

**I. RECYCLED WATER MONITORING:**

1. Prior to the commencement of recycled water recharge, at least one 24-hour composite or grab sample of recycled water shall be collected and analyzed for all chemicals, radio nuclides, and constituents listed in Tables I, II, and III of Recycled Water Monitoring requirement II.2, below. The results for the initial recycled water quality analysis shall be submitted to the CDHS and Regional Board.
2. Sampling station(s) shall be established where representative samples of recycled water can be obtained. Representative samples shall be collected and analyzed for the parameters at frequencies specified in the following Tables I, II, and III, below:

<b>Table I</b>			
<u>Chemical</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Minimum Frequency of Sampling and Analysis</u>
Total Recycled Water Flow	<i>mgd</i>	Flow meter/totalizer	Continuous
Turbidity	<i>NTU</i>	continuous monitoring and recording	Continuous (see paragraph I.3., below)
Total Nitrogen <sup>1</sup>	<i>mg/l</i>	Grab <sup>2</sup> /composite	2/week <sup>3</sup>
Nitrate Nitrogen	<i>mg/l</i>	Grab/composite	2/week
Total Inorganic Nitrogen	<i>mg/l</i>	Grab/composite	2/week
Total Organic Carbon	<i>mg/l</i>	Grab/composite	2/Weekly <sup>4</sup>
Total Coliform	<i>MPN/100ml</i>	Grab	Daily
pH	<i>pH units</i>	pH meter	Continuous
Electrical Conductivity	<i>Micromhos/cm</i>	Grab	Daily
Total Dissolved Solids	<i>mg/l</i>	composite	Monthly
Total Hardness	<i>mg/l</i>	composite	Monthly
Oil and Grease	<i>mg/l</i>	grab	Quarterly
<u>Inorganic Chemical</u>			
Aluminum	<i>mg/l</i>	grab	Quarterly
Antimony	“	“	“
Arsenic	“	“	“
Asbestos	<i>MFL</i>	“	“

<sup>1</sup> Total Nitrogen is defined as the sum of nitrate, nitrite, ammonia, and organic nitrogen concentrations, expressed as nitrogen.

<sup>2</sup> Grab sample is an individual sample collected in a short period of time not exceeding 15 minutes. Grab samples shall be collected during normal peak loading conditions for the parameter of interest, which may or may not be during hydraulic peaks.

<sup>3</sup> Two samples shall be collected at least three days apart.

<sup>4</sup> Sampling and testing frequency may be reduced to once weekly subject to CDHS' and Regional Board Executive Officer's approval.

<b>Table I</b>			
<b><u>Chemical</u></b>	<b><u>Units</u></b>	<b><u>Type of Sample</u></b>	<b><u>Minimum Frequency of Sampling and Analysis</u></b>
Barium	<i>mg/l</i>	Grab	Quarterly
Beryllium	“	“	“
Cadmium	“	“	“
Chromium	“	“	“
Cyanide	“	“	“
Fluoride	“	“	“
Mercury	“	“	“
Nickel	“	“	“
Selenium	“	“	“
Thallium	<i>mg/L</i>	Grab	Quarterly
<b><u>Volatile Organic Chemicals (VOC)</u></b>			
Benzene	<i>mg/l</i>	Grab	Quarterly
Carbon Tetrachloride	“	“	“
1,2-Dichlorobenzene	“	“	“
1,4-Dichlorobenzene	“	“	“
1,1-Dichloroethane	“	“	“
1,2-Dichloroethane	“	“	“
1,1-Dichloroethene	“	“	“
cis-1,2-Dichloroethene	“	“	“
trans-1,2-Dichloroethene	“	“	“
Dichloromethane	“	“	“
1,2-Dichloropropane	“	“	“
1,3-Dichloropropene	“	“	“
Ethylbenzene	“	“	“
Monochlorobenzene	“	“	“
Methyl- <i>tert</i> -butyl ether (MTBE)	“	“	“
Styrene	“	“	“
1,1,2,2-Tetrachloroethane	“	“	“
Tetrachloroethene	“	“	“
Toluene	“	“	“
1,2,4-Trichlorobenzene	“	“	“
1,1,1Trichloroethane	“	“	“
1,1,2-Trichloroethane	“	“	“
Trichloroethene	“	“	“
Trichlorofluoromethane	“	“	“
1,1,2-Trichloro-1,2,2-Trifluoroethane	“	“	“
Vinyl Chloride	“	“	“
Xylenes <sup>5</sup>	<i>mg/L</i>	Grab	Quarterly

<sup>5</sup>

Limit is for either a single isomer or the sum of the isomers.

**Table I**

<u>Chemical</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Minimum Frequency of Sampling and Analysis</u>
<b><u>Non-Volatile Synthetic Organic Chemicals (SOCs)</u></b>			
Alachlor	<i>mg/l</i>	Grab	Quarterly
Atrazine	“	“	“
Bentazon	“	“	“
Benzo(a)pyrene	“	“	“
Carbofuran	“	“	“
Chlordane	“	“	“
2,4-D	“	“	“
Dalapon	“	“	“
Dibromochloropropane (DBCP)	“	“	“
Di(2-ethylhexyl)adipate	“	“	“
Di(2-ethylhexyl)phthalate	“	“	“
Dinoseb	“	“	“
Diquat	“	“	“
Endothall	“	“	“
Endrin	“	“	“
Ethylene Dibromide (EDB)	“	“	“
Glyphosate	“	“	“
Heptachlor	“	“	“
Heptachlor Epoxide	“	“	“
Hexachlorobenzene	“	“	“
Hexachlorocyclopentadiene	“	“	“
Lindane	“	“	“
Methoxychlor	“	“	“
Molinate	“	“	“
Oxamyl	“	“	“
Pentachlorophenol	“	“	“
Picloram	“	“	“
Polychlorinated Biphenyls	“	“	“
Simazine	“	“	“
Thiobencarb	“	“	“
Toxaphene	“	“	“
2,3,7,8-TCDD (Dioxin)	“	“	“
2,4,5-TP (Silvex)	<i>mg/l</i>	Grab	Quarterly

<b>Table I</b>			
<u><i>Chemical</i></u>	<u><i>Units</i></u>	<u><i>Type of Sample</i></u>	<u><i>Minimum Frequency of Sampling and Analysis</i></u>
<b><u>Disinfection By-products</u></b>			
Total Trihalomethanes (TTHM) <sup>6</sup>	<i>mg/l</i>	Grab	Quarterly
Total Haloacetic acids (five) (HAA5) <sup>7</sup>	“	“	“
Bromate	“	“	“
Chlorite	<i>mg/l</i>	Grab	Quarterly
<b><u>Notification Levels</u></b>			
Copper	<i>mg/l</i>	Grab	Quarterly
Lead	<i>mg/l</i>	Grab	Quarterly
<b><u>Radionuclides</u></b>			
Combined Radium-226 and Radium-228	<i>pCi/l</i>	Grab	Quarterly
Gross Alpha particle activity (including Radium-226 but excluding Radon and Uranium)	“	“	“
Tritium	“	“	“
Strontium-90	“	“	“
Gross Beta particle activity	“	“	“
Uranium	<i>pCi/l</i>	Grab	Quarterly

<sup>6</sup> Sum of bromodichloromethane, dibromochloromethane, bromoform, and chloroform.

<sup>7</sup> Sum of monochloroacetic acid, dichloroacetic acid, trichloroacetic acid, monobromoacetic acid, and dibromoacetic acid).

<b><u>Table II</u></b>			
<b>Constituents</b>	<b>Units</b>	<b>Type of Sample</b>	<b>Minimum Frequency of Sampling and Analysis</b>
Remaining priority pollutants (See Attachment "A")	$\mu\text{g/l}$	Grab	Quarterly
Endocrine disrupting chemicals & pharmaceuticals See Attachment "B"	$\mu\text{g/l}$	Grab	Annually
<b><u>Unregulated Chemicals</u></b>			
Boron	$\text{mg/l}$	Grab	Quarterly (see I.4., below)
Chromium-6	$\mu\text{g/l}$	"	"
Dichlorodifluoromethane	"	"	"
Ethyl tertiary butyl ether	"	"	"
N-Nitrosodimethylamine (NDMA)	$\mu\text{g/l}$	Grab	"
Perchlorate	$\text{mg/l}$	Grab	Quarterly (see I.4., below)
Tertiary amyl methyl ether	"	"	"
Tertiary butyl alcohol	"	"	"
Vanadium	"	"	"
1,4-Dioxane	"	"	"
1,2,3-Trichloropropane	$\mu\text{g/l}$	Grab	"

<b><u>Table III</u></b>			
<b><u>Constituents</u></b>	<b>Units</b>	<b>Type of Sample</b>	<b>Minimum Frequency of Sampling and Analysis</b>
Aluminum	$\text{mg/L}$	Grab	Annually
Corrosivity	--	"	"
Foaming Agents (MBAS)	"	"	"
Iron	"	"	"
Manganese	$\text{mg/l}$	Grab	Annually
Odor—Threshold	<i>units</i>	"	"
Silver	$\text{mg/l}$	Grab	Annually
Thiobencarb	"	"	"
Zinc	$\text{mg/l}$	Grab	Annually

3. Turbidity shall be measured and recorded continuously and immediately before disinfection with at least one reading every 1.2 hours. Should the continuous turbidity meter and recorder fail, grab sampling at a minimum frequency of 1.2 hours may be substituted for a period of up to 24 hours.
4. For the first year of operation, all unregulated chemical constituents shall be sampled and tested quarterly. After the first year of operation and with CDHS recommendation and approval, the Executive Officer may allow the monitoring frequency to be reduced to annually for these chemicals based on the initial sample results.

**II. DILUENT WATER MONITORING:**

1. Sampling station(s) shall be established where representative samples of diluent water can be obtained. Representative samples shall be collected and analyzed for the following parameters at frequencies specified herein:

<b>Monitoring Program for Diluent Water</b>				
<b><u>Parameter</u></b>	<b><u>Sample Station</u></b>	<b><u>Units</u></b>	<b><u>Type of Sample</u></b>	<b><u>Minimum Frequency of Analysis</u></b>
Diluent water flow	Before blending	<i>mgd</i>	Flow Meter/Totalizer	Continuous
Nitrate and nitrite	"	<i>mg/l</i>	Grab	Quarterly
Total Dissolved Solids	"	<i>mg/l</i>	Grab	Quarterly

**III. RECHARGED WATER MONITORING**

1. A lysimeter-based monitoring system shall be used to demonstrate soil-aquifer treatment for TOC and total nitrogen. Samples of recharged water shall be collected using lysimeters in the vadose zone at each recharge basin.

<b>Monitoring Program for Recharged Water</b>				
<b><u>Parameter</u></b>	<b><u>Sample Station</u></b>	<b><u>Units</u></b>	<b><u>Type of Sample</u></b>	<b><u>Minimum Frequency of Analysis</u></b>
TOC	lysimeter	<i>mg/l</i>	Grab	Weekly
Total Nitrogen	lysimeter	<i>mg/l</i>	Grab	2/Week
Total Inorganic Nitrogen	lysimeter	<i>mg/l</i>	Grab	2/week
Nitrate-Nitrogen	lysimeter	<i>mg/l</i>	Grab	2/week

<b>Monitoring Program for Recharged Water</b>				
<b><u>Parameter</u></b>	<b><u>Sample Station</u></b>	<b><u>Units</u></b>	<b><u>Type of Sample</u></b>	<b><u>Minimum Frequency of Analysis</u></b>
Nitrite, Ammonia, and Organic Nitrogen	lysimeter	<i>mg/l</i>	Grab	2/week
Nitrite-Nitrogen	lysimeter	<i>mg/l</i>	Grab	2/week

#### **IV. GROUNDWATER MONITORING PROGRAM**

1. The groundwater-monitoring program shall begin one month prior to recharge of recycled water. Representative samples shall be taken at the groundwater monitoring - Groundwater Monitoring Well Requirements are for the following constituents:

<b>Parameter</b>	<b>Units</b>	<b>Type of Sample</b>	<b>Minimum Frequency of Analysis</b>
Total Organic Carbon	<i>mg/l</i>	Grab	Quarterly
Total Coliform	<i>MPN/100ml</i>	“	“
pH	<i>pH units</i>	“	“
Electrical Conductivity	<i>micromhos/cm</i>	“	“
Aluminum	<i>mg/l</i>	“	“
Color	<i>Units</i>	“	“
Copper	<i>mg/l</i>	Grab	Quarterly
Corrosivity	<i>units</i>	“	“
Foaming Agents (MBAS)	<i>mg/l</i>	“	“
Iron	“	“	“
Manganese	“	“	“
Methyl- <i>tert</i> -butyl ether (MTBE)	<i>mg/l</i>	Grab	Quarterly
Odor—Threshold	<i>Units</i>	Grab	Quarterly
Silver	<i>mg/l</i>	“	“
Thiobencarb	<i>mg/l</i>	“	“
Turbidity	<i>NTU</i>	“	“
Zinc	<i>mg/l</i>	“	“
Total Dissolved Solids	“	“	“
Chloride	“	“	“
Hardness	“	“	“
Sodium	<i>mg/l</i>	Grab	Quarterly

<b>Parameter</b>	<b>Units</b>	<b>Type of Sample</b>	<b>Minimum Frequency of Analysis</b>
Sulfate	<i>mg/l</i>	Grab	Quarterly
Water Quality Constituents <sup>8</sup>	“	“	“
Total Nitrogen	“	“	Every two weeks for close proximity wells (See IV.2.,below), Quarterly for all other wells
Nitrate-nitrogen	“	“	“
Nitrite-nitrogen	“	“	“
Dissolved Oxygen	“	“	“

2. The frequency of sampling for the last four constituents may be decreased to quarterly after recharge water recharged at the highest RWC allowed in permit has reached the well for a period of 24 months and only if the nitrite and nitrate maximum contaminant level (MCL) levels have not been exceeded and the dissolved oxygen level has not fallen below 2 mg/l in two consecutive samples.
  
3. If any of the groundwater monitoring test results indicates that a maximum contaminant level has been exceeded, that the dissolved oxygen falls below 2 mg/l, or that coliform are present, the users shall notify the CDHS within 48 hours of receiving the results and make note of any positive findings in the monthly report submitted to the Regional Board.

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*Any water quality constituents specified by the CDHS based on the results of the recycled water monitoring, above.*

EPA PRIORITY POLLUTANT LIST		
Metals	Acid Extractibles	Base/Neutral Extractibles (continuation)
1. Antimony	45. 2-Chlorophenol	91. Hexachloroethane
2. Arsenic	46. 2,4-Dichlorophenol	92. Indeno (1,2,3-cd) Pyrene
3. Beryllium	47. 2,4-Dimethylphenol	93. Isophorone
4. Cadmium	48. 2-Methyl-4,6-Dinitrophenol	94. Naphthalene
5a. Chromium (III)	49. 2,4-Dinitrophenol	95. Nitrobenzene
5b. Chromium (VI)	50. 2-Nitrophenol	96. N-Nitrosodimethylamine
6. Copper	51. 4-Nitrophenol	97. N-Nitrosodi-N-Propylamine
7. Lead	52. 3-Methyl-4-Chlorophenol	98. N-Nitrosodiphenylamine
8. Mercury	53. Pentachlorophenol	99. Phenanthrene
9. Nickel	54. Phenol	100. Pyrene
10. Selenium	55. 2, 4, 6 - Trichlorophenol	101. 1,2,4-Trichlorobenzene
11. Silver	Base/Neutral Extractibles	Pesticides
12. Thallium	56. Acenaphthene	102. Aldrin
13. Zinc	57. Acenaphthylene	103. Alpha BHC
Miscellaneous	58. Anthracene	104. Beta BHC
14. Cyanide	59. Benzidine	105. Delta BHC
15. Asbestos (not required unless requested)	60. Benzo (a) Anthracene	106. Gamma BHC
16. 2,3,7,8-Tetrachlorodibenzo-P-Dioxin (TCDD)	61. Benzo (a) Pyrene	107. Chlordane
Volatile Organics	62. Benzo (b) Fluoranthene	108. 4, 4' - DDT
17. Acrolein	63. Benzo (g,h,i) Perylene	109. 4, 4' - DDE
18. Acrylonitrile	64. Benzo (k) Fluoranthene	110. 4, 4' - DDD
19. Benzene	65. Bis (2-Chloroethoxy) Methane	111. Dieldrin
20. Bromoform	66. Bis (2-Chloroethyl) Ether	112. Alpha Endosulfan
21. Carbon Tetrachloride	67. Bis (2-Chloroisopropyl) Ether	113. Beta Endosulfan
22. Chlorobenzene	68. Bis (2-Ethylhexyl) Phthalate	114. Endosulfan Sulfate
23. Chlorodibromomethane	69. 4-Bromophenyl Phenyl Ether	115. Endrin
24. Chloroethane	70. Butylbenzyl Phthalate	116. Endrin Aldehyde
25. 2-Chloroethyl Vinyl Ether	71. 2-Chloronaphthalene	117. Heptachlor
26. Chloroform	72. 4-Chlorophenyl Phenyl Ether	118. Heptachlor Epoxide
27. Dichlorobromomethane	73. Chrysene	119. PCB 1016
28. 1,1-Dichloroethane	74. Dibenzo (a,h) Anthracene	120. PCB 1221
29. 1,2-Dichloroethane	75. 1,2-Dichlorobenzene	121. PCB 1232
30. 1,1-Dichloroethylene	76. 1,3-Dichlorobenzene	122. PCB 1242
31. 1,2-Dichloropropane	77. 1,4-Dichlorobenzene	123. PCB 1248
32. 1,3-Dichloropropylene	78. 3,3' -Dichlorobenzidine	124. PCB 1254
33. Ethylbenzene	79. Diethyl Phthalate	125. PCB 1260
34. Methyl Bromide	80. Dimethyl Phthalate	126. Toxaphene
35. Methyl Chloride	81. Di-n-Butyl Phthalate	Note: All laboratory analyses shall be performed in accordance with test procedures under 40 CFR 136 (latest edition) and shall meet the minimum levels specified in Appendix 4 of the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California
36. Methylene Chloride	82. 2,4-Dinitrotoluene	
37. 1,1,2,2-Tetrachloroethane	83. 2-6-Dinitrotoluene	
38. Tetrachloroethylene	84. Di-n-Octyl Phthalate	
39. Toluene	85. 1,2-Dipenylhydrazine	
40. 1,2-Trans-Dichloroethylene	86. Fluoranthene	
41. 1,1,1-Trichloroethane	87. Fluorene	
42. 1,1,2-Trichloroethane	88. Hexachlorobenzene	
43. Trichloroethylene	89. Hexachlorobutadiene	
44. Vinyl Chloride	90. Hexachlorocyclopentadiene	

Revised: 1/12/2005

## **List of Chemicals of Endocrine Disrupting Chemicals & Pharmaceuticals and Other Chemicals**

### **A. Chemicals with State Notification Levels:**

1. n-butylbenzene
2. sec-butylbenzene
3. tert-butylbenzene
4. carbon disulfide
5. chlorate
6. 2-chlorotoluene
7. diazinon
8. 1,4-dioxane
9. formaldehyde
10. isopropylbenzene
11. n-propylbenzene
12. 1,2,4 –trimethylbenzene
13. 1,3,5-trimethylbenzene

### **B. Nitrosoamines**

14. N-Nitrosodiethylamine (NDEA)
15. N-Nitrosopyrrolidine

### **C. Endocrine Disrupting Chemicals, Pharmaceuticals and Other Chemicals:**

- Hormones:
  16. Ethinyl estradiol
  17. 17-B estradiol
  18. estrone
- "Industrial" Endocrine Disruptors:
  19. bisphenol A
  20. nonylphenol and nonylphenol polyethoxylate
  21. octylphenol and octylphenol polyethoxylate
  22. polybrominated diphenyl ethers

**List of Chemicals  
of  
Endocrine Disrupting Chemicals & Pharmaceuticals and Other Chemicals**

- Pharmaceuticals and others substances:
  23. acetaminopen
  24. amoxicillin
  25. azithromycin
  26. caffience
  27. carbamazepine
  28. ciprofloxacin
  29. ethylenediamine tetra-acetic acid (EDTA)
  30. gemfibrozil
  31. ibuprofen
  32. iodinated contrast media
  33. lipitor
  34. methadone
  35. morphine
  36. salicylic acid
  37. triclosan