council* is a nonprofit organization which is tracking activities throughout the Los Angeles and San

Gabriel River watersheds. Its goal is to help facilitate a process to preserve, restore, and enhance all aspects of both watersheds. Currently, it is initiating the development of a Watershed Management Plan for both watersheds.

- K. ***CWA 303(d) Listed Pollutants.*** On May 12, 1999, USEPA approved the State's 1998 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).

The Rio Hondo, Los Angeles River, and the San Gabriel River, and its tributaries are on the 303(d) List for the following pollutants/stressors, from point and non-point sources:

Rio Hondo Reach 2 (at Spreading grounds)-- Hydrologic Unit 405.41

- Ammonia, and Coliform;

San Gabriel River Reach 3 (Whittier Narrows to Ramona) -- Hydrologic Unit 405.41

- Toxicity

Los Angeles River Reach 1 (Estuary to Carson Street) -- Hydrologic Unit 405.12

- Ammonia, Coliform, Nutrients (Algae), Lead, pH, scum/foam, Trash;

Rio Hondo Reach 1 (Confluence of LA River to 5 Fwy.) -- Hydrologic Unit 405.15

- Ammonia, Coliform, Lead, pH, Trash, Copper, Zinc;

San Gabriel River Reach 2 (Firestone to Whittier N. Dam) -- Hydrologic Unit 405.15

- Ammonia, Coliform, Lead;

San Gabriel River Reach 1 (Estuary to Firestone) -- Hydrologic Unit 405.15

- Abnormal fish histology, Algae, Ammonia, Coliform, Toxicity; and,

San Gabriel River Estuary -- Hydrologic unit 405.15

- Abnormal fish histology and Arsenic (in fish tissue).

- L. ***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. The Regional Board is developing a TMDL that will assess the extent and sources of the ammonia and algae (nutrient) problems in the San Gabriel River. 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 nitrogen and heavy metals for the San Gabriel River Watershed must be completed by March 2003 and March 2006, respectively. The remaining TMDLs, such as abnormal fish histology, algae, and coliform are tentatively scheduled for completion by 2012, 2003, and 2012, respectively (subject to reevaluation). Subsequent to the effective date of the TMDLs, the Order or its successor orders will be reopened and modified to include final

effluent limits for 303(d) listed constituents that will be consistent with the waste load allocations in the relevant TMDLs.

- M. Pursuant to this Regional Board's watershed initiative framework, the San Gabriel River Watershed Management Area was the targeted watershed for fiscal year 1999-2000. However, the NPDES permit renewals were re-scheduled so that provisions of the CTR and SIP could be incorporated into the permits.

On June 29, 2000, the Regional Board published the *San Gabriel River State of the Watershed Report* (State of the Watershed Report). This document contains a summary of water quality problems and issues in the San Gabriel River Watershed, describes the San Gabriel River and its tributaries, presents an overview of the existing monitoring data, and suggests that further monitoring is required. This report forms the basis for the water quality element of future watershed plans.

As described in the State of the Watershed Report, the San Gabriel River drains a 689 square mile area of eastern Los Angeles County; its headwaters originate in National Forest lands in the San Gabriel Mountains. The San Gabriel River watershed consists of extensive areas of undisturbed riparian and woodland habitats in its upper reaches. The U.S. Congress has set aside a wilderness area in much of the West and East Forks of the San Gabriel River. Towards the middle of the watershed, large spreading grounds are used to recharge groundwater basins. The watershed is hydraulically connected to the Los Angeles River Watershed through the Whittier Narrows Reservoir. Nurseries and small stable areas are located along channelized portions of the river. The lower part of the San Gabriel River Watershed is heavily urbanized.

- N. **Performance Goals.** In Order No. 95-082, the Regional Board implemented the Water Quality Task Force² recommendations on the use of performance goals, rather than performance-based limits, when appropriate. In the absence of an Inland Surface Water Plan and Enclosed Bays and Estuaries Plan, performance goals were intended to minimize pollutant loadings (primarily toxics) and, at the same time, maintain the incentive for future voluntary improvement of water quality whenever feasible, without the imposition of more stringent limits based on improved performance. Effluent performance goals were not enforceable limitations or standards. The accompanying Order does not contain performance goals, but rather implements controls as referenced below to reflect technology-based effluent limits and WQBELs.

VII. 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

² *Working Together for an Affordable Clean Water Environment.* A final report presented to the California Regional Water Quality Control Board, Los Angeles Region by Water Quality Advisory Task Force, September 1993.

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 Law Regulations
 - Federal Clean Water Act, and
 - 40 CFR Parts 122, 125, and 131, among others; and,
- Best professional judgment (pursuant to 40 CFR 122.44).

Where numeric water quality objectives have not been established in the Basin Plan, 40 CFR section 122.44(d) specifies that water quality based effluent limits 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. U.S. EPA 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 do not apply during wet weather flows when storm water infiltration causes the plant to exceed its design capacity.

- D. **Maximum Daily Effluent Limitations.** Pursuant to 40 CFR 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.** Pursuant to 40 CFR section 403, CSDLAC developed and has implemented an approved industrial wastewater pretreatment program. The accompanying Order requires implementation of the approved pretreatment program.
- F. **Sewage Sludge.** To implement CWA section 405(d), on February 19, 1993, USEPA promulgated 40 CFR section 503 to regulate the use and disposal of municipal sewage sludge. The accompanying 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.** Section 402(p) of the Federal Clean Water Act, 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 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 Order No. 97-03-DWQ.
- General NPDES permit No. CAS000001 is applicable to storm water discharges from the Whittier Narrows WRP's premises. On June 4, 1992, CSDLAC filed a Notice of Intent to comply with the requirements of the general permit. CSDLAC developed and currently implements a Storm Water Pollution Prevention Plan (SWPPP), to comply with the State Board's (Order No. 97-03-DWQ).
- H. **Federal Clean Water 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** provisions are contained in Sections 303(d)(4) and 402(o) of the CWA, and in 40 CFR section 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 changed 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. Section 402(o)(2) provides 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. 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 certain specified sections of the CWA; 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 exception "c" (as listed above) does not apply to water quality-based effluent limitations. Further, exception "e" as listed above only concerns sections of the CWA governing technology-based limits. Thus, exceptions c & e would only apply to technology-based effluent limitations.

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, 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 section 122.44(d)(vi)(A) requires the establishment of numeric effluent limitations to attain and maintain applicable narrative water quality criteria to protect the designated beneficial use.

The Basin Plan includes narrative and numeric Water Quality Objectives (WQOs). The CTR promulgates numeric aquatic life criteria for 23 toxic pollutants and numeric human health criteria for 57 toxic pollutants. A compliance schedule provision in the CTR and 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 section 122.44(d) specifies that WQBELs 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 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 EPA develop secondary treatment standards for POTWs as defined in Section 304(d)(1). Based on this statutory requirement, EPA developed national secondary treatment regulations which are specified in 40 CFR section 133. These technology-based regulations apply to all POTWs and identify the minimum level of

effluent quality to be attained 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 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 from POTWs from additional regulation to protect water quality standards. As a result, POTWs are also subject to WQBELs. Applicable water quality standards for the San Gabriel River are contained in the Basin Plan and CTR, as described in previous findings.
- N. **Water Quality Based Effluent Limitations 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 40 CFR 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 Table R and the fact sheet, pollutants exhibiting reasonable potential in the discharge, authorized in the accompanying Order, are identified in the Reasonable Potential Analysis (RPA) section and have final effluent limits. The Discharger is required to gather the appropriate data and the Regional Board will determine if final effluent limits are needed. If final limits are needed, the permit will be reopened and limits will be included in the permit.
- 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 and SIP (if applicable). These effluent limits are based on criteria applied to end-of-pipe.

VIII. 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.” Using the method described in the SIP, the Regional Board has conducted a Reasonable Potential Analysis (RPA) using the Discharger’s effluent data contained in Attachment D. The RPA compares the effluent data with water quality objectives in the Basin Plan and CTR.

- a. **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:
- 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).
 - 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).
 - 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 shall 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 will 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, if the constituent had a limit in the previous

permit, and if none of the Antibracksliding exceptions apply, then the limit will be retained. 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.

The limits for 10 metals (arsenic, barium, cadmium, chromium VI, lead, nickel, selenium, silver, zinc, iron); a few organics (endrin, gamma-BHC (lindane), methoxychlor, toxaphene, 2,4-D, 2,4,5-TP (Silvex)); MBAS, and fluoride contained in Order No. 95-082 will be retained. Existing effluent limitations for these constituents were derived from California Code of Regulations (Title 22) maximum contaminant levels for the protection of groundwater recharge. Consistent with antibracksliding statutes and regulations, the effluent limitations contained in this Order are at least as stringent as existing effluent limitation guidelines and are fully protective of existing, intermittent, and potential designated uses.

- b. **RPA Data.** The RPA was based on effluent monitoring data for June 1995 through May 2000, and interim monitoring results from July 2001 to December 2001. Table R (Attachment R) 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. 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. For Discharge Serial Nos. 001, 002, and 003, hardness values from receiving water station R-11 were averaged and used for RPA. For Discharge Serial No. 004, hardness values from receiving water station RD-1 were averaged and used for RPA.

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 has been collecting samples on a monthly basis for all priority pollutants, with the exception of asbestos and 2,3,7,8-TCDD that are sampled semiannually, and reporting the results quarterly to the Regional Board. After the additional information is gathered, and prior to April 2003, 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 the accompanying 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.

The Order is consistent with State and Federal antidegradation policies in that it does not authorize a change in the quantity of wastewater discharged by the facility, nor

does it authorize a change or relaxation in the manner or level of treatment. As a result, both the quantity and quality of the discharge are expected to remain the same or improve, consistent with antidegradation policies. In general, conformance with reasonable potential analysis procedures identified in State Board and USEPA documents, effluent limitations for some toxic constituents are not carried forth in this Order because there is not presently a reasonable potential for the constituents to cause or contribute to an exceedance of water quality standards. Without reasonable potential, there is no longer a need to maintain prior WQBELs under WQBEL regulations, antibacksliding provisions, or antidegradation policies. The accompanying monitoring and reporting program requires continued data collection and if monitoring data show a reasonable potential for a constituent to cause or contribute to an exceedance of water quality standards, the permit will be reopened to incorporate appropriate WQBELs. Such an approach ensures that the discharge will adequately protect water quality standards for potential and existing uses and conforms with antidegradation policies and antibacksliding provisions.

The Regional Board also notes that the discharges regulated by the accompanying Order are discharges from a POTW. A POTW receives sewage from myriad domestic and industrial sources, with the industrial sources subject to pretreatment requirements. These diverse sewage sources are all subject to primary, secondary, and tertiary treatment and chlorination/dechlorination at the POTW. Due to the nature of a POTW, the discharger would not be able to adjust treatment techniques to exploit removed effluent limitations, without running the risk of violating effluent limits for nonpriority pollutants. It is technically difficult and would also trigger a reopening of the NPDES permit. As a result, the accompanying Order is consistent with antidegradation because the discharge will not change or increase.

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 section 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 above 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.

In the case of cyanide, the monthly average limitation in the accompanying Order is lower than the lowest minimum level (ML) listed in Attachment 4 of the SIP, 5 µg/L, using the colorimetric technique. CSDLAC and other Dischargers have contacted Regional Board staff and State Board staff communicating the difficulty they are experiencing in achieving that low ML level for cyanide, the uncertainty in the results due to possible matrix interferences, and the possible impacts of interferences on the test method. CSDLAC submitted a workplan to investigate the assertion that matrix interferences cause spurious, random detections of cyanide in the total cyanide analytical test (Standard Methods Section 4500CN and EPA 335.1). In their workplan, CSDLAC proposes to: (i) establish matrix-specific MDLs, pursuant to 40 CFR section 136, and provide a broad-based evaluation of background effects using the method of standard additions; (ii) utilize an independent, EPA approved analytical test method (EPA 1677, ligand exchange method) to evaluate the

presence of any available cyanide remaining after wastewater treatment; and, (iii) directly analyze the finite number of inert metal cyanide complexes which could possibly survive the treatment plant process and chlorination, which could be detected by the total cyanide method, but not by EPA method 1677. During the course of the eight-month investigation, the Discharger will continue using 10 µg/L as an interim matrix specific ML.

IX. WASTE DISCHARGE REQUIREMENTS

Numeric toxic constituent limitations are based on the Basin Plan the 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)(2), for a POTWs 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 for POTWs. 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. As a result, maximum daily effluent limitations, as referenced in 40 CFR 122.45(d)(1), are included in the permit.

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 R is the spreadsheet that staff used to calculate the AMELs and MDELs for priority pollutants.

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, except during wet-weather, storm events that cause flows to the treatment plant to exceed the plant’s design capacity.

A. Effluent Limitations:

1. Limits for Conventional and nonconventional pollutants for Discharge Serial Nos. 001, 002, 003, and 004:

Constituent	Units	Discharge Limitations		
		Daily Maximum ^[1]	7-Day Average ^[2]	Monthly Average
BOD ₅ 20 °C	mg/L	45	30	20
	lbs/day ^[3]	5,600	3,800	2,500
Suspended solids	mg/L	45	40	15
	lbs/day ^[3]	5,600	5,000	1,900
Settleable solids	ml/L	0.3	--	0.1
Oil and grease	mg/L	15	--	10
	lbs/day ^[3]	1,900	--	1,300
Total residual chlorine	mg/L	0.1 ^[4]	--	
Fluoride	mg/L	--	--	1.6
	lbs/day ^[3]	--	--	200
Total dissolved solids	mg/L	--	--	750
	lbs/day ^[3]	--	--	94,000
Chloride	mg/L	--	--	180
	lbs/day ^[3]	--	--	23,000
Sulfate	mg/L	--	--	300
	lbs/day ^[3]	--	--	38,000
Boron	mg/L	--	--	1.0 ^[7]
	lbs/day ^[3]	--	--	130 ^[7]
Iron	µg/L	--	--	300
	lbs/day ^[3]	--	--	38
MBAS ^[6]	mg/L	--	--	0.5
	lbs/day ^[3]	--	--	63
Total inorganic nitrogen (Nitrate + nitrite as nitrogen)	mg/L	--	--	8
	lbs/day ^[3]	--	--	1,000
Nitrite as nitrogen	mg/L	--	--	1
	lbs/day	--	--	130
Total ammonia	mg/L	^[5]	--	^[5]
	lbs/day	^[3]	--	^[3]

[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] As defined in Standard Provisions, Attachment N.

- [3] The mass emission rates are based on the plant design flow rate of 15.0 mgd. During wet-weather storm events in which the flow exceeds the design capacity, the mass discharge rate limitations shall not apply, and concentration limitations will provide the only applicable effluent limitations.
- [4] Based on results of continuous monitoring, total residual chlorine concentration of up to 0.3 mg/L, at the point in 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] CSDLAC must meet the total ammonia limitations contained in Attachment H, Basin Plan Tables 3-2 and 3-4, for the protection of freshwater aquatic habitat, by June 14, 2002. At a future date, these Ammonia Tables will be replaced with the 1999 USEPA Ammonia Update criteria for ammonia, according to the Ammonia Basin Plan Amendment, Resolution No. 2002-011 (adopted by the Los Angeles Regional Board on April 25, 2002). Following State Board, Office of Administrative Law, and USEPA approval of the Ammonia Basin Plan Amendment, the Regional Board will reopen this NPDES permit to revise the ammonia effluent limits using the new criteria.
- [6] Unlined reaches of the San Gabriel River 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.
- [7] The Boron effluent limit does not apply to Discharge No. 004, because the Basin Plan (Table 3-8) does not contain a water quality objective for the Rio Hondo or any other reach of the Los Angeles River Watershed.

2. Basis for Conventional and nonconventional pollutants:

a. Biochemical Oxygen Demand (BOD) and Suspended solids

Biochemical oxygen demand (BOD) is a measure of the quantity 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 resupply 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 monthly average shall not exceed 30 mg/L and
- the 7-day average shall not exceed 45 mg/L.

Whittier Narrows WRP provides tertiary treatment, as such, the limits in the permit are more stringent than secondary treatment requirements. The Plant achieves solids removal that are better than secondary-treated wastewater by adding a polymer (Alum) to enhance the precipitation of solids, and by filtering the effluent.

The monthly average, the 7-day average, and the daily maximum limits cannot be removed because none of the antibacksliding exceptions apply. Those limits were all included in the previous permit (Order 95-082) and the Whittier Narrows WRP has been able to meet all three limits (monthly average, the 7-day average, and the daily maximum), for both BOD and suspended solids.

In addition to having mass-based and concentration-based effluent limitations for BOD and suspended solids, the Whittier Narrows WRP 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 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 average values of the raw wastewater influent pollutant concentrations to the facility and the 30-day average values of the effluent pollutant concentrations for a given time period.

b. 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 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 antibacksliding exceptions apply. The monthly average and daily maximum limits were both included in the previous permit (Order 95-082) and the Whittier Narrows WRP has been able to meet both limits.

c. 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 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 antibacksliding exceptions apply. Both limits were included in the previous permit (Order 95-082) and the Whittier Narrows WRP has been able to meet both limits.

d. Residual chlorine

Disinfection of wastewaters 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 average or a 30-day average limitation, because it is not as protective as of beneficial uses as a daily maximum limitation is. Chlorine is very toxic to aquatic life and short-term exposures of chlorine may cause fish kills.

e. Fluoride

The existing permit effluent limitation of 1.6 mg/l for fluoride was developed based on the Basin Plan incorporation of Title 22, *Drinking Water Standards*, by reference, for the protection of GWR. It is practicable to express the limit as a monthly average, since fluoride is not expected to cause acute effects on beneficial uses.

f. Total Dissolved Solids, Chloride, Sulfate, and Boron

The limits for total dissolved solids, sulfate, and boron are based on Basin Plan Table 3-8 (page 3-13), for the San Gabriel River watershed (between Ramona Boulevard and Firestone Boulevard) and the Los Angeles River Watershed (Rio Hondo above Santa Ana Freeway). TDS = 750 mg/L; Sulfate = 300 mg/L; and Boron = 1.0. The Chloride limit is no longer 150 mg/L, but 180 mg/L, which resulted from Regional Board Resolution No. 97-02, *Amendment to the Water Quality Control Plan to incorporate a Policy for Addressing Levels of Chloride in Discharges of Wastewaters*. Resolution 97-02 was adopted by Regional Board on January 27, 1997; approved by SWRCB (Resolution 97-94); and, approved by OAL on January 8, 1998; and served to revise the chloride water quality objective in the San Gabriel River and other surface waters. It is practicable to express these limits as monthly averages, since they are not expected to cause acute effects on beneficial uses.

g. Iron

The existing permit effluent limitation of 300 mg/l for iron was developed based on the Basin Plan chemical constituent incorporation of Title 22, *Drinking Water Standards*, by reference, for the protection of GWR beneficial use. 300 µg/L is the secondary MCL for iron. Iron is not a priority pollutant. The monthly average limit cannot be removed because none of the antibacksliding exceptions apply. The limit was included in the previous permit (Order 95-082) and the Whittier Narrows WRP has been able to meet it.

h. Methylene Blue Activated Substances (MBAS)

The existing permit effluent limitation of 0.5 mg/l for MBAS was developed based on the Basin Plan incorporation of Title 22, *Drinking Water Standards*, by reference, to protect the surface water MUN beneficial use. However, the Regional Board has new information about the appropriate designated uses for the water body, and based on the current designated uses, a limit for MBAS is unnecessary and inappropriate unless discharge is to a reach used for groundwater recharge, where Title 22-based limits apply. Therefore, the

accompanying Order will contain a limit for MBAS to protect the GWR beneficial use.

i. Total inorganic nitrogen

Total inorganic nitrogen is the sum of Nitrate-nitrogen and Nitrite-nitrogen. High nitrate levels in drinking water can cause health problems in humans. Infants are particularly sensitive and can develop methemoglobinemia (blue-baby syndrome). Nitrogen is also considered a nutrient. Excessive amounts of nutrients can lead to other water quality impairments.

1. **Algae.** A reach of the San Gabriel River is 303(d) listed for algae. Excessive growth of algae and/or other aquatic plants can degrade water quality. Algal blooms sometimes occur naturally, but they are often the result of excess nutrients (i.e., nitrogen, phosphorus) from waste discharges or nonpoint sources. These algal blooms can lead to problems with tastes, odors, color, and increased turbidity and can depress the dissolved oxygen content of the water, leading to fish kills. Floating algal scum and algal mats are also an aesthetically unpleasant nuisance.

The 303(d) listing for algae is being addressed by applying the narrative WQO for biostimulatory substances, "Waters shall not contain biostimulatory substances in concentrations that promote aquatic growth to the extent that such growth causes nuisance or adversely affects beneficial uses," and other relevant information to arrive at a mass based-limit intended to be protective of the beneficial uses, pursuant to 40 CFR 122.44(d). Total nitrogen will be the indicator parameter intended to control algae, pursuant to 40 CFR 122.44(d)(1)(vi)(C).

2. **Concentration-based limit.** The effluent limit for total inorganic nitrogen (NO₂-N + NO₃-N) of 8 mg/L is based on Basin Plan Table 3-8 (page 3-13), for the San Gabriel River watershed (between Ramona Boulevard and Firestone Boulevard) and the Los Angeles River Watershed (Rio Hondo above Santa Ana Freeway).
3. **Mass based limit.** The mass emission rates are based on the plant design flow rate of 15.0 mgd. The mass based limit for nitrogen should not be based on the long-term average flow (the annual average NPDES flow from 1995 to 1999) of 9.84 MGD because flows from the past couple of years are not representative of future flows. Since CSDLAC was running a pilot project for the NDN process, the water reclamation plant could not operate at full capacity. CSDLAC provided information to Regional Board staff about the proposed NDN technology. According to CSDLAC, the Whittier Narrows WRP will be able to reduce inorganic nitrogen concentrations to 8 mg/L, ammonia concentrations to about 1 mg/L, and organic nitrogen concentrations to 1 mg/L, or total nitrogen to 10 mg/L. That means that the NDN technology, is expected to achieve a 68% reduction in total nitrogen. This reduction is intended to alleviate the algae

problem. The % nitrogen load reduction from the Whittier Narrows WRP was calculated in the following way:

$$\begin{aligned} \text{\% nitrogen reduction} &= 100\% - [(10 \text{ mg/L} \div 14.74 \text{ mg/L}) \times 100] = 100\% - 68\% = 32\% \\ &= 100\% - [\text{projected total nitrogen} \div \text{five-year average nitrogen}] \times 100 \\ &\qquad\qquad\qquad \text{concentration} \qquad\qquad\qquad \text{concentration} \end{aligned}$$

Watershed-wide monitoring will track concentration levels of phosphorus and all nitrogen series pollutants present in the effluent and receiving waters, pursuant to 40 CFR 122.44(d)(1)(vi)(C)(3).

4. **Nitrite as nitrogen.** Chapter 3 of the Basin Plan (page 3-11) contains the following water quality objective, “Waters shall not exceed the 10 mg/L nitrogen as nitrate-nitrogen plus nitrite-nitrogen (NO₃-N + NO₂-N), 45 mg/L as nitrate (NO₃), 10 mg/L as nitrate-nitrogen (NO₃-N), or 1 mg/L as nitrite-nitrogen (NO₂-N) or as otherwise designated in Table 3-8.” The Discharger will have to meet the 1 mg/L WQO at the end-of-pipe, since dilution is not an option at the present time.

j. Total ammonia

Ammonia is a pollutant routinely found in the wastewater effluent of Publicly Owned Treatment Works (POTWs), in landfill-leachate, as well as in run-off from agricultural fields where commercial fertilizers and animal manure are applied. Ammonia exists in two forms – un-ionized ammonia (NH₃) and the ammonium ion (NH₄⁺). They are both toxic, but the neutral, un-ionized ammonia species (NH₃) is much more toxic, because it is able to diffuse across the epithelial membranes of aquatic organisms much more readily than the charged ammonium ion. The form of ammonia is primarily a function of pH, but it is also affected by temperature and other factors. Additional impacts can also occur as the oxidation of ammonia lowers the dissolved oxygen content of the water, further stressing aquatic organisms. Oxidation of ammonia to nitrate may lead to groundwater impacts in areas of recharge. [There is groundwater recharge in these reaches]. Ammonia also combines with chlorine (often both are present in POTW treated effluent discharges) to form chloramines – persistent toxic compounds that extend the effects of ammonia and chlorine downstream.

Ammonia is 303(d) listed in the San Gabriel River. Since ammonia has reasonable potential to cause or contribute to an excursion of a water quality objective, a water quality-based effluent limitation for total ammonia is required in order to be protective of the water quality objective. This limit must be met at the end-of-pipe by June 14, 2002. The total ammonia numeric limits are protective of warm freshwater aquatic habitat and take into account the effect of un-ionized ammonia on aquatic habitat. Therefore, a separate limit for un-ionized ammonia is not necessary. Numeric limits for total ammonia are contained in Basin Plan Tables 3-2 and 3-4 (Attachment H of the permit). At a future date, these tables will be replaced with the 1999 USEPA Ammonia Update criteria for ammonia.

Regional Board staff will prepare a Time Schedule Order (TSO) for CSDLAC to come into compliance with the total ammonia limitation by September 30, 2003. The compliance date was based on CSDLAC's letter dated January 5, 2001, titled *Status Report on POTWs Progress Toward Achieving Compliance With Inland Surface Water Ammonia Objective*. In that letter, CSDLAC communicated to the Regional Board that the modifications and construction to the Long Beach WRP, the Los Coyotes WRP, Pomona WRP, San Jose Creek WRP, and the Whittier Narrows WRP are scheduled for completion by June 2003. The TSO will contain interim limits for total ammonia from June 2002 to September 2003.

The values that appear in the 1994 Basin Plan Ammonia Tables were based on the *Quality Criteria for Water 1986* (EPA 440/5-86-001) document.

To express the 1-Hour and the 4-Day total ammonia concentrations as nitrogen, the tabulated values should be multiplied by the 0.822 conversion factor. The factor was obtained by using stoichiometry.

Atomic mass of nitrogen = 14.01. Atomic mass of hydrogen = 1.008. In one mole of ammonia (NH₃), there is one nitrogen for every 3 hydrogens. Therefore, the molecular weight of NH₃ = 14.01 + (3 x 1.008) = 17.034.

The conversion factor is:

$$\frac{1 \text{ mole N}}{1 \text{ mole NH}_3} = \frac{14.01 \text{ mg N}}{17.037 \text{ mg NH}_3} = 0.822$$

k. 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 filtration and disinfection 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. Coliform is 303(d) listed in reach one of the San Gabriel River. However, the disinfection and filtration processes reduce the likelihood of having pathogens in the effluent. Most of the time the coliform analyses results are reported as less than 1 MPN/ 100 mL. 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.

l. 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 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.

m. 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 which reads, "For the protection of the water contact recreation beneficial use, the wastes discharged to water courses shall have received adequate treatment, so that the turbidity of the wastewater does not exceed: (a) a daily average of 2 Nephelometric turbidity units (NTUs); and (b) 5 NTUs more than 5 percent of the time (72 minutes) during any 24 hour period," is based on the Basin Plan (page 3-17).

n. 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 existing 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 incorporation of Title 22, *Drinking Water Standards*, by reference, to protect the surface water MUN beneficial use. However, the Regional Board has new information about the appropriate designated uses for the water body, and based on the current designated uses, a limit for Radioactivity is unnecessary and inappropriate unless discharge is to a reach used for groundwater recharge, where Title 22-based limits apply. Therefore, the accompanying Order will contain a limit for radioactivity to protect the GWR beneficial use.

3. Toxicity

Reach one of the San Gabriel River is 303(d) listed for toxicity. Ambient monitoring data indicates that the background concentration in the lower San Gabriel is toxic to aquatic organisms, and therefore exceeds water quality standards. Also, effluent monitoring data exceeds water quality standards. Therefore, pursuant to the SIP, reasonable potential exists for toxicity. As such, the permit contains effluent limitations for toxicity.

The toxicity limitations are based on:

- the Basin Plan objectives and implementation provisions for toxicity
- Regions 9 & 10 Guidance for Implementing Whole Effluent Toxicity Programs Final May 31, 1996, and
- Whole Effluent Toxicity (WET) Control Policy July 1994.

Acute Toxicity Limitation:

The Dischargers may test for Acute toxicity by using USEPA's Methods for Measuring the Acute Toxicity of effluent to Freshwater and Marine Organisms, September 1991 (EPA 600/4-90/027). Acute toxicity provisions in the

accompanying Order are derived from the Basin Plan’s toxicity standards (Basin Plan 3-16 and 3-17). The provisions require the Discharger to accelerate acute toxicity monitoring and take further actions to identify the source of toxicity and to reduce acute toxicity.

Chronic Toxicity Limitation and Requirements:

Chronic toxicity provisions in the accompanying Order are derived from the Basin Plan’s toxicity standards (Basin Plan 3-16 and 3-17). The provisions require the Discharger to accelerate chronic toxicity monitoring and take further actions to identify the source of toxicity and to reduce chronic toxicity. The monthly median effluent limitation of 1.0 TU_c for chronic toxicity is based on *USEPA Regions 9 & 10 Guidance for Implementing Whole Effluent Toxicity (WET) Programs* Final May 31, 1996 (Chapter 2 – Developing WET Permitting Conditions, page 2-8). In cases where effluent receives no dilution or where mixing zones are not allowed, the 1.0 TU_c chronic criterion should be expressed as a monthly median. The “median” is defined as the middle value in a distribution, above which and below which lie an equal number of values. For example, if the results of the WET testing for a month were 1.5, 1.0, and 1.0 TU_c, the median would be 1.0 TU_c.

The *USEPA Regions 9 & 10 Guidance for Implementing Whole Effluent Toxicity (WET) Programs* Final May 31, 1996 (Chapter 2 – Developing WET Permitting Conditions, page 2-8) recommends a statistical approach to developing a maximum daily effluent limitation. The daily maximum limit of 1.0 TU_c was derived using SIP procedures (a statistical approach) to calculate a maximum daily effluent limitation, using historical effluent chronic toxicity data from annual discharge monitoring reports.

4. Limits for priority pollutants and other toxics for Discharge Serial Nos. 001, 002, 003 and 004:

CTR # ^[1]	Constituent	Units	Discharge Limitations	
			Monthly Average ^[2]	Daily Maximum
2	Arsenic ^[3]	µg/L	50 ^c	--
		lbs/day ^[4]	6.32	--
	Barium ^[3]	µg/L	1,000 ^c	--
		lbs/day ^[4]	130	--
4	Cadmium ^[3]	µg/L	5 ^c	--
		lbs/day ^[4]	0.6	--
5b	Chromium VI ^[3]	µg/L	50 ^c	--
		lbs/day ^[4]	6.3	--
7	Lead ^[3]	µg/L	50 ^{c, [6]}	--
		lbs/day ^[4]	6.3	--
8	Mercury ^[3]	µg/L	0.051 ^{[5], [7], b}	0.10 ^{[5], [7], b}
		lbs/day ^[4]	0.006	0.012
9	Nickel ^[3]	µg/L	200 ^c	--
		lbs/day ^[4]	25	--
10	Selenium ^[3]	µg/L	10 ^c	--
		lbs/day ^[4]	0.13	--

CTR # ^[1]	Constituent	Units	Discharge Limitations	
			Monthly Average ^[2]	Daily Maximum
11	Silver ^[3]	µg/L	50 ^c	--
		lbs/day ^[4]	6.3	--
13	Zinc ^[3]	µg/L	5,000 ^c	--
		lbs/day ^[4]	630	--
14	Cyanide	µg/L	4.3 ^{[5], [7], a}	8.5 ^{[5], [7], a}
		lbs/day ^[4]	0.54	1.1
18	Acrylonitrile	µg/L	0.66 ^{[5], [7], b}	1.3 ^{[5], [7], b}
		lbs/day ^[4]	0.083	0.16
105	Gamma-BHC (Lindane)	µg/L	0.2 ^c	--
		lbs/day ^[4]	0.03	--
115	Endrin	µg/L	2 ^c	--
		lbs/day ^[4]	0.3	--
126	Toxaphene	µg/L	3 ^c	--
		lbs/day ^[4]	0.4	--
	Methoxychlor	µg/L	40 ^c	--
		lbs/day ^[4]	5	--
	2,4-D	µg/L	100 ^c	--
		lbs/day ^[4]	13	--
	2,4,5-TP (Silvex)	µg/L	10 ^c	--
		lbs/day ^[4]	1.3	--

- [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] Compliance may be determined from a single analysis or from the average of the initial analysis and three additional analyses within the month taken one week apart after the results of the initial analysis are obtained.
- [3] Concentration expressed as total recoverable.
- [4] The mass emission rates are based on the plant design flow rate of 15.0 mgd. During wet-weather storm events in which the flow exceeds the design capacity, the mass discharge rate limitations shall not apply, and concentration limitations will provide the only applicable effluent limitations.
- [5] Section 2.4.5 of CTR *Compliance Determination*, reads, “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 ML.”
- [6] The 50 mg/L limit for lead applies to Discharge Serial Nos. 001, 002, 003, and 004.
- [7] This effluent limitation will not be in effect until July 10, 2007, and until that time the Discharger shall comply with the interim limits established in Section I.A.9. of NPDES Order No. R4-2002-0142.

Additional Footnotes - Priority Pollutants:

- a. Based on most stringent CTR criteria [Criterion Continuous Concentration (CCC)] for the protection of freshwater aquatic life. To arrive at this 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 CCC is intended to be the highest concentration that could be maintained indefinitely in a water body without causing an unacceptable effect on aquatic community or its uses.

- b. Based on most stringent CTR criteria for the protection of human health from consumption of organisms only. CTR criteria was adjusted according to SIP Section 1.4, to arrive at this limitation.
- c. Based on the Basin Plan chemical constituent incorporation of Title 22, *Drinking Water Standards*, by reference, for the protection of GWR beneficial use. Previous Orders, No. 95-085 and 89-098, for the Whittier Narrows WRP contained limits for these constituents.

5. Basis for priority pollutants:

Mixing zones and dilution credits are not used in the accompanying order and would be inappropriate to grant in light of the following factors:

- The Whittier Narrows WRP discharge contributes the largest flow into the San Gabriel watershed in the vicinity of the discharge point; it overwhelms the receiving water providing limited mixing and dilution;
- Even in the absence of the Whittier Narrows WRP discharge, the receiving water primarily consists of nuisance flows and other effluents, limiting its ability to assimilate additional waste;
- Several reaches of the San Gabriel River [including those subject to this Order] are 303(d) listed (i.e, impaired) for certain constituents;
- Impaired waters do not have the capacity to assimilate pollutants of concern at concentrations greater than the applicable objective;
- For the protection of the beneficial uses, such as rare, threatened, or endangered species.
- For the protection of warm freshwater habitat;
- For the protection of the beneficial uses, such as estuarine habitat; marine habitat; wildlife habitat;
- Because a mixing zone study has not been conducted; and
- Because a hydrologic model of the discharge and the receiving water has not been conducted.

Allowance of a mixing zone is discretionary under Section 1.4.2 of the SIP and under the Basin Plan (Basin Plan Chapter 4, page 30). If the Discharger subsequent conducts appropriate mixing zone and dilution credit studies, the Regional Board can evaluate the propriety of granting a mixing zone or establishing dilution credits.

6. Example calculation: Cyanide

Is a limit required? What is RPA?

- From Table R, *Reasonable Potential & Limit Derivation*, we determined that Reasonable potential analysis (RPA) = Yes, therefore a limit is required.

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:

CMC = 22 µg/L (CTR page 31712, column B1) and

CCC = 5.2 µg/L (CTR page 31712, column B2); and

Human Health Criteria for Water & Organisms = 700 µg/L.

Step 2 – Calculate effluent concentration allowance (ECA)

ECA = Criteria in CTR, since no dilution is allowed.

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

a. Calculate CV:

CV = Standard Deviation / Mean

= 0.6 (By default because data was > 80% nondetect, SIP page 6)

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.

c. LTA acute = ECA acute x ECA Multiplier acute

= 22 µg/L x 0.321 = 7.062 µg/L

d. LTA chronic = ECA chronic x ECA Multiplier chronic

= 5.2 µg/L x 0.527 = 2.7404 µg/L

Step 4 – Select the lowest LTA.

In this case, LTA chronic < LTA acute, therefore lowest LTA = 2.74 µg/L

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

a. Find the multipliers. 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 Step4) x AMEL Multiplier

= 2.74 µg/L x 1.55 = 4.2476 µg/L

c. MDEL aquatic life = lowest LTA (from Step4) x MDEL Multiplier

= 2.74 µg/L x 3.11 = 8.5226 µg/L

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

a. Find factors. Given CV = 0.6 and n = 4.

For AMEL human health limit, there is no factor.

The MDEL/AMEL human health factor = 2.01

- b. AMEL human health = ECA = 700 µg/L
- c. MDEL human health = ECA x MDEL/AMEL factor
= 700 µg/L x 2.01 = 1407

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 = 4.2 µg/L (Based on Aquatic life protection)
 - b. Lowest MDEL = 8.5 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 the accompanying Order 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.

X. INTERIM REQUIREMENTS

Ammonia

The 1994 Basin plan provides that to protect aquatic life, the total ammonia concentrations in receiving waters shall not exceed the objectives for the corresponding in-stream conditions given in Tables 3-1 to 3-4 of the Basin Plan. The objectives for total ammonia take into account the effect of un-ionized ammonia on aquatic habitat. Compliance with this requirement is up to 8 years following adoption of the Basin Plan. However, Order No. 95-082, the previous permit, the Discharger was granted up to eight years following the adoption of Order No. 95-082 to: (a) meet the Basin Plan objective for ammonia by making the necessary adjustments/improvements (to the Plant processes), or (b) conduct studies leading to an approved site specific objective for ammonia.

In compliance with Order No. 95-082, the Discharger developed and submitted an eight-year schedule (beginning in 1995 and ending in 2003) to achieve compliance with the ammonia, nitrite nitrogen, and nitrite plus nitrate nitrogen limitations for all POTWs in its network. Elements of the schedule included pilot studies, design, construction, and startup of a modified process for nitrification and de-nitrification (NDN).

In addition to modifying all of the POTWs with the NDN process, the Discharger is pursuing site-specific objectives (SSO) for ammonia for some of the POTWs. On December 31, 2001, the Discharger submitted a workplan for the development of ammonia SSOs through development of water effect ratios (WER). A WER adjusts the existing objective to account

for site-specific conditions by measuring the actual toxicity of the site water to aquatic species in the waterbody as compared to laboratory dilution water. CSDLAC is following the requirements outlined in the Basin Plan, USEPA guidance, and as specified by the Regional Board for the development of SSOs. The need for a use attainability analysis (UAA) is being assessed throughout the process as data are obtained and the SSO is developed. Regional Board staff have met with the Discharger and its consultant, Larry Walker and Associates, discussing the workplan. Regional Board approval of the workplan is pending.

Because there is reasonable potential, the ammonia objective which was a receiving water quality objective in the previous permit, is a WQBEL in this Order that has to be met at the end-of-pipe by June 14, 2002 (per Basin Plan). The numeric limits for total ammonia applicable to the Whittier Narrows discharge are contained in Basin Plan Tables 3-2 and 3-4 (Attachment H of this Order).

The accompanying 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 adopted by the Regional Board on April 25, 2002. The Amendment updates the existing ammonia objectives in the 1994 Basin Plan with the 1999 USEPA criteria. The existing criteria for ammonia in the Basin Plan Tables are more stringent than the recently adopted ammonia criteria. Once the Ammonia Basin Plan Amendment has been approved by the Office of Administrative Law, and after it becomes effective, then the Regional Board will reopen the NPDES permit to update the ammonia effluent limits. At that time, WQBELs will be developed for ammonia.

Due to the complexity of the network of interconnected CSDLAC POTWs, the good faith efforts that CSDLAC has demonstrated (including the pilot studies completed and the process modification timelines submitted), and, the compliance date provided in Order No. 95-082, this Order is accompanied by a Time Schedule Order requiring CSDLAC to comply with the total ammonia and inorganic nitrogen limitations according to Order No. 95-082 compliance date. Interim limits contained in the TSO will be in effect during construction of the NDN system and will end once the six-week start-up and process optimization phase of the NDN system is completed.

Pollutant Minimization Program

The accompanying Order provides for the use of Pollutant Minimization Program, developed in conformance with Section 2.4.5.1 of the SIP, when there is evidence (e.g., sample results reported as DNQ 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 above, presence of whole effluent toxicity, health advisories for fish consumption, results of benthic or aquatic organisms tissue sampling) that a priority pollutant is present in the discharger's effluent above an effluent limitation.

The Discharger shall develop and conduct a Pollutant Minimization Program (PMP), in accordance with Section 2.4.5.1.,of the SIP, if all of the following conditions are true, and shall submit the PMP to the Regional Board within 90 days of determining the conditions are true:

1. when there is evidence that the priority pollutant is present in the effluent above an effluent limitation and either:

- a. A sample result is reported as detected but not quantified (DNQ) and the effluent limitation is less than the reported ML; or
- b. A sample result is reported as nondetect (ND) and the effluent limitation is less than the MDL.

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

- sample results reported as DNQ when the effluent limitation is less than the method detection limit (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.

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.

In a letter dated June 30, 2000, CSDLAC proposed a plan with a logical sequence of actions to achieve full compliance with the limits in the accompanying Order. The first phase of the plan is to investigate the sources of the high levels of contaminants in the collection system. If the sources can be identified, source reduction measures (including, when appropriate, Pollution Minimization Plans) will be instituted. At the time the accompanying Order is considered, CSDLAC is unsure whether or not all sources contributing to the high contaminant levels can be identified. Therefore, a parallel effort will be made to evaluate the appropriateness of Site Specific Objectives (SSO) and, when necessary, Use Attainability Analyses (UAA), and modifications to and/or construction of, treatment facilities. If it is determined that a SSO or UAA is necessary, CSDLAC will submit a written request for a SSO study, accompanied by a preliminary commitment to fund the study, to the Regional Board. The Discharger will then develop a workplan and submit it to the Regional Board for approval prior to the initiation of the studies.

Interim Limits

The Whittier Narrows WRP may not be able to achieve immediate compliance with the limits for mercury, cyanide, and acrylonitrile contained in Section I.A.2.(b).. Data submitted in previous self monitoring reports indicates that these constituents have been detected in the effluent, at least once, at a concentration greater than the new limit proposed in the accompanying Order.

40 CFR section 131.38(e) provides conditions under which interim effluent limits and compliance schedules may be issued, but the current Basin Plan does not allow inclusion of interim limits and compliance schedules in NPDES permits for effluent limits. The SIP allows inclusion of interim limits in NPDES permits for CTR-based priority pollutants. The CTR provides for a five-year maximum compliance schedule, while the SIP allows for longer, TMDL-based compliance schedule. However, the USEPA has yet to approve the longer compliance schedules. Therefore, this Order includes interim limits and compliance schedules based on the CTR for CTR-based priority pollutants limits when the Discharger

has been determined to have problems in meeting the new limits. This Order also includes a reopener to allow the Regional Board to grant TMDL-based compliance schedules if the USEPA approves the longer compliance schedule provisions of the SIP. For new non-CTR-based limits prescribed in this Order for which the Discharger will not be able to meet immediately, interim limits and compliance dates are provided in an accompanying Time Schedule Order.

In conformance with the CTR and the relevant provisions of SIP Section 2.1, the Discharger has submitted documentation that diligent efforts have been made to quantify pollutant levels in the discharge and the sources of the pollutants entering the POTW. In addition, the Discharger already has in place a source control and pollutant minimization approach through its existing pollutant minimization strategies and through the pretreatment program. The duration of interim requirements established in this order was developed in coordination with Regional Board staff and the Discharger, and the proposed schedule is as short as practicable. In fact, the five-year compliance schedule is based on the maximum duration compliance schedule available because the Regional Board anticipates it will take longer than five years to achieve the final limits.

XI. 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-2848 (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 complete a reasonable potential analysis for CTR constituents.