# 7050.0220 SPECIFIC WATER QUALITY STANDARDS BY ASSOCIATED USE CLASSES.

Subpart 1. **Purpose and scope.** The numeric and narrative water quality standards in this chapter prescribe the qualities or properties of the waters of the state that are necessary for the designated public uses and benefits. If the standards in this chapter are exceeded, it is considered indicative of a polluted condition which is actually or potentially deleterious, harmful, detrimental, or injurious with respect to designated uses or established classes of the waters of the state.

All surface waters are protected for multiple beneficial uses. Numeric water quality standards are tabulated in this part for all uses applicable to four common categories of surface waters, so that all applicable standards for each category are listed together in subparts 3a to 6a. The four categories are:

- A. cold water sport fish (trout waters), also protected for drinking water: Classes 1B, 2A, 3A or 3B, 4A and 4B, and 5 (subpart 3a);
- B. cool and warm water sport fish, also protected for drinking water: Classes 1B or 1C, 2Bd, 3A or 3B, 4A and 4B, and 5 (subpart 4a);
- C. cool and warm water sport fish, indigenous aquatic life, and wetlands: Classes 2B, 2C, or 2D; 3A, 3B, 3C, or 3D; 4A and 4B or 4C; and 5 (subpart 5a); and
  - D. limited resource value waters: Classes 3C, 4A and 4B, 5, and 7 (subpart 6a).

# Subp. 2. Explanation of tables.

- A. Class 1 domestic consumption (DC) standards are the United States Environmental Protection Agency primary (maximum contaminant levels) and secondary drinking water standards, as contained in Code of Federal Regulations, title 40, parts 141 and 143, as amended through July 1, 2006. The DC standards are listed in subparts 3a and 4a, except that individual pollutants, substances, or organisms in the treatment technological, disinfectants, microbiological, and radiological categories are not listed unless they are listed because a secondary drinking water standard or a standard for another use class exists.
- B. Certain drinking water standards are not applicable to Class 1 waters. The following are not applicable to Class 1 surface waters: the primary drinking water standards for acrylamide, epichlorohydrin, copper, lead, and turbidity (treatment technique standards) and the standards in the disinfectants and microbiological organisms categories. The drinking water standards not applicable to Class 1 ground waters are listed in part 7050.0221.
- C. Class 2 standards for metals are expressed as total metal in subparts 3a to 5a, but must be converted to dissolved metal standards for application to surface waters.

Conversion factors for converting total metal standards to dissolved metal standards are listed in part 7050.0222, subpart 9. The conversion factor for metals not listed in part 7050.0222, subpart 9, is one. The dissolved metal standard equals the total metal standard times the conversion factor. Water quality-based effluent limits for metals are expressed as total metal.

D. The tables of standards in subparts 3a to 6a include the following abbreviations and acronyms:

AN means aesthetic enjoyment and navigation, Class 5 waters an asterisk following the FAV and MS values or double dashes (–) means part 7050.0222, subpart 7, item E, applies (c) means the chemical is assumed to be a human carcinoge CS means chronic standard, defined in part 7050.0218, subpart 3 DC means domestic consumption (drinking water), Class 1 waters double dashes means there is no standard means the natural antilogarithm (base e) of the expression in parenthesis exp. () **FAV** means final acute value, defined in part 7050.0218, subpart 3 IC means industrial consumption, Class 3 waters IR means agriculture irrigation use, Class 4A waters LS means agriculture livestock and wildlife use, Class 4B waters MS means maximum standard, defined in part 7050.0218, subpart 3 means not applicable NA **(S)** means the associated value is a secondary drinking water standard means standard unit. It is the reporting unit for pH SII TH means total hardness in mg/L, which is the sum of the calcium and magnesium concentrations expressed as CaCO<sub>2</sub> TON means threshold odor number

- E. Important synonyms or acronyms for some chemicals are listed in parentheses below the primary name.
- F. When two or more use classes have standards for the same pollutant, the most stringent standard applies pursuant to part 7050.0450. All surface waters are protected for Class 6, but this class has no numeric standards so it is not included in the tables.

# Subp. 3. [Repealed, 24 SR 1105]

Subp. 3a. Cold water sport fish, drinking water, and associated use classes. Water quality standards applicable to use Classes 1B, 2A, 3A or 3B, 4A and 4B, and 5 surface waters.

A. MISCELLANEOUS SUBSTANCE, CHARACTERISTIC, OR POLLUTANT

|       | 2A<br>CS    | 2A<br>MS              | 2A<br>FAV   | 1B<br>DC | 3A/3B<br>IC | 4A<br>IR | 4B<br>IR | 5<br>AN |
|-------|-------------|-----------------------|-------------|----------|-------------|----------|----------|---------|
| (1)   | Ammonia     | , un-ionize           | d as N, μg/ | Ĺ        |             |          |          |         |
|       | 16          | _                     | _           | _        | _           | _        | _        | _       |
| (2)   | Asbestos,   | >10 μm (c             | ), fibers/L |          |             |          |          |         |
|       | _           | _                     | _           | 7.0e+06  | _           | _        | _        | _       |
| (3) 1 | Bicarbona   | tes (HCO <sub>3</sub> | ), meq/L    |          |             |          |          |         |
|       | _           | _                     | _           | _        | _           | 5        | _        | _       |
| (4)   | Bromate,    | μg/L                  |             |          |             |          |          |         |
|       | _           | _                     | _           | 10       | _           | _        | _        | _       |
| (5)   | Chloride,   | mg/L                  |             |          |             |          |          |         |
|       | 230         | 860                   | 1,720       | 250(S)   | 50/100      | _        | _        | _       |
|       | 2A<br>CS    | 2A<br>MS              | 2A<br>FAV   | 1B<br>DC | 3A/3B<br>IC | 4A<br>IR | 4B<br>IR | 5<br>AN |
| (6)   | Chlorine,   | total residu          | ıal, μg/L   |          |             |          |          |         |
|       | 11          | 19                    | 38          | _        | _           | _        | _        | _       |
| (7)   | Chlorite, p | ug/L                  |             |          |             |          |          |         |
|       | _           | _                     | _           | 1,000    | _           | _        | _        | _       |
| (8)   | Color, Pt-  | Co                    |             |          |             |          |          |         |
|       | 30          | _                     | _           | 15(S)    | _           | _        | _        | _       |
| (9)   | Cyanide, 1  | free, μg/L            |             |          |             |          |          |         |

(17) Nitrate as N, mg/L

0.02

|                | _                     | _            | _         | 10         | _           | _          | _          | _       |  |  |  |
|----------------|-----------------------|--------------|-----------|------------|-------------|------------|------------|---------|--|--|--|
| (18            | 3) Nitrite a          | s N, mg/L    |           |            |             |            |            |         |  |  |  |
|                | _                     | _            | _         | 1          | _           | _          | _          | _       |  |  |  |
| (19            | ) Nitrate +           | - Nitrite as | N, mg/L   |            |             |            |            |         |  |  |  |
|                | _                     | _            | _         | 10         | _           | _          | _          | _       |  |  |  |
| (20            | Odor, To              | ON           |           |            |             |            |            |         |  |  |  |
|                | _                     | _            | _         | 3(S)       | _           | _          | _          | _       |  |  |  |
|                | 2A<br>CS              | 2A<br>MS     | 2A<br>FAV | 1B<br>DC   | 3A/3B<br>IC | 4A<br>IR   | 4B<br>IR   | 5<br>AN |  |  |  |
| (21) Oil, µg/L |                       |              |           |            |             |            |            |         |  |  |  |
|                | 500                   | 5,000        | 10,000    | _          | _           | _          | _          | _       |  |  |  |
| (22            | 2) Oxygen,            | dissolved,   | mg/L      |            |             |            |            |         |  |  |  |
|                | 7, as a daily minimum | _<br>I       | _         | _          | _           | _          | _          | -       |  |  |  |
| (23            | ) pH mini             | mum, su      |           |            |             |            |            |         |  |  |  |
|                | 6.5                   | _            | _         | 6.5(S)     | 6.5/6.0     | 6.0        | 6.0        | 6.0     |  |  |  |
| (24            | ) pH maxi             | mum, su      |           |            |             |            |            |         |  |  |  |
|                | 8.5                   | _            | _         | 8.5(S)     | 8.5/9.0     | 8.5        | 9.0        | 9.0     |  |  |  |
| (25            | (i) Radioact          | tive materi  | als       |            |             |            |            |         |  |  |  |
|                | See item E            | _            | -         | See item E | -           | See item E | See item E | -       |  |  |  |
|                | 2A<br>CS              | 2A<br>MS     | 2A<br>FAV | 1B<br>DC   | 3A/3B<br>IC | 4A<br>IR   | 4B<br>IR   | 5<br>AN |  |  |  |

| (26) Salinity,   | total, mg/       | L                  |             |             |                      |          |         |
|--|------------------|--------------------|-------------|-------------|----------------------|----------|---------|
| _  | _                | _                  | _           | _           | _                    | 1,000    | _       |
| (27) Sodium,   | , meq/L          |                    |             |             |                      |          |         |
| -  | _                | _                  | _           | _           | 60% of total cations | _        | -       |
| (28) Specific  | conductan        | ce at 25°C         | , μmhos/cn  | n           |                      |          |         |
| _  | _                | _                  | _           | _           | 1,000                | _        | _       |
| (29) Sulfate,  | mg/L             |                    |             |             |                      |          |         |
| _  | _                | _                  | 250(S)      | _           | _                    | _        | _       |
| (30) Sulfates  | , wild rice      | present, m         | g/L         |             |                      |          |         |
| _  | _                | _                  | _           | _           | 10                   | _        | _       |
| 2A<br>CS   | 2A<br>MS         | 2A<br>FAV          | 1B<br>DC    | 3A/3B<br>IC | 4A<br>IR             | 4B<br>IR | 5<br>AN |
|  |                  |                    |             |             |                      |          |         |
| (31) Tempera   | ature, °F        |                    |             |             |                      |          |         |
| No material increase                                   | ature, °F        | _                  | _           | _           | _                    | _        | _       |
| No<br>material   | _                | -<br>ts, mg/L      | _           | _           | _                    | _        | _       |
| No<br>material<br>increase                             | _                | –<br>ts, mg/L<br>– | _           | _           | 700                  | _        | _       |
| No<br>material<br>increase                             | –<br>ssolved sal | -                  | _           | _           | 700                  | _        | _       |
| No<br>material<br>increase<br>(32) Total dis           | –<br>ssolved sal | -                  | -<br>500(S) | _           | 700                  | _        | _       |
| No<br>material<br>increase<br>(32) Total dis           | ssolved sal      | -                  | -<br>500(S) | _           | 700                  | _        | _       |
| No material increase (32) Total dis     (33) Total dis | ssolved sal      | -                  | -<br>500(S) | _           | 700                  | _        | _       |

|     | 2A<br>CS | 2A<br>MS      | 2A<br>FAV | 1B<br>DC      | 3A/3B<br>IC | 4A<br>IR | 4B<br>LS | 5<br>AN |
|-----|----------|---------------|-----------|---------------|-------------|----------|----------|---------|
| (1) | Alumin   | num, total,   | μg/L      |               |             |          |          |         |
|     | 87       | 748           | 1,496     | 50-<br>200(S) | -           | _        | -        | _       |
| (2) | Antimo   | ony, total, μ | ıg/L      |               |             |          |          |         |
|     | 5.5      | 90            | 180       | 6             | _           | _        | _        | _       |
| (3) | Arsenio  | e, total, μg/ | L         |               |             |          |          |         |
|     | 2.0      | 360           | 720       | 10            | _           | _        | _        | _       |
| (4) | Barium   | ı, total, μg/ | L         |               |             |          |          |         |
|     | _        | _             | _         | 2,000         | _           | _        | _        | _       |
| (5) | Berylli  | um, total, µ  | ıg/L      |               |             |          |          |         |
|     | _        | _             | _         | 4.0           | _           | _        | _        | _       |
|     | 2A<br>CS | 2A<br>MS      | 2A<br>FAV | 1B<br>DC      | 3A/3B<br>IC | 4A<br>IR | 4B<br>LS | 5<br>AN |
| (6) | Boron,   | total, μg/L   |           |               |             |          |          |         |
|     | _        | _             | _         | _             | _           | 500      | _        | _       |
| (7) | Cadmi    | ım, total, μ  | g/L       |               |             |          |          |         |
|     | 1.1      | 3.9           | 7.8       | 5             | _           | _        | _        | _       |

Class 2A cadmium standards are hardness dependent. Cadmium values shown are for a total hardness of 100 mg/L only. See part 7050.0222, subpart 2, for examples at other hardness values and equations to calculate cadmium standards for any hardness value not to exceed 400 mg/L.

| (8) | Chromium | +3, | total, | μg/L |
|-----|----------|-----|--------|------|
|-----|----------|-----|--------|------|

207 1,737 3,469 - - - - -

| Class 2A trivalent chromium standards are hardness dependent. Chromium +3 values          |
|---|
| shown are for a total hardness of 100 mg/L only. See part 7050.0222, subpart 2, for       |
| examples at other hardness values and equations to calculate trivalent chromium standards |
| for any hardness value not to exceed 400 mg/L.  |

| (9)  | Chromium    | +6, total,   | μg/L         |          |             |          |          |         |
|------|-------------|--------------|--------------|----------|-------------|----------|----------|---------|
|      | 11          | 16           | 32           | _        | _           | _        | _        | _       |
| (10) | ) Chromiu   | m, total, με | g/L          |          |             |          |          |         |
|      | _           | _            | _            | 100      | _           | _        | _        | _       |
|      | 2A<br>CS    | 2A<br>MS     | 2A<br>FAV    | 1B<br>DC | 3A/3B<br>IC | 4A<br>IR | 4B<br>LS | 5<br>AN |
| (11) | Cobalt, to  | otal, μg/L   |              |          |             |          |          |         |
|      | 2.8         | 436          | 872          | _        | _           | _        | _        | _       |
|      |             |              | 0 / <b>_</b> |          |             |          |          |         |
| (12) | ) Copper, t |              | 3, <u>2</u>  |          |             |          |          |         |

Class 2A copper standards are hardness dependent. Copper values shown are for a total hardness of 100 mg/L only. See part 7050.0222, subpart 2, for examples at other hardness values and equations to calculate copper standards for any hardness value not to exceed 400 mg/L.

| (13) Iron, t | otal, μg/L  |     |        |   |   |   |   |
|--------------|-------------|-----|--------|---|---|---|---|
| _            | _           | _   | 300(S) | _ | _ | _ | _ |
| (14) Lead,   | total, μg/L |     |        |   |   |   |   |
| 3.2          | 82          | 164 | NA     | _ | _ | _ | _ |

Class 2A lead standards are hardness dependent. Lead values shown are for a total hardness of 100 mg/L only. See part 7050.0222, subpart 2, for examples at other hardness values and equations to calculate lead standards for any hardness value not to exceed 400 mg/L.

| (15) Mang | ganese, tot | tal, µg/L |       |   |   |   |   |
|-----------|-------------|-----------|-------|---|---|---|---|
| _         | _           | _         | 50(S) | _ | _ | _ | _ |

| 2A<br>CS   | 2A<br>MS       | 2A<br>FAV     | 1B<br>DC   | 3A/3B<br>IC | 4A<br>IR   | 4B<br>LS  | 5<br>AN       |
|------------|----------------|---------------|------------|-------------|------------|-----------|---------------|
|            |                |               |            |             |            |           |               |
| (16) Mercu | ıry, total, in | water, ng/I   |            |             |            |           |               |
| 6.9        | 2,400*         | 4,900*        | 2,000      | _           | _          | _         | _             |
| (17) Mercu | ry, total in e | edible fish t | issue, mg/ | kg or parts | per millio | n         |               |
| 0.2        | _              | _             | _          | _           | _          | _         | _             |
| (18) Nicke | l, total, μg/I | ٠             |            |             |            |           |               |
| 158        | 1,418          | 2,836         | _          | _           | _          | _         | _             |
| Class 2A r | vickel stands  | arde are ha   | rdness der | nendent N   | ickel valu | iec chown | are for a tot |

Class 2A nickel standards are hardness dependent. Nickel values shown are for a total hardness of 100 mg/L only. See part 7050.0222, subpart 2, for examples at other hardness values and equations to calculate nickel standards for any hardness value not to exceed 400 mg/L.

(19) Selenium, total, µg/L

5.0 20 40 50 - - - - - - (20) Silver, total,  $\mu g/L$  0.12 2.0 4.1 100(S) - - - - -

Class 2A silver MS and FAV are hardness dependent. Silver values shown are for a total hardness of 100 mg/L only. See part 7050.0222, subpart 2, for examples at other hardness values and equations to calculate silver standards for any hardness value not to exceed 400 mg/L.

| 2A           | 2A           | 2A   | DC | 3A/3B | 4A | 4B | 5  |  |
|--------------|--------------|------|----|-------|----|----|----|--|
| CS           | MS           | FAV  | DC | IC    | IR | LS | AN |  |
| (21) Thalliu | um, total, µ | ıg/L |    |       |    |    |    |  |

(22) Zinc, total, µg/L

64

128

2

0.28

| 106 | 117 | 234 | 5,000 | _ | _ | _ | _ |
|-----|-----|-----|-------|---|---|---|---|
|     |     |     | (S)   |   |   |   |   |

Class 2A zinc standards are hardness dependent. Zinc values shown are for a total hardness of 100 mg/L only. See part 7050.0222, subpart 2, for examples at other hardness values and equations to calculate zinc standards for any hardness value not to exceed 400 mg/L.

# C. ORGANIC POLLUTANTS OR CHARACTERISTICS

|     | 2A<br>CS | 2A<br>MS        | 2A<br>FAV | 1B<br>DC | 3A/3B<br>IC | 4A<br>IR | 4B<br>LS | 5<br>AN |
|-----|----------|-----------------|-----------|----------|-------------|----------|----------|---------|
| (1) | Acenap   | hthene, μg/I    |           |          |             |          |          |         |
|     | 20       | 56              | 112       | _        | _           | _        | _        | _       |
| (2) | Acetoch  | nlor, μg/L      |           |          |             |          |          |         |
|     | 3.6      | 86              | 173       | _        | _           | _        | _        | _       |
| (3) | Acrylor  | nitrile (c), με | g/L       |          |             |          |          |         |
|     | 0.38     | 1,140*          | 2,281*    | _        | _           | _        | _        | _       |
| (4) | Alachlo  | or (c), μg/L    |           |          |             |          |          |         |
|     | 3.8      | 800*            | 1,600*    | 2        | _           | _        | _        | _       |
| (5) | Aldicar  | b, μg/L         |           |          |             |          |          |         |
|     | _        | _               | _         | 3        | _           | _        | _        | _       |
|     | 2A<br>CS | 2A<br>MS        | 2A<br>FAV | 1B<br>DC | 3A/3B<br>IC | 4A<br>IR | 4B<br>LS | 5<br>AN |
| (6) | Aldicar  | b sulfone, μ    | g/L       |          |             |          |          |         |
|     | _        | _               | _         | 2        | _           | _        | _        | _       |
| (7) | Aldicar  | b sulfoxide,    | $\mu g/L$ |          |             |          |          |         |
|     | _        | _               | _         | 4        | _           | _        | _        | _       |

| 0.035       | 0.32           | 0.63        | _                | _           | _        | _        | _       |
|-------------|----------------|-------------|------------------|-------------|----------|----------|---------|
| (9) Atrazir | ne (c), µg/L   |             |                  |             |          |          |         |
| 3.4         | 323            | 645         | 3                | _           | _        | _        | _       |
| (10) Benze  | ene (c), μg/L  |             |                  |             |          |          |         |
| 5.1         | 4,487*         | 8,974*      | 5                | _           | _        | _        | _       |
| 2A<br>CS    | 2A<br>MS       | 2A<br>FAV   | 1B<br>DC         | 3A/3B<br>IC | 4A<br>IR | 4B<br>LS | 5<br>AN |
| (11) Benzo  | o(a)pyrene, μ  | .g/L        |                  |             |          |          |         |
| _           | _              | _           | 0.2              | _           | _        | _        | _       |
| (12) Brom   | oform, μg/L    |             |                  |             |          |          |         |
| 33          | 2,900          | 5,800       | See subitem (73) |             | -        | -        | _       |
| (13) Carbo  | ofuran, μg/L   |             |                  |             |          |          |         |
| _           | _              | _           | 40               | _           | _        | _        | _       |
| (14) Carbo  | on tetrachlori | de (c), μg/ | L                |             |          |          |         |
| 1.9         | 1,750*         | 3,500*      | 5                | _           | _        | _        | _       |
| (15) Chlor  | dane (c), ng/  | L           |                  |             |          |          |         |
| 0.073       | 1,200*         | 2,400*      | 2,000            | _           | _        | _        | _       |
| 2A<br>CS    | 2A<br>MS       | 2A<br>FAV   | 1B<br>DC         | 3A/3B<br>IC | 4A<br>IR | 4B<br>LS | 5<br>AN |
| (16) Chlor  | obenzene, με   | g/L (Mono   | chlorobenze      | ne)         |          |          |         |
| 20          | 423            | 846         | 100              | _           | _        | _        | _       |
| (17) Chlor  | roform (c), με | g/L         |                  |             |          |          |         |

| 1,392   2,784   See subitem (73)   -   |  |             |             |              |         |   |   |   |   |  |  |  |
|--|--|-------------|-------------|--------------|---------|---|---|---|---|--|--|--|
| 0.041 0.083 0.17 (19) Dalapon, μg/L  200 (20) DDT (c), ng/L  0.11 550* 1,100*  |  | 53          | 1,392       | 2,784        |         |   | - | _ | _ |  |  |  |
| (19) Dalapon, μg/L  200  (20) DDT (c), ng/L  0.11 550* 1,100*  2A 2A 2A 1B 3A/3B 4A 4B 5  CS MS FAV DC IC IR LS AN  (21) 1,2-Dibromo-3-chloropropane (c), μg/L  0.2  (22) Dichlorobenzene (ortho), μg/L  600  (23) 1,4-Dichlorobenzene (para) (c), μg/L  75  (24) 1,2-Dichloroethane (c), μg/L  3.5 45,050* 90,100* 5  (25) 1,1-Dichloroethylene, μg/L  7  2A 2A 2A 1B 3A/3B 4A 4B 5 | (18  | 8) Chlorpyr | rifos, µg/L |              |         |   |   |   |   |  |  |  |
| 200 (20) DDT (c), ng/L  0.11 550* 1,100*   |  | 0.041       | 0.083       | 0.17         | _       | _ | _ | _ | _ |  |  |  |
| (20) DDT (c), ng/L  0.11 550* 1,100*   | (19  | 9) Dalapon, | , μg/L      |              |         |   |   |   |   |  |  |  |
| 0.11 550* 1,100*   |  | _           | _           | _            | 200     | _ | _ | _ | _ |  |  |  |
| 2A 2A 2A 1B 3A/3B 4A 4B 5 CS MS FAV DC IC IR LS AN  (21) 1,2-Dibromo-3-chloropropane (c), μg/L  0.2  (22) Dichlorobenzene (ortho), μg/L  600  (23) 1,4-Dichlorobenzene (para) (c), μg/L  75  (24) 1,2-Dichloroethane (c), μg/L  3.5 45,050* 90,100* 5  (25) 1,1-Dichloroethylene, μg/L  7  2A 2A 2A 1B 3A/3B 4A 4B 5   | (20  | 0) DDT (c)  | , ng/L      |              |         |   |   |   |   |  |  |  |
| CS MS FAV DC IC IR LS AN  (21) 1,2-Dibromo-3-chloropropane (c), μg/L  0.2  (22) Dichlorobenzene (ortho), μg/L  600  (23) 1,4-Dichlorobenzene (para) (c), μg/L  75  (24) 1,2-Dichloroethane (c), μg/L  3.5 45,050* 90,100* 5  (25) 1,1-Dichloroethylene, μg/L  77  2A 2A 2A 1B 3A/3B 4A 4B 5  |  | 0.11        | 550*        | 1,100*       | _       | _ | _ | _ | _ |  |  |  |
| 0.2 (22) Dichlorobenzene (ortho), μg/L  600 (23) 1,4-Dichlorobenzene (para) (c), μg/L  75 (24) 1,2-Dichloroethane (c), μg/L  3.5 45,050* 90,100* 5 (25) 1,1-Dichloroethylene, μg/L  7 - 7 2  2A 2A 2A 1B 3A/3B 4A 4B 5   |  |             |             |              |         |   |   |   |   |  |  |  |
| (22) Dichlorobenzene (ortho), μg/L  600  (23) 1,4-Dichlorobenzene (para) (c), μg/L  75  (24) 1,2-Dichloroethane (c), μg/L  3.5 45,050* 90,100* 5  (25) 1,1-Dichloroethylene, μg/L  7 - 7  2A 2A 2A 1B 3A/3B 4A 4B 5  | (21) 1,2-Dibromo-3-chloropropane (c), μg/L |             |             |              |         |   |   |   |   |  |  |  |
| 600 (23) 1,4-Dichlorobenzene (para) (c), μg/L 75 (24) 1,2-Dichloroethane (c), μg/L 3.5 45,050* 90,100* 5 (25) 1,1-Dichloroethylene, μg/L 7 - 7 2  2A 2A 2A 1B 3A/3B 4A 4B 5  |  | _           | _           | _            | 0.2     | _ | _ | _ | _ |  |  |  |
| (23) 1,4-Dichlorobenzene (para) (c), μg/L  75  (24) 1,2-Dichloroethane (c), μg/L  3.5 45,050* 90,100* 5  (25) 1,1-Dichloroethylene, μg/L  7 - 7  2A 2A 2A 1B 3A/3B 4A 4B 5   | (22  | 2) Dichloro | benzene (c  | ortho), μg/L | J       |   |   |   |   |  |  |  |
| 75 (24) 1,2-Dichloroethane (c), μg/L  3.5 45,050* 90,100* 5 (25) 1,1-Dichloroethylene, μg/L  7 2A  2A 2A 2A 1B 3A/3B 4A 4B 5   |  | _           | _           | _            | 600     | _ | _ | _ | _ |  |  |  |
| (24) 1,2-Dichloroethane (c), μg/L  3.5   | (23  | 3) 1,4-Dich | lorobenzen  | ne (para) (c | ), μg/L |   |   |   |   |  |  |  |
| 3.5 45,050* 90,100* 5 (25) 1,1-Dichloroethylene, μg/L  7   |  | _           | _           | _            | 75      | _ | _ | _ | _ |  |  |  |
| (25) 1,1-Dichloroethylene, μg/L  7  2A 2A 2A 1B 3A/3B 4A 4B 5  | (24  | 4) 1,2-Dich | loroethane  | (c), μg/L    |         |   |   |   |   |  |  |  |
| 7 2A 2A 2A 1B 3A/3B 4A 4B 5  |  | 3.5         | 45,050*     | 90,100*      | 5       | _ | _ | _ | _ |  |  |  |
| 2A 2A 2A 1B 3A/3B 4A 4B 5  | (2:  | 5) 1,1-Dich | loroethyler | ne, μg/L     |         |   |   |   |   |  |  |  |
|  |  | _           | _           | _            | 7       | _ | _ | _ | _ |  |  |  |
|  |  |             |             |              |         |   |   |   |   |  |  |  |

(26) 1,2-Dichloroethylene (cis),  $\mu g/L$ 

| _        | _                | _              | 70         | _           | _        | _        | _       |  |
|----------|------------------|----------------|------------|-------------|----------|----------|---------|--|
| (27) 1,2 | -Dichloroethy    | elene (trans), | μg/L       |             |          |          |         |  |
| _        | _                | _              | 100        | _           | _        | _        | _       |  |
| (28) 2,4 | -Dichloropher    | noxyacetic a   | cid (2,4-) | D), μg/L    |          |          |         |  |
| _        | _                | _              | 70         | _           | _        | _        | _       |  |
| (29) 1,2 | -Dichloroprop    | oane (c), μg/  | L          |             |          |          |         |  |
| _        | _                | _              | 5          | _           | _        | _        | _       |  |
| (30) Die | eldrin (c), ng/l | L              |            |             |          |          |         |  |
| 0.00     | 065 1,300*       | 2,500*         | _          | _           | _        | _        | _       |  |
| 2A<br>CS | 2A<br>MS         | 2A<br>FAV      | 1B<br>DC   | 3A/3B<br>IC | 4A<br>IR | 4B<br>LS | 5<br>AN |  |
| (31) Di- | -2-ethylhexyl    | adipate, μg/l  | L          |             |          |          |         |  |
| _        | _                | _              | 400        | _           | _        | _        | _       |  |
| (32) Di- | 2-ethylhexyl     | phthalate (c)  | ), μg/L    |             |          |          |         |  |
| 1.9      | _*               | _*             | 6          | _           | _        | _        | _       |  |
| (33) Di- | n-Octyl phtha    | ılate, μg/L    |            |             |          |          |         |  |
| 30       | 825              | 1,650          | _          | _           | _        | _        | _       |  |
| (34) Dia | noseb, µg/L      |                |            |             |          |          |         |  |
| _        | _                | _              | 7          | _           | _        | _        | _       |  |
| (35) Dio | quat, μg/L       |                |            |             |          |          |         |  |
| _        |                  |                | • •        |             |          |          |         |  |
|          | _                | _              | 20         | _           | _        | _        | _       |  |

| `   | _           | ic acids (c),<br>cetic acid, | . •       |     | - | noacetic ac | id, Dichloro | acet |
|-----|-------------|------------------------------|-----------|-----|---|-------------|--------------|------|
|     | _           | _                            | _         | 60  | _ | _           | _            | _    |
| (44 | 4) Heptachl | lor (c), ng/l                | L         |     |   |             |              |      |
|     | 0.10        | 260*                         | 520*      | 400 | _ | _           | _            | _    |
| (45 | 5) Heptachl | or epoxide                   | (c), ng/L |     |   |             |              |      |
|     | 0.12        | 270*                         | 530*      | 200 | _ | _           | _            | _    |
|     |             |                              |           |     |   |             |              |      |

| 2A<br>CS      | 2A<br>MS  | 2A<br>FAV    | 1B<br>DC  | 3A/3B<br>IC | 4A<br>IR | 4B<br>LS | 5<br>AN |  |  |  |  |  |
|---------------|---|--------------|-----------|-------------|----------|----------|---------|--|--|--|--|--|
| (46) Hexach   | lorobenzen  | e (c), ng/L  |           |             |          |          |         |  |  |  |  |  |
| 0.061         | _*  | _*           | 1,000     | _           | _        | _        | _       |  |  |  |  |  |
| (47) Hexach   | lorocyclope   | entadiene, p | ug/L      |             |          |          |         |  |  |  |  |  |
| _             | _   | _            | 50        | _           | _        | _        | _       |  |  |  |  |  |
| (48) Lindane  | e (c), μg/L (                                       | Hexachlor    | ocyclohex | ane, gamm   | a-)      |          |         |  |  |  |  |  |
| 0.0087        | 1.0*  | 2.0*         | 0.2       | _           | _        | _        | _       |  |  |  |  |  |
| (49) Methox   | cychlor, μg/  | L            |           |             |          |          |         |  |  |  |  |  |
| _             | _   | _            | 40        | _           | _        | _        | _       |  |  |  |  |  |
| (50) Methyle  | (50) Methylene chloride (c), μg/L (Dichloromethane) |              |           |             |          |          |         |  |  |  |  |  |
| 45            | 13,875*   | 27,749*      | 5         | -           | _        | _        | _       |  |  |  |  |  |
| 2A<br>CS      | 2A<br>MS  | 2A<br>FAV    | 1B<br>DC  | 3A/3B<br>IC | 4A<br>IR | 4B<br>LS | 5<br>AN |  |  |  |  |  |
| (51) Metolae  | chlor   |              |           |             |          |          |         |  |  |  |  |  |
| 23            | 271   | 543          | _         | _           | _        | _        | _       |  |  |  |  |  |
| (52) Naphth   | alene, μg/L   |              |           |             |          |          |         |  |  |  |  |  |
| 65            | 409   | 818          | _         | _           | _        | _        | _       |  |  |  |  |  |
| (53) Oxamy    | l, μg/L (Vyo  | date)        |           |             |          |          |         |  |  |  |  |  |
| _             | _   | _            | 200       | _           | _        | _        | _       |  |  |  |  |  |
| (54) Parathio | on, μg/L  |              |           |             |          |          |         |  |  |  |  |  |
| 0.013         | 0.07  | 0.13         | _         | _           | -        | _        | _       |  |  |  |  |  |
| (55) Pentach  | lorophenol  | , μg/L       |           |             |          |          |         |  |  |  |  |  |

| 0.93 | 15 | 30 | 1 | _ | _ | _ | _ |
|------|----|----|---|---|---|---|---|
| 0.75 | 10 | 50 | 1 |   |   |   |   |

Class 2A MS and FAV are pH dependent. Pentachlorophenol values shown are for a pH of 7.5 only. See part 7050.0222, subpart 2, for examples at other pH values and equations to calculate pentachlorophenol standards for any pH value.

| 2A<br>CS     | 2A<br>MS      | 2A<br>FAV   | 1B<br>DC   | 3A/3B<br>IC | 4A<br>IR | 4B<br>LS | 5<br>AN |
|--------------|---------------|-------------|------------|-------------|----------|----------|---------|
| (56) Phena   | nthrene, μg/  | L           |            |             |          |          |         |
| 3.6          | 32            | 64          | _          | _           | _        | _        | _       |
| (57) Pheno   | l, μg/L       |             |            |             |          |          |         |
| 123          | 2,214         | 4,428       | _          | _           | _        | _        | _       |
| (58) Piclor  | am, μg/L      |             |            |             |          |          |         |
| _            | _             | _           | 500        | _           | _        | _        | _       |
| (59) Polycl  | nlorinated bi | phenyls (c) | , ng/L (P  | CBs, total) |          |          |         |
| 0.014        | 1,000*        | 2,000*      | 500        | _           | _        | _        | _       |
| (60) Simaz   | ine, μg/L     |             |            |             |          |          |         |
| _            | _             | _           | 4          | _           | _        | _        | _       |
| 2A<br>CS     | 2A<br>MS      | 2A<br>FAV   | 1B<br>DC   | 3A/3B<br>IC | 4A<br>IR | 4B<br>LS | 5<br>AN |
| (61) Styren  | ne (c), μg/L  |             |            |             |          |          |         |
| _            | _             | _           | 100        | _           | _        | _        | _       |
| (62) 2,3,7,8 | 3-Tetrachloro | odibenzo-p  | -dioxin, n | g/L (TCDD   | -dioxin) |          |         |
| _            | _             | _           | 0.03       | _           | _        | _        | _       |
| (63) 1,1,2,2 | 2-Tetrachloro | oethane (c) | , μg/L     |             |          |          |         |
| 1.1          | 1,127*        | 2,253*      | _          | _           | _        | _        | _       |

| (64) Tetr | achloroethylen  | e (c), μg/L  |          |             |           |          |            |
|-----------|-----------------|--------------|----------|-------------|-----------|----------|------------|
| 3.8       | 428*            | 857*         | 5        | _           | _         | _        | _          |
| (65) Tol  | uene, μg/L      |              |          |             |           |          |            |
| 253       | 1,352           | 2,703        | 1,000    | _           | _         | _        | _          |
| 2A<br>CS  | 2A<br>MS        | 2A<br>FAV    | 1B<br>DC | 3A/3B<br>IC | 4A<br>IR  | 4B<br>LS | 5<br>AN    |
| (66) Tox  | aphene (c), ng  | 'L           |          |             |           |          |            |
| 0.31      | 730*            | 1,500*       | 3,000    | _           | _         | _        | _          |
| (67) 2,4, | 5-TP, μg/L (Si  | lvex)        |          |             |           |          |            |
| _         | _               | _            | 50       | _           | _         | _        | _          |
| (68) 1,2, | 4-Trichloroben  | zene, μg/L   |          |             |           |          |            |
| _         | _               | _            | 70       | _           | _         | _        | _          |
| (69) 1,1, | 1-Trichloroetha | ane, μg/L    |          |             |           |          |            |
| 329       | 2,957           | 5,913        | 200      | _           | _         | _        | _          |
| (70) 1,1, | 2-Trichloroetha | ane, μg/L    |          |             |           |          |            |
| _         | _               | _            | 5        | _           | -         | _        | _          |
| 2A<br>CS  | 2A<br>MS        | 2A<br>FAV    | 1B<br>DC | 3A/3B<br>IC | 4A<br>IR  | 4B<br>LS | 5<br>AN    |
| (71) 1,1, | 2-Trichloroethy | ylene (c), μ | g/L      |             |           |          |            |
| 25        | 6,988           | 13,976*      | 5        | _           | _         | _        | _          |
| (72) 2,4, | 6-Trichlorophe  | nol, μg/L    |          |             |           |          |            |
| 2.0       | 102             | 203          | _        | _           | _         | _        | _          |
| (73) T    | rihalomethanes  | , total      | (c), μg  | /L (Brom    | odichloro | methane, | Bromoform, |

Chlorodibromomethane, and Chloroform)

D. *Escherichia (E.) coli* bacteria shall not exceed 126 organisms per 100 milliliters as a geometric mean of not less than five samples representative of conditions within any calendar month, nor shall more than ten percent of all samples taken during any calendar month individually exceed 1,260 organisms per 100 milliliters. The standard applies only between April 1 and October 31.

E. For radioactive materials, see parts 7050.0221, subpart 2; 7050.0222, subpart 2; and 7050.0224, subparts 2 and 3.

Subp. 4. [Repealed, 24 SR 1105]

Subp. 4a. Cool and warm water sport fish, drinking water, and associated use classes. Water quality standards applicable to use Classes 1B or 1C, 2Bd, 3A or 3B, 4A and 4B, and 5 surface waters.

A. MISCELLANEOUS SUBSTANCE, CHARACTERISTIC, OR POLLUTANT

| 2Bd<br>CS    | 2Bd<br>MS   | 2Bd<br>FAV              | 1B/1C<br>DC | 3A/3B<br>IC | 4A<br>IR | 4B<br>LS | 5<br>AN |   |
|--------------|-------------|-------------------------|-------------|-------------|----------|----------|---------|---|
| (1) Ammon    | ia, un-ioni | zed as N, μ             | ıg/L        |             |          |          |         | _ |
| 40           | _           | _                       | _           | _           | _        | _        | _       |   |
| (2) Asbesto  | s, >10 μm   | (c), fibers/            | L           |             |          |          |         |   |
| _            | _           | _                       | 7.0e+06     | _           | _        | _        | _       |   |
| (3) Bicarbon | nates (HC   | O <sub>3</sub> ), meq/L |             |             |          |          |         |   |
| _            | _           | _                       | _           | _           | 5        | _        | _       |   |
| (4) Bromate  | e, μg/L     |                         |             |             |          |          |         |   |
| _            | _           | _                       | 10          | _           | _        | _        | _       |   |

| (5) | Chloride,                                     | mg/L         |                     |             |             |          |             |              |
|-----|---|--------------|---------------------|-------------|-------------|----------|-------------|--------------|
|     | 230   | 860          | 1,720               | 250(S)      | 50/100      | _        | _           | _            |
|     | 2Bd<br>CS                                     | 2Bd<br>MS    | 2Bd<br>FAV          | 1B/1C<br>DC | 3A/3B<br>IC | 4A<br>IR | 4B<br>LS    | 5<br>AN      |
| (6) | Chlorine,                                     | total residu | ıal, μg/L           |             |             |          |             |              |
|     | 11  | 19           | 38                  | _           | _           | _        | _           | _            |
| (7) | Chlorite, µ                                   | ug/L         |                     |             |             |          |             |              |
|     | _   | _            | _                   | 1,000       | _           | _        | _           | _            |
| (8) | Color, Pt-                                    | Co           |                     |             |             |          |             |              |
|     | _   | _            | _                   | 15(S)       | _           | _        | _           | _            |
| (9) | Cyanide, 1                                    | free, μg/L   |                     |             |             |          |             |              |
|     | 5.2   | 22           | 45                  | 200         | _           | _        | _           | _            |
| (10 | ) Escheric                                    | hia (E.) co  | <i>li</i> bacteria, | organisms   | /100 mL     |          |             |              |
|     | See item D                                    | -            | -                   | -           | -           | -        | -           | _            |
|     | 2Bd<br>CS                                     | 2Bd<br>MS    | 2Bd<br>FAV          | 1B/1C<br>DC | 3A/3B<br>IC | 4A<br>IR | 4B<br>LS    | 5<br>AN      |
|     | ) Eutrophic/L; chlorop                        |              |                     |             |             |          | oirs (phosp | horus, total |
|     | See part<br>7050.0222<br>subparts 3<br>and 3a | _,           | _                   | _           | _           | _        | _           | _            |
| (12 | 2) Fluoride,                                  | mg/L         |                     |             |             |          |             |              |
|     | _   | _            | _                   | Δ           | _           | _        | _           | _            |

| (13) Fluor  | ide, mg/L     |                        |             |             |          |          |         |
|-------------|---------------|------------------------|-------------|-------------|----------|----------|---------|
| _           | _             | _                      | 2(S)        | _           | _        | _        | _       |
| (14) Foam   | ing agents,   | μg/L                   |             |             |          |          |         |
| _           | _             | -                      | 500(S)      | _           | _        | _        | _       |
| (15) Hardr  | ness, Ca+Mg   | g as CaCO <sub>3</sub> | , mg/L      |             |          |          |         |
| _           | _             | _                      | _           | 50/250      | _        | _        | _       |
| 2Bd<br>CS   | 2Bd<br>MS     | 2Bd<br>FAV             | 1B/1C<br>DC | 3A/3B<br>IC | 4A<br>IR | 4B<br>LS | 5<br>AN |
| (16) Hydro  | ogen sulfide  | , mg/L                 |             |             |          |          |         |
| _           | _             | _                      | _           | _           | _        | _        | 0.02    |
| (17) Nitrat | e as N, mg/   | L                      |             |             |          |          |         |
| _           | -             | _                      | 10          | _           | _        | _        | _       |
| (18) Nitrit | e as N, mg/l  | L                      |             |             |          |          |         |
| _           | _             | _                      | 1           | _           | _        | _        | _       |
| (19) Nitrat | e + Nitrite a | as N, mg/L             |             |             |          |          |         |
| _           | _             | -                      | 10          | _           | _        | _        | _       |
| (20) Odor,  | TON           |                        |             |             |          |          |         |
| _           | _             | _                      | 3(S)        | _           | _        | _        | _       |
| 2Bd<br>CS   | 2Bd<br>MS     | 2Bd<br>FAV             | 1B/1C<br>DC | 3A/3B<br>IC | 4A<br>IR | 4B<br>LS | 5<br>AN |
| (21) Oil, μ | ug/L          |                        |             |             |          |          |         |
| 500         | 5,000         | 10,000                 | _           | _           | _        | _        | _       |
| (22) Oxyg   | en, dissolve  | d, mg/L                |             |             |          |          |         |

|     | See part 7050.0222 subpart 3 |             | -           | -           | -           | -                    | -          | _       |
|-----|------------------------------|-------------|-------------|-------------|-------------|----------------------|------------|---------|
| (23 | ) pH minir                   | num, su     |             |             |             |                      |            |         |
|     | 6.5                          | _           | _           | 6.5(S)      | 6.5/6.0     | 6.0                  | 6.0        | 6.0     |
| (24 | ) pH maxi                    | mum, su     |             |             |             |                      |            |         |
|     | 9.0                          | _           | _           | 8.5(S)      | 8.5/9.0     | 8.5                  | 9.0        | 9.0     |
| (25 | ) Radioact                   | ive materia | als         |             |             |                      |            |         |
|     | See item E                   | _           | _           | See item E  | _           | See item E           | See item E | _       |
|     | 2Bd<br>CS                    | 2Bd<br>MS   | 2Bd<br>FAV  | 1B/1C<br>DC | 3A/3B<br>IC | 4A<br>IR             | 4B<br>LS   | 5<br>AN |
| (26 | ) Salinity,                  | total, mg/I |             |             |             |                      |            |         |
|     | _                            | _           | _           | _           | _           | _                    | 1,000      | _       |
| (27 | ) Sodium,                    | meq/L       |             |             |             |                      |            |         |
|     | _                            | -           | -           | -           | -           | 60% of total cations | -          | -       |
| (28 | ) Specific (                 | conductan   | ce at 25°C, | μmhos/cm    |             |                      |            |         |
|     | _                            | _           | _           | _           | _           | 1,000                | _          | _       |
| (29 | ) Sulfate, 1                 | mg/L        |             |             |             |                      |            |         |
|     | _                            | _           | _           | 250(S)      | _           | _                    | _          | _       |
| (30 | ) Sulfates,                  | wild rice j | present, mg | z/L         |             |                      |            |         |
|     | _                            | _           | _           | _           | _           | 10                   | _          | _       |

| 2Bd<br>CS                        | 2Bd<br>MS   | 2Bd<br>FAV                 | 1B/1C<br>DC   | 3A/3B<br>IC | 4A<br>IR | 4B<br>LS | 5<br>AN |
|----------------------------------|---|----------------------------|---------------|-------------|----------|----------|---------|
| (31) Temper                      | ature, °F   |                            |               |             |          |          |         |
| See item F                       | -   | _                          | _             | -           | -        | -        | _       |
| (32) Total di                    | ssolved sa  | lts, mg/L                  |               |             |          |          |         |
| _                                | _   | _                          | _             | _           | 700      | _        | _       |
| (33) Total di                    | ssolved so  | lids, mg/L                 |               |             |          |          |         |
| _                                | _   | _                          | 500(S)        | _           | _        | _        | _       |
| (34) Turbidi                     | ty, NTU   |                            |               |             |          |          |         |
| 25                               | _   | _                          | –<br>NA       | _           | _        | _        | _       |
| B. METALS                        | AND EL  | EMENTS                     |               |             |          |          |         |
| 2Bd<br>CS                        | 2Bd<br>MS   | 2Bd<br>FAV                 | 1B/1C<br>DC   | 3A/3B<br>IC | 4A<br>IR | 4B<br>LS | 5<br>AN |
|                                  |   |                            |               |             |          |          |         |
| (1) Aluminu                      | m, total, μ                                       | g/L                        |               |             |          |          |         |
|                                  | m, total, μ                                       |                            | 50-<br>200(S) | _           | _        | _        |         |
|                                  | 1,072   | 2,145                      |               | _           | _        | _        | _       |
| 125                              | 1,072   | 2,145                      |               | _           | _        | _        |         |
| 125 (2) Antimon                  | 1,072<br>y, total, µg<br>90                       | 2,145<br>g/L<br>180        | 200(S)        | -           | _        | _        |         |
| 125 (2) Antimon 5.5              | 1,072<br>y, total, µg<br>90                       | 2,145<br>g/L<br>180        | 200(S)        | _           | _        | _        | _       |
| 125 (2) Antimon 5.5 (3) Arsenic, | 1,072<br>y, total, µg<br>90<br>total, µg/L<br>360 | 2,145<br>g/L<br>180<br>720 | 200(S)        | _           | _        | _        | _       |

| _   | _  | _   | 4.0  | _                   | _  | _                                   | _   |
|---|--|---|--|---------------------|--|-------------------------------------|---|
| 2Bd<br>CS   | 2Bd<br>MS  | 2Bd<br>FAV  | 1B/1C<br>DC  | 3A/3B<br>IC         | 4A<br>IR   | 4B<br>LS                            | 5<br>AN   |
| 6) Boron, t   | total, μg/L  |   |  |                     |  |                                     |   |
| _   | _  | _   | _  | _                   | 500  | _                                   | _   |
| 7) Cadmiu   | m, total, με   | g/L   |  |                     |  |                                     |   |
| 1.1   | 33   | 67  | 5  | _                   | _  | _                                   | _   |
|   |  | THIO/I. AMI   | v oce daff   | 7030.0222           | , suopart  | 5, IUI EXA                          | mpies at our                                      |
| exceed 4  | lues and ed<br>00 mg/L.  | quations to   | -  |                     | _  |                                     | lness value r                                     |
| ardness va<br>o exceed 4  | lues and ed<br>00 mg/L.<br>um +3, tota   | quations to   | -  |                     | _  |                                     | _   |
| ardness van exceed 4/8) Chromic 207 Class 2Bd thown are examples at or any hard               | lues and ed<br>00 mg/L.<br>um +3, tota<br>1,737<br>trivalent ch<br>for a total   | al, μg/L 3,469  aromium st hardness oness values anot to except         | calculate car  | hardness L only. Se | ndards for the dependent of the dependen | er any hard  - at. Chroma 050.0222, | _   |
| ardness van exceed 4/8) Chromic 207 Class 2Bd thown are examples at or any hard               | lues and ed<br>00 mg/L.<br>um +3, tota<br>1,737<br>trivalent ch<br>for a total<br>other hard<br>dness value                      | al, μg/L 3,469  aromium st hardness oness values anot to except         | calculate catandards are of 100 mg/ls and equation   | hardness L only. Se | ndards for the dependent of the dependen | er any hard  - at. Chroma 050.0222, | lness value r<br>-<br>ium +3 valu<br>subpart 3, 1 |
| ardness van exceed 4/8) Chromin 207 Class 2Bd thown are examples at or any hard 9) Chromin 11 | lues and ed<br>00 mg/L.<br>um +3, tota<br>1,737<br>trivalent ch<br>for a total<br>other hard<br>dness value<br>um +6, tota       | al, μg/L 3,469  aromium st hardness oness values not to exceed, μg/L 32 | calculate catandards are of 100 mg/ls and equation   | hardness L only. Se | ndards for the dependent of the dependen | er any hard  - at. Chroma 050.0222, | lness value r<br>-<br>ium +3 valu<br>subpart 3, 1 |
| ardness van exceed 4/8) Chromin 207 Class 2Bd thown are examples at or any hard 9) Chromin 11 | lues and ed<br>00 mg/L.<br>um +3, tota<br>1,737<br>trivalent ch<br>for a total<br>other hard<br>lness value<br>um +6, tota<br>16 | al, μg/L 3,469  aromium st hardness oness values not to exceed, μg/L 32 | calculate catandards are of 100 mg/ls and equation   | hardness L only. Se | ndards for the dependent of the dependen | er any hard  - at. Chroma 050.0222, | lness value r<br>-<br>ium +3 valu<br>subpart 3, 1 |
| ardness van exceed 4/8) Chromin 207 Class 2Bd thown are examples at or any hard 9) Chromin 11 | lues and ed<br>00 mg/L.<br>um +3, tota<br>1,737<br>trivalent ch<br>for a total<br>other hard<br>lness value<br>um +6, tota<br>16 | al, μg/L 3,469  aromium st hardness oness values not to excell, μg/L 32 | calculate calcul | hardness L only. Se | ndards for the dependent of the dependen | er any hard  - at. Chroma 050.0222, | lness value r<br>-<br>ium +3 valu<br>subpart 3, 1 |

2.8

436

872

| (12) Coppe | r, total, με | g/L |              |   |   |   |   |
|------------|--------------|-----|--------------|---|---|---|---|
| 9.8        | 18           | 35  | 1,000<br>(S) | _ | _ | - | _ |

Class 2Bd copper standards are hardness dependent. Copper values shown are for a total hardness of 100 mg/L only. See part 7050.0222, subpart 3, for examples at other hardness values and equations to calculate copper standards for any hardness value not to exceed 400 mg/L.

| (13) Iron, to | otal, μg/L  |     |        |   |   |   |   |
|---------------|-------------|-----|--------|---|---|---|---|
| _             | _           | _   | 300(S) | _ | _ | _ | _ |
| (14) Lead,    | total, μg/L |     |        |   |   |   |   |
| 3.2           | 82          | 164 | NA     | _ | _ | _ | _ |

50(O)

Class 2Bd lead standards are hardness dependent. Lead values shown are for a total hardness of 100 mg/L only. See part 7050.0222, subpart 3, for examples at other hardness values and equations to calculate lead standards for any hardness value not to exceed 400 mg/L.

(15) Manganese, total, µg/L

|     | _           | _             | _              | 50(S)       | _            | _          | _        | _       |
|-----|-------------|---------------|----------------|-------------|--------------|------------|----------|---------|
|     | 2Bd<br>CS   | 2Bd<br>MS     | 2Bd<br>FAV     | 1B/1C<br>DC | 3A/3B<br>IC  | 4A<br>IR   | 4B<br>LS | 5<br>AN |
|     |             | 1716          | rav<br>        | DC          |              | IK         | LS       | AII     |
| (16 | ) Mercury,  | , total in w  | ater, ng/L     |             |              |            |          |         |
|     | 6.9         | 2,400*        | 4,900*         | 2,000       | _            | _          | _        | _       |
| (17 | ) Mercury,  | , total in ed | lible fish tis | ssue, mg/kį | g or parts p | er million |          |         |
|     | 0.2         | _             | _              | _           | _            | _          | _        | _       |
| (18 | ) Nickel, t | otal, μg/L    |                |             |              |            |          |         |
|     | 158         | 1,418         | 2,836          | _           | _            | _          | _        | _       |

Class 2Bd nickel standards are hardness dependent. Nickel values shown are for a total hardness of 100 mg/L only. See part 7050.0222, subpart 3, for examples at other hardness values and equations to calculate nickel standards for any hardness value not to exceed 400 mg/L.

| (19) Seleni | um, total,   | μg/L |        |   |   |   |   |
|-------------|--------------|------|--------|---|---|---|---|
| 5.0         | 20           | 40   | 50     | _ | _ | _ | _ |
| (20) Silver | , total, μg/ | L    |        |   |   |   |   |
| 1.0         | 2.0          | 4 1  | 100(S) | _ | _ | _ | _ |

Class 2Bd silver MS and FAV are hardness dependent. Silver values shown are for a total hardness of 100 mg/L only. See part 7050.0222, subpart 3, for examples at other hardness values and equations to calculate silver standards for any hardness value not to exceed 400 mg/L.

| 2Bd<br>CS     | 2Bd<br>MS   | 2Bd<br>FAV | 1B/1C<br>DC  | 3A/3B<br>IC | 4A<br>IR | 4B<br>LS | 5<br>AN | _ |
|---------------|-------------|------------|--------------|-------------|----------|----------|---------|---|
| (21) Thalliu  | m, total, μ | g/L        |              |             |          |          |         |   |
| 0.28          | 64          | 128        | 2            | _           | _        | _        | _       |   |
| (22) Zinc, to | otal, μg/L  |            |              |             |          |          |         |   |
| 106           | 117         | 234        | 5,000<br>(S) | _           | _        | _        | _       |   |

Class 2Bd zinc standards are hardness dependent. Zinc values shown are for a total hardness of 100 mg/L only. See part 7050.0222, subpart 3, for examples at other hardness values and equations to calculate zinc standards for any hardness value not to exceed 400 mg/L.

#### C. ORGANIC POLLUTANTS OR CHARACTERISTICS

| 2Bd<br>CS | 2Bd<br>MS     | 2Bd<br>FAV | 1B/1C<br>DC | 3A/3B<br>ICIC | 4A<br>IR | 4B<br>LS | 5<br>AN |   |
|-----------|---------------|------------|-------------|---------------|----------|----------|---------|---|
| (1) Acena | aphthene, μg/ | /L         |             |               |          |          |         | _ |
| 20        | 56            | 112        | _           | _             | _        | _        | _       |   |
| (2) Aceto | chlor, μg/L   |            |             |               |          |          |         |   |
| 3.6       | 86            | 173        | _           | _             | _        | _        | _       |   |

|     | 0.38      | 1,140*      | 2,281*     | _           | _             | _        | _        | _       |
|-----|-----------|-------------|------------|-------------|---------------|----------|----------|---------|
| (4) | Alachlor  |             | , -        |             |               |          |          |         |
| (1) | 4.2       | 800*        | 1,600*     | 2           | _             | _        | _        | _       |
| (5) |           |             | 1,000      | <i>_</i>    |               |          |          |         |
| (3) | Aldicarb, | μg/L        |            |             |               |          |          |         |
|     | _         | _           | _          | 3           | _             | _        | _        | _       |
|     | 2Bd<br>CS | 2Bd<br>MS   | 2Bd<br>FAV | 1B/1C<br>DC | 3A/3B<br>ICIC | 4A<br>IR | 4B<br>LS | 5<br>AN |
| (6) | Aldicarb  | sulfone, μ  | g/L        |             |               |          |          |         |
|     | _         | _           | _          | 2           | _             | _        | _        | _       |
| (7) | Aldicarb  | sulfoxide,  | μg/L       |             |               |          |          |         |
|     | _         | _           | _          | 4           | _             | _        | _        | _       |
| (8) | Anthrace  | ne, μg/L    |            |             |               |          |          |         |
|     | 0.035     | 0.32        | 0.63       | _           | _             | _        | _        | _       |
| (9) | Atrazine  | (c), μg/L   |            |             |               |          |          |         |
|     | 3.4       | 323         | 645        | 3           | _             | _        | _        | _       |
| (10 | ) Benzene | e (c), μg/L |            |             |               |          |          |         |
|     | 6.0       | 4,487*      | 8,974*     | 5           | _             | _        | _        | _       |
|     | 2Bd<br>CS | 2Bd<br>MS   | 2Bd<br>FAV | 1B/1C<br>DC | 3A/3B<br>ICIC | 4A<br>IR | 4B<br>LS | 5<br>AN |
| (11 | ) Benzo(a | )pyrene, μ  | g/L        |             |               |          |          |         |
|     | _         | _           | _          | 0.2         | _             | _        | _        | -       |

| 41            | 2,900        | 5,800        | See subitem (73) | _             | _        | _        | _                                     |
|---------------|--------------|--------------|------------------|---------------|----------|----------|---------------------------------------|
| (13) Carbofu  | ran, μg/L    |              |                  |               |          |          |                                       |
| _             | _            | _            | 40               | _             | _        | _        | _                                     |
| (14) Carbon   | tetrachloric | le (c), μg/L | ,                |               |          |          |                                       |
| 1.9           | 1,750*       | 3,500*       | 5                | _             | _        | _        | _                                     |
| (15) Chlorda  | ne (c), ng/I |              |                  |               |          |          |                                       |
| 0.29          | 1,200*       | 2,400*       | 2,000            | _             | _        | _        | _                                     |
| 2Bd<br>CS     | 2Bd<br>MS    | 2Bd<br>FAV   | 1B/1C<br>DC      | 3A/3B<br>ICIC | 4A<br>IR | 4B<br>LS | 5<br>AN                               |
| (16) Chlorob  | enzene, μg   | /L (Monoc    | hlorobenze       | ene)          |          |          | · · · · · · · · · · · · · · · · · · · |
| 20            | 423          | 846          | 100              | _             | _        | _        | _                                     |
| (17) Chlorofe | orm (c), µg  | /L           |                  |               |          |          |                                       |
| 53            | 1,392        | 2,784        | See subitem (73) | _             | -        | _        | -                                     |
| (18) Chlorpy  | rifos, μg/L  |              |                  |               |          |          |                                       |
| 0.041         | 0.083        | 0.17         | _                | _             | _        | _        | _                                     |
| (19) Dalapon  | n, μg/L      |              |                  |               |          |          |                                       |
| _             | _            | _            | 200              | _             | _        | _        | _                                     |
| (20) DDT (c)  | ), ng/L      |              |                  |               |          |          |                                       |
| 1.7           | 550*         | 1,100*       | -                | _             | _        | _        | -                                     |
| 2Bd<br>CS     | 2Bd<br>MS    | 2Bd<br>FAV   | 1B/1C<br>DC      | 3A/3B<br>ICIC | 4A<br>IR | 4B<br>LS | 5<br>AN                               |

| (21  | 1,2-Dibr                               | romo-3-chlo   | oropropane                                 | e (c), μg/L                                    |           |           |             |             |
|------|--|---|--|--|-----------|-----------|-------------|-------------|
|      | _                                      | _   | _  | 0.2  | _         | _         | _           | _           |
| (22  | 2) Dichloro                            | obenzene (d   | ortho), μg/I                               | -<br>-   |           |           |             |             |
|      | _                                      | _   | _  | 600  | _         | _         | _           | _           |
| (23  | 3) 1,4-Dich                            | nlorobenzer   | ne (para) (c                               | e), µg/L                                       |           |           |             |             |
|      | _                                      | _   | _  | 75   | _         | _         | _           | _           |
| (24  | 1) 1,2-Dich                            | nloroethane   | e (c), μg/L                                |  |           |           |             |             |
|      | 3.8                                    | 45,050*   | 90,100*                                    | 5  | _         | _         | _           | _           |
| (25  | 5) 1,1-Dich                            | nloroethyle   | ne, μg/L                                   |  |           |           |             |             |
|      | _                                      | _   | _  | 7  | _         | _         | _           | _           |
|      | 2Bd                                    | 2Bd   | 2Bd  | 1B/1C  | 3A/3B     | <b>4A</b> | <b>4B</b>   | 5           |
|      | CS                                     | MS  | FAV  | DC   | ICIC      | IR        | LS          | AN          |
| (26  |  | MS<br>aloroethyle   |  |  | ICIC      | IR<br>    | LS          | AN          |
| (26  |  |   |  |  | ICIC      | IR<br>-   | <b>LS</b>   | AN          |
|      | —————————————————————————————————————— |   | ne (cis), μ <u>ε</u>                       | z/L<br>70                                      | ICIC<br>- | IR<br>_   | <b>LS</b> - | AN          |
|      | —————————————————————————————————————— | nloroethyle   | ne (cis), μ <u>ε</u>                       | z/L<br>70                                      | ICIC      | -<br>-    | <b>LS</b> - | AN          |
| (27  |  | nloroethyle   | ne (cis), µg  - ne (trans),  -             | g/L<br>70<br>μg/L<br>100                       | _         | -<br>-    |             | <b>AN</b> - |
| (27  |  | nloroethylen  - nloroethylen  -                               | ne (cis), µg  - ne (trans),  -             | g/L<br>70<br>μg/L<br>100                       | _         | IR        |             | AN          |
| (28  |  | nloroethylen  - nloroethylen  -                               | ne (cis), µg  - ne (trans),  - xyacetic ac | g/L<br>70<br>μg/L<br>100<br>sid (2,4-D),       | _         | IR        |             | AN          |
| (28  |  | nloroethylen  nloroethylen  nloropheno                        | ne (cis), µg  - ne (trans),  - xyacetic ac | g/L<br>70<br>μg/L<br>100<br>sid (2,4-D),       | _         | IR        |             | AN          |
| (28) |  | aloroethyles  - aloroethyles  - alorophenos  - aloropropar  - | ne (cis), µg  - ne (trans),  - xyacetic ac | g/L<br>70<br>μg/L<br>100<br>sid (2,4-D),<br>70 | _         | IR        |             | AN          |

| 2Bd<br>CS    | 2Bd<br>MS                                     | 2Bd<br>FAV       | 1B/1C<br>DC | 3A/3B<br>ICIC | 4A<br>IR | 4B<br>LS | 5<br>AN |   |  |  |  |
|--------------|---|------------------|-------------|---------------|----------|----------|---------|---|--|--|--|
| (31) Di-2-et | (31) Di-2-ethylhexyl adipate, μg/L            |                  |             |               |          |          |         |   |  |  |  |
| _            | _   | _                | 400         | _             | _        | _        | _       |   |  |  |  |
| (32) Di-2-et | (32) Di-2-ethylhexyl phthalate (c), $\mu$ g/L |                  |             |               |          |          |         |   |  |  |  |
| 1.9          | _*  | _*               | 6           | _             | _        | _        | _       |   |  |  |  |
| (33) Di-n-O  | octyl phthal                                  | ate, μg/L        |             |               |          |          |         |   |  |  |  |
| 30           | 825   | 1,650            | _           | _             | _        | _        | _       |   |  |  |  |
| (34) Dinose  | eb, μg/L                                      |                  |             |               |          |          |         |   |  |  |  |
| _            | -   | _                | 7           | _             | _        | _        | _       |   |  |  |  |
| (35) Diquat  | , μg/L  |                  |             |               |          |          |         |   |  |  |  |
| _            | _   | _                | 20          | _             | _        | _        | _       |   |  |  |  |
| 2Bd<br>CS    | 2Bd<br>MS                                     | 2Bd<br>FAV       | 1B/1C<br>DC | 3A/3B<br>ICIC | 4A<br>IR | 4B<br>LS | 5<br>AN |   |  |  |  |
| (36) Endosu  | ılfan, μg/L                                   |                  |             |               |          |          |         | - |  |  |  |
| 0.029        | 0.28  | 0.56             | _           | _             | _        | _        | _       |   |  |  |  |
| (37) Endoth  | nall, μg/L                                    |                  |             |               |          |          |         |   |  |  |  |
| _            | -   | _                | 100         | _             | _        | _        | _       |   |  |  |  |
| (38) Endrin  | , μg/L  |                  |             |               |          |          |         |   |  |  |  |
| 0.016        | 0.090   | 0.18             | 2           | _             | _        | _        | _       |   |  |  |  |
| (39) Ethylb  | enzene (c),                                   | $\mu \text{g}/L$ |             |               |          |          |         |   |  |  |  |
| 68           | 1,859   | 3,717            | 700         | _             | _        | _        | _       |   |  |  |  |
| (40) Ethyler | ne dibromi                                    | de, μg/L         |             |               |          |          |         |   |  |  |  |

| _                        | _            | _             | 0.05        | _             | _        | _           | _              |
|--------------------------|--------------|---------------|-------------|---------------|----------|-------------|----------------|
| 2Bd<br>CS                | 2Bd<br>MS    | 2Bd<br>FAV    | 1B/1C<br>DC | 3A/3B<br>ICIC | 4A<br>IR | 4B<br>LS    | 5<br>AN        |
| (41) Fluora              | nthene, µg   | /L            |             |               |          |             |                |
| 1.9                      | 3.5          | 6.9           | _           | _             | _        | _           | _              |
| (42) Glypho              | osate, μg/L  | ı             |             |               |          |             |                |
| _                        | _            | _             | 700         | _             | _        | _           | _              |
| (43) Haloac<br>Monochlor | ,            |               |             |               | moacetic | acid, Dichl | oroacetic acid |
| _                        | _            | _             | 60          | _             | _        | _           | _              |
| (44) Heptac              | chlor (c), n | g/L           |             |               |          |             |                |
| 0.39                     | 260*         | 520*          | 400         | _             | _        | _           | _              |
| (45) Heptac              | chlor epoxi  | de (c), ng/l  | -<br>       |               |          |             |                |
| 0.48                     | 270*         | 530*          | 200         | _             | _        | _           | _              |
| 2Bd<br>CS                | 2Bd<br>MS    | 2Bd<br>FAV    | 1B/1C<br>DC | 3A/3B<br>ICIC | 4A<br>IR | 4B<br>LS    | 5<br>AN        |
| (46) Hexac               | hlorobenze   | ene (c), ng/l | L           |               |          |             |                |
| 0.24                     | _*           | _*            | 1,000       | _             | _        | _           | _              |
| (47) Hexac               | hlorocyclo   | pentadiene,   | μg/L        |               |          |             |                |
| _                        | _            | _             | 50          | _             | _        | _           | _              |
| (48) Lindar              | ne (c), μg/L | (Hexachlo     | orocyclohex | ane, gamm     | a-)      |             |                |
| 0.032                    | 4.4*         | 8.8*          | 0.2         | _             | _        | _           | _              |
| (49) Metho               | xychlor, με  | g/L           |             |               |          |             |                |

|     | _   | _          | _          | 40          | _             | _        | _        | _       |  |  |  |
|-----|---|------------|------------|-------------|---------------|----------|----------|---------|--|--|--|
| (50 | (50) Methylene chloride (c), μg/L (Dichloromethane) |            |            |             |               |          |          |         |  |  |  |
|     | 46  | 13,875*    | 27,749*    | 5           | _             | _        | _        | _       |  |  |  |
|     | 2Bd<br>CS   | 2Bd<br>MS  | 2Bd<br>FAV | 1B/1C<br>DC | 3A/3B<br>ICIC | 4A<br>IR | 4B<br>LS | 5<br>AN |  |  |  |
| (5] | l) Metolacl   | hlor       |            |             |               |          |          |         |  |  |  |
|     | 23  | 271        | 543        | _           | _             | _        | _        | _       |  |  |  |
| (52 | 2) Naphtha  | lene, μg/L |            |             |               |          |          |         |  |  |  |
|     | 81  | 409        | 818        | _           | _             | _        | _        | _       |  |  |  |
| (53 | 3) Oxamyl,  | μg/L (Vyd  | late)      |             |               |          |          |         |  |  |  |
|     | _   | _          | _          | 200         | _             | _        | _        | _       |  |  |  |
| (54 | 4) Parathion  | n, μg/L    |            |             |               |          |          |         |  |  |  |
|     | 0.013   | 0.07       | 0.13       | _           | _             | _        | _        | _       |  |  |  |
| (55 | 5) Pentachl   | orophenol, | $\mu g/L$  |             |               |          |          |         |  |  |  |
|     | 1.9   | 15         | 30         | 1           | _             | _        | _        | _       |  |  |  |

Class 2Bd MS and FAV are pH dependent. Pentachlorophenol values shown are for a pH of 7.5 only. See part 7050.0222, subpart 3, for examples at other pH values and equations to calculate pentachlorophenol standards for any pH value.

| 2Bd<br>CS         | 2Bd<br>MS   | 2Bd<br>FAV | 1B/1C<br>DC | 3A/3B<br>ICIC | 4A<br>IR | 4B<br>LS | 5<br>AN |  |
|-------------------|-------------|------------|-------------|---------------|----------|----------|---------|--|
| (56) Phenar       | nthrene, µg | /L         |             |               |          |          |         |  |
| 3.6               | 32          | 64         | _           | _             | _        | _        | _       |  |
| (57) Phenol, μg/L |             |            |             |               |          |          |         |  |
| 123               | 2,214       | 4,428      | _           | _             | _        | _        | _       |  |

| (58) Piclora | am, μg/L     |              |             |               |          |          |         |  |
|--------------|--------------|--------------|-------------|---------------|----------|----------|---------|--|
| _            | _            | _            | 500         | _             | _        | _        | _       |  |
| (59) Polych  | lorinated bi | phenyls (c)  | , ng/L (PC  | Bs, total)    |          |          |         |  |
| 0.029        | 1,000*       | 2,000*       | 500         | _             | _        | _        | _       |  |
| (60) Simazi  | ine, μg/L    |              |             |               |          |          |         |  |
| _            | _            | _            | 4           | _             | _        | _        | _       |  |
| 2Bd<br>CS    | 2Bd<br>MS    | 2Bd<br>FAV   | 1B/1C<br>DC | 3A/3B<br>ICIC | 4A<br>IR | 4B<br>LS | 5<br>AN |  |
| (61) Styren  | e (c), μg/L  |              |             |               |          |          |         |  |
| _            | _            | _            | 100         | _             | _        | _        | _       |  |
| (62) 2,3,7,8 | -Tetrachloro | odibenzo-p   | -dioxin, ng | /L (TCDD      | -dioxin) |          |         |  |
| _            | _            | _            | 0.03        | _             | _        | _        | _       |  |
| (63) 1,1,2,2 | -Tetrachloro | bethane (c)  | , μg/L      |               |          |          |         |  |
| 1.5          | 1,127*       | 2,253*       | _           | _             | _        | _        | _       |  |
| (64) Tetracl | hloroethyler | ne (c), μg/L | ı           |               |          |          |         |  |
| 3.8          | 428*         | 857*         | 5           | _             | _        | _        | _       |  |
| (65) Toluen  | ne, μg/L     |              |             |               |          |          |         |  |
| 253          | 1,352        | 2,703        | 1,000       | _             | _        | _        | _       |  |
| 2Bd<br>CS    | 2Bd<br>MS    | 2Bd<br>FAV   | 1B/1C<br>DC | 3A/3B<br>ICIC | 4A<br>IR | 4B<br>LS | 5<br>AN |  |
| (66) Toxapl  | hene (c), ng | /L           |             |               |          |          |         |  |
| 1.3          | 730*         | 1,500*       | 3,000       | _             | _        | _        | _       |  |
| (67) 2,4,5-7 | ΓΡ, μg/L (Si | lvex)        |             |               |          |          |         |  |

|             | _                     | _            | _           | 50          | _             | _          | _        | _          |
|-------------|-----------------------|--------------|-------------|-------------|---------------|------------|----------|------------|
| (68         | ) 1,2,4-Trio          | chlorobenz   | ene, μg/L   |             |               |            |          |            |
|             | _                     | _            | _           | 70          | _             | _          | _        | _          |
| (69         | ) 1,1,1 <b>-</b> Trio | chloroethar  | ne, μg/L    |             |               |            |          |            |
|             | 329                   | 2,957        | 5,913       | 200         | _             | _          | _        | _          |
| (70         | ) 1,1,2-Trio          | chloroethar  | ne, μg/L    |             |               |            |          |            |
|             | _                     | _            | _           | 5           | _             | _          | _        | _          |
|             | 2Bd<br>CS             | 2Bd<br>MS    | 2Bd<br>FAV  | 1B/1C<br>DC | 3A/3B<br>ICIC | 4A<br>IR   | 4B<br>LS | 5<br>AN    |
| (71         | 1,1,2-Trio            | chloroethyl  | ene (c), μg | /L          |               |            | -        |            |
|             | 25                    | 6,988*       | 13,976*     | 5           | _             | _          | _        | _          |
| (72         | ) 2,4,6-Trio          | chlorophen   | ol, μg/L    |             |               |            |          |            |
|             | 2.0                   | 102          | 203         | _           | _             | _          | _        | _          |
| (73)<br>Chl |                       |              | total (     |             | (Bromoo       | dichlorome | thane, F | Bromoform, |
|             | _                     | _            | _           | 80          | _             | _          | _        | _          |
| (74         | ) Vinyl chl           | oride (c), µ | ug/L        |             |               |            |          |            |
|             | 0.18                  | _*           | _*          | 2           | _             | _          | _        | _          |
| (75         | ) Xylenes,            | total, μg/L  | ,           |             |               |            |          |            |
|             | 166                   | 1,407        | 2,814       | 10,000      | _             | _          | _        | _          |

D. *Escherichia (E.) coli* bacteria shall not exceed 126 organisms per 100 milliliters as a geometric mean of not less than five samples representative of conditions within any calendar month, nor shall more than ten percent of all samples taken during any calendar month individually exceed 1,260 organisms per 100 milliliters. The standard applies only between April 1 and October 31.

- E. For radioactive materials, see parts 7050.0221, subpart 3; 7050.0222, subpart 3; and 7050.0224, subparts 2 and 3.
- F. Temperature must not exceed five degrees Fahrenheit above natural in streams and three degrees Fahrenheit 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 Fahrenheit.

### Subp. 5. [Repealed, 24 SR 1105]

Subp. 5a. Cool and warm water sport fish and associated use classes. Water quality standards applicable to use Classes 2B, 2C, or 2D; 3A, 3B, or 3C; 4A and 4B; and 5 surface waters. See parts 7050.0223, subpart 5; 7050.0224, subpart 4; and 7050.0225, subpart 2, for Class 3D, 4C, and 5 standards applicable to wetlands, respectively.

A. MISCELLANEOUS SUBSTANCE, CHARACTERISTIC, OR POLLUTANT

| B,C&D<br>CS | 2B,C&D<br>MS   | 2B,C&D<br>FAV   | 3A/3B/3C<br>IC  | 4A<br>IR   | 4B<br>LS                                       | 5<br>AN                          |
|-------------|--|---|---|--|--|----------------------------------|
|             |  |   |   |  |  |                                  |
| mmonia,     | un-ionized   | as N, μg/L  |   |  |  |                                  |
| 0           | _  | _   | _   | _  | _  | _                                |
| carbonate   | es (HCO <sub>3</sub> ),  | meq/L   |   |  |  |                                  |
|             | _  | _   | _   | 5  | _  | _                                |
| nloride, m  | ng/L   |   |   |  |  |                                  |
| 30          | 860  | 1,720   | 50/100/250  | _  | _  | _                                |
| nlorine, to | otal residual  | l, μg/L   |   |  |  |                                  |
| 1           | 19   | 38  | _   | _  | _  | _                                |
| yanide, fr  | ee, μg/L   |   |   |  |  |                                  |
| .2          | 22   | 45  | _   | _  | _  | _                                |
| B,C&D       | 2B,C&D<br>MS   | 2B,C&D<br>FAV   | 3A/3B/3C<br>IC  | 4A<br>IR   | 4B<br>LS                                       | 5<br>AN                          |
|             | mmonia, no carbonate no carbonate no no carbonate no no carbonate no no carbonate n | mmonia, un-ionized  o – carbonates (HCO <sub>3</sub> ), – nloride, mg/L  30 860 nlorine, total residual  1 19 vanide, free, µg/L  .2 22  B,C&D 2B,C&D | mmonia, un-ionized as N, μg/L  0 – – carbonates (HCO <sub>3</sub> ), meq/L  – – hloride, mg/L  30 860 1,720 hlorine, total residual, μg/L  1 19 38 vanide, free, μg/L  2 22 45  B,C&D 2B,C&D 2B,C&D | MS FAV IC  mmonia, un-ionized as N, μg/L  0 – – –  carbonates (HCO <sub>3</sub> ), meq/L  – –  nloride, mg/L  30 860 1,720 50/100/250  nlorine, total residual, μg/L  1 19 38 –  vanide, free, μg/L  2 22 45 –  B,C&D 2B,C&D 2B,C&D 3A/3B/3C | MS FAV IC IR  mmonia, un-ionized as N, μg/L  0 | mmonia, un-ionized as N, μg/L  0 |

<sup>(6)</sup> Escherichia (E.) coli bacteria, organisms/100 mL

| See item D                                | -            | -                       | -                                       | -        | -            | _              |
|---|--------------|-------------------------|---|----------|--------------|----------------|
| · ·                                       |              |                         | es, shallow lakes,<br>oth transparency, |          | voirs (phosp | ohorus, total, |
| See part 7050.0222, subparts 4, 4a, and 5 | -            | -                       | _                                       | _        | _            | _              |
| (8) Hardness, (                           | Ca+Mg as (   | CaCO <sub>3</sub> , mg/ | L                                       |          |              |                |
| _   | _            | _                       | 50/250/500                              | _        | _            | _              |
| (9) Hydrogen s                            | sulfide, mg/ | L                       |   |          |              |                |
| _   | _            | _                       | _                                       | _        | _            | 0.02           |
| (10) Oil, μg/L                            |              |                         |   |          |              |                |
| 500                                       | 5,000        | 10,000                  | _                                       | _        | _            | -              |
| 2B,C&D<br>CS                              | 2B,C&D<br>MS | 2B,C&D<br>FAV           | 3A/3B/3C<br>IC                          | 4A<br>IR | 4B<br>LS     | 5<br>AN        |
| (11) Oxygen, d                            | lissolved, m | ng/L                    |   |          |              |                |
| See part 7050.0222, subparts 4 to 6       | _            | _                       | _                                       | _        | _            | _              |
| (12) pH minim                             | ium, su      |                         |   |          |              |                |
| 6.5<br>See<br>item E                      | -            | -                       | 6.5/6.0/6.0                             | 6.0      | 6.0          | 6.0            |
| (13) pH maxin                             | num, su      |                         |   |          |              |                |

|      | 9.0<br>See<br>item E | _             | _             | 8.5/9.0/9.0    | 8.5                  | 9.0        | 9.0     |
|------|----------------------|---------------|---------------|----------------|----------------------|------------|---------|
| (14) | Radioactiv           | e materials   |               |                |                      |            |         |
|      | See item F           | -             | -             | _              | See item F           | See item F | -       |
| (15) | Salinity, to         | otal, mg/L    |               |                |                      |            |         |
|      | _                    | _             | _             | _              | _                    | 1,000      | _       |
|      | 2B,C&D<br>CS         | 2B,C&D<br>MS  | 2B,C&D<br>FAV | 3A/3B/3C<br>IC | 4A<br>IR             | 4B<br>LS   | 5<br>AN |
| (16) | Sodium, n            | neq/L         |               |                |                      |            |         |
|      | _                    | _             | _             | _              | 60% of total cations | _          | _       |
| (17) | Specific co          | onductance    | at 25°C, μ 1  | mhos/cm        |                      |            |         |
|      | _                    | _             | _             | _              | 1,000                | _          | _       |
| (18) | Sulfates, w          | vild rice pre | esent, mg/L   |                |                      |            |         |
|      | _                    | _             | _             | _              | 10                   | _          | _       |
| (19) | Temperatu            | ıre, °F       |               |                |                      |            |         |
|      | See item G           | -             | -             | _              | _                    | _          | -       |
| (20) | Total disso          | olved salts,  | mg/L          |                |                      |            |         |
|      | _                    | _             | _             | _              | 700                  | _          | _       |
| (21) | Turbidity,           | NTU           |               |                |                      |            |         |
|      | 25                   | _             | _             | _              | _                    | _          | _       |

|       | 2B,C&D<br>CS | 2B,C&D<br>MS | 2B,C&D<br>FAV | 3A/3B/3C<br>IC | 4A<br>IR | 4B<br>LS | 5<br>AN |
|-------|--------------|--------------|---------------|----------------|----------|----------|---------|
| (1)   | Aluminum,    | total, μg/L  |               |                |          |          |         |
|       | 125          | 1,072        | 2,145         | _              | _        | _        | _       |
| (2)   | Antimony,    | total, μg/L  |               |                |          |          |         |
|       | 31           | 90           | 180           | _              | _        | _        | _       |
| (3)   | Arsenic, tot | tal, µg/L    |               |                |          |          |         |
|       | 53           | 360          | 720           | _              | -        | -        | -       |
| (4) I | Boron, tota  | l, μg/L      |               |                |          |          |         |
|       | _            | _            | _             | _              | 500      | _        | _       |
| (5)   | Cadmium, 1   | total, µg/L  |               |                |          |          |         |
|       | 1.1          | 33           | 67            | _              | _        | _        | _       |

Class 2B, 2C, and 2D cadmium standards are hardness dependent. Cadmium values shown are for a total hardness of 100 mg/L only. See part 7050.0222, subpart 4, for examples at other hardness values and equations to calculate cadmium standards for any hardness value not to exceed 400 mg/L.

| 2B,C&D<br>CS | 2B,C&D<br>MS | 2B,C&D<br>FAV | 3A/3B/3C<br>IC | 4A<br>IR | 4B<br>LS | 5<br>AN |  |
|--------------|--------------|---------------|----------------|----------|----------|---------|--|
| (6) Chromium | +3, total, μ | g/L           |                |          |          |         |  |
| 207          | 1,737        | 3,469         | _              | _        | _        | _       |  |

Class 2B, 2C, and 2D trivalent chromium standards are hardness dependent. Chromium  $\pm 3$  values shown are for a total hardness of  $\pm 100$  mg/L only. See part  $\pm 7050.0222$ , subpart 4, for examples at other hardness values and equations to calculate trivalent chromium standards for any hardness value not to exceed  $\pm 400$  mg/L.

| (7) Chromi | um +6, tota | l, μg/L |   |   |   |   |
|------------|-------------|---------|---|---|---|---|
| 11         | 16          | 32      | _ | _ | _ | _ |

(9) Copper, total, μg/L 9.8 18 35 – – – –

Class 2B, 2C, and 2D copper standards are hardness dependent. Copper values shown are for a total hardness of 100 mg/L only. See part 7050.0222, subpart 4, for examples at other hardness values and equations to calculate copper standards for any hardness value not to exceed 400 mg/L.

(10) Lead, total, μg/L

3.2 82 164 - - - -

Class 2B, 2C, and 2D lead standards are hardness dependent. Lead values shown are for a total hardness of 100 mg/L only. See part 7050.0222, subpart 4, for examples at other hardness values and equations to calculate lead standards for any hardness value not to exceed 400 mg/L.

2B.C&D 2B,C&D 2B,C&D 3A/3B/3C **4A 4B** 5 MS **FAV** AN CS IC IR LS (11) Mercury, total in water, ng/L 2,400\* 6.9 4,900\* (12) Mercury, total in edible fish tissue, mg/kg or parts per million 0.2 (13) Nickel, total, μg/L

158 1,418 2,836 - - - -

Class 2B, 2C, and 2D nickel standards are hardness dependent. Nickel values shown are for a total hardness of 100 mg/L only. See part 7050.0222, subpart 4, for examples at other hardness values and equations to calculate nickel standards for any hardness value not to exceed 400 mg/L.

(14) Selenium, total, μg/L

5.0 20 40 - - - -

| (15) Silver, | total, µg/L |     |   |   |   |   |
|--------------|-------------|-----|---|---|---|---|
| 1.0          | 2.0         | 4.1 | _ | _ | _ | _ |

Class 2B, 2C, and 2D silver MS and FAV are hardness dependent. Silver values shown are for a total hardness of 100 mg/L only. See part 7050.0222, subpart 4, for examples at other hardness values and equations to calculate silver standards for any hardness value not to exceed 400 mg/L.

|      | 2B,C&D<br>CS | 2B,C&D<br>MS | 2B,C&D<br>FAV | 3A/3B/3C<br>IC | 4A<br>IR | 4B<br>LS | 5<br>AN |
|------|--------------|--------------|---------------|----------------|----------|----------|---------|
| (16) | Thallium,    | total, μg/L  |               |                |          |          |         |
|      | 0.56         | 64           | 128           | _              | _        | _        | _       |
| (17) | Zinc, total  | l, μg/L      |               |                |          |          |         |
|      | 106          | 117          | 234           | _              | _        | _        | _       |

Class 2B, 2C, and 2D zinc standards are hardness dependent. Zinc values shown are for a total hardness of 100 mg/L only. See part 7050.0222, subpart 4, for examples at other hardness values and equations to calculate zinc standards for any hardness value not to exceed 400 mg/L.

#### C. ORGANIC POLLUTANTS OR CHARACTERISTICS

|     | 2B,C&D<br>CS                | 2B,C&D<br>MS | 2B,C&D<br>FAV | 3A/3B/3C<br>IC | 4A<br>IR | 4B<br>LS | 5<br>AN |  |  |
|-----|-----------------------------|--------------|---------------|----------------|----------|----------|---------|--|--|
| (1) | Acenaphthe                  | ene, μg/L    |               |                |          |          |         |  |  |
|     | 20                          | 56           | 112           | _              | -        | _        | _       |  |  |
| (2) | Acetochlor,                 | , μg/L       |               |                |          |          |         |  |  |
|     | 3.6                         | 86           | 173           | _              | _        | _        | _       |  |  |
| (3) | (3) Acrylonitrile (c), μg/L |              |               |                |          |          |         |  |  |
|     | 0.89                        | 1,140*       | 2,281*        | _              | -        | _        | _       |  |  |
| (4) | (4) Alachlor (c), μg/L      |              |               |                |          |          |         |  |  |

|      | 59           | 800          | 1,600         | _              | _        | _        | _       |
|------|--------------|--------------|---------------|----------------|----------|----------|---------|
| (5)  | Anthracene   | e, μg/L      |               |                |          |          |         |
|      | 0.035        | 0.32         | 0.63          | _              | _        | _        | _       |
|      | 2B,C&D<br>CS | 2B,C&D<br>MS | 2B,C&D<br>FAV | 3A/3B/3C<br>IC | 4A<br>IR | 4B<br>LS | 5<br>AN |
| (6)  | Atrazine (c  | ), μg/L      |               |                |          |          |         |
|      | 10           | 323          | 645           | _              | _        | _        | _       |
| (7)  | Benzene (c   | ), μg/L      |               |                |          |          |         |
|      | 98           | 4,487        | 8,974         | _              | _        | _        | _       |
| (8)  | Bromoform    | n, μg/L      |               |                |          |          |         |
|      | 466          | 2,900        | 5,800         | _              | _        | _        | _       |
| (9)  | Carbon tetr  | achloride (d | e), µg/L      |                |          |          |         |
|      | 5.9          | 1,750*       | 3,500*        | _              | _        | _        | _       |
| (10) | ) Chlordane  | e (c), ng/L  |               |                |          |          |         |
|      | 0.29         | 1,200*       | 2,400*        | _              | _        | _        | _       |
|      | 2B,C&D<br>CS | 2B,C&D<br>MS | 2B,C&D<br>FAV | 3A/3B/3C<br>IC | 4A<br>IR | 4B<br>LS | 5<br>AN |
| (11) | Chlorober    | zene, μg/L   | (Monochlo     | robenzene)     |          |          |         |
|      | 20           | 423          | 846           | _              | _        | _        | _       |
| (12) | ) Chlorofor  | m (c), μg/L  |               |                |          |          |         |
|      | 155          | 1,392        | 2,78          | _              | _        | _        | _       |
| (13) | ) Chlorpyri  | fos, μg/L    |               |                |          |          |         |
|      | 0.041        | 0.083        | 0.17          | _              | _        | _        | _       |

| (14) | DDT (c),     | ng/L         |               |                |          |          |         |
|------|--------------|--------------|---------------|----------------|----------|----------|---------|
|      | 1.7          | 550*         | 1,100*        | _              | _        | _        | _       |
| (15) | 1,2-Dichlo   | oroethane (  | e), µg/L      |                |          |          |         |
|      | 190          | 45,050*      | 90,100*       | _              | _        | _        | _       |
|      | 2B,C&D<br>CS | 2B,C&D<br>MS | 2B,C&D<br>FAV | 3A/3B/3C<br>IC | 4A<br>IR | 4B<br>LS | 5<br>AN |
| (16) | Dieldrin (   | c), ng/L     |               |                |          |          |         |
|      | 0.026        | 1,300*       | 2,500*        | _              | _        | _        | _       |
| (17) | Di-2-ethy    | lhexyl phth  | alate (c), με | g/L            |          |          |         |
|      | 2.1          | _*           | _*            | _              | _        | _        | _       |
| (18) | Di-n-Octy    | l phthalate, | μg/L          |                |          |          |         |
|      | 30           | 825          | 1,650         | _              | _        | _        | _       |
| (19) | Endosulfa    | ın, μg/L     |               |                |          |          |         |
|      | 0.031        | 0.28         | 0.56          | _              | _        | _        | _       |
| (20) | Endrin, με   | g/L          |               |                |          |          |         |
|      | 0.016        | 0.090        | 0.18          | _              | _        | _        | _       |
|      | 2B,C&D<br>CS | 2B,C&D<br>MS | 2B,C&D<br>FAV | 3A/3B/3C<br>IC | 4A<br>IR | 4B<br>LS | 5<br>AN |
| (21) | Ethylbenz    | zene (c), μg | /L            |                |          |          |         |
|      | 68           | 1,859        | 3,717         | _              | _        | _        | _       |
| (22) | Fluoranth    | ene, μg/L    |               |                |          |          |         |
|      | 1.9          | 3.5          | 6.9           | _              | _        | _        | _       |
| (23) | Heptachlo    | or (c), ng/L |               |                |          |          |         |

|      | 0.39         | 260*          | 520*          | _              | _        | _        | _       |
|------|--------------|---------------|---------------|----------------|----------|----------|---------|
| (24) | Heptachlo    | r epoxide (   | c), ng/L      |                |          |          |         |
|      | 0.48         | 270*          | 530*          | _              | _        | _        | _       |
| (25) | Hexachlor    | robenzene (   | c), ng/L      |                |          |          |         |
|      | 0.24         | _*            | _*            | _              | _        | _        | _       |
|      | 2B,C&D<br>CS | 2B,C&D<br>MS  | 2B,C&D<br>FAV | 3A/3B/3C<br>IC | 4A<br>IR | 4B<br>LS | 5<br>AN |
| (26) | Lindane (d   | c), μg/L (He  | exachlorocy   | clohexane, gam | ma-)     |          |         |
|      | 0.036        | 4.4*          | 8.8*          | _              | _        | _        | _       |
| (27) | Methylene    | e chloride (d | c), µg/L (Di  | chloromethane) |          |          |         |
|      | 1,940        | 13,875        | 27,749        | _              | _        | _        | _       |
| (28) | Metolachl    | or            |               |                |          |          |         |
|      | 23           | 271           | 543           | _              | -        | -        | _       |
| (29) | Naphthale    | ne, μg/L      |               |                |          |          |         |
|      | 81           | 409           | 818           | _              | _        | _        | _       |
| (30) | Parathion,   | μg/L          |               |                |          |          |         |
|      | 0.013        | 0.07          | 0.13          | _              | _        | _        | _       |
|      | 2B,C&D<br>CS | 2B,C&D<br>MS  | 2B,C&D<br>FAV | 3A/3B/3C<br>IC | 4A<br>IR | 4B<br>LS | 5<br>AN |
| (31) | Pentachlor   | rophenol, μ   | g/L           |                |          |          |         |
|      | 5.5          | 15            | 30            | _              | _        | _        | _       |

Class 2B, 2C, and 2D standards are pH dependent, except that the CS will not exceed  $5.5\,\mu g/L$ . Pentachlorophenol values shown are for a pH of  $7.5\,o$ nly. See part 7050.0222, subpart

4, for examples at other pH values and equations to calculate pentachlorophenol standards

| 120          | 6,988   | 13,976  | _   | _  | _   | _                       |
|--------------|---|---|---|--|---|-------------------------|
|              | ( 000   | 12 076  |   |  |   |                         |
| 1,1,2-Tricl  | hloroethylei  | ne (c), μg/L  | ,   |  |   |                         |
| 329          | 2,957   | 5,913   | _   | _  | -   | _                       |
| 1,1,1-Tricl  | hloroethane   | , μg/L  |   |  |   |                         |
| 1.3          | 730*  | 1,500*  | _   | -  | -   | _                       |
| Toxaphene    | e (c), ng/L   |   |   |  |   |                         |
| 253          | 1,352   | 2,703   | _   | -  | -   | _                       |
| Toluene, μ   | ıg/L  |   |   |  |   |                         |
| 8.9          | 428   | 857   | _   | -  | -   | _                       |
| Tetrachlor   | oethylene (   | c), µg/L  |   |  |   |                         |
| 2B,C&D<br>CS | 2B,C&D<br>MS  | 2B,C&D<br>FAV   | 3A/3B/3C<br>IC  | 4A<br>IR   | 4B<br>LS  | 5<br>AN                 |
|              |   |   | _   | _  | _   | _                       |
|              |   |   | /L  |  |   |                         |
|              |   | •   | —<br>/т   | _  | _   | _                       |
| -            | _   |   | g/L (PCBs, total)   |  |   |                         |
|              |   |   | -<br>r/L (DCDa_tata1)   | _  | _   | _                       |
|              |   | 4 429   |   |  |   |                         |
|              |   | 64  | _   | _  | _   | _                       |
|              |   |   |   |  |   |                         |
| • •          |   |   |   |  |   |                         |
|              | Phenanthr 3.6 Phenol, μg 123 Polychlori 0.029 1,1,2,2-Te 13 2B,C&D CS Tetrachlor 8.9 Toluene, μ 253 Toxaphene 1.3 1,1,1-Tricl 329 | Phenol, μg/L  123 2,214  Polychlorinated bipher 0.029 1,000* 1,1,2,2-Tetrachloroeth 13 1,127  2B,C&D 2B,C&D CS MS  Tetrachloroethylene ( 8.9 428  Toluene, μg/L 253 1,352  Toxaphene (c), ng/L 1.3 730* 1,1,1-Trichloroethane 329 2,957 | Phenanthrene, μg/L  3.6 32 64  Phenol, μg/L  123 2,214 4,428  Polychlorinated biphenyls (c), ng 0.029 1,000* 2,000*  1,1,2,2-Tetrachloroethane (c), μg 13 1,127 2,253  2B,C&D 2B,C&D 2B,C&D CS MS FAV  Tetrachloroethylene (c), μg/L  8.9 428 857  Toluene, μg/L  253 1,352 2,703  Toxaphene (c), ng/L  1.3 730* 1,500*  1,1,1-Trichloroethane, μg/L  329 2,957 5,913 | Phenanthrene, μg/L  3.6 32 64 - Phenol, μg/L  123 2,214 4,428 - Polychlorinated biphenyls (c), ng/L (PCBs, total)  0.029 1,000* 2,000* - 1,1,2,2-Tetrachloroethane (c), μg/L  13 1,127 2,253 -  2B,C&D 2B,C&D 2B,C&D 3A/3B/3C CS MS FAV IC  Tetrachloroethylene (c), μg/L  8.9 428 857 - Toluene, μg/L  253 1,352 2,703 - Toxaphene (c), ng/L  1.3 730* 1,500* - 1,1,1-Trichloroethane, μg/L | Phenanthrene, μg/L  3.6 32 64  Phenol, μg/L  123 2,214 4,428  Polychlorinated biphenyls (c), ng/L (PCBs, total)  0.029 1,000* 2,000*  1,1,2,2-Tetrachloroethane (c), μg/L  13 1,127 2,253  2B,C&D 2B,C&D 2B,C&D 3A/3B/3C 4A CS MS FAV IC IR  Tetrachloroethylene (c), μg/L  8.9 428 857  Toluene, μg/L  253 1,352 2,703  Toxaphene (c), ng/L  1.3 730* 1,500*  1,1,1-Trichloroethane, μg/L  329 2,957 5,913 | Phenanthrene, μg/L  3.6 |

| (41) 2, | 4,6-Trichl | lorophenol,  | μg/L  |   |   |  |
|---------|------------|--------------|-------|---|---|--|
| 2.0     | 0          | 102          | 203   | _ | _ |  |
| (42) Vi | inyl chlor | ide (c), μg/ | L     |   |   |  |
| 9.2     | 2 -        | _*           | _*    | _ | _ |  |
| (43) X  | ylenes, to | tal, μg/L    |       |   |   |  |
| 16      | 56         | 1 407        | 2 814 | _ | _ |  |

- D. *Escherichia (E.) coli* bacteria shall not exceed 126 organisms per 100 milliliters as a geometric mean of not less than five samples representative of conditions within any calendar month, nor shall more than ten percent of all samples taken during any calendar month individually exceed 1,260 organisms per 100 milliliters. The standard applies only between April 1 and October 31.
  - E. For pH, maintain background. See part 7050.0222, subpart 6.
- F. For radioactive materials, see parts 7050.0222, subpart 4; and 7050.0224, subparts 2 and 3.
  - G. Temperature must not exceed:
- (1) Class 2B standard: five degrees Fahrenheit above natural in streams and three degrees Fahrenheit 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 Fahrenheit;
- (2) Class 2C standard: five degrees Fahrenheit above natural in streams and three degrees Fahrenheit 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 Fahrenheit; and
- (3) Class 2D standard: maintain background as defined in part 7050.0222, subpart 6.
  - Subp. 6. [Repealed, 24 SR 1105]
  - Subp. 6a. Limited resource value waters and associated use classes.

A. WATER QUALITY STANDARDS APPLICABLE TO USE CLASSES 3C, 4A, 4B, 5, AND 7 SURFACE WATERS

| 7<br>LIMITED<br>RESOURCE<br>VALUE  | IC                       | 4A<br>IR       | 4B<br>LS | 5<br>AN |  |
|------------------------------------|--------------------------|----------------|----------|---------|--|
| (1) Bicarbonates (HCO <sub>3</sub> | ), meq/L                 |                |          |         |  |
| _                                  | _                        | 5              | _        | _       |  |
| (2) Boron, μg/L                    |                          |                |          |         |  |
| _                                  | _                        | 500            | _        | _       |  |
| (3) Chloride, mg/L                 |                          |                |          |         |  |
| _                                  | 250                      | _              | _        | _       |  |
| (4) Escherichia (E.) coli          | bacteria, or             | ganisms/100 mI | J        |         |  |
| See item C                         | _                        | _              | _        | _       |  |
| (5) Hardness, Ca+Mg as             | s CaCO <sub>3</sub> , mg | g/L            |          |         |  |
| _                                  | 500                      | _              | _        | -       |  |
| 7<br>LIMITED<br>RESOURCE<br>VALUE  | 3C<br>IC                 | 4A<br>IR       | 4B<br>LS | 5<br>AN |  |
| (6) Hydrogen sulfide, m            | g/L                      |                |          |         |  |
| _                                  | _                        | -              | _        | 0.02    |  |
| (7) Oxygen, dissolved, 1           | mg/L                     |                |          |         |  |
| See item C                         | _                        | _              | _        | _       |  |
| (8) pH minimum, su                 |                          |                |          |         |  |
| 6.0                                | 6.0                      | 6.0            | 6.0      | 6.0     |  |
| (9) pH maximum, su                 |                          |                |          |         |  |

B. *Escherichia (E.) coli* bacteria shall not exceed 630 organisms per 100 milliliters as a geometric mean of not less than five samples representative of conditions within any calendar month, nor shall more than ten percent of all samples taken during any calendar month individually exceed 1,260 organisms per 100 milliliters. The standard applies only between May 1 and October 31.

- C. The level of dissolved oxygen shall be maintained at concentrations that will avoid odors or putrid conditions in the receiving water or at concentrations at not less than one milligram per liter (daily average) provided that measurable concentrations are present at all times.
  - D. For radioactive materials, see part 7050.0224, subparts 2 and 3.
- E. Toxic pollutants shall not be allowed in such quantities or concentrations that will impair the specified uses.

# Subp. 7. Site-specific modifications of standards.

- A. The standards in this part and in parts 7050.0221 to 7050.0227 are subject to review and modification as applied to a specific surface water body, reach, or segment. If site-specific information is available that shows that a site-specific modification is more appropriate than the statewide or ecoregion standard for a particular water body, reach, or segment, the site-specific information shall be applied.
- B. The information supporting a site-specific modification can be provided by the commissioner or by any person outside the agency. The commissioner shall evaluate all relevant data in support of a modified standard and determine whether a change in the standard for a specific water body or reach is justified.
- C. Any effluent limit determined to be necessary based on a modified standard shall only be required after the discharger has been given notice of the specific proposed effluent limits and an opportunity to request a hearing as provided in part 7000.1800.

Statutory Authority: MS s 115.03; 115.44

**History:** 9 SR 913; 12 SR 1810; 15 SR 1057; 18 SR 2195; 24 SR 1105; 24 SR 1133; 32 SR 1699

Published Electronically: July 23, 2013