

**MAXIMUM CONTAMINANT LEVELS AND REGULATORY DATES
FOR DRINKING WATER
U.S. EPA VS CALIFORNIA
NOVEMBER 2008**

Contaminant	U.S. EPA		California	
	MCL (mg/L)	Date ^a	MCL (mg/L)	Effective Date
<i>Inorganics</i>				
Aluminum	0.05 to 0.2 ^b	1/91	1 0.2 ^b	2/25/89 9/8/94
Antimony	0.006	7/92	0.006	9/8/94
Arsenic	0.05 0.010	eff: 6/24/77 eff: 1/23/06	0.05 0.010	77 11/28/08
Asbestos	7 MFL ^c	1/91	7 MFL ^c	9/8/94
Barium	1 2	eff: 6/24/77 1/91	1	77
Beryllium	0.004	7/92	0.004	9/8/94
Cadmium	0.010 0.005	eff: 6/24/77 1/91	0.010 0.005	77 9/8/94
Chromium	0.05 0.1	eff: 6/24/77 1/91	0.05	77
Copper	1.3 ^d	6/91	1 ^b 1.3 ^d	77 12/11/95
Cyanide	0.2	7/92	0.2 0.15	9/8/94 6/12/03
Fluoride	4 2 ^b	4/86 4/86	2	4/98
Lead	0.05 ^e 0.015 ^d	eff: 6/24/77 6/91	0.05 ^e 0.015 ^d	77 12/11/95
Mercury	0.002	eff: 6/24/77	0.002	77
Nickel	Remanded		0.1	9/8/94
Nitrate	(as N) 10	eff: 6/24/77	(as NO ₃) 45	77
Nitrite (as N)	1	1/91	1	9/8/94
Total Nitrate/Nitrite (as N)	10	1/91	10	9/8/94
Perchlorate	-	-	0.006	10/18/07
Selenium	0.01 0.05	eff: 6/24/77 1/91	0.01 0.05	77 9/8/94
Thallium	0.002	7/92	0.002	9/8/94
<i>Radionuclides</i>				
Uranium	30 ug/L	12/7/00	20 pCi/L 20 pCi/L	1/1/89 6/11/06
Combined Radium - 226+228	5 pCi/L	eff: 6/24/77	5 pCi/L 5 pCi/L	77 6/11/06
Gross Alpha particle activity (excluding radon & uranium)	15 pCi/L	eff: 6/24/77	15 pCi/L 15 pCi/L	77 6/11/06
Gross Beta particle activity	4 millirem/yr	eff: 6/24/77	50 pCi/L ¹ 4 millirem/yr	77 6/11/06
Strontium-90	8 pCi/L	eff: 6/24/77 now covered by Gross Beta	8 pCi/L ¹ 8 pCi/L ^f	77 6/11/06
Tritium	20,000 pCi/L	eff: 6/24/77 now covered by Gross Beta	20,000 pCi/L ¹ 20,000 pCi/L ^f	77 6/11/06

Contaminant	U.S. EPA		California	
	MCL (mg/L)	Date ^a	MCL (mg/L)	Effective Date
VOCS				
Benzene	0.005	6/87	0.001	2/25/89
Carbon Tetrachloride	0.005	6/87	0.0005	4/4/89
1,2-Dichlorobenzene	0.6	1/91	0.6	9/8/94
1,4-Dichlorobenzene	0.075	6/87	0.005	4/4/89
1,1-Dichloroethane	-	-	0.005	6/24/90
1,2-Dichloroethane	0.005	6/87	0.0005	4/4/89
1,1-Dichloroethylene	0.007	6/87	0.006	2/25/89
cis-1,2-Dichloroethylene	0.07	1/91	0.006	9/8/94
trans-1,2-Dichloroethylene	0.1	1/91	0.01	9/8/94
Dichloromethane	0.005	7/92	0.005	9/8/94
1,3-Dichloropropene	-	-	0.0005	2/25/89
1,2-Dichloropropane	0.005	1/91	0.005	6/24/90
Ethylbenzene	0.7	1/91	0.68	2/25/89
			0.7	9/8/94
			0.3	6/12/03
Methyl-tert-butyl ether (MTBE)	-	-	0.005 ^b	1/7/99
			0.013	5/17/00
Monochlorobenzene	0.1	1/91	0.03	2/25/89
			0.07	9/8/94
Styrene	0.1	1/91	0.1	9/8/94
1,1,2,2-Tetrachloroethane	-	-	0.001	2/25/89
Tetrachloroethylene	0.005	1/91	0.005	5/89
Toluene	1	1/91	0.15	9/8/94
1,2,4 Trichlorobenzene	0.07	7/92	0.07	9/8/94
			0.005	6/12/03
1,1,1-Trichloroethane	0.200	6/87	0.200	2/25/89
1,1,2-Trichloroethane	0.005	7/92	0.032	4/4/89
			0.005	9/8/94
Trichloroethylene	0.005	6/87	0.005	2/25/89
Trichlorofluoromethane	-	-	0.15	6/24/90
1,1,2-Trichloro-1,2,2-Trifluoroethane	-	-	1.2	6/24/90
Vinyl chloride	0.002	6/87	0.0005	4/4/89
Xylenes	10	1/91	1.750	2/25/89

Contaminant	U.S. EPA		California	
	MCL (mg/L)	Date ^a	MCL (mg/L)	Effective Date
SOCS				
Alachlor	0.002	1/91	0.002	9/8/94
Atrazine	0.003	1/91	0.003	4/5/89
			0.001	6/12/03
Bentazon	-	-	0.018	4/4/89
Benzo(a) Pyrene	0.0002	7/92	0.0002	9/8/94
Carbofuran	0.04	1/91	0.018	6/24/90
Chlordane	0.002	1/91	0.0001	6/24/90
Dalapon	0.2	7/92	0.2	9/8/94
Dibromochloropropane	0.0002	1/91	0.0001	7/26/89
			0.0002	5/3/91
Di(2-ethylhexyl)adipate	0.4	7/92	0.4	9/8/94
Di(2-ethylhexyl)phthalate	0.006	7/92	0.004	6/24/90
2,4-D	0.1	eff: 6/24/77	0.1	77
	0.07	1/91	0.07	9/8/94
Dinoseb	0.007	7/92	0.007	9/8/94
Diquat	0.02	7/92	0.02	9/8/94
Endothall	0.1	7/92	0.1	9/8/94
Endrin	0.0002	eff: 6/24/77	0.0002	77
	0.002	7/92	0.002	9/8/94
Ethylene Dibromide	0.00005	1/91	0.00002	2/25/89
			0.00005	9/8/94
Glyphosate	0.7	7/92	0.7	6/24/90
Heptachlor	0.0004	1/91	0.00001	6/24/90
Heptachlor Epoxide	0.0002	1/91	0.00001	6/24/90
Hexachlorobenzene	0.001	7/92	0.001	9/8/94
Hexachlorocyclopentadiene	0.05	7/92	0.05	9/8/94
Lindane	0.004	eff: 6/24/77	0.004	77
	0.0002	1/91	0.0002	9/8/94
Methoxychlor	0.1	eff: 6/24/77	0.1	77
	0.04	1/91	0.04	9/8/94
			0.03	6/12/03
Molinate	-	-	0.02	4/4/89
Oxamyl	0.2	7/92	0.2	9/8/94
			0.05	6/12/03
Pentachlorophenol	0.001	1/91	0.001	9/8/94
Picloram	0.5	7/92	0.5	9/8/94
Polychlorinated Biphenyls	0.0005	1/91	0.0005	9/8/94
Simazine	0.004	7/92	0.010	4/4/89
			0.004	9/8/94
Thiobencarb	-	-	0.07	4/4/89
			0.001 ^b	4/4/89
Toxaphene	0.005	eff: 6/24/77	0.005	77
	0.003	1/91	0.003	9/8/94
2,3,7,8-TCDD (Dioxin)	3x10 ⁻⁸	7/92	3x10 ⁻⁸	9/8/94
2,4,5-TP (Silvex)	0.01	eff: 6/24/77	0.01	77
	0.05	1/91	0.05	9/8/94

Contaminant	U.S. EPA		California	
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Disinfection Byproducts				
Total Trihalomethanes	0.100	11/29/79 eff: 11/29/83	0.100	3/14/83
	0.080	eff: 1/1/02 ^g	0.080	6/17/06
Haloacetic acids (five)	0.060	eff: 1/1/02 ^g	0.060	6/17/06
Bromate	0.010	eff: 1/1/02 ^g	0.010	6/17/06
Chlorite	1.0	eff: 1/1/02 ^g	1.0	6/17/06
Treatment Technique				
Acrylamide	TT ^h	1/91	TT ^h	9/8/94
Epichlorohydrin	TT ^h	1/91	TT ^h	9/8/94
<p>a. "eff." indicates the date the MCL took effect; any other date provided indicates when USEPA established (i.e., published) the MCL.</p> <p>b. Secondary MCL.</p> <p>c. MFL = million fibers per liter, with fiber length > 10 microns.</p> <p>d. Regulatory Action Level; if system exceeds, it must take certain actions such as additional monitoring, corrosion control studies and treatment, and for lead, a public education program; replaces MCL.</p> <p>e. The MCL for lead was rescinded with the adoption of the regulatory action level described in footnote d.</p> <p>f. Gross beta MCL is 4 millirem/year annual dose equivalent to the total body or any internal organ; Sr-90 MCL = 4 millirem/year to bone marrow; tritium MCL = 4 millirem/year to total body</p> <p>g. Effective for surface water systems serving more than 10,000 people; effective for all others 1/1/04.</p> <p>h. TT = treatment technique, because an MCL is not feasible.</p>				

Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater

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**Table A. Environmental Screening Levels (ESLs)
Shallow Soils (<3m bgs)
Groundwater is Current or Potential Source of Drinking Water**

Chemical	¹ Shallow Soil		³ Groundwater (ug/L)
	² Residential Land Use (mg/kg)	Commercial/ Industrial Land Use Only (mg/kg)	
Acenaphthene	1.6E+01	1.6E+01	2.0E+01
Acenaphthylene	1.3E+01	1.3E+01	3.0E+01
Acetone	5.0E-01	5.0E-01	1.5E+03
Aldrin	3.2E-02	1.3E-01	2.0E-03
Anthracene	2.8E+00	2.8E+00	7.3E-01
Antimony	6.3E+00	4.0E+01	6.0E+00
Arsenic	3.9E-01	1.6E+00	3.6E+01
Barium	7.5E+02	1.5E+03	1.0E+03
Benzene	4.4E-02	4.4E-02	1.0E+00
Benzo(a)anthracene	3.8E-01	1.3E+00	2.7E-02
Benzo(b)fluoranthene	3.8E-01	1.3E+00	2.9E-02
Benzo(k)fluoranthene	3.8E-01	1.3E+00	2.9E-02
Benzo(g,h,i)perylene	2.7E+01	2.7E+01	1.0E-01
Benzo(a)pyrene	3.8E-02	1.3E-01	1.4E-02
Beryllium	4.0E+00	8.0E+00	5.3E-01
1,1-Biphenyl	6.5E-01	6.5E-01	5.0E-01
Bis(2-chloroethyl) ether	4.0E-04	4.0E-04	3.2E-02
Bis(2-chloroisopropyl) ether	1.5E-04	1.5E-04	1.4E-02
Bis(2-ethylhexyl) phthalate	3.5E+01	1.2E+02	4.0E+00
Boron	1.6E+00	2.0E+00	1.6E+00
Bromodichloromethane	5.7E-01	1.3E+00	1.0E+02
Bromoform (Tribromomethane)	2.2E+00	2.2E+00	1.0E+02
Bromomethane	3.9E-01	3.9E-01	9.8E+00
Cadmium	1.7E+00	7.4E+00	2.5E-01
Carbon tetrachloride	2.0E-02	4.4E-02	5.0E-01
Chlordane	4.4E-01	1.7E+00	4.0E-03
p-Chloroaniline	5.3E-02	5.3E-02	5.0E+00
Chlorobenzene	1.5E+00	1.5E+00	2.5E+01
Chloroethane	8.5E-01	8.5E-01	1.2E+01
Chloroform	6.8E-01	1.5E+00	7.0E+01
Chloromethane	6.4E+00	6.4E+00	4.1E+01
2-Chlorophenol	1.2E-02	1.2E-02	1.8E-01
Chromium (total)			5.0E+01
Chromium III	7.5E+02	7.5E+02	1.8E+02
Chromium VI	8.0E+00	8.0E+00	1.1E+01
Chrysene	2.3E+01	2.3E+01	3.5E-01
Cobalt	4.0E+01	8.0E+01	3.0E+00
Copper	2.3E+02	2.3E+02	3.1E+00
Cyanide	3.6E-03	3.6E-03	1.0E+00
Dibenz(a,h)anthracene	6.2E-02	2.1E-01	4.8E-03
Dibromochloromethane	7.6E+00	8.3E+00	1.0E+02
1,2-dibromo-3-chloropropane	4.5E-03	4.5E-03	2.0E-01
1,2-Dibromoethane	3.3E-04	3.3E-04	5.0E-02
1,2-Dichlorobenzene	1.1E+00	1.1E+00	1.0E+01

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Chemical	¹ Shallow Soil		³ Groundwater (ug/L)
	² Residential Land Use (mg/kg)	Commercial/ Industrial Land Use Only (mg/kg)	
1,3-Dichlorobenzene	7.4E+00	7.4E+00	6.5E+01
1,4-Dichlorobenzene	5.9E-01	5.9E-01	5.0E+00
3,3-Dichlorobenzidine	7.7E-03	7.7E-03	2.9E-02
Dichlorodiphenyldichloroethane (DDD)	2.4E+00	1.0E+01	1.0E-03
Dichlorodiphenyldichloroethene (DDE)	1.7E+00	4.0E+00	1.0E-03
Dichlorodiphenyltrichloroethane (DDT)	1.7E+00	4.0E+00	1.0E-03
1,1-Dichloroethane	2.0E-01	2.0E-01	5.0E+00
1,2-Dichloroethane	4.5E-03	4.5E-03	5.0E-01
1,1-Dichloroethene	1.0E+00	1.0E+00	6.0E+00
<i>cis</i> -1,2-Dichloroethene	1.9E-01	1.9E-01	6.0E+00
<i>trans</i> -1,2-Dichloroethene	6.7E-01	6.7E-01	1.0E+01
2,4-Dichlorophenol	3.0E-01	3.0E-01	3.0E-01
1,2-Dichloropropane	1.2E-01	1.2E-01	5.0E+00
1,3-Dichloropropene	5.9E-02	5.9E-02	5.0E-01
Dieldrin	2.3E-03	2.3E-03	1.9E-03
Diethyl phthalate	3.5E-02	3.5E-02	1.5E+00
Dimethyl phthalate	3.5E-02	3.5E-02	1.5E+00
2,4-Dimethylphenol	6.7E-01	6.7E-01	1.0E+02
2,4-Dinitrophenol	4.2E-02	4.2E-02	1.5E+01
2,4-Dinitrotoluene	3.9E-04	3.9E-04	5.1E-02
1,4-Dioxane	1.8E-03	1.8E-03	3.0E+00
Dioxin (2,3,7,8-TCDD)	4.5E-06	1.8E-05	1.0E-06
Endosulfan	4.6E-03	4.6E-03	8.7E-03
Endrin	6.5E-04	6.5E-04	2.3E-03
Ethylbenzene	2.3E+00	3.3E+00	3.0E+01
Fluoranthene	4.0E+01	4.0E+01	8.0E+00
Fluorene	8.9E+00	8.9E+00	3.9E+00
Heptachlor	1.3E-02	1.3E-02	3.6E-03
Heptachlor epoxide	1.4E-02	1.4E-02	3.6E-03
Hexachlorobenzene	3.4E-01	1.3E+00	1.0E+00
Hexachlorobutadiene	2.2E+00	2.2E+00	4.5E-01
γ -Hexachlorocyclohexane (Lindane)	9.8E-03	9.8E-03	1.6E-02
Hexachloroethane	3.0E+00	3.0E+00	9.0E-01
Indeno(1,2,3-c,d)pyrene	6.2E-01	2.1E+00	4.8E-02
Lead	2.0E+02	7.5E+02	2.5E+00
Mercury (elemental)	1.3E+00	1.0E+01	2.5E-02
Methoxychlor	1.9E+01	1.9E+01	3.0E-03
Methylene chloride	7.7E-02	7.7E-02	5.0E+00
Methyl ethyl ketone	3.9E+00	3.9E+00	4.2E+03
Methyl isobutyl ketone	2.8E+00	2.8E+00	1.2E+02
Methyl mercury	1.2E+00	1.2E+01	3.0E-03
2-Methylnaphthalene	2.5E-01	2.5E-01	2.1E+00
<i>tert</i> -Butyl methyl ether	2.3E-02	2.3E-02	5.0E+00
Molybdenum	4.0E+01	4.0E+01	3.5E+01

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Chemical	¹ Shallow Soil		³ Groundwater (ug/L)
	² Residential Land Use (mg/kg)	Commercial/ Industrial Land Use Only (mg/kg)	
Naphthalene	1.3E+00	2.8E+00	1.7E+01
Nickel	1.5E+02	1.5E+02	8.2E+00
Pentachlorophenol	3.0E+00	5.0E+00	1.0E+00
Perchlorate	1.1E+01	1.4E+02	6.0E+00
Phenanthrene	1.1E+01	1.1E+01	4.6E+00
Phenol	7.6E-02	7.6E-02	5.0E+00
Polychlorinated biphenyls (PCBs)	2.2E-01	7.4E-01	1.4E-02
Pyrene	8.5E+01	8.5E+01	2.0E+00
Selenium	1.0E+01	1.0E+01	5.0E+00
Silver	2.0E+01	4.0E+01	1.9E-01
Styrene	1.5E+00	1.5E+00	1.0E+01
<i>tert</i> -Butyl alcohol	7.5E-02	7.5E-02	1.2E+01
1,1,1,2-Tetrachloroethane	2.4E-02	2.4E-02	1.3E+00
1,1,2,2-Tetrachloroethane	1.8E-02	1.8E-02	1.0E+00
Tetrachloroethene	3.7E-01	7.0E-01	5.0E+00
Thallium	1.3E+00	1.6E+01	2.0E+00
Toluene	2.9E+00	2.9E+00	4.0E+01
Toxaphene	4.2E-04	4.2E-04	2.0E-04
TPH (gasolines)	8.3E+01	8.3E+01	1.0E+02
TPH (middle distillates)	8.3E+01	8.3E+01	1.0E+02
TPH (residual fuels)	3.7E+02	2.5E+03	1.0E+02
1,2,4-Trichlorobenzene	1.5E+00	1.5E+00	5.0E+00
1,1,1-Trichloroethane	7.8E+00	7.8E+00	6.2E+01
1,1,2-Trichloroethane	7.0E-02	7.0E-02	5.0E+00
Trichloroethene	4.6E-01	4.6E-01	5.0E+00
2,4,5-Trichlorophenol	1.8E-01	1.8E-01	1.1E+01
2,4,6-Trichlorophenol	2.3E-01	2.3E-01	7.0E-01
Vanadium	1.6E+01	2.0E+02	1.5E+01
Vinyl chloride	2.2E-02	4.7E-02	5.0E-01
Xylenes	2.3E+00	2.3E+00	2.0E+01
Zinc	6.0E+02	6.0E+02	8.1E+01

Notes:

1. Shallow soils defined as soils less than or equal to 3 meters (approximately 10 feet) below ground surface.
 2. Category "Residential Land Use" generally considered adequate for other sensitive uses.
 3. Assumes potential discharge of groundwater into a freshwater, marine or estuary surface water system.
- Soil ESLs intended to address direct-exposure, groundwater protection, ecologic (urban areas) and nuisance concerns under noted land-use scenarios. **Soil gas data should be collected for additional evaluation of potential indoor-air impacts at sites with areas of VOC-contaminated soil.**
- Groundwater ESLs intended to be address drinking water, surface water, indoor-air and nuisance concerns. **Use in conjunction with soil gas screening levels to more closely evaluate potential impacts to indoor-air if groundwater screening levels for this concern approached or exceeded.**
- Aquatic habitat goals for bioaccumulation concerns not considered in selection of groundwater goals.
- TPH - Total Petroleum Hydrocarbons. TPH ESLs must be used in conjunction with ESLs for related chemicals (e.g., BTEX, PAHs, oxidizers, etc.).

**Table F-2b. Surface Water Screening Levels
Marine Habitats
(µg/L)**

			Gross Contamination Ceiling Value (Odors, etc.)	Marine Aquatic Habitat Goal (Chronic Toxicity)	Bioaccumulation and Human Consumption
Chemical	¹Final Surface Water Screening Level	Basis	Table I-4	Table F-4a	Table F-4d
Acenaphthene	2.0E+01	Ceiling Level	2.0E+01	4.0E+01	2.7E+03
Acenaphthylene	3.0E+01	Aquatic Habitat Chronic Toxicity	2.0E+03	3.0E+01	
Acetone	1.5E+03	Aquatic Habitat Chronic Toxicity	2.0E+04	1.5E+03	
Aldrin	1.4E-04	Bioaccumulation/Human Consumption	8.5E+00	1.3E-01	1.4E-04
Anthracene	7.3E-01	Aquatic Habitat Chronic Toxicity	2.2E+01	7.3E-01	1.1E+05
Antimony	5.0E+02	Aquatic Habitat Chronic Toxicity	5.0E+04	5.0E+02	4.3E+03
Arsenic	1.4E-01	Bioaccumulation/Human Consumption	5.0E+04	3.6E+01	1.4E-01
Barium	1.0E+03	Aquatic Habitat Chronic Toxicity	5.0E+04	1.0E+03	
Benzene	7.1E+01	Bioaccumulation/Human Consumption	2.0E+03	3.5E+02	7.1E+01
Benzo(a)anthracene	2.7E-02	Aquatic Habitat Chronic Toxicity	5.0E+00	2.7E-02	4.9E-02
Benzo(b)fluoranthene	2.9E-02	Aquatic Habitat Chronic Toxicity	7.0E+00	2.9E-02	4.9E-02
Benzo(k)fluoranthene	4.9E-02	Bioaccumulation/Human Consumption	4.0E-01	3.7E+00	4.9E-02
Benzo(g,h,i)perylene	1.0E-01	Aquatic Habitat Chronic Toxicity	1.3E-01	1.0E-01	
Benzo(a)pyrene	1.4E-02	Aquatic Habitat Chronic Toxicity	1.9E+00	1.4E-02	4.9E-02
Beryllium	5.3E-01	Aquatic Habitat Chronic Toxicity	5.0E+04	5.3E-01	
1,1-Biphenyl	5.0E-01	Ceiling Level	5.0E-01	1.4E+01	
Bis(2-chloroethyl) ether	1.4E+00	Bioaccumulation/Human Consumption	3.6E+02	1.2E+01	1.4E+00
Bis(2-chloroisopropyl) ether	1.2E+01	Aquatic Habitat Chronic Toxicity	3.2E+02	1.2E+01	1.7E+05
Bis(2-ethylhexyl) phthalate	5.9E+00	Bioaccumulation/Human Consumption	6.5E+02	3.2E+01	5.9E+00
Boron	1.6E+00	Aquatic Habitat Chronic Toxicity	5.0E+04	1.6E+00	
Bromodichloromethane	3.2E+03	Aquatic Habitat Chronic Toxicity	5.0E+04	3.2E+03	
Bromoform (Tribromomethane)	3.6E+02	Bioaccumulation/Human Consumption	5.1E+02	3.2E+03	3.6E+02
Bromomethane	3.2E+03	Aquatic Habitat Chronic Toxicity	5.0E+04	3.2E+03	4.0E+03
Cadmium	9.3E+00	Aquatic Habitat Chronic Toxicity	5.0E+04	9.3E+00	
Carbon tetrachloride	4.4E+00	Bioaccumulation/Human Consumption	5.2E+02	3.2E+03	4.4E+00
Chlordane	5.9E-04	Bioaccumulation/Human Consumption	2.5E+00	4.0E-03	5.9E-04
p-Chloroaniline	5.0E+00	Aquatic Habitat Chronic Toxicity	5.0E+04	5.0E+00	
Chlorobenzene	5.0E+01	Ceiling Level	5.0E+01	6.5E+01	2.1E+04
Chloroethane	1.2E+01	Aquatic Habitat Chronic Toxicity	1.6E+01	1.2E+01	
Chloroform	4.7E+02	Bioaccumulation/Human Consumption	2.4E+03	3.2E+03	4.7E+02
Chloromethane	3.2E+03	Aquatic Habitat Chronic Toxicity	5.0E+04	3.2E+03	
2-Chlorophenol	1.8E-01	Ceiling Level	1.8E-01	4.4E+02	4.0E+02
Chromium (total)	1.8E+02	Aquatic Habitat Chronic Toxicity	5.0E+04	1.8E+02	
Chromium III	1.0E+03	Aquatic Habitat Chronic Toxicity	5.0E+04	1.0E+03	

**Table F-2b. Surface Water Screening Levels
Marine Habitats
(µg/L)**

			Gross Contamination Ceiling Value (Odors, etc.)	Marine Aquatic Habitat Goal (Chronic Toxicity)	Bioaccumulation and Human Consumption
Chemical	¹ Final Surface Water Screening Level	Basis	Table I-4	Table F-4a	Table F-4d
Chromium VI	5.0E+01	Aquatic Habitat Chronic Toxicity	5.0E+04	5.0E+01	
Chrysene	4.9E-02	Bioaccumulation/Human Consumption	8.0E-01	3.5E-01	4.9E-02
Cobalt	3.0E+00	Aquatic Habitat Chronic Toxicity	5.0E+04	3.0E+00	
Copper	3.1E+00	Aquatic Habitat Chronic Toxicity	5.0E+04	3.1E+00	
Cyanide	1.0E+00	Aquatic Habitat Chronic Toxicity	1.7E+02	1.0E+00	2.2E+05
Dibenz(a,h)anthracene	4.9E-02	Bioaccumulation/Human Consumption	2.5E-01	7.5E+00	4.9E-02
Dibromochloromethane	4.6E+01	Bioaccumulation/Human Consumption	5.0E+04	3.2E+03	4.6E+01
1,2-dibromo-3-chloropropane	2.0E-01	Aquatic Habitat Chronic Toxicity	1.0E+01	2.0E-01	
1,2-Dibromoethane	1.4E+03	Aquatic Habitat Chronic Toxicity	5.0E+04	1.4E+03	
1,2-Dichlorobenzene	1.0E+01	Ceiling Level	1.0E+01	6.5E+01	1.7E+04
1,3-Dichlorobenzene	6.5E+01	Aquatic Habitat Chronic Toxicity	5.0E+04	6.5E+01	2.6E+03
1,4-Dichlorobenzene	1.1E+01	Ceiling Level	1.1E+01	6.5E+01	2.6E+03
3,3-Dichlorobenzidine	7.7E-02	Bioaccumulation/Human Consumption	1.6E+03	2.5E+02	7.7E-02
Dichlorodiphenyldichloroethane (DDD)	8.4E-04	Bioaccumulation/Human Consumption	8.0E+01	1.0E-03	8.4E-04
Dichlorodiphenyldichloroethene (DDE)	5.9E-04	Bioaccumulation/Human Consumption	2.0E+01	1.0E-03	5.9E-04
Dichlorodiphenyltrichloroethane (DDT)	5.9E-04	Bioaccumulation/Human Consumption	1.5E+00	1.0E-03	5.9E-04
1,1-Dichloroethane	4.7E+01	Aquatic Habitat Chronic Toxicity	5.0E+04	4.7E+01	
1,2-Dichloroethane	9.9E+01	Bioaccumulation/Human Consumption	2.0E+04	2.0E+03	9.9E+01
1,1-Dichloroethene	3.2E+00	Bioaccumulation/Human Consumption	1.5E+03	2.2E+04	3.2E+00
<i>cis</i> -1,2-Dichloroethene	2.2E+04	Aquatic Habitat Chronic Toxicity	5.0E+04	2.2E+04	
<i>trans</i> -1,2-Dichloroethene	2.6E+02	Ceiling Level	2.6E+02	2.2E+04	1.4E+05
2,4-Dichlorophenol	3.0E-01	Ceiling Level	3.0E-01	3.7E+01	7.9E+02
1,2-Dichloropropane	1.0E+01	Ceiling Level	1.0E+01	1.5E+03	3.9E+01
1,3-Dichloropropene	2.4E+01	Aquatic Habitat Chronic Toxicity	5.0E+04	2.4E+01	1.7E+03
Dieldrin	1.4E-04	Bioaccumulation/Human Consumption	4.1E+01	1.9E-03	1.4E-04
Diethyl phthalate	1.7E+00	Aquatic Habitat Chronic Toxicity	5.0E+04	1.7E+00	1.2E+54
Dimethyl phthalate	1.7E+00	Aquatic Habitat Chronic Toxicity	5.0E+04	1.7E+00	2.9E+06
2,4-Dimethylphenol	1.1E+02	Aquatic Habitat Chronic Toxicity	4.0E+02	1.1E+02	2.3E+03
2,4-Dinitrophenol	1.5E+01	Aquatic Habitat Chronic Toxicity	5.0E+04	1.5E+01	1.4E+04
2,4-Dinitrotoluene	9.1E+00	Bioaccumulation/Human Consumption	5.0E+04	1.9E+02	9.1E+00
1,4-Dioxane	5.0E+04	Ceiling Level	5.0E+04	5.0E+05	
Dioxin (2,3,7,8-TCDD)	1.4E-08	Bioaccumulation/Human Consumption	7.0E+03	1.0E-06	1.4E-08
Endosulfan	8.7E-03	Aquatic Habitat Chronic Toxicity	7.5E+01	8.7E-03	2.4E+02

**Table F-2b. Surface Water Screening Levels
Marine Habitats
(µg/L)**

			Gross Contamination Ceiling Value (Odors, etc.)	Marine Aquatic Habitat Goal (Chronic Toxicity)	Bioaccumulation and Human Consumption
Chemical	¹ Final Surface Water Screening Level	Basis	Table I-4	Table F-4a	Table F-4d
Endrin	2.3E-03	Aquatic Habitat Chronic Toxicity	4.1E+01	2.3E-03	8.1E-01
Ethylbenzene	3.0E+01	Ceiling Level	3.0E+01	4.3E+01	2.9E+04
Fluoranthene	8.0E+00	Aquatic Habitat Chronic Toxicity	1.3E+02	8.0E+00	3.7E+02
Fluorene	3.0E+01	Aquatic Habitat Chronic Toxicity	9.5E+02	3.0E+01	1.4E+04
Heptachlor	2.1E-04	Bioaccumulation/Human Consumption	2.0E+01	3.6E-03	2.1E-04
Heptachlor epoxide	1.1E-04	Bioaccumulation/Human Consumption	1.8E+02	3.6E-03	1.1E-04
Hexachlorobenzene	7.7E-04	Bioaccumulation/Human Consumption	5.5E+01	6.5E+01	7.7E-04
Hexachlorobutadiene	9.3E-01	Aquatic Habitat Chronic Toxicity	6.0E+00	9.3E-01	5.0E+01
γ-Hexachlorocyclohexane (Lindane)	1.6E-02	Aquatic Habitat Chronic Toxicity	3.5E+03	1.6E-02	6.3E-02
Hexachloroethane	8.9E+00	Bioaccumulation/Human Consumption	1.0E+01	5.4E+01	8.9E+00
Indeno(1,2,3-c,d)pyrene	4.8E-02	Aquatic Habitat Chronic Toxicity	2.7E-01	4.8E-02	4.9E-02
Lead	5.6E+00	Aquatic Habitat Chronic Toxicity	5.0E+04	5.6E+00	
Mercury (elemental)	2.5E-02	Aquatic Habitat Chronic Toxicity	5.0E+04	2.5E-02	5.1E-02
Methoxychlor	3.0E-03	Aquatic Habitat Chronic Toxicity	2.0E+01	3.0E-03	
Methylene chloride	1.6E+03	Bioaccumulation/Human Consumption	9.1E+03	3.2E+03	1.6E+03
Methyl ethyl ketone	8.4E+03	Ceiling Level	8.4E+03	1.4E+04	
Methyl isobutyl ketone	1.7E+02	Aquatic Habitat Chronic Toxicity	1.3E+03	1.7E+02	
Methyl mercury	3.0E-03	Aquatic Habitat Chronic Toxicity	5.0E+04	3.0E-03	
2-Methylnaphthalene	1.0E+01	Ceiling Level	1.0E+01	3.0E+01	
tert-Butyl methyl ether	1.8E+02	Ceiling Level	1.8E+02	8.0E+03	
Molybdenum	2.4E+02	Aquatic Habitat Chronic Toxicity	5.0E+04	2.4E+02	
Naphthalene	2.1E+01	Ceiling Level	2.1E+01	6.2E+01	
Nickel	8.2E+00	Aquatic Habitat Chronic Toxicity	5.0E+04	8.2E+00	4.6E+03
Pentachlorophenol	7.9E+00	Aquatic Habitat Chronic Toxicity	5.9E+02	7.9E+00	8.2E+00
Perchlorate	6.0E+02	Aquatic Habitat Chronic Toxicity	5.0E+04	6.0E+02	
Phenanthrene	4.6E+00	Aquatic Habitat Chronic Toxicity	4.1E+02	4.6E+00	
Phenol	2.6E+02	Aquatic Habitat Chronic Toxicity	7.9E+03	2.6E+02	4.6E+06
Polychlorinated biphenyls (PCBs)	1.7E-04	Bioaccumulation/Human Consumption	1.6E+01	3.0E-02	1.7E-04
Pyrene	2.0E+00	Aquatic Habitat Chronic Toxicity	6.8E+01	2.0E+00	1.1E+04
Selenium	7.1E+01	Aquatic Habitat Chronic Toxicity	5.0E+04	7.1E+01	
Silver	1.9E-01	Aquatic Habitat Chronic Toxicity	5.0E+04	1.9E-01	
Styrene	1.1E+01	Ceiling Level	1.1E+01	1.0E+02	
tert-Butyl alcohol	1.8E+04	Aquatic Habitat Chronic Toxicity	5.0E+04	1.8E+04	

**Table F-2b. Surface Water Screening Levels
Marine Habitats
(µg/L)**

			Gross Contamination Ceiling Value (Odors, etc.)	Marine Aquatic Habitat Goal (Chronic Toxicity)	Bioaccumulation and Human Consumption
Chemical	¹Final Surface Water Screening Level	Basis	Table I-4	Table F-4a	Table F-4d
1,1,1,2-Tetrachloroethane	9.3E+02	Aquatic Habitat Chronic Toxicity	5.0E+04	9.3E+02	
1,1,2,2-Tetrachloroethane	1.1E+01	Bioaccumulation/Human Consumption	5.0E+02	2.4E+02	1.1E+01
Tetrachloroethene	8.9E+00	Bioaccumulation/Human Consumption	3.0E+02	2.3E+02	8.9E+00
Thallium	4.0E+00	Aquatic Habitat Chronic Toxicity	5.0E+04	4.0E+00	6.3E+00
Toluene	4.0E+01	Ceiling Level	4.0E+01	2.5E+03	2.0E+05
Toxaphene	2.0E-04	Aquatic Habitat Chronic Toxicity	1.4E+02	2.0E-04	7.5E-04
TPH (gasolines)	2.1E+02	Aquatic Habitat Chronic Toxicity	5.0E+03	2.1E+02	
TPH (middle distillates)	2.1E+02	Aquatic Habitat Chronic Toxicity	2.5E+03	2.1E+02	
TPH (residual fuels)	2.1E+02	Aquatic Habitat Chronic Toxicity	2.5E+03	2.1E+02	
1,2,4-Trichlorobenzene	6.5E+01	Aquatic Habitat Chronic Toxicity	3.0E+03	6.5E+01	
1,1,1-Trichloroethane	3.1E+03	Aquatic Habitat Chronic Toxicity	5.0E+04	3.1E+03	
1,1,2-Trichloroethane	4.2E+01	Bioaccumulation/Human Consumption	5.0E+04	9.4E+02	4.2E+01
Trichloroethene	8.1E+01	Bioaccumulation/Human Consumption	1.0E+04	2.2E+03	8.1E+01
2,4,5-Trichlorophenol	1.1E+01	Aquatic Habitat Chronic Toxicity	2.0E+02	1.1E+01	3.6E+03
2,4,6-Trichlorophenol	6.5E+00	Bioaccumulation/Human Consumption	1.0E+02	9.7E+01	6.5E+00
Vanadium	1.9E+01	Aquatic Habitat Chronic Toxicity	5.0E+04	1.9E+01	
Vinyl chloride	5.3E+02	Bioaccumulation/Human Consumption	3.4E+03	7.8E+02	5.3E+02
Xylenes	1.0E+02	Aquatic Habitat Chronic Toxicity	5.3E+02	1.0E+02	
Zinc	8.1E+01	Aquatic Habitat Chronic Toxicity	5.0E+04	8.1E+01	

Notes:
1. Lowest of Ceiling Value, aquatic habitat goal, and bioaccumulation goal.

TPH -Total Petroleum Hydrocarbons. See text for discussion of different TPH categories.
Ceiling Level: Odor threshold, 1/2 solubility or 50000 µg/L maximum, whichever is lower. Intended to limit nuisances and general resource degradation.

**SAN FRANCISCO BAY BASIN (REGION 2)
WATER QUALITY CONTROL PLAN
(BASIN PLAN)**

**CALIFORNIA REGIONAL WATER QUALITY
CONTROL BOARD
SAN FRANCISCO BAY REGION**

1515 Clay Street, Suite 1400
Oakland, CA 94612
(510) 622-2300

Incorporating all amendments approved by the Office of
Administrative Law as of January 18, 2007.

TABLE 3-3 MARINE^a WATER QUALITY OBJECTIVES FOR TOXIC POLLUTANTS FOR SURFACE WATERS (ALL VALUES IN UG/L)

COMPOUND	4-DAY AVERAGE	1-HR AVERAGE	24-HR AVERAGE
Arsenic ^{b, c, d}	36	69	
Cadmium ^{b, c, d}	9.3	42	
Chromium VI ^{b, c, d, e}	50	1100	
Copper ^{c, d, f}			
Cyanide ^g			
Lead ^{b, c, d}	8.1	220	
Mercury ^h	0.025	2.1	
Nickel ^{b, c, d}	8.2	74	
Selenium ⁱ			
Silver ^{b, c, d}		1.9	
Tributyltin ^j			
Zinc ^{b, c, d}	81	90	
PAHs ^k			15

NOTES:

- a. Marine waters are those in which the salinity is equal to or greater than 10 parts per thousand 95% of the time, as set forth in Chapter 4 of the Basin Plan. Unless a site-specific objective has been adopted, these objectives shall apply to all marine waters except for the South Bay south of Dumbarton Bridge, where the California Toxics Rule (CTR) applies. For waters in which the salinity is between 1 and 10 parts per thousand, the applicable objectives are the more stringent of the freshwater (Table 3-4) or marine objectives.
- b. Source: 40 CFR Part 131.38 (California Toxics Rule or CTR), May 18, 2000.
- c. These objectives for metals are expressed in terms of the dissolved fraction of the metal in the water column.
- d. According to the CTR, these objectives are expressed as a function of the water-effect ratio (WER), which is a measure of the toxicity of a pollutant in site water divided by the same measure of the toxicity of the same pollutant in laboratory dilution water. The 1-hr. and 4-day objectives = table value X WER. The table values assume a WER equal to one.
- e. This objective may be met as total chromium.
- f. Water quality objectives for copper were promulgated by the CTR and may be updated by U.S. EPA without amending the Basin Plan. Note: at the time of writing, the values are 3.1 ug/l (4-day average) and 4.8 ug/l (1-hr. average). The most recent version of the CTR should be consulted before applying these values.
- g. Cyanide criteria were promulgated in the National Toxics Rule (NTR). The NTR criteria specifically apply to San Francisco Bay upstream to and including Suisun Bay and Sacramento-San Joaquin Delta. Note: at the time of writing, the values are 1.0 ug/l (4-day average) and 1.0 ug/l (1-hr. average).

- h. Source: U.S. EPA Ambient Water Quality Criteria for Mercury (1984).
- i. Selenium criteria were promulgated for all San Francisco Bay/Delta waters in the National Toxics Rule (NTR). The NTR criteria specifically apply to San Francisco Bay upstream to and including Suisun Bay and Sacramento-San Joaquin Delta. Note: at the time of writing, the values are 5.0 ug/l (4-day average) and 20 ug/l (1-hr. average).
- j. Tributyltin is a compound used as an antifouling ingredient in marine paints and toxic to aquatic life in low concentrations. U.S. EPA has published draft criteria for protection of aquatic life (Federal Register: December 27, 2002, Vol. 67, No. 249, Page 79090-79091). These criteria are cited for advisory purposes. The draft criteria may be revised.
- k. The 24-hour average aquatic life protection objective for total PAHs is retained from the 1995 Basin Plan. Source: U.S. EPA 1980.

California Regional Water Quality Control Board

San Francisco Bay Region
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**ORDER NO. R2-2006-0075
NPDES NO. CAG912002**

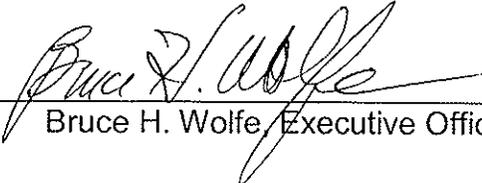
**GENERAL WASTE DISCHARGE REQUIREMENTS FOR:
Discharge or Reuse of Extracted and Treated Groundwater Resulting from the
Cleanup of Groundwater Polluted by Fuel Leaks and Other Related Wastes at
Service Stations and Similar Sites**

Table 1. Administrative Information

This Order was adopted by the Regional Water Board on:	November 13, 2006
This Order shall become effective on:	January 12, 2007
This Order shall expire on:	January 12, 2012
The U.S. Environmental Protection Agency (USEPA) and the Regional Water Board have classified the discharges under this General National Pollutant Discharge Elimination System (NPDES) Permit as minor discharges.	
To obtain coverage under this general permit, Dischargers must submit a Notice of Intent (NOI) Form as described in Attachments B and C and a filing fee equivalent to the first year's annual fee. If the NOI is complete, authorization to initiate discharge will be issued by the Regional Water Board Executive Officer.	
The Dischargers who need to discharge treated groundwater after the expiration date of this Order shall file a complete Notice of Intent (NOI), as a Report of Waste Discharge in accordance with Title 23, California Code of Regulations, and as an application for proposed discharge no later than July 15, 2011, which is 180 days in advance of the Order expiration date, as application for issuance of new waste discharge requirements (see Attachments B and C). The terms and conditions of this Order will be automatically continued after the expiration date of this Order for the Dischargers who submitted a complete NOI and will remain in effect until a new Order is adopted by the Regional Water Board. In order to assure no lapse in NPDES permit coverage for authorized discharges, the Dischargers who submitted a complete NOI will then be subject to the new Order pending receipt of a new discharge authorization.	

IT IS HEREBY ORDERED, that this Order supercedes Order No. 01-100 except for enforcement purposes, and, in order to meet the provisions contained in division 7 of the California Water Code (commencing with section 13000) and regulations adopted thereunder, and the provisions of the federal Clean Water Act and regulations and guidelines adopted thereunder, the Dischargers shall comply with the requirements in this Order.

I, Bruce H. Wolfe, Executive Officer, do hereby certify that this Order, Order No. R2-2006-0075, with all attachments is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on November 13, 2006.


Bruce H. Wolfe, Executive Officer

- D. The discharge shall cause no scouring or erosion at the point where the storm drain discharges into the receiving waters.
- E. Neither the treatment nor the discharge of pollutants shall create a pollution, contamination, or nuisance, as defined by Section 13050 of the California Water Code.
- F. Bypass or overflow of untreated or partially treated groundwater polluted by fuel leaks or other wastes to waters of the State either at the treatment system or from any of the collection or transport systems or pump stations tributary to the treatment system is prohibited.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations (Surface water discharges only)

1. **Organic Pollutants:** The discharge of the effluent shall maintain compliance with the following effluent limitations at a discharge point after full treatment but before it joins or is diluted by any other waste stream, body of water, or substance:

Table 2. Effluent Limitations for Toxics Pollutants

No.	Compound	CAS Number	Column A: Discharge to Drinking Water Areas (see Note 2)		Column B: Discharge to Other Surface Water Areas	
			Average Monthly Effluent Limitation (ug/L)	Maximum Daily Effluent Limitation (ug/L)	Average Monthly Effluent Limitation (ug/L)	Maximum Daily Effluent Limitation (ug/L)
1	Benzene	71432		1		5
2	Carbon Tetrachloride	56235	0.25 (see Note 1)	0.50	4.4	5
3	Chloroform	67663		5		5
4	1,1-Dichloroethane	75343		5		5
5	1,2-Dichloroethane	107062	0.38 (see Note 1)	0.5		5
6	1,1-Dichloroethylene	75354	0.057 (see Note 1)	0.11 (see Note 1)	3.2	5
7	Ethylbenzene	100414		5		5
8	Methylene Chloride (Dichloromethane)	75092	4.7	5		5
9	Tetrachloroethylene	127184	0.8	1.6		5
10	Toluene	108883		5		5
11	Cis 1,2-Dichloroethylene	156592		5		5
12	Trans 1,2-Dichloroethylene	156605		5		5
13	1,1,1-Trichloroethane	71556		5		5
14	1,1,2-Trichloroethane	79005	0.6	1.2		5

No.	Compound	CAS Number	Column A: Discharge to Drinking Water Areas (see Note 2)		Column B: Discharge to Other Surface Water Areas	
			Average Monthly Effluent Limitation (ug/L)	Maximum Daily Effluent Limitation (ug/L)	Average Monthly Effluent Limitation (ug/L)	Maximum Daily Effluent Limitation (ug/L)
15	Trichloroethylene	79016	2.7	5		5
16	Vinyl Chloride	75014		0.5		1
17	Total Xylenes	1330207		5		5
18	Methyl Tertiary Butyl Ether (MTBE)	1634044		5		5
19	Total Petroleum Hydrocarbons (as Gasoline or as Diesel)			50		50
20	Ethylene Dibromide (1,2-Dibromoethane)	106934		0.05 (see Note 1)		5
21	Trichloro-trifluoroethane	76131		5		5

Notes:
 1) If reported detection level is greater than effluent limit, then a non-detect result using a 0.5 ug/L detection level will not be deemed to be out of compliance.
 2) Drinking water areas are defined as surface waters with the existing or potential beneficial uses of "municipal and domestic supply" and "groundwater recharge" (the latter includes recharge areas to maintain salt balance or to halt salt water intrusion into fresh water aquifers).

2. **pH:** The pH of the discharge shall not exceed 8.5 nor be less than 6.5.
3. **Toxicity:** The survival of rainbow trout test fish in 96-hour static renewal bioassays (EPA-821-R-02-012 Test method 2019.0) of the discharge shall be not less than a three sample moving median of 90% survival and a single test value of not less than 70% survival.

B. Land Discharge Specifications. (Not applicable)

C. Reclamation Specifications – Water Reuse

1. **Reuse Policy:** The Regional Water Board adopted Resolution No. 88-160 on October 19, 1988. The Resolution urges Dischargers of extracted groundwater from site cleanup projects to reclaim their effluent and that when reclamation is not technically and/or economically feasible, to discharge to a publicly owned treatment works (POTW). If neither reclamation nor discharge to a POTW is technically or economically feasible and if beneficial uses of the receiving water are not adversely affected, it is the intent of the Regional Water Board to authorize the discharge of treated extracted groundwater in accordance with the requirements of this Order.
2. **Reuse Allowed:** This Order permits reuse or reclamation of extracted treated groundwater in conjunction with the discharge to surface water, except for purposes of recharge or reinjection. Reuse of extracted treated groundwater

corresponding trigger as listed in the Table 3 below, then the Discharger shall take three additional samples (three influent and three effluent) for each exceeded constituent during the following calendar quarter and conduct activities as explained in the Provisions VI.C.7, VI.C.8, or VI.C.9. If this monitoring activity has already been completed in the past, then summarize the results including the design of any installed treatment unit.

Table 3. Trigger Compounds or Constituents

Compound	CAS Number	Trigger (ug/L)
Antimony	7440360	6
Arsenic	7440382	10
Beryllium	7440417	1
Cadmium	7440439	0.07
Chromium (total)	18540299	11 (See Note 1)
Chromium (VI)	18540299	11
Copper	7440508	3.1
Lead	7439921	2.0
Mercury	7439976	0.025
Nickel	7440020	8.2
Selenium	7782492	5.0
Silver	7440224	1.9
Thallium	7440280	0.1
Zinc	7440666	35
Cyanide	57125	1.0
Asbestos	1332214	7 MFibers/L
2,3,7,8-TCDD (Dioxin)	1746016	0.00000013
Acrylonitrile	107131	2.0
Bromoform	75252	4.3
Chlorodibromomethane	124481	0.401
Dichlorobromomethane	75274	0.56
1,2-Dichloropropane	78875	0.50
1,3-Dichloropropylene	542756	0.2
1,1,2,2-Tetrachloroethane	79345	0.1
Pentachlorophenol	87865	0.28
2,4,6-Trichlorophenol	88062	2.1
Benzidine	92875	0.00012
Benzo(a)Anthracene	56553	0.0044
Benzo(a)Pyrene	50328	0.004
Benzo(b)Fluoranthene	205992	0.0044
Benzo(k)Fluoranthene	207089	0.0044
Bis(2-Chloroethyl)Ether	111444	0.031
Bis(2-Ethylhexyl)Phthalate	117817	1.8
Chrysene	218019	0.0044
Dibenzo(a,h)Anthracene	53703	0.0044
3,3'-Dichlorobenzidine	91941	0.04
2,4-Dinitrotoluene	121142	0.11
1,2-Diphenylhydrazine	122667	0.04

Compound	CAS Number	Trigger (ug/L)
Hexachlorobenzene	118741	0.00075
Hexachlorobutadiene	87683	0.44
Hexachloroethane	67721	1.9
Indeno(1,2,3-cd)Pyrene	193395	0.0044
N-Nitrosodimethylamine	62759	0.00069
N-Nitrosodi-n-Propylamine	621647	0.005
Aldrin	309002	0.00013
alpha-BHC	319846	0.0039
beta-BHC	319857	0.014
gamma-BHC	58899	0.019
Chlordane	57749	0.00057
4,4'-DDT	50293	0.00059
4,4'-DDE	72559	0.00059
4,4'-DDD	72548	0.00083
Dieldrin	60571	0.00014
alpha-Endosulfan	959988	0.0087
beta-Endosulfan	33213659	0.0087
Endrin	72208	0.0023
Endrin Aldehyde	7421934	0.76
Heptachlor	76448	0.00021
Heptachlor Epoxide	1024573	0.0001
Polychlorinated biphenyls (PCBs) total	1336363	0.00017
Toxaphene	8001352	0.0002
1,4-Dioxane	123911	3
Perchlorate	14797730	5
Freon 12 (Dichlorodifluoromethane)	75718	0.19
Other Oxygenates (Other than MTBE)	-	5
Other VOCs	-	5
Other SVOCs	-	5
Turbidity (Units)	-	5
Odor-Threshold (Units)	-	3
Total Petroleum Hydrocarbons other than Gasoline and Diesel	-	50 (See Note 2)
Sulfate	-	250,000
Foaming Agents	-	500
Color (Units)	-	15

Legend:
CAS = Chemical Abstract System or Service

Notes:

- 1) If total chromium concentration exceeds 11 then Chromium (VI) analysis shall also be done.
- 2) If a Discharger is reporting monitoring data with a detection level higher than 50 ug/l, the reason for a higher detection level shall be fully explained in the monitoring report.

7. Triggers Case 1: If the results of the three additional samples for the effluent **do not** exceed the triggers, the Discharger shall report the results to the Executive Officer in the next Monitoring Report, and shall return to the schedule of sampling and analysis in the attached MRP (Attachment E).
8. Triggers Case 2: If the results of **any one of the three** additional samples

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. R2-2004-0055
NPDES NO. CAG912003

GENERAL WASTE DISCHARGE REQUIREMENTS FOR:

Discharge or Reuse of Extracted and Treated Groundwater Resulting From the Cleanup of Groundwater Polluted by Volatile Organic Compounds

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter Water Board) finds that:

1. General: This National Pollutant Discharge Elimination System (NPDES) general permit regulates discharge or reuse of extracted and treated groundwater resulting from the cleanup of groundwater polluted by volatile organic compounds (VOC). All dischargers eligible for this general permit must submit a Notice of Intent (NOI) described in the attachment and the appropriate annual fee to obtain coverage. Written authorization to initiate the discharge will be issued by the Executive Officer.
2. Authority: States may request authority to issue general NPDES permits pursuant to Code of Federal Regulations, Title 40, Chapter 1, Subchapter D, part 122.28 (40 CFR 122.28). On June 8, 1989, the State Water Resources Control Board (hereinafter State Board) submitted an application to the United States Environmental Protection Agency (hereinafter USEPA) requesting revisions to its NPDES program in accordance with 40 CFR 122.28, 123.62 and 403.10. The application included a request to add general permit authority to its approved NPDES program. On September 22, 1989, the USEPA, Region IX, approved the State Board's request and granted authorization for the State to issue general NPDES permits.
3. Types of Discharges: 40 CFR 122.28 provides for the issuance of general permits to regulate discharges of waste which result from similar operations, are the same types of waste, require the same effluent limitations, require similar monitoring, and are more appropriately regulated under a general permit rather than individual permits.
4. Eligibility for General Permit: A general permit for existing and proposed discharges of extracted and treated groundwater to surface waters of the San Francisco Bay Region (except for direct discharges to the Pacific Ocean) from groundwater cleanup projects meets the requirements of 40 CFR 122.28. The discharges and proposed discharges:
 - a. result from similar operations (all involve extraction, treatment, and discharge of groundwater),
 - b. are the same types of waste (all are groundwater containing volatile organic compounds due to leaks and spills from businesses that have used VOC,
 - c. require similar effluent limitations for the protection of the beneficial uses of

5. The discharge shall cause no scouring or erosion at the point where the storm drain discharges into the receiving waters.
6. Neither the treatment nor the discharge of pollutants shall create a pollution, contamination, or nuisance, as defined by Section 13050 of the California Water Code.
7. Bypass or overflow of untreated or partially treated polluted groundwater to waters of the State either at the treatment system or from any of the collection or transport systems or pump stations tributary to the treatment system is prohibited.

B. Effluent Limitations (Surface water discharges only)

1. The effluent (at a point after full treatment but before it joins or is diluted by any other waste stream, body of water, or substance) shall not contain constituents in excess of the following:

Table B.1 Effluent Limits

No.	Compound	CAS Number	Discharge to Drinking Water Areas**		Discharge to Other Surface Water Areas	
			Average Monthly Effluent Limitation*** (ug/L)	Maximum Daily Effluent Limitation (ug/L)	Average Monthly Effluent Limitation*** (ug/L)	Maximum Daily Effluent Limitation (ug/L)
1	Benzene	71432		1		5
2	Carbon Tetrachloride	56235	0.25*	0.50	4.4	5
3	Chloroform	67663		5		5
4	1,1-Dichloroethane	75343		5		5
5	1,2-Dichloroethane	107062	0.38*	0.5		5
6	1,1-Dichloroethylene	75354	0.057*	0.11*	3.2	5
7	Ethylbenzene	100414		5		5
8	Methylene Chloride (Dichloromethane)	75092	4.7	5		5
9	Tetrachloroethylene	127184	0.8	1.6		5
10	Toluene	108883		5		5
11	Cis 1,2-Dichloroethylene	156592		5		5
12	Trans 1,2-Dichloroethylene	156605		5		5
13	1,1,1-Trichloroethane	71556		5		5
14	1,1,2-Trichloroethane	79005	0.6	1.2		5
15	Trichloroethylene	79016	2.7	5		5
16	Vinyl Chloride	75014		0.5		5
17	Total Xylenes	1330207		5		5

No.	Compound	CAS Number	Discharge to Drinking Water Areas**		Discharge to Other Surface Water Areas	
18	Methyl Tertiary Butyl Ether (MtBE)	1634044		5		13
19	Total Petroleum Hydrocarbons			50		50
20	Ethylene Dibromide (1,2-Dibromoethane)	106934		0.05*		5
21	Trichloro-trifluoroethane	76131		5		5
<p>* If reported detection level is greater than effluent limit, then a non-detect result using a 0.5 ug/L detection level is deemed to be in compliance.</p> <p>** Drinking water areas are defined as surface waters with the existing or potential beneficial uses of "municipal and domestic supply" and "groundwater recharge" (the latter includes recharge areas to maintain salt balance or to halt salt water intrusion into fresh water aquifers).</p> <p>*** Applicable when three or more days of effluent monitoring results are available</p>						

2. pH: The pH of the discharge shall not exceed 8.5 nor be less than 6.5.
3. Toxicity: The survival of rainbow trout test fish in 96-hour static renewal bioassays of the discharge shall be a three sample moving median of 90% survival and a minimum value of not less than 70% survival.

C. Receiving Water Limitations

1. Narrative Limits: The discharge shall not cause the following conditions to exist in waters of the State at any place:
 - a. Floating, suspended, or deposited macroscopic particulate matter or foam;
 - b. Bottom deposits or aquatic growths;
 - c. Alteration of temperature, turbidity, taste, odor, or apparent color beyond present natural background levels;
 - d. Visible, floating, suspended, or deposited oil or other products of petroleum origin; and
 - e. Toxic or other deleterious substances to be present in concentrations or quantities that will cause deleterious effects on aquatic biota, wildlife, or waterfowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentration.
2. Numerical Limits: The discharge shall not cause the following limits to be exceeded in waters of the State in any place within one foot of the water surface:

4. **Non-Compliance As A Violation:** Upon receipt of the Executive Officer's discharge authorization letter, the discharger(s) shall comply with all applicable conditions and limitations of this Order and the discharge authorization letter. Any permit noncompliance (violations of requirements in this Order or Self Monitoring Program) constitutes a violation of the Clean Water Act and the California Water Code and is grounds for enforcement action, permit or authorization letter termination, revocation and reissuance, modification, the issuance of an individual permit, or denial of a renewal application.
5. **Self-Monitoring Program:** Dischargers shall comply with (1) the "Self-Monitoring Program" as attached to this Order (or as may be amended by the Executive Officer) or (2) an amended Self-Monitoring Program specified in the discharge authorization letter. The sampling and analysis schedule in the attached Self-Monitoring Program is the program expected to be followed for six months. After six months, the results will be reviewed, if requested by the dischargers, and the Executive Officer may modify the Self-Monitoring Program to cover constituents of concern. If the groundwater extraction and/or treatment system(s) described in the application for proposed discharge and certification report is modified, the schedule of monitoring specified in Table A of the Self-Monitoring Program will be reviewed for possible modification.
6. **Triggers:** The following triggers are not effluent limitations, and should not be construed as such. Instead, they are levels at which additional investigation is warranted to determine whether a numeric limit for a particular constituent is necessary. If any constituent in the effluent of a discharge exceeds the corresponding trigger as listed in the table E.6 below, then the discharger shall take three additional samples (three influent and three effluent) for each exceeded constituent during the following quarter and conduct activities as explained in the Provisions E.7, E.8, or E.9. If this monitoring activity has already been completed in the past, then summarize the results including the design of any installed treatment unit.

Table E.6 Trigger Compounds

Compound	CAS Number	Trigger (ug/L)
Antimony	7440360	6
Arsenic	7440382	10
Beryllium	7440417	1
Cadmium	7440439	0.07
Chromium (total)	18540299	11*
Chromium (VI)	18540299	11
Copper	7440508	3.1
Lead	7439921	2.0
Mercury	7439976	0.025
Nickel	7440020	8.2
Selenium	7782492	5.0
Silver	7440224	1.9
Thallium	7440280	0.1

Compound	CAS Number	Trigger (ug/L)
Zinc	7440666	35
Cyanide	57125	1.0
Asbestos	1332214	7 MFibers/L
2,3,7,8-TCDD (Dioxin)	1746016	0.000000013
Acrylonitrile	107131	2.0
Bromoform	75252	4.3
Chlorodibromomethane	124481	0.401
Dichlorobromomethane	75274	0.56
1,2-Dichloropropane	78875	0.50
1,3-Dichloropropylene	542756	0.2
1,1,2,2-Tetrachloroethane	79345	0.1
Pentachlorophenol	87865	0.28
2,4,6-Trichlorophenol	88062	2.1
Benzidine	92875	0.00012
Benzo(a)Anthracene	56553	0.0044
Benzo(a)Pyrene	50328	0.004
Benzo(b)Fluoranthene	205992	0.0044
Benzo(k)Fluoranthene	207089	0.0044
Bis(2-Chloroethyl)Ether	111444	0.031
Bis(2-Ethylhexyl)Phthalate	117817	1.8
Chrysene	218019	0.0044
Dibenzo(a,h)Anthracene	53703	0.0044
3,3'-Dichlorobenzidine	91941	0.04
2,4-Dinitrotoluene	121142	0.11
1,2-Diphenylhydrazine	122667	0.04
Hexachlorobenzene	118741	0.00075
Hexachlorobutadiene	87683	0.44
Hexachloroethane	67721	1.9
Indeno(1,2,3-cd)Pyrene	193395	0.0044
N-Nitrosodimethylamine	62759	0.00069
N-Nitrosodi-n-Propylamine	621647	0.005
Aldrin	309002	0.00013
alpha-BHC	319846	0.0039
beta-BHC	319857	0.014
gamma-BHC	58899	0.019
Chlordane	57749	0.00057
4,4'-DDT	50293	0.00059
4,4'-DDE	72559	0.00059
4,4'-DDD	72548	0.00083
Dieldrin	60571	0.00014
alpha-Endosulfan	959988	0.0087
beta-Endosulfan	33213659	0.0087
Endrin	72208	0.0023
Endrin Aldehyde	7421934	0.76

Compound	CAS Number	Trigger (ug/L)
Heptachlor	76448	0.00021
Heptachlor Epoxide	1024573	0.0001
Polychlorinated biphenyls (PCBs) total	1336363	0.00017
Toxaphene	8001352	0.0002
1,4-Dioxane	123911	3.0
Perchlorate	14797730	5.0
Freon 12 (Dichlorodifluoromethane)	75718	0.19
Other VOCs	-	5.0
Other SVOCs	-	5.0

Legend:
CAS = Chemical Abstract System or Service
* If total chromium concentration exceeds 11 then Chromium (VI) analysis shall also be done

7. Triggers Case 1: If the results of the three additional samples for the effluent **do not** exceed the triggers the discharger shall report the results to the Executive Officer in the next Self-Monitoring Report, and shall return to the schedule of sampling and analysis in the Self-Monitoring Program.
8. Triggers Case 2: If the results of **any one of the three** additional samples exceed the triggers, the discharger has two options of submitting a rationale for not doing the special studies explained below or performing the following:
 - a. Calculate the median and maximum concentration values for the constituent(s) of concern, using the three recent samples **and** all samples collected and analyzed for that constituent in the previous 12-month period.
 - b. Estimate the mass load discharged in the previous 12 month period for the constituent(s) of concern. Report the results in grams per day and in pounds per year, using the average flow rate for the previous 12 month period.
 - c. Report the results to the Executive Officer in the next Self-Monitoring Report, and return to the schedule of sampling and analysis in the Self-Monitoring Program.
9. Triggers Case 3: If the results of **two or three** of the additional samples exceed the triggers, the discharger shall perform the following:
 - a. Calculate median and maximum concentration values and mass load for the constituent(s) of concern, as described in Case 2 above.
 - b. Explain or identify source(s) of the compound and any other related chemicals of concern.

TABLE 7-6
CLEANUP LEVELS FOR SURFACE WATER, SEEPS, AND GROUNDWATER
AT THE PRESIDIO OF SAN FRANCISCO

Presidio of San Francisco, California

Potential Chemical of Concern	Water Quality Criteria									
	Surface Water (a) (µg/L)	Reference	Freshwater Seep (b) (µg/L)	Reference	Salt Water (c) (µg/L)	Reference	Drinking Water Cleanup Level (d):(e) (µg/L)			
							Background Levels	Reference	MCLs or Risk-Based Drinking Water Standards	Reference
Inorganic Chemicals										
Antimony	14	CTR (f)	- (g)	-	-	-	-	-	6	Federal MCL
Arsenic	150 (h, i)	Basin Plan (j)	150 (h, i)	Basin Plan	36 (h, i)	Basin Plan	-	-	10	Federal MCL
Barium	-	-	-	-	-	-	-	-	1,000	California MCL
Beryllium	-	-	-	-	-	-	-	-	4	Federal MCL
Cadmium	1.1 (h, k)	Basin Plan	1.1 (h, k)	Basin Plan	9.3 (h, i)	Basin Plan	-	-	5	Federal MCL
Chloride	-	-	-	-	-	-	-	-	250,000 (l)	Secondary MCL
Chromium (III)	180 (i, k)	NTR (m)	180 (i, k)	NTR	-	-	-	-	50	California MCL
Hexavalent Chromium	11 (h, i)	Basin Plan	11 (h, i)	Basin Plan	50 (h, i)	Basin Plan	-	-	-	-
Chromium (Total)	180 (i, k)	CTR	180 (i, k)	CTR	50 (i)	Basin Plan	-	-	50	California MCL
Cobalt	-	-	-	-	-	-	-	-	-	-
Copper	9.0 (h, i, k)	Basin Plan	9.0 (h, i, k)	Basin Plan	3.1 (h, i)	CTR	-	-	1,000	Secondary MCL
Cyanide	5.2	NTR	5.2	NTR	1	NTR	-	-	150	California MCL
Lead	2.5 (h, i, k)	Basin Plan	2.5 (h, i, k)	Basin Plan	8.1 (h, i)	Basin Plan	-	-	15 (n)	Federal MCL
Mercury	0.012 (o)	Basin Plan	0.012 (o)	Basin Plan	0.025	Basin Plan	-	-	2	Federal MCL
Molybdenum	-	-	-	-	-	-	-	-	-	-
Nickel	52 (h, i, k)	Basin Plan	52 (h, i, k)	Basin Plan	8.2 (h, i)	Basin Plan	-	-	100	California MCL
Selenium	5	NTR	5	NTR	71 (i)	NTR	-	-	50	Federal MCL
Silver	3.4 (h, i, k)	Basin Plan	3.4 (h, i, k)	Basin Plan	1.9 (h, i)	Basin Plan	-	-	50	Basin Plan
Thallium	1.7	CTR	-	-	-	-	-	-	2	Federal MCL
Vanadium	-	-	-	-	-	-	-	-	-	-
Zinc	120 (h, i, k)	Basin Plan	120 (h, i, k)	Basin Plan	81 (h, i)	Basin Plan	-	-	5,000	Secondary MCL

**TABLE 7-6
CLEANUP LEVELS FOR SURFACE WATER, SEEPS, AND GROUNDWATER
AT THE PRESIDIO OF SAN FRANCISCO**

Presidio of San Francisco, California

Potential Chemical of Concern	Water Quality Criteria									
	Surface Water (a) (µg/L)	Reference	Freshwater Seep (b) (µg/L)	Reference	Salt Water (c) (µg/L)	Reference	Drinking Water Cleanup Level (d):(e) (µg/L)			
							Background Levels	Reference	MCLs or Risk-Based Drinking Water Standards	Reference
Semivolatile Organic Compounds										
Acenaphthene	1,200	CTR	-	-	-	-	-	-	-	-
Acenaphthylene	-	-	-	-	-	-	-	-	-	-
Anthracene	9,600	CTR	-	-	-	-	0.05	FPALDR	770	FPALDR (p)
Benzo(a)anthracene	0.0044 (q)	CTR	-	-	-	-	0.05	FPALDR	0.1	Proposed MCL
Benzo(a)pyrene	0.0044 (q)	CTR	-	-	-	-	0.05	FPALDR	0.2	Federal MCL
Benzo(b)fluoranthene	0.0044 (q)	CTR	-	-	-	-	0.05	FPALDR	0.2	Proposed MCL
Benzo(g,h,i)perylene	-	-	-	-	-	-	0.06	FPALDR	150	FPALDR
Benzo(k)fluoranthene	0.0044 (q)	CTR	-	-	-	-	0.05	FPALDR	2	FPALDR
Benzyl Alcohol	-	-	-	-	-	-	-	-	-	-
Bis(2-ethylhexyl)phthalate	1.8	CTR	-	-	-	-	-	-	4	California MCL
Chrysene	0.0044 (q)	CTR	-	-	-	-	0.05	FPALDR	20	FPALDR
Dibenzo(a,h)anthracene	0.0044 (q)	CTR	-	-	-	-	-	-	-	-
Dibenzofuran	-	-	-	-	-	-	-	-	-	-
Fluoranthene	300	CTR	-	-	-	-	0.06	FPALDR	300	FPALDR
Fluorene	1,300	CTR	-	-	-	-	0.05	FPALDR	300	FPALDR
Indeno(1,2,3-c,d)-pyrene	0.0044 (q)	CTR	-	-	-	-	-	-	-	-
2-methylnaphthalene	-	-	-	-	-	-	-	-	-	-
2-methylphenol (o-Cresol)	-	-	-	-	-	-	-	-	-	-
Methylphenol (m- and p-Cresol)	-	-	-	-	-	-	-	-	-	-
Naphthalene	-	-	-	-	-	-	0.05	FPALDR	300	FPALDR

TABLE 7-6
CLEANUP LEVELS FOR SURFACE WATER, SEEPS, AND GROUNDWATER
AT THE PRESIDIO OF SAN FRANCISCO

Presidio of San Francisco, California

Potential Chemical of Concern	Water Quality Criteria									
	Surface Water (a) (µg/L)	Reference	Freshwater Seep (b) (µg/L)	Reference	Salt Water (c) (µg/L)	Reference	Drinking Water Cleanup Level (d):(e) (µg/L)			
							Background Levels	Reference	MCLs or Risk-Based Drinking Water Standards	Reference
Semivolatile Organic Compounds (contd)										
n-dotriacontane	-	-	-	-	-	-	-	-	-	-
n-hentriacontane	-	-	-	-	-	-	-	-	-	-
n-nitrosodiphenylamine	5	CTR	-	-	-	-	-	-	-	-
n-triacontane	-	-	-	-	-	-	-	-	-	-
Pentachlorophenol	0.28	CTR	15	CTR	7.9	CTR	-	-	1	Federal MCL
Phenanthrene	-	-	-	-	-	-	0.05	FPALDR	230	FPALDR
Phenol	21,000	CTR	-	-	-	-	-	-	1	Basin Plan
Polycyclic Aromatic Hydrocarbons	0.031 (q)	Basin Plan	-	-	0.031 (q)	Basin Plan	-	-	26 (r)	FPALDR
Pyrene	960	CTR	-	-	-	-	0.09	FPALDR	230	FPALDR
Volatile Organic Compounds										
Acetone	-	-	-	-	-	-	-	-	-	-
Bromodichloromethane	0.56	CTR	-	-	-	-	-	-	80	Federal MCL
2-Butanone (MEK)	-	-	-	-	-	-	-	-	-	-
Carbon Disulfide	-	-	-	-	-	-	-	-	-	-
Carbon Tetrachloride	0.25	CTR	-	-	-	-	-	-	0.5	California MCL
Chlorodibromomethane	0.41	CTR	-	-	-	-	-	-	80	Federal MCL
Chlorobenzene	680	CTR	-	-	-	-	-	-	70	California MCL
Chloroform	-	-	-	-	-	-	-	-	80	Federal MCL
Chloromethane	-	-	-	-	-	-	-	-	-	-
1,4-dichlorobenzene	400	CTR	-	-	-	-	-	-	5	California MCL
1,2-dichloroethane	0.38	CTR	-	-	-	-	-	-	0.5	California MCL
1,1-dichloroethene	0.057	CTR	-	-	-	-	-	-	6	California MCL
cis-1,2-dichloroethene	-	-	-	-	-	-	-	-	6	California MCL

**TABLE 7-6
CLEANUP LEVELS FOR SURFACE WATER, SEEPS, AND GROUNDWATER
AT THE PRESIDIO OF SAN FRANCISCO**

Presidio of San Francisco, California

Potential Chemical of Concern	Water Quality Criteria									
	Surface Water (a) (µg/L)	Reference	Freshwater Seep (b) (µg/L)	Reference	Salt Water (c) (µg/L)	Reference	Drinking Water Cleanup Level (d):(e) (µg/L)			
							Background Levels	Reference	MCLs or Risk-Based Drinking Water Standards	Reference
Volatile Organic Compounds (contd)										
p-Isopropyltoluene (p-cymene)	-	-	-	-	-	-	-	-	-	-
Methylene Chloride	4.7	CTR	-	-	-	-	-	-	5	Federal MCL
Tetrachloroethene	0.8	CTR	-	-	-	-	-	-	5	Federal MCL
1,2,3-trichlorobenzene (s)	-	-	-	-	-	-	-	-	5	California MCL
1,2,4-trichlorobenzene	-	-	-	-	-	-	-	-	5	California MCL
1,1,1-trichloroethane	-	-	-	-	-	-	-	-	200	Federal MCL
Trichloroethene	2.7	CTR	-	-	-	-	-	-	5	Federal MCL
Trichlorofluoromethane	-	-	-	-	-	-	-	-	150	California MCL
Petroleum Hydrocarbons and Constituents										
Gasoline Range Hydrocarbons	443	Order (t)	443	Order	1,200	Order	50	FPALDR	770	FPALDR
Diesel Range Hydrocarbons	443 (u)	BBL Study (t)	443 (u)	BBL Study	2,200	Order	50	FPALDR	880	FPALDR
Fuel Oil Range Hydrocarbons (v)	443 (u)	BBL Study	443 (u)	BBL Study	2,200	Order	50	FPALDR	1,200	FPALDR
Benzene	1.2	CTR	463	Order	510	Order	0.5	FPALDR	1	California MCL
Ethylbenzene	845	Order	845	Order	43	Order	0.5	FPALDR	300	California MCL
Toluene	490	Order	490	Order	1,000	Order	0.5	FPALDR	150	California MCL
Tetraethyl Lead	-	-	-	-	-	-	-	-	-	-
Total Xylenes	318	Order	318	Order	130	Order	0.5	FPALDR	1,750	California MCL
Methyl t-butyl ether (MTBE)	-	-	-	-	4,400	Order	-	-	13	California MCL
PCBs, Pesticides, and Herbicides										
Polychlorinated Biphenyls	0.00017 (w, x)	CTR	0.014 (w, x)	CTR	0.03	CTR	-	-	0.5	Federal MCL
Aldrin	0.00013 (x)	CTR	3	CTR	1.3	CTR	-	-	-	-
Chlordane	0.00057 (x)	CTR	0.0043 (x)	CTR	0.004	CTR	-	-	0.1	California MCL

**TABLE 7-6
CLEANUP LEVELS FOR SURFACE WATER, SEEPS, AND GROUNDWATER
AT THE PRESIDIO OF SAN FRANCISCO**

Presidio of San Francisco, California

Potential Chemical of Concern	Water Quality Criteria									
	Surface Water (a) (µg/L)	Reference	Freshwater Seep (b) (µg/L)	Reference	Salt Water (c) (µg/L)	Reference	Drinking Water Cleanup Level (d):(e) (µg/L)			
							Background Levels	Reference	MCLs or Risk-Based Drinking Water Standards	Reference
PCBs, Pesticides, and Herbicides (contd)										
2,4-D	-	-	-	-	-	-	-	-	70	Federal MCL
4,4'-DDD (y)	0.00083 (x)	CTR	0.001 (x)	CTR	0.001 (x)	CTR	-	-	-	-
4,4'-DDE (y)	0.00059 (x)	CTR	0.001 (x)	CTR	0.001 (x)	CTR	-	-	-	-
4,4'-DDT	0.00059 (x)	CTR	0.001 (x)	CTR	0.001 (x)	CTR	-	-	-	-
Dicamba	-	-	-	-	-	-	-	-	-	-
Dieldrin	0.00014 (x)	CTR	0.056 (x)	CTR	0.0019 (x)	CTR	-	-	0.5	Action Level (z)
Endosulfan	0.056 (x)	CTR	0.056 (x)	CTR	0.0087 (x)	CTR	-	-	-	-
Endosulfan Sulfate (s)	0.056 (x)	CTR	0.056 (x)	CTR	0.0087 (x)	CTR	-	-	-	-
Endrin	0.036 (x)	CTR	0.036 (x)	CTR	0.0023 (x)	CTR	-	-	2	Federal MCL
Endrin Aldehyde (s)	0.036 (x)	CTR	0.036 (x)	CTR	0.0023 (x)	CTR	-	-	2	Federal MCL
Endrin Ketone (s)	0.036 (x)	CTR	0.036 (x)	CTR	0.0023 (x)	CTR	-	-	2	Federal MCL
beta-BHC	0.014 (x)	CTR	-	-	-	-	-	-	0.3	Action Level (z)
gamma-BHC (Lindane)	0.019 (x)	CTR	0.95	CTR	0.16	CTR	-	-	0.2	Federal MCL
Heptachlor	0.00021 (x)	CTR	0.0038 (x)	CTR	0.0036 (x)	CTR	-	-	0.01 (x)	California MCL
Heptachlor Epoxide	0.00010 (x)	CTR	0.0038 (x)	CTR	0.0036 (x)	CTR	-	-	0.01 (x)	California MCL
Isodrin (aa)	0.00013 (x)	CTR	3	CTR	1.3	CTR	-	-	-	-
MCPD	-	-	-	-	-	-	-	-	-	-
Methoxychlor	-	-	-	-	-	-	-	-	30	California MCL

TABLE 7-6
CLEANUP LEVELS FOR SURFACE WATER, SEEPS, AND GROUNDWATER
AT THE PRESIDIO OF SAN FRANCISCO

Presidio of San Francisco, California

Notes:

- (a) Cleanup levels are based upon concentrations of chemicals of concern ("COCs") that result in chronic toxicity to freshwater aquatic organisms, or to humans through consumption of water and fish, whichever is more stringent. Cleanup levels apply to freshwater surface water and groundwater that may exfiltrate directly to surface water, such as Lobos Creek, Mountain Lake, and the Tennessee Hollow Riparian Corridor upon enhancement.
- (b) Cleanup levels are based upon concentrations of COCs that result in chronic toxicity to freshwater aquatic organisms. Cleanup levels apply to seeps and to groundwater that emerges as freshwater seeps.
- (c) Cleanup levels are based upon concentrations of COCs that result in chronic toxicity to marine organisms. Cleanup levels apply to marine or salt water environments.
- (d) Cleanup levels listed in the FPALDR are the Practical Quantitation Limits ("PQLs"). Background levels (i.e., the PQLs) will be used as water quality goals for the Lobos Creek Groundwater Basin.
- (e) Cleanup level listed is a promulgated or proposed federal Maximum Contaminant Level ("MCL"), promulgated or proposed MCL or action level specific to the State of California, or a water quality objective for municipal supply as identified in the Basin Plan (California Environmental Protection Agency, Regional Water Quality Control Board, San Francisco Bay Region, Water Quality Control Plan, San Francisco Bay Basin, San Francisco Bay Region ("Basin Plan"), dated 21 June 1995), as updated by Resolution R2-2004-003 dated 21 January 2004. Federal MCLs obtained from U.S. EPA, 2002 Edition of Drinking Water Standards and Health Advisories, dated Summer 2002. California MCLs obtained from Title 22 of the California Code of Regulations, §64431 and §64444. Proposed MCLs and action levels obtained from U.S. EPA Region IX, *Drinking Water Standards and Health Advisories Table*, dated November 2000, revised February 2001. Drinking water cleanup levels apply to groundwater and surface water at the Presidio.
- (f) Cleanup level obtained from Title 40 of the Code of Federal Regulations, Part §131.38, *Establishment of Numerical Criteria for Priority Toxic Pollutants for the State of California*, or California Toxics Rule ("CTR"), promulgated 18 May 2000.
- (g) Hyphen indicates that a cleanup level is not available.
- (h) Cleanup level is expressed as a function of the water-effects ratio, as defined in the CTR.
- (i) These objectives for metals are expressed in terms of the dissolved fraction of the metal in the water column.
- (j) Cleanup level obtained from the Basin Plan (as defined above).
- (k) Cleanup level is a function of hardness. Value shown is based on a hardness of 100 mg/L as calcium carbonate.

TABLE 7-6
CLEANUP LEVELS FOR SURFACE WATER, SEEPS, AND GROUNDWATER
AT THE PRESIDIO OF SAN FRANCISCO

Presidio of San Francisco, California

Notes (contd):

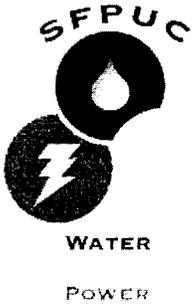
- (l) Cleanup level listed is a secondary MCL. Secondary MCLs apply to chemicals in drinking water that adversely affect its odor, taste, or appearance and therefore cause people to discontinue using the water.
- (m) Cleanup level obtained from Title 40 of the Code of Federal Regulations, Part §131.36, *Establishment of Numerical Criteria for Priority Toxic Pollutants*, or National Toxics Rule ("NTR"), promulgated 22 December 1992, as amended. The Basin Plan indicates values for these chemicals should be obtained from the NTR. The values in the NTR are consistent with those presented in the CTR.
- (n) MCL based upon treatment technique. Treatment technique and public notification required at action level of 15 µg/L for lead.
- (o) Cleanup level for mercury is 0.012 µg/L. However, this level is below the typical analytical method reporting limit of 0.025 µg/L. A cleanup objective of 0.012 µg/L is desirable, but attainment can only be determined at the analytical method reporting limit.
- (p) Cleanup level obtained from Montgomery Watson, *Fuel Product Action Level Development Report, Presidio of San Francisco, California* ("FPALDR"), dated October 1995. Numerical values developed based upon residential exposure to COCs in groundwater through ingestion and inhalation pathways.
- (q) This level is below the typical analytical method reporting limit range of 0.1 to 10 µg/L for semivolatile organic compounds. Cleanup level listed is desirable, but attainment can only be determined at the analytical method reporting limit. Cleanup level is established at the typical analytical method reporting limit range for semivolatile organic compounds assuming no matrix interference. In the event of matrix interference, actual method reporting limits determining compliance with cleanup levels may be raised.
- (r) The drinking water standard in the FPALDR is for total carcinogenic polycyclic aromatic hydrocarbons ("PAHs"). These carcinogenic PAHs include benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, and chrysene.
- (s) Values for 1,2,4-trichlorobenzene were used for 1,2,3-trichlorobenzene. Values for Endosulfan were used for Endosulfan Sulfate. Values for Endrin were used for Endrin Aldehyde and Endrin Ketone.

TABLE 7-6
CLEANUP LEVELS FOR SURFACE WATER, SEEPS, AND GROUNDWATER
AT THE PRESIDIO OF SAN FRANCISCO

Presidio of San Francisco, California

Notes (contd):

- (t) Cleanup levels for TPH-diesel for the saltwater zone are from Order No. R2-2003-0080, *Revised Site Cleanup Requirements and Recision of Order No. 91-082 and Order No. 96-070 for the Property Located at The Presidio of San Francisco, City and County of San Francisco*, issued by the California Regional Water Quality Control Board, 20 August 2003 ("Order").
Cleanup levels for TPH-diesel and TPH-fuel oil for the freshwater ecological protection zone were obtained from Blasland, Bouck, & Lee ("BBL"), *Draft Development of Freshwater TPH-diesel and TPH-fuel oil Point of Compliance Concentration Determinations, Presidio of San Francisco, California*, dated 15 July 2004 ("BBL Study"). This report was approved by the RWQCB on 7 September 2004 in a letter from Bruce H. Wolfe.
- (u) The BBL Study developed Point of Compliance Concentrations for areas within the Freshwater Ecological Protection Zone ("FEPZ"). Value is to be used within FEPZ Zone of Application, as discussed in the BBL Study, and in other areas of the Presidio where freshwater cleanup levels may be appropriate (e.g., Lobos Creek).
- (v) Fuel oil range hydrocarbons includes motor oil.
- (w) Cleanup level applies to total polychlorinated biphenyls ("PCBs").
- (x) This level is below the typical analytical method reporting limit range of 0.05 to 0.5 µg/L for PCBs and pesticides. Cleanup level listed is desirable, but attainment can only be determined at the analytical method reporting limit.
- (y) In the absence of a published value for 4,4'-DDD or 4,4'-DDE, the value for 4,4'-DDT is used.
- (z) Cleanup level is State of California action level for drinking water.
- (aa) Isodrin is an isomer of Aldrin. Values for Aldrin were used for Isodrin.



SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Wastewater Enterprise/Collection System Division

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July 11, 2006

REQUIREMENTS FOR BATCH WASTEWATER DISCHARGES

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1.0 Introduction

The following requirements for batch wastewater discharges have been established pursuant to the provisions of Chapter X (Public Works Code) of Part II of the San Francisco Municipal Code, Article 4.1 (hereinafter referred to as "Article 4.1"). This document specifies the pollutant limitations that apply, and the information that must be included in applications for permits to carry out batch discharges of wastewater into the City and County of San Francisco's ("City's") sewerage system.

Such batch discharges may result from de-watering of construction sites, wells drilled to investigate/mitigate a suspected contaminated site, water used for cleaning/hydrostatic testing of pipes or tanks, or any other activity that generates wastewater, other than from routine commercial/industrial processes.

All permit applicants shall demonstrate compliance with the pollutant limits in Appendices 1.0 and 1.1. Certain other applicants shall also demonstrate compliance with the pollutant limits in Appendices 2.0 and 2.1. All applicants shall be subject to payment of sewer service charges in accordance with the provisions of applicable City laws.

2.0 The Application

Completed permit application forms ("Batch Wastewater Permit Application" – available from this office) for batch wastewater discharges shall be submitted no later than **45 days prior** to the proposed commencement of the discharge and must include the following information:

1. The source (i.e. the activity and location at which the wastewater is generated);
2. The total estimated volume of the proposed discharge;
3. The proposed discharge location and the sewer opening, such as the side sewer(s), catch basin(s), storm drain(s) or manhole(s), proposed for disposal;
4. A description of any proposed wastewater treatment before discharge;
5. A **site plan** showing the source of the wastewater, the sampling location(s) or monitoring well(s), and the proposed discharge location;

**Appendix 1.0 Analytical Requirements For Batch Wastewater Discharges
–All Sources (City’s local limits)**

<u>Pollutant/Pollutant Property</u>	<u>Analytical Methodology</u> ¹	<u>Regulatory Limit</u> ² (mg/L)
pH (pH units)	150.1 / 9040B	6.0 min.; 9.5 max.
Dissolved sulfides	376.2 / 9030B ³	0.5
Hydrocarbon oil and grease	Std. Methods 5520F ⁴	100
Total recoverable oil and grease ⁵	413.1 / 9070	300
Total suspended solids ⁵	160.2	----
Chemical oxygen demand ⁵	410.1	----

**Appendix 1.1 Analytical Requirements For Batch Wastewater Discharges
–All Sources (City’s local limits)**

<u>Pollutant/Pollutant Property</u>	<u>Analytical Methodology</u> ¹	<u>Regulatory Limit</u> ⁶ (mg/L)
Arsenic (Total)	200.7 / 6010B	4.0
Cadmium (Total)	200.7 / 6010B / 7130	0.5
Chromium (Total)	200.7 / 6010B / 7190	5.0

Appendix 1.1 (Cont'd)

<u>Pollutant/Pollutant Property</u>	<u>Analytical Methodology</u> ¹	<u>Regulatory Limit</u> ⁶ (mg/L)
Copper (Total)	200.7 / 6010B / 7210	4.0
Lead (Total)	200.7 / 6010B / 7420	1.5
Mercury (Total)	245.1 / 7470A	0.05
Nickel (Total)	200.7 / 6010B / 7520	2.0
Silver (Total)	200.7 / 6010B / 7760A	0.6
Zinc (Total)	200.7 / 6010B / 7950	7.0
Phenols	420.1 / 8041	23.0
Cyanide (Total)	335.3 / 9010B	1.0

**Appendix 2.0 Analytical Requirements For Batch Wastewater Discharges
–Sources Suspected of Petroleum or Hazardous Waste Contamination**

<u>Contaminant</u>	<u>Analytical Methodology</u> ¹	<u>Regulatory Level</u> ⁷ (mg/L)
Flashpoint (°C, °F)	1010 / 1020A	≥ 60°C (140°F) ⁸
Benzene	8021B / 8260B	0.5
Carbon tetrachloride	8021B / 8260B	0.5
Chlordane	8081A / 8270C	0.03
Chlorobenzene	8021B / 8260B	100.0
Chloroform	8021B / 8260B	6.0
o-Cresol	8041 / 8270C	200.0 ⁹
m-Cresol	8041 / 8270C	200.0 ⁹
p-Cresol	8041 / 8270C	200.0 ⁹
Cresol	8041 / 8270C	200.0 ⁹
2,4-D	8151A	10.0
1,4-Dichlorobenzene	8021B / 8270C	7.5
1,2-Dichloroethane	8021B / 8260B	0.5

Appendix 2.0 (Cont'd)

<u>Contaminant</u>	<u>Analytical Methodology¹</u>	<u>Regulatory Level⁷</u> (mg/L)
1,1-Dichloroethylene	8021B / 8260B	0.7
2,4-Dinitrotoluene	8270C	0.13
Endrin	8081A / 8270C	0.02
Heptachlor (and its epoxide)	8081A / 8270C	0.008
Hexachlorobenzene	8121 / 8270C	0.13
Hexachlorobutadiene	8021B / 8121 / 8270C	0.5
Hexachloroethane	8121 / 8260B	3.0
Lindane	8081A / 8270C	0.4
Methoxychlor	8081A / 8270C	10.0
Methyl ethyl ketone	8260B	200.0
Nitrobenzene	8091 / 8270C	2.0
Pentachlorophenol	8041 / 8270C	100.0
Pyridine	8270C	5.0
Tetrachloroethylene	8021B / 8260B	0.7

Appendix 2.0 (Cont'd)

<u>Contaminant</u>	<u>Analytical Methodology</u> ¹	<u>Regulatory Level</u> ⁷ (mg/L)
Toxaphene	8081A / 8270C	0.5
Trichloroethylene	8021B / 8260B	0.5
2,4,5-Trichlorophenol	8041 / 8270C	400.0
2,4,6-Trichlorophenol	8041 / 8270C	2.0
2,4,5-TP (Silvex)	8151A	1.0
Vinyl chloride	8021B / 8260B	0.2

**Appendix 2.1 Analytical Requirements For Batch Wastewater Discharges
–Sources Suspected of Hazardous Waste Contamination**

<u>Substance</u>	<u>Analytical Methodology¹</u>	<u>Regulatory Level</u>	
		<u>STLC¹⁰</u> (mg/L)	<u>TTLC¹¹</u> Wet-Weight (mg/kg)
Antimony and/or antimony compounds	200.7 / 6010B / 7040	15	500
Arsenic and/or arsenic compounds	200.7 / 6010B	5.0	500
Asbestos	40 CFR Part 763 ¹²	----	1.0 (as percent)
Barium and/or barium compounds (excluding barite)	200.7 / 6010B / 7080A	100	10,000 ¹³
Beryllium and/or beryllium compounds	200.7 / 6010B / 7090	0.75	75
Cadmium and/or cadmium compounds	200.7 / 6010B / 7130	1.0	100
Chromium (VI) compounds	7195 / 7196A / 7197	5	500
Chromium and/or chromium (III) compounds	200.7 / 6010B / 7190	5	2,500
Cobalt and/or cobalt compounds	200.7 / 6010B / 7200	80	8,000
Copper and/or copper compounds	200.7 / 6010B / 7210	25	2,500
Fluoride salts	340.1 / 340.2	180	18,000
Lead and/or lead compounds	200.7 / 6010B / 7420	5.0	1,000

Appendix 2.1 (Cont'd)

<u>Substance</u>	<u>Analytical Methodology</u> ¹	<u>Regulatory Level</u>	
		<u>STLC</u> ¹⁰ (mg/L)	<u>TTLC</u> ¹¹ Wet-Weight (mg/kg)
Mercury and/or mercury compounds	7470A	0.2	20
Molybdenum and/or molybdenum compounds	200.7 / 6010B / 7480	350	3,500
Nickel and/or nickel compounds	200.7 / 6010B / 7520	20	2,000
Selenium and/or selenium compounds	200.7 / 6010B	1.0	100
Silver and/or silver compounds	200.7 / 6010B / 7760A	5	500
Thallium and/or thallium compounds	200.7 / 6010B / 7840	7.0	700
Vanadium and/or vanadium compounds	200.7 / 6010B / 7910	24	2,400
Zinc and/or zinc compounds	200.7 / 6010B / 7950	250	5,000
Aldrin	8081A / 8270C	0.14	1.4
Chlordane	8081A / 8270C	0.25	2.5
DDT, DDE, DDD	8081A / 8270C	0.1	1.0
2,4-Dichlorophenoxyacetic acid	8151A	10	100
Dieldrin	8081A / 8270C	0.8	8.0

Appendix 2.1 (Cont'd)

<u>Substance</u>	<u>Analytical Methodology</u> ¹	<u>Regulatory Level</u>	
		<u>STLC</u> ¹⁰ (mg/L)	<u>TTLC</u> ¹¹ Wet-Weight (mg/kg)
Dioxin (2,3,7,8-TCDD)	8280A / 8290	0.001	0.01
Endrin	8081A / 8270C	0.02	0.2
Heptachlor	8081A / 8270C	0.47	4.7
Kepone	Section 5A(5)(a) ¹⁴ / 8270C	2.1	21
Lead compounds, organic	Appendix XI ¹⁵	---	13
Lindane	8081A / 8270C	0.4	4.0
Methoxychlor	8081A / 8270C	10	100
Mirex	8081A / 8270C	2.1	21
Pentachlorophenol	8041 / 8270C	1.7	17
Polychlorinated biphenyls (PCBs)	8270C	5.0	50
Toxaphene	8081A / 8270C	0.5	5
Trichloroethylene	8021B / 8260B	204	2,040
2,4,5-Trichlorophenoxypropionic acid	8151A	1.0	10

Footnotes:

¹ Analytical methodologies in the 100 – 400 series are cited at EPA regulations 40 CFR Part 136 – “Guidelines Establishing Test Procedures for the Analysis of Pollutants”, as amended. The application of any method approved in this regulation as an approved alternative method is necessarily permitted for use by SFPUC-BERM.

Analytical methodologies in the 1000 – 9000 series are found at the EPA methodology Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods, U.S. EPA, SW-846, 3rd ed., Final Update III, December 1996, as amended.

² Chapter X (Public Works Code) of Part II of the San Francisco Municipal Code, Article 4.1, Section 123

³ Acid-soluble fraction only

⁴ Standards Methods for the Examination of Water and Wastewater, Eaton, Andrew D., et al., American Public Health Association, et al., Washington, D.C., 1998, 20th ed., as amended

⁵ Notwithstanding any regulatory limit that may be identified with this pollutant/pollutant property, this parameter defines the characteristic of the discharge that, in part, is used in the calculation of sewer service charges.

⁶ City and County of San Francisco, Department of Public Works, Order No. 158170, dated December 18, 1991

⁷ California Code of Regulations, Title 22, Section 66261.24(a)(1)(B)

⁸ California Code of Regulations, Title 22, Section 66261.21(a)(1)

⁹ If o-, m-, and p-Cresol concentrations cannot be differentiated, the total cresol concentration is used. The regulatory level of cresol is 200 mg/L.

¹⁰ Soluble Threshold Limit Concentration. California Code of Regulations, Title 22, Section 66261.24(a)(2)(A)

¹¹ Total Threshold Limit Concentration. California Code of Regulations, Title 22, Section 66261.24(a)(2)(A)

¹² Code of Federal Regulations (CFR) Part 763 - Asbestos, Subpart F, Appendix A, “Interim Method for the Determination of Asbestos in Bulk Insulation Samples”.

¹³ Excluding barium sulfate

¹⁴ Manual of Analytical Methods for the Analysis of Pesticides in Humans and Environmental Samples, EPA-600/8-80-038, U.S. Environmental Protection Agency, 1980, Section 5, A, (5), (a)

¹⁵ California Code of Regulations, Title 22, Division 4.5, Chapter 11, Appendix XI, “Organic Lead Test Method”, as amended