Water quality standards applicable to use Classes 1B, 2A, 3A or 3B, 4A and 4B, and 5 continued.

SUBSTANCE OR CHARACTERISTIC	UNITS	STANDARDS FOR USE CLASSES							
		2A CHRONIC	2A MAXIMUM	2A FAV	1B DRINKING WATER	3A/3B INDUST. CONSUMPT.	4A IRRIGATION	4B LIVESTOCK	5 AESTHETIC
MISCELLANEOUS continued									
Sulfate	mg/l				250(S)				
Sulfates, wild rice present	mg/l						10		
Specific conductance	umhos/cm						1000		
Temperature	F	no material increase							
Total dissolved salts	mg/l						700		
Total dissolved solids	mg/l				500(S)				
Turbidity	NTUs	10	none	none	1-5				
METALS AND ELEMENTS									
Aluminum	ug/l	87	748	1496	50-200(S)				
Antimony	ug/l	5.5	90	180	6				
Arsenic	ug/l	2.0	360	720	50				
Barium	ug/l				2000				
Beryllium	ug/l				4.0				
Boron	ug/l						500		
Cadmium	ug/l	See note No. 3 below			5				
Chromium, +3	ug/l	See note No. 4 below							
Chromium, +6	ug/l	11	16	32					
Chromium, total	ug/l				100				
Cobalt	ug/l	2.8	436	872					
Copper	ug/l	See note No. 5 below			1000(S)				
Iron	ug/l				300(S)				
Lead	ug/l	See note No. 6 below							
Manganese	ug/l				50(S)				
Mercury	ug/l	0.0069	2.4*	4.9*	2				
Nickel	ug/l	See note No. 7 below			100				

Water quality standards applicable to use Classes 1B, 2A, 3A or 3B, 4A and 4B, and 5 continued.

SUBSTANCE OR CHARACTERISTIC	UNITS	STANDARDS FOR USE CLASSES							
		2A CHRONIC	2A MAXIMUM	2A FAV	1B DRINKING WATER	3A/3B INDUST. CONSUMPT.	4A IRRIGA-TION	4B LIVESTOCK	5 AESTHETIC
METALS AND ELEMENTS continued									
Selenium	ug/l	5.0	20	40	50				
Silver	ug/l	0.12	see note No. 8 below		100(S)				
Thallium	ug/l	0.28	64	128	2				
Zinc	ug/l	See note No. 9 below			5000(S)				
ORGANICS									
Acenaphthene	ug/l	12	41	81					
Acrylonitrile (c)	ug/l	0.38	1140*	2281*					
Alachlor (c)	ug/l	3.8	800*	1600*	2				
Aldicarb	ug/l				3				
Aldicarb sulfone	ug/l				2				
Aldicarb sulfoxide	ug/l				4				
Anthracene	ug/l	0.029	0.78	1.6					
Atrazine (c)	ug/l	3.4	323	645	3				
Benzene (c)	ug/l	9.7	4487*	8974*	5				
Benzo(a)pyrene	ug/l				0.2				
Bromoform	ug/l	33	2900	5800					
Carbofuran	ug/l				40				
Carbon tetrachloride (c)	ug/l	1.9	1750*	3500*	5				
Chlordane (c)	ug/l	0.000073	1.2*	2.4*	2				
Chlorobenzene (Monochlorobenzene)	ug/l	10	423	846	100				
Chloroform (c)	ug/l	49	2235	4471					
Chlorpyrifos	ug/l	0.041	0.083	0.17					
Dalapon	ug/l				200				
DDT (c)	ug/l	0.00011	0.55*	1.1*					
1,2-Dibromo-3-chloropropane (c)	ug/l				0.2				

Water quality standards applicable to use Classes 1B, 2A, 3A or 3B, 4A and 4B, and 5 continued.

SUBSTANCE OR CHARACTERISTIC	UNITS	STANDARDS FOR USE CLASSES							
		2A CHRONIC	2A MAXIMUM	2A FAV	1B DRINKING WATER	3A/3B INDUST. CONSUMPT.	4A IRRIGA-TION	4B LIVESTOCK	5 AESTHETIC
ORGANICS continued									
Dichlorobenzene (ortho)	ug/l				600				
1,4-Dichlorobenzene (para) (c)	ug/l				75				
1,2-Dichloroethane (c)	ug/l	3.5	45050*	90100*	5				
1,1-Dichloroethylene	ug/l				7				
1,2-Dichloroethylene (cis)	ug/l				70				
1,2-Dichloroethylene (trans)	ug/l				100				
2,4-Dichlorophenoxyacetic acid (2,4-D)	ug/l				70				
1,2-Dichloropropane (c)	ug/l				5				
Dieldrin (c)	ug/l	6.5e-06	1.3*	2.5*					
Di-2-ethylhexyl adipate	ug/l				400				
Di-2-ethylhexyl phthalate (c)	ug/l	1.9	none	none	6				
Di-n-Octyl phthalate	ug/l	30	825	1650					
Dinoseb	ug/l				7				
Diquat	ug/l				20				
Endosulfan	ug/l	0.0076	0.084	0.17					
Endothall	ug/l				100				
Endrin	ug/l	0.0039	0.090	0.18	2				
Ethylbenzene (c)	ug/l	68	1859	3717	700				
Ethylene dibromide	ug/l				0.05				
Fluoranthene	ug/l	7.1	199	398					
Glyphosate	ug/l				700				
Heptachlor (c)	ug/l	0.00010	0.26*	0.52*	0.4				
Heptachlor epoxide (c)	ug/l	0.00012	0.27*	0.53*	0.2				
Hexachlorobenzene (c)	ug/l	0.000061	none	none	1				
Hexachlorocyclopentadiene	ug/l				50				

Water quality standards applicable to use Classes 1B, 2A, 3A or 3B, 4A and 4B, and 5 continued.

SUBSTANCE OR CHARACTERISTIC	UNITS	STANDARDS FOR USE CLASSES							
		2A CHRONIC	2A MAXIMUM	2A FAV	1B DRINKING WATER	3A/3B INDUST. CONSUMPT.	4A IRRIGA-TION	4B LIVESTOCK	5 AESTHETIC
ORGANICS continued									
Lindane (c) (Hexachlorocyclohexane, gamma-)	ug/l	0.0087	1.0*	2.0*	0.2				
Methoxychlor	ug/l				40				
Methylene chloride (c) (Dichloromethane)	ug/l	45	9600*	19200*	5				
Oxamyl (Vydate)	ug/l				200				
Naphthalene	ug/l	81	409	818					
Parathion	ug/l	0.013	0.07	0.13					
Pentachlorophenol	ug/l	0.93	See note No. 10 below		1				
Phenanthrene	ug/l	2.1	29	58					
Phenol	ug/l	123	2214	4428					
Picloram	ug/l				500				
Polychlorinated biphenyls (c) (PCBs, total)	ug/l	0.000014	1.0*	2.0*	0.5				
Simazine	ug/l				4				
Styrene (c)	ug/l				100				
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD-dioxin)	pg/l				30				
1,1,2,2-Tetrachloroethane (c)	ug/l	1.1	1127*	2253*					
Tetrachloroethylene (c)	ug/l	3.8	428*	857*	5				
Toluene	ug/l	253	1352	2703	1000				
Toxaphene (c)	ug/l	0.00031	0.73*	1.5*	3				
2,4,5-TP (Silvex)	ug/l				50				
1,2,4-Trichlorobenzene	ug/l				70				
1,1,1-Trichloroethane	ug/l	263	2628	5256	200				
1,1,2-Trichloroethane	ug/l				5				

Water quality standards applicable to use Classes 1B, 2A, 3A or 3B, 4A and 4B, and 5 continued.

SUBSTANCE OR CHARACTERISTIC	UNITS	STANDARDS FOR USE CLASSES							
		2A CHRONIC	2A MAXIMUM	2A FAV	1B DRINKING WATER	3A/3B INDUST. CONSUMPT.	4A IRRIGA TION	4B LIVESTOCK	5 AESTHETIC
ORGANICS continued									
1,1,2-Trichloroethylene (c)	ug/l	25	6988*	13976*	5				
2,4,6-Trichlorophenol	ug/l	2.0	102	203					
Trihalomethanes, total (c)	ug/l				100				
(Bromodichloromethane)									
(Bromoform)									
(Chlorodibromomethane)									
(Chloroform)									
Vinyl chloride (c)	ug/l	0.17	none	none	2				
Xylenes, total	ug/l	166	1407	2814	10000				

Note No. 1, FECAL COLIFORM ORGANISMS

Not to exceed 200 organisms per 100 milliliters as a geometric mean of not less than five samples in any calendar month, nor shall more than ten percent of all samples taken during any calendar month individually exceed 400 organisms per 100 milliliters. The standard applies only between March 1 and October 31.

Note No. 2, RADIOACTIVE MATERIALS

See parts 7050.0221, subparts 2, 3, 4, and 5; 7050.0222, subparts 4, 5, and 6; 7050.0224, subparts 2, 3 and 4.

STANDARDS THAT VARY WITH TOTAL HARDNESS (TH)	EXAMPLE STANDARDS AT TH OF:				
	50	100	200	300	400
Note No. 3, CADMIUM					
CS = exp.(0.7852[ln (TH mg/l)]-3.49)	0.66	1.1	2.0	2.7	3.4
MS = exp.(1.128[ln (TH mg/l)]-3.828)	1.8	3.9	8.6	14	19
FAV = exp.(1.128[ln (TH mg/l)]-3.1349)	3.6	7.8	17	27	37

Water quality standards applicable to use Classes 1B, 2A, 3A or 3B, 4A and 4B, and 5 continued.

STANDARDS THAT VARY WITH TOTAL HARDNESS (TH)	EXAMPLE STANDARDS AT TH OF:				
	50	100	200	300	400
Note No. 4, CHROMIUM +3					
CS = exp.(0.819[ln (TH mg/l)]+1.561)	117	207	365	509	644
MS = exp.(0.819[ln (TH mg/l)]+3.688)	984	1737	3064	4270	5405
FAV = exp.(0.819[ln (TH mg/l)]+4.380)	1966	3469	6120	8530	10797
Note No. 5, COPPER					
CS = exp.(0.62[ln (TH mg/l)]-0.57)	6.4	9.8	15	19	23
MS = exp.(0.9422[ln (TH mg/l)]-1.464)	9.2	18	34	50	65
FAV = exp.(0.9422[ln (TH mg/l)]-0.7703)	18	35	68	100	131
Note No. 6, LEAD					
CS = exp.(1.273[ln (TH mg/l)]-4.705)	1.3	3.2	7.7	13	19
MS = exp.(1.273[ln (TH mg/l)]-1.460)	34	82	197	331	477
FAV = exp.(1.273[ln (TH mg/l)]-0.7643)	68	164	396	663	956
Note No. 7, NICKEL					
CS = exp.(0.846[ln (TH mg/l)]+1.1645)	88	158	283	297	297
Not to exceed 297 ug/l					
MS = exp.(0.846[ln (TH mg/l)]+3.3612)	789	1418	2549	3592	4582
FAV = exp.(0.846[ln (TH mg/l)]+4.0543)	1578	2836	5098	7185	9164
Note No. 8, SILVER					
MS = exp.(1.72[ln (TH mg/l)]-7.2156)	0.61	2.0	6.7	13	22
FAV = exp.(1.72[ln (TH mg/l)]-6.52)	1.2	4.1	13	27	44
Note No. 9, ZINC					
CS = exp.(0.8473[ln (TH mg/l)]+0.7615)	59	106	191	269	343
MS = exp.(0.8473[ln (TH mg/l)]+0.8604)	65	117	211	297	379
FAV = exp.(0.8473[ln (TH mg/l)]+1.5536)	130	234	421	594	758

STANDARD THAT VARIES WITH pH	EXAMPLE STANDARDS AT pH OF:				
	6.5	7.0	7.5	8.0	8.5
Note No. 10, PENTACHLOROPHENOL					
MS = exp.(1.005(pH)-4.830)	5.5	9.1	15	25	41
FAV = exp.(1.005(pH)-4.1373)	11	18	30	50	82

1 Subp. 4. Water quality standards applicable to use Classes
2 1B or 1C, 2Bd, 3A or 3B, 4A and 4B, and 5.

Subp. 4. Water quality standards applicable to use Classes 1B or 1C, 2Bd, 3A or 3B, 4A and 4B, and 5.

SUBSTANCE OR CHARACTERISTIC	UNITS	STANDARDS FOR USE CLASSES							
		2Bd CHRONIC	2Bd MAXIMUM	2Bd FAV	1B/1C DRINKING WATER	3A/3B INDUST. CONSUMPT.	4A IRRIGA-TION	4B LIVESTOCK	5 AESTHETIC
MISCELLANEOUS									
Ammonia, un-ionized as N	ug/l	40	none	none					
Asbestos, >10 um (c)	fibers/l				7.0e+06				
Bicarbonates (HCO3)	meq/l						5		
Chloride	mg/l	230	860	1720	250(S)	50/100			
Chlorine, total residual	ug/l	6	19	38					
Color	Pt-Co				15(S)				
Cyanide, free	ug/l	5.2	22	45	200				
Dissolved oxygen	mg/l	5 as a daily minimum							
Fecal coliform organisms		See note No. 1 below							
Fluoride	mg/l				4				
Fluoride	mg/l				2(S)				
Foaming agents	ug/l				500(S)				
Hardness, Ca+Mg as CaCO3	mg/l					50/250			
Hydrogen sulfide	mg/l								0.02
Nitrate, as N	mg/l				10				
Nitrite, as N	mg/l				1				
Nitrate + Nitrite, as N	mg/l				10				
Odor	TON				3(S)				
Oil	ug/l	500	5000	10000					
pH	low	6.5	none	none	6.5(S)	6.5/6.0	6.0	6.0	6.0
	high	9.0	none	none	8.5(S)	8.5/9.0	8.5	9.0	9.0
Radioactive materials		See note No. 2 below							
Salinity, total	mg/l							1000	
Sodium	meq/l						60% of total cations		

Water quality standards applicable to use Classes 1B or 1C, 2Bd, 3A or 3B, 4A and 4B, and 5 continued.

SUBSTANCE OR CHARACTERISTIC	UNITS	STANDARDS FOR USE CLASSES							
		2Bd CHRONIC	2Bd MAXIMUM	2Bd FAV	1B/1C DRINKING WATER	3A/3B INDUST. CONSUMPT.	4A IRRIGA-TION	4B LIVESTOCK	5 AESTHETIC
MISCELLANEOUS continued									
Sulfate	mg/l				250(S)				
Sulfates, wild rice present	mg/l						10		
Specific conductance	umhos/cm						1000		
Temperature	F	See note No. 3 below							
Total dissolved salts	mg/l						700		
Total dissolved solids	mg/l				500(S)				
Turbidity	NTUs	25	none	none	1-5/25				
METALS AND ELEMENTS									
Aluminum	ug/l	125	1072	2145	50-200(S)				
Antimony	ug/l	5.5	90	180	6				
Arsenic	ug/l	2.0	360	720	50				
Barium	ug/l				2000				
Beryllium	ug/l				4.0				
Boron	ug/l						500		
Cadmium	ug/l	See note No. 4 below			5				
Chromium, +3	ug/l	See note No. 5 below							
Chromium, +6	ug/l	11	16	32					
Chromium, total	ug/l				100				
Cobalt	ug/l	2.8	436	872					
Copper	ug/l	See note No. 6 below			1000(S)				
Iron	ug/l				300(S)				
Lead	ug/l	See note No. 7 below							
Manganese	ug/l				50(S)				
Mercury	ug/l	0.0069	2.4*	4.9*	2				
Nickel	ug/l	See note No. 8 below			100				

Water quality standards applicable to use Classes 1B or 1C, 2Bd, 3A or 3B, 4A and 4B, and 5 continued.

SUBSTANCE OR CHARACTERISTIC	UNITS	STANDARDS FOR USE CLASSES							
		2Bd CHRONIC	2Bd MAXIMUM	2Bd FAV	1B/1C DRINKING WATER	3A/3B INDUST. CONSUMPT.	4A IRRIGA-TION	4B LIVESTOCK	5 AESTHETIC
METALS AND ELEMENTS continued									
Selenium	ug/l	5.0	20	40	50				
Silver	ug/l	1.0	See note No. 9 below		100(S)				
Thallium	ug/l	0.28	64	128	2				
Zinc	ug/l	See note No. 10 below			5000(S)				
ORGANICS									
Acenaphthene	ug/l	12	41	81					
Acrylonitrile (c)	ug/l	0.38	1140*	2281*					
Alachlor (c)	ug/l	4.2	800*	1600*	2				
Aldicarb	ug/l				3				
Aldicarb sulfone	ug/l				2				
Aldicarb sulfoxide	ug/l				4				
Anthracene	ug/l	0.029	0.78	1.6					
Atrazine (c)	ug/l	3.4	323	645	3				
Benzene (c)	ug/l	11	4487*	8974*	5				
Benzo(a)pyrene	ug/l				0.2				
Bromoform	ug/l	41	2900	5800					
Carbofuran	ug/l				40				
Carbon tetrachloride (c)	ug/l	1.9	1750*	3500*	5				
Chlordane (c)	ug/l	0.00029	1.2*	2.4*	2				
Chlorobenzene (Monochlorobenzene)	ug/l	10	423	846	100				
Chloroform (c)	ug/l	55	2235	4471					
Chlorpyrifos	ug/l	0.041	0.083	0.17					
Dalapon	ug/l				200				
DDT (c)	ug/l	0.0017	0.55*	1.1*					
1,2-Dibromo-3-chloropropane (c)	ug/l				0.2				

Water quality standards applicable to use Classes 1B or 1C, 2Bd, 3A or 3B, 4A and 4B, and 5 continued.

SUBSTANCE OR CHARACTERISTIC	UNITS	STANDARDS FOR USE CLASSES							
		2Bd CHRONIC	2Bd MAXIMUM	2Bd FAV	1B/1C DRINKING WATER	3A/3B INDUST. CONSUMPT.	4A IRRIGA-TION	4B LIVESTOCK	5 AESTHETIC
ORGANICS continued									
Dichlorobenzene (ortho)	ug/l				600				
1,4-Dichlorobenzene (para) (c)	ug/l				75				
1,2-Dichloroethane (c)	ug/l	3.8	45050*	90100*	5				
1,1-Dichloroethylene	ug/l				7				
1,2-Dichloroethylene (cis)	ug/l				70				
1,2-Dichloroethylene (trans)	ug/l				100				
2,4-Dichlorophenoxyacetic acid (2,4-D)	ug/l				70				
1,2-Dichloropropane (c)	ug/l				5				
Dieldrin (c)	ug/l	0.000026	1.3*	2.5*					
Di-2-ethylhexyl adipate	ug/l				400				
Di-2-ethylhexyl phthalate (c)	ug/l	1.9	none	none	6				
Di-n-Octyl phthalate	ug/l	30	825	1650					
Dinoseb	ug/l				7				
Diquat	ug/l				20				
Endosulfan	ug/l	0.029	0.28	0.56					
Endothall	ug/l				100				
Endrin	ug/l	0.016	0.090	0.18	2				
Ethylbenzene (c)	ug/l	68	1859	3717	700				
Ethylene dibromide	ug/l				0.05				
Fluoranthene	ug/l	20	199	398					
Glyphosate	ug/l				700				
Heptachlor (c)	ug/l	0.00039	0.26*	0.52*	0.4				
Heptachlor epoxide (c)	ug/l	0.00048	0.27*	0.53*	0.2				
Hexachlorobenzene (c)	ug/l	0.00024	none	none	1				
Hexachlorocyclopentadiene	ug/l				50				

Water quality standards applicable to use Classes 1B or 1C, 2Bd, 3A or 3B, 4A and 4B, and 5 continued.

SUBSTANCE OR CHARACTERISTIC	UNITS	STANDARDS FOR USE CLASSES							
		2Bd CHRONIC	2Bd MAXIMUM	2Bd FAV	1B/1C DRINKING WATER	3A/3B INDUST. CONSUMPT.	4A IRRIGA-TION	4B LIVESTOCK	5 AESTHETIC
ORGANICS continued									
Lindane (c) (Hexachlorocyclohexane, gamma-)	ug/l	0.032	4.4*	8.8*	0.2				
Methoxychlor	ug/l				40				
Methylene chloride (c) (Dichloromethane)	ug/l	46	9600*	19200*	5				
Oxamyl (Vydate)	ug/l				200				
Naphthalene	ug/l	81	409	818					
Parathion	ug/l	0.013	0.07	0.13					
Pentachlorophenol	ug/l	1.9	See note No. 11 below		1				
Phenanthrene	ug/l	2.1	29	58					
Phenol	ug/l	123	2214	4428					
Picloram	ug/l				500				
Polychlorinated biphenyls (c) (PCBs, total)	ug/l	0.000029	1.0*	2.0*	0.5				
Simazine	ug/l				4				
Styrene (c)	ug/l				100				
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD-dioxin)	pg/l				30				
1,1,2,2-Tetrachloroethane (c)	ug/l	1.5	1127*	2253*					
Tetrachloroethylene (c)	ug/l	3.8	428*	857*	5				
Toluene	ug/l	253	1352	2703	1000				
Toxaphene (c	ug/l	0.0013	0.73*	1.5*	3				
2,4,5-TP (Silve[illegible]	ug/l				50				
1,2,4-Trichlorobenzene	ug/l				70				
1,1,1-Trichloroethane	ug/l	263	2628	5256	200				
1,1,2-Trichloroethane	ug/l				5				

Water quality standards applicable to use Classes 1B or 1C, 2Bd, 3A or 3B, 4A and 4B, and 5 continued.

SUBSTANCE OR CHARACTERISTIC	UNITS	STANDARDS FOR USE CLASSES							
		2Bd CHRONIC	2Bd MAXIMUM	2Bd FAV	1B/1C DRINKING WATER	3A/3B INDUST. CONSUMPT.	4A IRRIGA-TION	4B LIVESTOCK	5 AESTHETIC
ORGANICS continued									
1,1,2-Trichloroethylene (c)	ug/l	25	6988*	13976*	5				
2,4,6-Trichlorophenol	ug/l	2.0	102	203					
Trihalomethanes, total (c)	ug/l				100				
(Bromodichloromethane)									
(Bromoform)									
(Chlorodibromomethane)									
(Chloroform)									
Vinyl chloride (c)	ug/l	0.18	none	none	2				
Xylenes, total	ug/l	166	1407	2814	10000				

Note No. 1, FECAL COLIFORM ORGANISMS

Not to exceed 200 organisms per 100 milliliters as a geometric mean of not less than five samples in any calendar month, nor shall more than ten percent of all samples taken during any calendar month individually exceed 2000 organisms per 100 milliliters. The standard applies only between March 1 and October 31.

Note No. 2, RADIOACTIVE MATERIALS

See parts 7050.0221, subparts 2, 3, 4, and 5; 7050.0222, subparts 4, 5, and 6; 7050.0224, subparts 2, 3, and 4.

Note No. 3, TEMPERATURE

5 Degrees F above natural in streams and 3 degrees F above natural in lakes, based on monthly average of maximum daily temperature, except in no case shall it exceed the daily average temperature of 86 degrees F.

STANDARDS THAT VARY WITH TOTAL HARDNESS (TH)	EXAMPLE STANDARDS AT TH OF:				
	50	100	200	300	400
Note No. 4, CADMIUM					
CS = exp.(0.7852[ln (TH mg/l)]-3.49)	0.66	1.1	2.0	2.7	3.4
MS = exp.(1.128[ln (TH mg/l)]-1.685)	15	33	73	116	160
FAV = exp.(1.128[ln (TH mg/l)]-0.9919)	31	67	146	231	319

Water quality standards applicable to use Classes 1B or 1C, 2Bd, 3A or 3B, 4A and 4B, and 5 continued.

STANDARDS THAT VARY WITH TOTAL HARDNESS (TH)	EXAMPLE STANDARDS AT TH OF:				
	50	100	200	300	400
Note No. 5, CHROMIUM +3					
CS = exp.(0.819[ln (TH mg/l)]+1.561)	117	207	365	509	644
MS = exp.(0.819[ln (TH mg/l)]+3.688)	984	1737	3064	4270	5405
FAV = exp.(0.819[ln (TH mg/l)]+4.380)	1966	3469	6120	8530	10797
Note No. 6, COPPER					
CS = exp.(0.62[ln (TH mg/l)]-0.57)	6.4	9.8	15	19	23
MS = exp.(0.9422[ln (TH mg/l)]-1.464)	9.2	18	34	50	6[illegible]
FAV = exp.(0.9422[ln (TH mg/l)]-0.7703)	18	35	68	100	131
Note No. 7, LEAD					
CS = exp.(1.273[ln (TH mg/l)]-4.705)	1.3	3.2	7.7	13	19
MS = exp.(1.273[ln (TH mg/l)]-1.460)	34	82	197	331	477
FAV = exp.(1.273[ln (TH mg/l)]-0.7643)	68	164	396	663	956
Note No. 8, NICKEL					
CS = exp.(0.846[ln (TH mg/l)]+1.1645)	88	158	283	297	297
not to exceed 297 ug/l					
MS = exp.(0.846[ln (TH mg/l)]+3.3612)	789	1418	2549	3592	4582
FAV = exp.(0.846[ln (TH mg/l)]+4.0543)	1578	2836	5098	7185	9164
Note No. 9, SILVER					
MS = exp.(1.72[ln (TH mg/l)]-7.2156)	1.0	2.0	6.7	13	22
FAV = exp.(1.72[ln (TH mg/l)]-6.52)	1.2	4.1	13	27	44
The MS and FAV shall be no less than 1.0 ug/l					
Note No. 10, ZINC					
CS = exp.(0.8473[ln (TH mg/l)]+0.7615)	59	106	191	269	343
MS = exp.(0.8473[ln (TH mg/l)]+0.8604)	65	117	211	297	379
FAV = exp.(0.8473[ln (TH mg/l)]+1.5536)	130	234	421	594	758

STANDARD THAT VARIES WITH pH	EXAMPLE STANDARDS AT pH OF:				
	6.5	7.0	7.5	8.0	8.5
Note No. 11, PENTACHLOROPHENOL					
MS = exp.(1.005(pH)-4.830)	5.5	9.1	15	25	41
FAV = exp.(1.005(pH)-4.1373)	11	18	30	50	82

1 Subp. 5. **Water quality standards applicable to use Classes**
2 **2B, 2C, or 2D; 3A, 3B, 3C, or 3D; 4A and 4B or 4C; and 5.** See
3 note No. 1 below.

Subp. 5. Water quality standards applicable to use Classes 2B, 2C or 2D; 3A, 3B, 3C or 3D; 4A and 4B or 4C; and 5. See note No. 1 below

SUBSTANCE OR CHARACTERISTIC	UNITS	STANDARDS FOR USE CLASSES						
		2B,2C,2D CHRONIC	2B,C&D MAXIMUM	2B,C&D FAV	3A/3B/3C INDUST. CONSUMPT.	4A IRRIGA-TION	4B LIVESTOCK	5 AESTHETIC
MISCELLANEOUS								
Ammonia, un-ionized as N	ug/l	40	none	none				
Bicarbonates (HCO3)	meq/l					5		
Chloride	mg/l	230	860	1720	50/100/250			
Chlorine, total residual	ug/l	6	19	38				
Cyanide, free	ug/l	5.2	22	45				
Dissolved oxygen	mg/l	5 as a daily minimum, see note No. 2 below						
Fecal coliform organisms		See note No. 3 below						
Hardness, Ca+Mg as CaCO3	mg/l				50/250/500			
Hydrogen sulfide	mg/l							0.02
Oil	ug/l	500	5000	10000				
pH	low	6.5, see note No. 4 below			6.5/6.0/6.0	6.0	6.0	6.0
	high	9.0, see note No. 4 below			8.5/9.0/9.0	8.5	9.0	9.0
Radioactive materials		See note No. 5 below						
Salinity, total	mg/l						1000	
Sodium	meq/l					60% of total cations		
Sulfates, wild rice present	mg/l					10		
Specific conductance	umhos/cm					1000		
Temperature	F	See note No. 6 below						
Total dissolved salts	mg/l					700		
Turbidity	NTUs	25	none	none				

Water quality standards applicable to use Classes 2B, 2C or 2D; 3A, 3B, 3C or 3D; 4A and 4B or 4C; and 5 continued.
See note No. 1 below

SUBSTANCE OR CHARACTERISTIC	UNITS	STANDARDS FOR USE CLASSES						
		2B,C&D CHRONIC	2B,C&D MAXIMUM	2B,C&D FAV	3A/3B/3C INDUST. CONSUMPT.	4A IRRIGA- TION	4B LIVESTOCK	5 AESTHETIC
METALS AND ELEMENTS								
Aluminum	ug/l	125	1072	2145				
Antimony	ug/l	31	90	180				
Arsenic	ug/l	53	360	720				
Boron	ug/l					500		
Cadmium	ug/l	See note No. 7 below						
Chromium, +3	ug/l	See note No. 8 below						
Chromium, +6	ug/l	11	16	32				
Cobalt	ug/l	5.0	436	872				
Copper	ug/l	See note No. 9 below						
Lead	ug/l	See note No. 10 below						
Mercury	ug/l	0.0069	2.4*	4.9*				
Nickel	ug/l	See note No. 11 below						
Selenium	ug/l	5.0	20	40				
Silver	ug/l	1.0	See note No. 12 below					
Thallium	ug/l	0.56	64	128				
Zinc	ug/l	See note No. 13 below						

Water quality standards applicable to use Classes 2B, 2C or 2D; 3A, 3B, 3C or 3D; 4A and 4B or 4C; and 5 continued.
See note No. 1 below

SUBSTANCE OR CHARACTERISTIC	UNITS	STANDARDS FOR USE CLASSES						
		2B,C&D CHRONIC	2B,C&D MAXIMUM	2B,C&D FAV	3A/3B/3C INDUST. CONSUMPT.	4A IRRIGA-TION	4B LIVESTOCK	5 AESTHETIC
ORGANICS								
Acenaphthene	ug/l	12	41	81				
Acrylonitrile (c)	ug/l	0.89	1140*	2281*				
Alachlor	ug/l	59	800	1600				
Anthracene	ug/l	0.029	0.78	1.6				
Atrazine	ug/l	10	323	645				
Benzene	ug/l	114	4487	8974				
Bromoform	ug/l	466	2900	5800				
Carbon tetrachloride (c)	ug/l	5.9	1750*	3500*				
Chlordane (c)	ug/l	0.00029	1.2*	2.4*				
Chlorobenzene (Monochlorobenzene)	ug/l	10	423	846				
Chloroform	ug/l	224	2235	4471				
Chlorpyrifos	ug/l	0.041	0.083	0.17				
DDT (c)	ug/l	0.0017	0.55*	1.1*				
1,2-Dichloroethane (c)	ug/l	190	45050*	90100*				
Dieldrin (c)	ug/l	0.000026	1.3*	2.5*				
Di-2-ethylhexyl phthalate (c)	ug/l	2.1	none	none				
Di-n-Octyl phthalate	ug/l	30	825	1650				
Endosulfan	ug/l	0.031	0.28	0.56				
Endrin	ug/l	0.016	0.090	0.18				
Ethylbenzene (c)	ug/l	68	1859	3717				
Fluoranthene	ug/l	20	199	398				

Water quality standards applicable to use Classes 2B, 2C or 2D; 3A, 3B, 3C or 3D; 4A and 4B or 4C; and 5 continued.
See note No. 1 below

SUBSTANCE OR CHARACTERISTIC	UNITS	STANDARDS FOR USE CLASSES						
		2B,C&D CHRONIC	2B,C&D MAXIMUM	2B,C&D FAV	3A/3B/3C INDUST. CONSUMPT.	4A IRRIGA-TION	4B LIVESTOC	5 AESTHETIC
ORGANICS continued								
Heptachlor (c)	ug/l	0.00039	0.26*	0.52*				
Heptachlor epoxide (c)	ug/l	0.00048	0.27*	0.53*				
Hexachlorobenzene (c)	ug/l	0.00024	none	none				
Lindane (c) (Hexachlorocyclohexane, gamma-)	ug/l	0.036	4.4*	8.8*				
Methylene chloride (Dichloromethane)	ug/l	1561	9600	19200				
Naphthalene	ug/l	81	409	818				
Parathion	ug/l	0.013	0.07	0.13				
Pentachlorophenol	ug/l	See note No. 14 below						
Phenanthrene	ug/l	2.1	29	58				
Phenol	ug/l	123	2214	4428				
Polychlorinated biphenyls (c) (PCBs, total)	ug/l	0.000029	1.0*	2.0*				
1,1,2,2-Tetrachloroethane (c)	ug/l	13	1127	2253				
Tetrachloroethylene (c)	ug/l	8.9	428	857				
Toluene	ug/l	253	1352	2703				
Toxaphene (c)	ug/l	0.0013	0.73*	1.5*				
1,1,1-Trichloroethane	ug/l	263	2628	5256				
1,1,2-Trichloroethylene (c)	ug/l	120	6988	13976				
2,4,6-Trichlorophenol	ug/l	2.0	102	203				
Vinyl chloride (c)	ug/l	9.2	none	none				
Xylenes, total	ug/l	166	1407	2814				

Water quality standards applicable to use Classes 2B, 2C or 2D; 3A, 3B, 3C or 3D; 4A and 4B or 4C; and 5 continued.
See note No. 1 below

Note No. 1, CLASS 3D, 4C AND 5 STANDARD , applicable to wetlands

In general, if Class 3, 4 or 5 standards are exceeded, background conditions shall be maintained.

See parts 7050.0223, subpart 5; 7050.0224, subpart 4; and 7050.0225, subpart 2.

Note No. 2, DISSOLVED OXYGEN

See part 7050.0224, subparts 4 and 5 for site specific Dissolved Oxygen standards.

Class 2D standard: If background is less than 5 mg/l, as a daily minimum, maintain background.

Note No. 3, FECAL COLIFORM ORGANISMS

Not to exceed 200 organisms per 100 milliliters as a geometric mean of not less than five samples in any calendar month, nor shall more than ten percent of all samples taken during any calendar month individually exceed 2000 organisms per 100 milliliters.

The standard applies only between March 1 and October 31.

Note No. 4, PH

Class 2D standard: Maintain background.

Note No. 5, RADIOACTIVE MATERIALS

See parts 7050.0222, subparts 4, 5 and 6; and 7050.0224, subparts 2, 3 and 4.

Note No. 6, TEMPERATURE

Class 2B standard: 5 Degrees F above natural in streams and 3 degrees F above natural in lakes, based on monthly average of maximum daily temperature, except in no case shall it exceed the daily average temperature of 86 degrees F.

Class 2C standard: 5 Degrees F above natural in streams and 3 degrees F above natural in lakes, based on monthly average of maximum daily temperature, except in no case shall it exceed the daily average temperature of 90 degrees F.

Class 2D standard: Maintain background

STANDARDS THAT VARY WITH TOTAL HARDNESS (TH)	EXAMPLE STANDARDS AT TH OF:				
	50	100	200	300	400
Note No. 7, CADMIUM					
CS = exp.(0.7852[ln (TH mg/l)]-3.49)	0.66	1.1	2.0	2.7	3.4
MS = exp.(1.128[ln (TH mg/l)]-1.685)	15	33	73	116	160
FAV = exp.(1.128[ln (TH mg/l)]-0.9919)	31	67	146	231	319
Note No. 8, CHROMIUM +3					
CS = exp.(0.819[ln (TH mg/l)]+1.561)	117	207	365	509	644
MS = exp.(0.819[ln (TH mg/l)]+3.688)	984	1737	3064	4270	5405
FAV = exp.(0.819[ln (TH mg/l)]+4.380)	1966	3469	6120	8530	10797

Water quality standards applicable to use Classes 2B, 2C or 2D; 3A, 3B, 3C or 3D; 4A and 4B or 4C; and 5 continued.

STANDARDS THAT VARY WITH TOTAL HARDNESS (TH)	EXAMPLE STANDARDS AT TH OF:				
	50	100	200	300	400
Note No. 9, COPPER					
CS = exp.(0.62[ln (TH mg/l)]-0.57)	6.4	9.8	15	19	23
MS = exp.(0.9422[ln (TH mg/l)]-1.464)	9.2	18	34	50	65
FAV = exp.(0.9422[ln (TH mg/l)]-0.[illegible]703)	18	35	68	100	131
Note No. 10, LEAD					
CS = exp.(1.273[ln (TH mg/l)]-4.705)	1.3	3.2	7.7	13	19
MS = exp.(1.273[ln (TH mg/l)]-1.460)	34	82	197	331	477
FAV = exp.(1.273[ln (TH mg/l)]-0.7643)	68	164	396	663	956
Note No. 11, NICKEL					
CS = exp.(0.846[ln (TH mg/l)]+1.1645)	88	158	283	399	509
MS = exp.(0.846[ln (TH mg/l)]+3.3612)	789	1418	2549	3592	4582
FAV = exp.(0.846[ln (TH mg/l)]+4.0543)	1578	2836	5098	7185	9164
Note No. 12, SILVER					
MS = exp.(1.72[ln (TH mg/l)]-7.2156)	1.0	2.0	6.7	13	22
FAV = exp.(1.72[ln (TH mg/l)]-6.52)	1.2	4.1	13	27	44
The MS and FAV shall be no less than 1.0 ug/l					
Note No. 13, ZINC					
CS = exp.(0.8473[ln (TH mg/l)]+0.7615)	59	106	191	269	343
MS = exp.(0.8473[ln (TH mg/l)]+0.8604)	65	117	211	297	379
FAV = exp.(0.8473[ln (TH mg/l)]+1.5536)	130	234	421	594	758

STANDARD THAT VARIES WITH pH	EXAMPLE STANDARDS AT pH OF:				
	6.5	7.0	7.5	8.0	8.5
Note No. 14, PENTACHLOROPHENOL					
CS = exp.(1.005(pH)-5.290)	3.5	5.5	5.5	5.5	5.5
not to exceed 5.5 ug/l					
MS = exp.(1.0[illegible](pH)-4.830)	5.5	9.1	15	25	41
FAV = exp.(1.005(pH)-4.1373)	11	18	30	50	82

1 Subp. 6. Water quality standards applicable to use Classes

2 3C, 4A and 4B, 5, and 7.

SUBSTANCE OR CHARACTERISTIC	UNITS	STANDARDS FOR USE CLASSES				
		7 LIMITED RESOURCE	3C INDUST. CONSUMPT.	4A IRRIGA-TION	4B LIVESTOCK	5 AESTHETIC
Bicarbonates (HCO3)	meq/l			5		
Boron	ug/l			500		
Chloride	mg/l	230	250			
Dissolved oxygen		See note # 1 below				
Fecal coliform organisms		See note # 2 below				
Hardness, Ca+Mg as CaCO3	mg/l		500			
Hydrogen sulfide	mg/l					0.02
pH	low	6.0	6.0	6.0	6.0	6.0
	high	9.0	9.0	8.5	9.0	9.0
Radioactive materials		See note # 3 below				
Salinity, total	mg/l				1000	
Sodium	meq/l			60% of total cations		
Specific conductance	umhos/cm			1000		
Sulfates, wild rice present	mg/l			10		
Total dissolved salts	mg/l			700		
Toxic Pollutants		See note # 4 below				

Note # 1, DISSOLVED OXYGEN

At concentrations which will avoid odors or putrid conditions in the receiving water or at concentrations at not less than 1 mg/l (daily average) provided that measurable concentrations are present at all times.

Note # 2, FECAL COLIFORM ORGANISMS

Not to exceed 1000 organisms per 100 milliliters in any calendar month as determined by the logarithmic mean of a minimum of five samples, nor shall more than ten percent of all samples taken during any calendar month individually exceed 2000 organisms per 100 milliliters. The standard applies only between May 1 and October 31.

Note # 3, RADIOACTIVE MATERIALS

See parts 7050.0224, subparts 2, 3 and 4.

Note # 4, TOXIC POLLUTANTS

Toxic pollutants shall not be allowed in such quantities or concentrations that will impair the specified uses.