# STATE OF COLORADO

Bill Ritter, Jr., Governor
James B. Martin, Executive Director

Dedicated to protecting and improving the health and environment of the people of Colorado

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Colorado Department
of Public Health
and Environment

NOTICE OF PUBLIC RULEMAKING HEARING
BEFORE THE
COLORADO WATER QUALITY CONTROL COMMISSION

SUBJECT:

For consideration of revisions to statewide organic chemicals standards in the Basic Standards and Methodologies for Surface Water, Regulation #31 (5 CCR 1002-31) and in the Basic Standards for Ground Water, Regulation #41 (5 CCR 1002-41), as well as other proposed revisions to Regulation #41. The revisions to Regulation #31 proposed by the Water Quality Control Division (the Division) as staff to the Commission, along with a proposed Statement of Basis, Specific Statutory Authority, and Purpose, are attached to this Notice as Exhibit 1. The revisions to Regulation #41 proposed by the Division as staff to the Commission, along with a proposed Statement of Basis, Specific Statutory Authority, and Purpose, are attached to this Notice as Exhibit 2. The revisions to Regulation #41 proposed by the Centennial Water and Sanitation District, Town of Castle Rock, Castle Pines Metropolitan District, Consolidated Mutual Water Company and Rangeview Metropolitan District, along with a proposed Statement of Basis, Specific Statutory Authority, and Purpose, are attached to this Notice as Exhibit 3. In these attachments, proposed new language is shown with double-underlining and proposed deletions are shown with ~~strikeouts.~~ Any alternative proposals related to the revisions proposed in Exhibits 1 through 3, and developed in response to those proposed revisions, will also be considered.

HEARING SCHEDULE:

DATE: Monday, December 10, 2007
TIME: 1:00 p.m.
PLACE: Florence Sabin Conference Room
Department of Public Health and Environment
4300 Cherry Creek Drive South
Denver, Colorado

PUBLIC PARTICIPATION ENCOURAGED:

The Commission encourages all interested persons to provide their opinions or recommendations regarding the matters to be addressed in this rulemaking hearing, either orally at the hearing or in writing prior to or at the hearing. Although oral testimony from those with party status (see below) and other interested persons will be received at the hearing, the time available for such oral testimony may be limited. Written submissions prior to the hearing are encouraged, so that they can be distributed to the Commission for review prior to the hearing. Oral testimony at the hearing should primarily summarize written material previously submitted. The hearing will emphasize Commission questioning of parties and other interested persons about their written prehearing submittals. Introduction of written material at the hearing by those with party status or mailing list status (see below) generally will not be permitted.

PARTY STATUS/MAILING LIST STATUS:

Participation as a "party" to this hearing or acquisition of "mailing list status," will require compliance with section 21.4(D) of the Procedural Rules, Regulation #21 (5 CCR 1002-21). Mailing list status will allow receipt of all party documents (except individual exhibits more than five pages in length). It is not necessary to acquire party status or mailing list status in order to testify or comment. **For each request for party status or mailing list status, please provide the organization's name, a contact person, mailing address, phone number, fax number and email address if available.** Written party status or mailing list status requests are due in the Commission Office on or before:

DATE: Tuesday, September 25, 2007
TIME: 5:00 p.m.

Party status or mailing list status requests may be submitted by a fax to 303-691-7702 by this deadline, or by email to cdphe.wqcc@state.co.us, provided that the original and three copies are mailed by this same date.

PREHEARING STATEMENTS:

**PLEASE NOTE** that for this hearing two separate deadlines for prehearing statements are established: (1) An original and 13 copies of an initial prehearing statement from **the Division as proponents of revisions proposed in Exhibits 1 and 2 attached to this notice**, and **the Centennial Water and Sanitation District, Town of Castle Rock, Castle Pines Metropolitan District, Consolidated Mutual Water Company, and Rangeview Metropolitan District as proponents of revisions proposed in Exhibit 3 attached to this notice,** including written testimony and exhibits providing the basis for the proposals, must be received in the Commission Office no later than **October 4, 2007**; and (2) An original and 13 copies of a prehearing statement, including any exhibits, written testimony, and alternative proposals of **anyone seeking party status and intending to respond to the Division proposals** must be received in the Commission Office no later than **October 30, 2007**. **Those requesting mailing list status shall provide written testimony, if any testimony is to be offered for the hearing, by this same date.**

For each deadline, the required number of hard copies of documents must be received in the Commission office by the specified deadline. These requirements are not satisfied by electronic transmission of a facsimile copy or copies. However, **parties are also strongly encouraged to email a copy of their written documents to the Commission Office**, so that materials received can be posted on the Commission's web site. (Please email to cdphe.wqcc@state.co.us.) In addition, copies of these documents must be mailed or hand-delivered by the specified dates to all persons requesting party status or mailing list status, and to the Attorney General's Office representatives for the Commission and Division, in accordance with a list provided by the Commission Office following the party status/mailing list status deadline.

Also **note** that the Commission has prepared a document entitled **Information for Parties to Water Quality Control Commission Rulemaking Hearings.** A copy of this document will be mailed to all persons requesting party status or mailing list status. It is also posted on the Commission's web site noted above, under "General Information – Public Participation in Commission Proceedings". Following the suggestions set forth in this document will enhance the effectiveness of parties' input for this proceeding. **Please note the new request that all parties submit their hard copies of all hearing documents on three-hole punch paper.**

PREHEARING CONFERENCE:

DATE: Wednesday, November 7, 2007
TIME: 2:00 p.m.
PLACE: Board Room
Department of Public Health and Environment
4300 Cherry Creek Drive South
Denver, Colorado

Attendance at the prehearing conference is mandatory for all persons requesting party status.

REBUTTAL STATEMENTS:

**Written rebuttal statements responding to the prehearing statements due on October 30, 2007may be submitted**. Any such rebuttal statements must be received in the Commission Office by **November 28, 2007**. An original and 13 copies of written rebuttal statements must be received in the Commission Office by this deadline. Please also email a copy to cdphe.wqcc@state.co.us. This requirement is not satisfied by electronic transmission of a facsimile copy or copies. In addition, copies of these documents must be mailed or hand-delivered by that date to all those requesting party status or mailing list status, and to the Attorney General's Office representatives for the Commission and Division. No other documentation, exhibits, or other materials will be accepted following this deadline except for good cause shown.

SPECIFIC STATUTORY AUTHORITY:

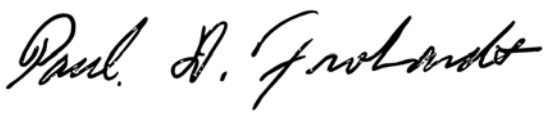
The provisions of sections 25-8-202(1)(a), (b) and (2); 25-8-203; 25-8-204; and 25-8-402; C.R.S. provide the specific statutory authority for consideration of the regulatory amendments proposed by this notice. Should the Commission adopt the regulatory language as proposed in this notice or alternative amendments, it will also adopt, in compliance with section 24-4-103(4) C.R.S., an appropriate Statement of Basis, Specific Statutory Authority, and Purpose.

NOTIFICATION OF POTENTIAL MATERIAL INJURY TO WATER RIGHTS:

In accordance with section 25-8-104(2)(d), C.R.S. any person who believes that the actions proposed in this notice have the potential to cause material injury to his or her water rights is requested to so indicate in the party status request submitted. In order for this potential to be considered fully by the Commission and the other agencies listed in the statute, persons must fully explain the basis for their claim in their prehearing statement which is due in the Commission Office on the date specified above. This explanation should identify and describe the water right(s), and explain how and to what degree the material injury will be incurred.

Dated this 21st day of August 2007 at Denver, Colorado.

WATER QUALITY CONTROL COMMISSION



Paul D. Frohardt, Administrator

# EXHIBIT 1

# WATER QUALITY CONTROL DIVISION PROPOSAL

# COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT
# WATER QUALITY CONTROL COMMISSION

## REGULATION NO. 31

## THE BASIC STANDARDS AND METHODOLOGIES FOR SURFACE WATER (5 CCR 1002-31)

### 31.11 BASIC STANDARDS APPLICABLE TO SURFACE WATERS OF THE STATE

. . .

(3) The interim organic pollutant standards contained in the following Basic Standards for Organic Chemicals Table are applicable to all surface waters of the state for which the corresponding use classifications have been adopted, unless alternative site-specific standards have been adopted pursuant to sub-section (4) below.

BASIC STANDARDS FOR ORGANIC CHEMICALS
(in micrograms per liter)

| Parameter | | Human Health Based[1] | | | Aquatic Life Based[4] | |
|---|---|---|---|---|---|---|
| | CAS No. | Water Supply[2] | Water+Fish[3] | Fish Ingestion[8] | Acute | Chronic |
| Acenaphthene | 83-32-9 | 420 | 420 | ---[10] | 1,700 | 520 |
| Acetochlor | 34256-82-1 | 210 | --- | --- | --- | --- |
| Acrolein | 107-02-8 | 3.5 | 3.5 | 9.3 | 68 | 21 |
| Acrylamide[C] | 79-06-1 | 0.0078 | --- | --- | --- | --- |
| Acrylonitrile[C] | 107-13-1 | 0.065 | 0.051 | 0.25 | 7,500 | 2,600 |

| BASIC STANDARDS FOR ORGANIC CHEMICALS (in micrograms per liter) | | | | | | |
|---|---|---|---|---|---|---|
| Parameter | | Human Health Based[1] | | | Aquatic Life Based[4] | |
| | CAS No. | Water Supply[2] | Water+Fish[3] | Fish Ingestion[8] | Acute | Chronic |
| Alachlor | 15972-60-8 | 2[M] | 2 | 140 | --- | --- |
| Aldicarb | 116-06-3 | 7[M] | --- | --- | --- | --- |
| Aldicarb Sulfone | 1646-88-4 | 7[M] | --- | --- | --- | --- |
| Aldicarb Sulfoxide | 1646-87-3 | 7[M] | --- | --- | --- | --- |
| Aldrin[C] | 309-00-2 | 0.0021 | $4.9X10^{-5}$ | $5.0X10^{-5}$ | 1.5 | --- |
| Aniline[C] | 62-53-3 | 6.1 | --- | --- | --- | --- |
| Anthracene (PAH) | 120-12-7 | 2,100 | 2,100 | 40,000 | --- | --- |
| Aramite[C] | 140-57-8 | 1.4 | --- | --- | --- | --- |
| Atrazine | 1912-24-9 | 3[M] | --- | --- | --- | --- |
| Azobenzene[C] | 103-33-3 | 0.32 | --- | --- | --- | --- |
| Benzene[C, 12] | 71-43-2 | 2.3 to 5[M] | 2.2 | 51 | 5,300 | --- |
| Benzidine[C] | 92-87-5 | 0.00015 | $8.6X10^{-5}$ | 0.00020 | 2,500 | --- |
| Benzo(a)anthracene (PAH)[C] | 56-55-3 | 0.0048 | 0.0038 | 0.018 | --- | --- |
| Benzo(a)pyrene (PAH)[C, 12] | 50-32-8 | 0.0048 to 0.2[M] | 0.0038 | 0.018 | --- | --- |
| Benzo(b)fluoranthene (PAH)[C] | 205-99-2 | 0.0048 | 0.0038 | 0.018 | --- | --- |
| Benzo(k)fluoranthene (PAH)[C] | 207-08-9 | 0.0048 | 0.0038 | 0.018 | --- | --- |
| Benzo(g,h,i)perylene (PAH) | 191-24-2 | --- | 0.0038 | 0.018 | --- | --- |
| Benzotrichloride[C] | 98-07-7 | 0.0027 | --- | --- | --- | --- |

| BASIC STANDARDS FOR ORGANIC CHEMICALS (in micrograms per liter) | | | | | | |
|---|---|---|---|---|---|---|
| Parameter | | Human Health Based[1] | | | Aquatic Life Based[4] | |
| | CAS No. | Water Supply[2] | Water+Fish[3] | Fish Ingestion[8] | Acute | Chronic |
| Benzyl chloride[C] | 100-44-7 | 0.21 | --- | --- | --- | --- |
| Bis(chloromethyl)ether (BCME)[C] | 542-88-1 | 0.00016 | 0.0001 | 0.0003 | --- | --- |
| Bromate[C] | 15541-45-4 | 0.050 | --- | --- | --- | --- |
| Bromodichloromethane (HM)[C] | 75-27-4 | --- | 0.55 | 17 | 11,000 | --- |
| Bromoform (HM)[C] | 75-25-2 | --- | 4.3 | 140 | --- | --- |
| Butyl benzyl phthalate | 85-68-7 | 1,400 | 1,400 | 1,900 | --- | --- |
| Carbofuran[C, 12] | 1563-66-2 | 35 to 40[M] | --- | --- | --- | --- |
| Carbon tetrachloride[C, 12] | 56-23-5 | 0.27 to 5[M] | 0.23 | 1.6 | 35,200 | --- |
| Chlordane[C, 12] | 57-74-9 | 0.10 to 2[M] | 0.00080 | 0.00081 | 1.2 | 0.0043 |
| Chlorethyl ether (BIS-2)[C] | 111-44-4 | 0.032 | 0.030 | 0.53 | --- | --- |
| Chlorobenzene[11] | 108-90-7 | 100[M] | 100 | 1,600 | --- | --- |
| Chlorodibromomethane (HM)[11] | 124-48-1 | --- | 54.0 | 1,700 | --- | --- |
| Chloroform (HM)[C] | 67-66-3 | --- | 3.4 | 110 | 28,900 | 1,240 |
| Chloroisopropyl ether(BIS-2) | 108-60-1 | 280 | 280 | 65,000 | --- | --- |
| 4-Chloro-3-methylphenol | 59-50-7 | 210 | --- | --- | 30 | --- |
| Chloronapthalene | 91-58-7 | 560 | 560 | ---[10] | 2,300 | 620 |
| Chlorophenol,2- | 95-57-8 | 35 | 35 | 150 | 4,380 | 2,000 |

| BASIC STANDARDS FOR ORGANIC CHEMICALS (in micrograms per liter) | | | | | | |
|---|---|---|---|---|---|---|
| Parameter | | Human Health Based[1] | | | Aquatic Life Based[4] | |
| | CAS No. | Water Supply[2] | Water+Fish[3] | Fish Ingestion[8] | Acute | Chronic |
| Chlorphrifos | 2921-88-2 | 21 | --- | --- | 0.083 | 0.041 |
| Chrysene (PAH)[C] | 218-01-9 | 0.0048 | 0.0038 | 0.018 | --- | --- |
| DDD[C] | 72-54-8 | 0.15 | 0.00031 | 0.00031 | 0.6 | --- |
| DDE[C] | 72-55-9 | 0.1 | 0.00022 | 0.00022 | 1,050 | --- |
| DDT[C] | 50-29-3 | 0.1 | 0.00022 | 0.00022 | 0.55 | 0.001 |
| Dalapon | 75-99-0 | 200[M] | --- | --- | --- | --- |
| Demeton | 8065-48-3 | --- | --- | --- | --- | 0.1 |
| Diazinon | 333-41-5 | --- | --- | --- | 0.17 | 0.17 |
| Dibenzo(a,h)anthracene (PAH)[C] | 53-70-3 | 0.0048 | 0.0038 | 0.018 | --- | --- |
| 1,2 Dibromo-3-Chloropropane (DBCP)[C] | 96-12-8 | 0.2[M] | --- | --- | --- | --- |
| Dicamba | 1918-00-9 | 210 | 170 | 860 | --- | --- |
| Dichloroacetic acid[C] | 79-43-6 | 0.7 | --- | --- | --- | --- |
| Dichlorobenzene 1,2[11] | 95-50-1 | 600[M] | 420 | 1,300 | --- | --- |
| Dichlorobenzene 1,3 | 541-73-1 | 94 | 94 | 960 | --- | --- |
| Dichlorobenzene 1,4[11] | 106-46-7 | 75[M] | 63 | 190 | --- | --- |
| Dichlorobenzidine[C] | 91-94-1 | 0.078 | 0.021 | 0.028 | --- | --- |
| Dichloroethane 1,2[C, 12] | 107-06-2 | 0.38 to 5[M] | 0.38 | 37 | 118,000 | 20,000 |
| Dichloroethylene 1,1 | 75-35-4 | 7[M] | 7 | 3,600 | --- | --- |

| BASIC STANDARDS FOR ORGANIC CHEMICALS (in micrograms per liter) | | | | | | |
|---|---|---|---|---|---|---|
| Parameter | | Human Health Based[1] | | | Aquatic Life Based[4] | |
| | CAS No. | Water Supply[2] | Water+Fish[3] | Fish Ingestion[8] | Acute | Chronic |
| Dichloroethylene 1,2-cis | 156-59-2 | 70[M] | --- | --- | --- | --- |
| Dichloroethylene 1,2-trans[11] | 156-60-5 | 100[M] | 100 | 10,000 | --- | --- |
| Dichlorophenol 2,4 | 120-83-2 | 21 | 21 | 290 | 2,020 | 365 |
| Dichlorophenoxyacetic acid (2,4-D) | 94-75-7 | 70[M] | --- | --- | --- | --- |
| Dichloropropane 1,2[C, 12] | 78-87-5 | 0.52 to 5[M] | 0.50 | 14 | 23,000 | 5,700 |
| Dichloropropylene 1,3[C] | 542-75-6 | 0.35 | 0.34 | 21 | 6,060 | 244 |
| Dichlorvos[C] | 62-73-7 | 0.12 | --- | --- | --- | --- |
| Dieldrin[C] | 60-57-1 | 0.002 | $5.2X10^{-5}$ | $5.4X10^{-5}$ | 0.24 | 0.056 |
| Diethyl phthalate | 84-66-2 | 5,600 | 5,600 | 44,000 | --- | --- |
| Diisopropylmethylphosphonate (DIMP) | 1445-75-6 | 8 | --- | --- | --- | --- |
| Dimethylphenol 2,4 | 105-67-9 | 140 | 140 | 850 | 2,120 | --- |
| Dimethyl phthalate | 131-11-3 | 70,000 | 70,000 | 1,100,000 | --- | --- |
| Di-n-butyl phthalate | 84-74-2 | 700 | 700 | 4,500 | --- | --- |
| Dinitrophenol 2,4 | 51-28-5 | 14 | 14 | 5,300 | --- | --- |
| Dinitro-o-cresol 4,6 | 534-52-1 | 0.27 | 1.3 | 28 | --- | --- |
| Dinitrotoluene 2,4[C] | 121-14-2 | 0.11 | 0.11 | 3.4 | --- | --- |
| Dinitrotoluene 2,6[C] | 606-20-2 | --- | --- | --- | 330 | 230 |
| Dinoseb | 88-85-7 | 7[M] | --- | --- | --- | --- |

| BASIC STANDARDS FOR ORGANIC CHEMICALS (in micrograms per liter) | | | | | | |
|---|---|---|---|---|---|---|
| Parameter | | Human Health Based[1] | | | Aquatic Life Based[4] | |
| | CAS No. | Water Supply[2] | Water+Fish[3] | Fish Ingestion[8] | Acute | Chronic |
| Dioxane 1,4- | 123-91-1 | 6.1(effective through 3/21/2010) | --- | --- | --- | --- |
| Dioxane 1,4- | 123-91-1 | 3.2(effective 3/22/2010) | --- | --- | --- | --- |
| Dioxin (2,3,7,8 TCDD)[C, 12] | 1746-01-6 | $2.2x10^{-7}$ to $3.0x10^{-5}$, M | $5.0X10^{-9}$ | $5.1X10^{-9}$ | 0.01 | 0.00001 |
| Diphenylhydrazine 1,2[C] | 122-66-7 | 0.044 | 0.036 | 0.20 | 270 | --- |
| Di(2-ethylhexyl)adipate | 103-23-1 | 400[M] | --- | --- | --- | --- |
| Diquat[12] | 85-00-7 | 15 to 20[M] | --- | --- | --- | --- |
| Endosulfan | 115-29-7 | 42 | ---[10] | --- | 0.11 | 0.056 |
| Endosulfan, alpha | 959-98-8 | 42 | ---[10] | --- | 0.11 | 0.056 |
| Endosulfan, beta | 33213-65-9 | 42 | ---[10] | --- | 0.11 | 0.056 |
| Endosulfan sulfate | 1031-07-8 | 42 | ---[10] | --- | 0.11 | 0.056 |
| Endothall | 145-73-3 | 100[M] | --- | --- | --- | --- |
| Endrin | 72-20-8 | 2[M] | ----[10] | --- | 0.086 | 0.036 |
| Endrin aldehyde | 7421-93-4 | 2.1 | 0.29 | 0.30 | --- | --- |
| Epichlorohydrin[C] | 106-89-8 | 3.5 | --- | --- | --- | --- |
| Ethylbenzene[11] | 100-41-4 | 700[M] | 530 | 2,100 | 32,000 | --- |
| Ethylene dibromide[C, 12] | 106-93-4 | 0.02~~0.00041~~ to 0.05[M] | --- | --- | --- | --- |

| BASIC STANDARDS FOR ORGANIC CHEMICALS (in micrograms per liter) | | | | | | |
|---|---|---|---|---|---|---|
| Parameter | | Human Health Based[1] | | | Aquatic Life Based[4] | |
| | CAS No. | Water Supply[2] | Water+Fish[3] | Fish Ingestion[8] | Acute | Chronic |
| Ethylhexyl phthalate (BIS-2)[C, 12](DEHP) | 117-81-7 | 2.5 to 6[M] | 1.2 | 2.2 | --- | --- |
| Fluoranthene (PAH) | 206-44-0 | 280 | 130 | 140 | 3,980 | --- |
| Fluorene (PAH) | 86-73-7 | 280 | 1,100 | 5,300 | --- | --- |
| Folpet[C] | 133-07-3 | 10 | --- | --- | --- | --- |
| Furmecyclox[C] | 60568-05-0 | 1.2 | --- | --- | --- | --- |
| Glyphosate | 1071-83-6 | 700[M] | --- | --- | --- | --- |
| Guthion | 86-50-0 | --- | --- | --- | --- | 0.01 |
| Heptachlor[C, 12] | 76-44-8 | 0.008 to 0.4[M] | $7.8X10^{-5}$ | $7.9X10^{-5}$ | 0.52 | 0.0038 |
| Heptachlor epoxide[C, 12] | 1024-57-3 | 0.004 to 0.2[M] | $3.9X10^{-5}$ | $3.9X10^{-5}$ | 0.52 | 0.0038 |
| Hexachlorobenzene[C, 12] | 118-74-1 | 0.022 to 1.0[M] | 0.00028 | 0.00029 | --- | --- |
| Hexachlorobutadiene | 87-68-3 | 0.45 | 0.44 | ---[10] | 90 | 9.3 |
| Hexachlorocyclohexane, Alpha[C] | 319-84-6 | 0.0056 | 0.0026 | 0.0049 | --- | --- |
| Hexachlorocyclohexane, Beta | 319-85-7 | 0.019 | 0.0091 | 0.017 | --- | --- |
| Hexachlorocyclohexane, Gamma (Lindane) | 58-89-9 | 0.2[M] | 0.2 | ---[10] | 0.95 | 0.08 |
| Hexachlorocyclohexane, Technical[C] | 608-73-1 | --- | 0.012 | 0.041 | 100 | --- |
| Hexachlorocyclopentadiene[11, 12] (HCCPD) | 77-47-4 | 42 to 50[M] | 40 | ---[10] | 7 | 5 |

| BASIC STANDARDS FOR ORGANIC CHEMICALS (in micrograms per liter) | | | | | | |
|---|---|---|---|---|---|---|
| Parameter | | Human Health Based[1] | | | Aquatic Life Based[4] | |
| | CAS No. | Water Supply[2] | Water+Fish[3] | Fish Ingestion[8] | Acute | Chronic |
| Hexachlorodibenzo-p-dioxin (1,2,3,7,8,9-hcdd)[C] | 19408-74-3 | 5.60E-06 | --- | --- | --- | --- |
| Hexachloroethane[11] | 67-72-1 | 0.7 | 0.4 | 0.92 | 980 | 540 |
| Hydrazine/Hydrazine sulfate[C] | 302-01-2 | 0.012 | --- | --- | --- | --- |
| Indeno(1,2,3-cd)pyrene (PAH)[C] | 193-39-5 | 0.0048 | 0.0038 | 0.018 | --- | --- |
| Isophorone[11] | 78-59-1 | 140 | 130 | 3,600 | --- | --- |
| Malathion | 121-75-5 | 140 | --- | --- | --- | 0.1 |
| Methoxychlor[12] | 72-43-5 | 35 to 40[M] | ---[10] | --- | --- | 0.03 |
| Methyl bromide (HM) | 74-83-9 | --- | 9.8 | 1,500 | --- | --- |
| Methyl chloride (HM)[C] | 74-87-3 | --- | 5.6 | 180 | --- | --- |
| 4,4-Methylene bis (N,N'-dimethyl)aniline[C] | 101-61-1 | 0.76 | --- | --- | --- | --- |
| Methylene chloride[C, 12] | 75-09-2 | 4.7 to 5[M] | 4.6 | 590 | --- | --- |
| Metribuzin | 21087-64-9 | 180 | 160 | 1,700 | --- | --- |
| Mirex | 2385-85-5 | 1.4 | --- | --- | --- | 0.001 |
| Naphthalene (PAH) | 91-20-3 | 140 | 140 | ---[10] | 2,300 | 620 |
| Nitrobenzene | 98-95-3 | 3.5 | 3.5 | 690 | 27,000 | --- |
| Nitrophenol 4 | 100-02-7 | 56 | 56 | 9,700 | --- | --- |
| Nitrosodibutylamine N[C] | 924-16-3 | 0.0065 | 0.0043 | 0.012 | --- | --- |
| Nitrosodiethylamine N[C] | 55-18-5 | 0.00023 | 0.00023 | 0.0083 | --- | --- |

| BASIC STANDARDS FOR ORGANIC CHEMICALS (in micrograms per liter) | | | | | | |
|---|---|---|---|---|---|---|
| Parameter | | Human Health Based[1] | | | Aquatic Life Based[4] | |
| | CAS No. | Water Supply[2] | Water+Fish[3] | Fish Ingestion[8] | Acute | Chronic |
| Nitrosodimethylamine N[C] | 62-75-9 | 0.00069 | 0.00069 | 3.0 | --- | --- |
| N-Nitrosodiethanolamine[C] | 1116-54-7 | 0.013 | --- | --- | --- | --- |
| Nitrosodiphenylamine N[C] | 86-30-6 | 7.1 | 3.3 | 6.0 | --- | --- |
| N-Nitroso-N-methylethylamine[C] | 10595-95-6 | 0.0016 | --- | --- | --- | --- |
| Nitrosopyrrolidine N[C] | 930-55-2 | 0.017 | 0.016 | 36 | --- | --- |
| N-Nitrosodi-n-propylamineC | 621-64-7 | 0.005 | 0.005 | 0.50 | --- | --- |
| Nonylphenol | 84852-15-3 and 25154-52-3 | --- | --- | --- | 28 | 6.6 |
| Oxamyl (vydate)[12] | 23135-22-0 | 175 to 200[M] | --- | --- | --- | --- |
| PCBs[C, 9, 12] | 1336-36-3 | 0.0175 to 0.5[M] | $6.4X10^{-5}$ | $6.4X10^{-5}$ | 2.0 | 0.014 |
| Parathion | 56-38-2 | --- | --- | --- | 0.065 | 0.013 |
| Pentachlorobenzene | 608-93-5 | 5.6 | 1.4 | 1.5 | --- | --- |
| Pentachlorophenol[C, 12] | 87-86-5 | 0.29 to 1.0[M] | 0.27 | 3.0 | 19[6] | 15[6] |
| Phenol | 108-95-2 | 2,100 | 2,100 | ---[10] | 10,200 | 2,560 |
| Picloram | 1918-02-1 | 490 | --- | --- | --- | --- |
| Prometon | 1610-18-0 | 100 | --- | --- | --- | --- |
| Propylene oxide[C] | 75-56-9 | 0.15 | --- | --- | --- | --- |
| Pyrene (PAH) | 129-00-0 | 210 | 210 | 4,000 | --- | --- |

| BASIC STANDARDS FOR ORGANIC CHEMICALS (in micrograms per liter) | | | | | | |
|---|---|---|---|---|---|---|
| Parameter | | Human Health Based[1] | | | Aquatic Life Based[4] | |
| | CAS No. | Water Supply[2] | Water+Fish[3] | Fish Ingestion[8] | Acute | Chronic |
| Quinoline[C] | 91-22-5 | 0.012 | --- | --- | --- | --- |
| Simazine | 122-34-9 | 4[M] | --- | --- | --- | --- |
| Styrene | 100-42-5 | 100[M] | --- | --- | --- | --- |
| Tetrachlorobenzene 1,2,4,5- | 95-94-3 | 2.1 | 0.97 | 1.07 | --- | --- |
| Tetrachloroethane 1,1,2,2[C] | 79-34-5 | 0.18 | 0.17 | 4 | --- | 2,400 |
| Tetrachloroethylene (PCE) | 127-18-4 | 5[M] | 0.69 | 3.3 | 5,280 | 840 |
| Toluene[11, ~~12~~] | 108-88-3 | 560 to 1,000[M] | 510~~1,000~~ | 5,900~~15,000~~ | 17,500 | --- |
| Toxaphene[C, 12] | 8001-35-2 | 0.032 to 3[M] | 0.00028 | ---[10] | 0.73 | 0.0002 |
| Tributyltin (TBT) | 56573-85-4 | --- | --- | --- | 0.46 | 0.072 |
| Trichlorobenzene 1,2,4-[11] | 120-82-1 | 70[M] | 35 | ---[10] | 250 | 50 |
| Trichloroethane 1,1,1 (1,1,1-TCA) | 71-55-6 | 200[M] | --- | --- | --- | --- |
| Trichloroethane 1,1,2 (1,1,2-TCA)[11, 12] | 79-00-5 | 2.8 to 5[M] | 2.7 | 71 | 9,400 | --- |
| Trichloroethylene (TCE) | 79-01-6 | 5[M] | 2.5 | 30 | 45,000 | 21,900 |
| Trichlorophenol 2,4,5 | 95-95-4 | 700 | 700 | 3,600 | --- | --- |
| Trichlorophenol 2,4,6[C] | 88-06-2 | 3.2 | 1.4 | 2.4 | --- | 970 |
| Trichlorophenoxypropionic acid (2,4,5-tp) (Silvex) | 93-72-1 | 50[M] | --- | --- | --- | --- |

| BASIC STANDARDS FOR ORGANIC CHEMICALS (in micrograms per liter) | | | | | | |
|---|---|---|---|---|---|---|
| Parameter | | Human Health Based[1] | | | Aquatic Life Based[4] | |
| | CAS No. | Water Supply[2] | Water+Fish[3] | Fish Ingestion[8] | Acute | Chronic |
| Trihalomethanes | (total)[7] | 80 | 80 | --- | --- | --- |
| Vinyl Chloride[C, 12] | 75-01-4 | 0.023 to 2[M] | 0.023 | 2.3 | --- | --- |
| Xylenes (total)[12] | 1330-20-7 | 1,400 to 10,000[M] | --- | --- | --- | --- |

[1] All standards are chronic or 30-day standards. They are based on information contained in EPA's Integrated Risk Information System (IRIS) and/or EPA lifetime health advisories for drinking water using a $10^{-6}$ incremental risk factor unless otherwise noted.

[2] Only applicable to segments classified for water supply.

[3] Applicable to all Class 1 aquatic life segments which also have a water supply classification or Class 2 aquatic life segments which also have a water supply classification designated by the Commission after rulemaking hearing. These class 2 segments will generally be those where fish of a catchable size and which are normally consumed are present, and where there is evidence that fishing takes place on a recurring basis. The Commission may also consider additional evidence that may be relevant to a determination whether the conditions applicable to a particular segment are similar enough to the assumptions underlying the water plus fish ingestion criteria to warrant the adoption of water plus fish ingestion standards for the segment in question.

[4] Applicable to all aquatic life segments.

[5] PQL's for the constituents listed above can be found at section 61.8((2)(I) of the Regulations for the State Discharge Permit System.

[6] Standards are pH dependent. Those listed are calculated for pH = 7.8.

Acute = $e^{[1.005(pH)-4.869]}$; Chronic = $e^{[1.005(pH)-5.134]}$.

[7] Total trihalomethanes are considered the sum of the concentrations of bromodichloromethane (CAS No. 75-27-4), dibromochloromethane (Chlorodibromomethane(HM), CAS No. 124-48-1), tribromomethane (bromoform, CAS No. 75-25-2) and trichloromethane (chloroform, CAS No. 67-66-3).

[8] Applicable to the following segments which do not have a water supply classification: all Class 1 aquatic life segments or Class 2 aquatic life segments designated by the Commission after rulemaking hearing. These class 2 segments will generally be those where fish of a catchable size and which are normally consumed are present, and where there is evidence that fishing takes place on a recurring basis. The Commission may also consider additional evidence that may be relevant to a determination whether the conditions applicable to a particular segment are similar enough to the assumptions underlying the fish ingestion criteria to warrant the adoption of fish ingestion standards for the segment in question.

[9] PCBs are a class of chemicals which include aroclors, 1242, 1254, 1221, 1232, 1248,1260 and 1016, CAS numbers 53469-21-9, 11097-69-1, 11104-28-2, 11141-16-5, 12672-29-6, 11096-82-5, and 12674-11-2 respectively. The aquatic life criteria apply to this set of PCBs. The human health criteria apply to total PCBs, i.e. the sum of all congenor or all isomer analyses.

[10] The chronic aquatic life standard is more stringent than the associated Water+Fish or Fish Ingestion standard, and therefore no Water+Fish or Fish Ingestion standard has been adopted.

[11] The Water+Fish and Fish Ingestions standards for these compounds have been calculated using a relative source contribution (RSC).

[12] Whenever a range of standards is listed and referenced to this footnote, the first number in the range is a strictly health-based value, based on the Commission's established methodology for human health-based standards. The second number in the range is a maximum contaminant level, established under the federal Safe Drinking Water Act that has been determined to be an acceptable level of this chemical in public water supplies, taking treatability and laboratory

detection limits into account. Control requirements, such as discharge permit effluent limitations, shall be established using the first number in the range as the ambient water quality target, provided that no effluent limitation shall require an “end-of-pipe” discharge level more restrictive than the second number in the range. Water bodies will be considered in attainment of this standard, and not included on the Section 303(d) List, so long as the existing ambient quality does not exceed the second number in the range.

[C] Carcinogens classified by the EPA as A, B1, or B2.

[M] Drinking water MCL.

CAS No. - Chemical Abstracts Service Registry Number.

(HM) – Halomethanes

(PAH) - Polynuclear Aromatic Hydrocarbons.

# PROPOSED

## 31.46 STATEMENT OF BASIS, SPECIFIC STATUTORY AUTHORITY AND PURPOSE: December 2007 Rulemaking Hearing

The provisions of sections 25-8-202(1)(b), 25-8-204; and 25-8-402, C.R.S., provide the specific statutory authority for adoption. The Commission also adopted, in compliance with section 24-4-103(4) C.R.S., the following statement of basis and purpose.

## BASIS AND PURPOSE:

In this rulemaking, the Commission adopted revised and new organic chemical standards in section 31.11(3). In an effort to keep ground water and surface water organic chemical standards consistent, the changes to 31.11(3) were considered during the same hearing that addressed changes to the statewide Ground Water Organic Chemical Standards in Regulation No. 41 (Basic Standards for Ground Water).

In adopting these new and revised organic chemical standards, the Commission continued to rely on its past policy decisions and precedence documented in Commission Policy 96-2. Additionally, as per Departmental policy the Commission has relied on the United States Environmental Protection Agency's (EPA) Integrated Risk Information System (IRIS) as its first tier source of toxicological data. Review of the IRIS data that had been updated since the last revisions to section 31.11(3) indicated that the water quality standards for two organic chemicals, toluene and 1,2-dibromoethane, needed to be revised.

At the last hearing addressing section 31.11(3), in September 2004, during which the Commission adopted water quality standards for several carcinogenic compounds, EPA had requested that a future rulemaking consider water quality standards for non-carcinogenic compounds. For this hearing the Commission reviewed several non-carcinogenic compounds that lacked water quality standards. This review identified four pesticides for which the Commission elected to adopt water quality standards: acetochlor, dicamba, metribuzin, and prometon. Aquatic life-based standards were also adopted, based on EPA guidance, for diazinon and nonylphenol.

The Commission also corrected several typographical errors and added common synonyms for some of the organic chemicals.

# EXHIBIT 2

# WATER QUALITY CONTROL DIVISION

# COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT

# WATER QUALITY CONTROL COMMISSION

## REGULATION NO. 41

## THE BASIC STANDARDS FOR GROUND WATER (5 CCR 1002-41)

. . . .

### 41.5 GROUND WATER QUALITY STANDARDS

The water quality standards specified in subsection~~s A and~~ B below are deemed necessary and appropriate to protect ground water uses as specified in section 41.4, and shall be adopted to protect such classified uses. The standards specified in subsections A and C apply to all State ground waters, unless alternative site-specific standards have been adopted for a specified area pursuant to subsection D below.[M]

**A. Narrative Standards**

1. Ground Water shall be free from pollutants not listed in the tables referred to in section 41.5(B), which alone or in combination with other substances, are in concentrations shown to be:

   a. Carcinogenic, mutagenic, teratogenic, or toxic to human beings, and/or,

   b. A danger to the public health, safety, or welfare.

2. Determinations made pursuant to section 41.7 of specific numerical limitations under this subsection shall be based upon the best scientific information currently available.

**B. Numeric Standards**

. . .

**C. Statewide Standards**

. . .

3. Interim Organic Pollutant Standards:

   Note that all standards in table A are being adopted as “interim standards.” These interim standards will remain in effect until alternative permanent standards are adopted by the Commission in revisions to this regulation or site-specific standards determinations. Although fully effective with respect to current regulatory applications, these interim standards shall not be considered final or permanent standards subject to restrictions such as antibacksliding or downgrading.

**TABLE A**

**GROUND WATER ORGANIC CHEMICAL STANDARDS**

**(in micrograms per liter)**

| Parameter | CAS No. | STANDARD[1] |
|---|---|---|
| Acenaphthene | 83-32-9 | 420 |
| Acetochlor | 34256-82-1 | 210 |
| Acrolein | 107-02-8 | 3.5 |
| Acrylamide[C] | 79-06-1 | 0.0078 |
| Acrylonitrile[C] | 107-13-1 | 0.065 |
| Alachlor | 15972-60-8 | 2.0[M] |
| Aldicarb | 116-06-3 | 7.0[M] |
| Aldicarb Sulfone | 1646-88-4 | 7.0[M] |
| Aldicarb Sulfoxide | 1646-87-3 | 7.0[M] |
| Aldrin[C] | 309-00-2 | 0.0021 |
| Aniline[C] | 62-53-3 | 6.1 |
| Anthracene (PAH) | 120-12-7 | 2100 |
| Aramite[C] | 140-57-8 | 1.4 |
| Atrazine | 1912-24-9 | 3.0[M] |
| Azobenzene[C] | 103-33-3 | 0.32 |
| Benzene[C,2] | 71-43-2 | 5.0[M] |
| Benzidine[C] | 92-87-5 | 0.00015 |
| Benzo(a)anthracene (PAH)[C] | 56-55-3 | 0.0048 |
| Benzo(a)pyrene (PAH)[C, 6] | 50-32-8 | 0.0048 to 0.2[M] |
| Benzo(b)fluoranthene (PAH)[C] | 205-99-2 | 0.0048 |
| Benzo(k)fluoranthene (PAH)[C] | 207-08-9 | 0.0048 |
| Benzotrichloride[C] | 98-07-7 | 0.0027 |

**TABLE A**

**GROUND WATER ORGANIC CHEMICAL STANDARDS**

**(in micrograms per liter)**

| Parameter | CAS No. | STANDARD[1] |
|---|---|---|
| Benzyl chloride[C] | 100-44-7 | 0.21 |
| Bis(chloromethyl)ether (BCME)[C] | 542-88-1 | 0.00016 |
| Bromate[C] | 15541-45-4 | 0.05 |
| Bromodichloromethane (THM)[C, 7] | 75-27-4 | 0.56 |
| Bromoform (THM)[C, 7] | 75-25-2 | 4 |
| Butyl benzyl phthalate | 85-68-7 | 1,400 |
| Carbofuran[6] | 1563-66-2 | 35 to 40[M] |
| Carbon tetrachloride[C, 6] | 56-23-5 | 0.27 to 5[M] |
| Chlordane[C, 6] | 57-74-9 | 0.10 to 2[M] |
| Chlorethyl ether (BIS-2)[C] | 111-44-4 | 0.032 |
| 4-Chloro-3-methylphenol | 59-50-7 | 210 |
| Chlorobenzene | 108-90-7 | 100[M] |
| Chloroform (THM)[C, 7] | 67-66-3 | 3.5 |
| Chloroisopropyl ether (BIS-2) | 108-60-1~~39638-32-9~~ | 280 |
| Chloronapthalene | 91-58-7 | 560 |
| Chlorophenol, 2- | 95-57-8 | 35 |
| Chlorphrifos | 2921-88-2 | 21 |
| Chrysene (PAH)[C] | 218-01-9 | 0.0048 |
| Dalapon | 75-99-0 | 200[M] |
| DDD[C] | 72-54-8 | 0.15 |
| DDE[C] | 72-55-9 | 0.1 |
| DDT[C] | 50-29-3 | 0.1 |

**TABLE A**

**GROUND WATER ORGANIC CHEMICAL STANDARDS**

**(in micrograms per liter)**

| Parameter | CAS No. | STANDARD[1] |
|---|---|---|
| Di(2-ethylhexyl)adipate | 103-23-1 | 400[M] |
| Dibenzo(a,h)anthracene (PAH)[C] | 53-70-3 | 0.0048 |
| 1,2-Dibromo-3-Chloropropane (DBCP) | 96-12-8 | 0.2[M] |
| Dibromochloromethane (THM)[3, 7] | 124-48-1 | 14 |
| Dicamba | 1918-00-9 | 210 |
| Dichloroacetic acid[C] | 79-43-6 | 0.7 |
| Dichlorobenzene 1,2 | 95-50-1 | 600[M] |
| Dichlorobenzene 1,3 | 541-73-1 | 94 |
| Dichlorobenzene 1,4 | 106-46-7 | 75[M] |
| Dichloroethane 1,2[C, 6] | 107-06-2 | 0.38 to 5[M] |
| Dichloroethylene 1,1 | 75-35-4 | 7[M] |
| Dichloroethylene 1,2-cis | 156-59-2 | 70[M] |
| Dichloroethylene 1,2-trans | 156-60-5 | 100[M] |
| Dichlorophenol 2,4 | 120-83-2 | 21 |
| Dichlorophenoxyacetic acid (2,4-D) | 94-75-7 | 70[M] |
| Dichloropropane 1,2[C, 6] | 78-87-5 | 0.52 to 5[M] |
| Dichlorvos[C] | 62-73-7 | 0.12 |
| Diclorobenzidine[C] | 91-94-1 | 0.078 |
| Dieldrin[C] | 60-57-1 | 0.002 |
| Diethyl phthalate | 84-66-2 | 5,600 |
| Diisopropylmethylphosphonate (DIMP)[4] | 1445-75-6 | 8 |
| Dimethylphenol 2,4 | 105-67-9 | 140 |

**TABLE A**

**GROUND WATER ORGANIC CHEMICAL STANDARDS**

**(in micrograms per liter)**

| Parameter | CAS No. | STANDARD[1] |
|---|---|---|
| Di-n-butyl phthalate | 84-74-2 | 700 |
| Dinitro-o-cresol 4,6 | 534-52-1 | 0.27 |
| Dinitrophenol 2,4 | 51-28-5 | 14 |
| Dinitrotoluene 2,4[C] | 121-14-2 | 0.11 |
| Dinoseb | 88-85-7 | 7[M] |
| Dioxane 1,4-[C] | 123-91-1 | 6.1(effective through 3/21/2010) |
| Dioxane 1,4-[C] | 123-91-1 | 3.2(effective 3/22/2010) |
| Dioxin (2,3,7,8 TCDD)[C, 6] | 1746-01-6 | $2.2x10^{-7}$ to $3.0x10^{-5}$, [M] |
| Diphenylhydrazine 1,2[C] | 122-66-7 | 0.044 |
| Diquat[6] | 85-00-7 | 15 to 20[M] |
| Endosulfan | 115-29-7 | 42 |
| Endosulfan sulfate | 1031-07-8 | 42 |
| Endosulfan, alpha | 959-98-8 | 42 |
| Endosulfan, beta | 33213-65-9 | 42 |
| Endothall | 145-73-3 | 100[M] |
| Endrin | 72-20-8 | 2[M] |
| Endrin aldehyde | 7421-93-4 | 2.1 |
| Epichlorohydrin[C] | 106-89-8 | 3.5 |
| Ethylbenzene | 100-41-4 | 700[M] |
| Ethylene Dibromide[C, 6] | 106-93-4 | 0.02~~0.00041~~ to 0.05[M] |
| Ethylhexyl phthalate (BIS-2)[C, 6] (DEHP) | 117-81-7 | 2.5 to 6[M] |

**TABLE A**

**GROUND WATER ORGANIC CHEMICAL STANDARDS**

**(in micrograms per liter)**

| Parameter | CAS No. | STANDARD[1] |
|---|---|---|
| Fluoranthene (PAH) | 206-44-0 | 280 |
| Fluorene (PAH) | 86-73-7 | 280 |
| Folpet[C] | 133-07-3 | 10 |
| Furmecyclox[C] | 60568-05-0 | 1.2 |
| Glyphosate | 1071-83-6 | 700[M] |
| Heptachlor[C, 6] | 76-44-8 | 0.008 to 0.4[M] |
| Heptachlor epoxide[C, 6] | 1024-57-3 | 0.004 to 0.2[M] |
| Hexachlorobenzene[C, 6] | 118-74-1 | 0.022 to 1.0[M] |
| Hexachlorobutadiene | 87-68-3 | 0.45 |
| Hexachlorocyclohexane, Alpha[C] | 319-84-6 | 0.0056 |
| Hexachlorocyclohexane, Gamma (Lindane) | 58-89-9 | 0.2[M] |
| Hexachlorocyclopentadiene[6] 50[M] | 77-47-4 | 42 to 50[M] |
| Hexachlorodibenzo-p-dioxin (1,2,3,7,8,9-hcdd)[C] | 19408-74-3 | 5.60E-06 |
| Hexachloroethane[3] | 67-72-1 | 0.7 |
| Hydrazine/Hydrazine sulfate[C] | 302-01-2 | 0.012 |
| Indeno (1,2,3-cd) pyrene (PAH)[C] | 193-39-5 | 0.0048 |
| Isophorone[3] | 78-59-1 | 140 |
| Malathion | 121-75-5 | 140 |
| Methoxychlor[6] | 72-43-5 | 35 to 40[M] |
| Methylene bis(N,N'-dimethyl)aniline 4,4'[C] | 101-61-1 | 0.76 |
| Methylene chloride[C, 6] | 75-09-2 | 4.7 to 5[M] |

**TABLE A**

**GROUND WATER ORGANIC CHEMICAL STANDARDS**

**(in micrograms per liter)**

| Parameter | CAS No. | STANDARD[1] |
|---|---|---|
| Metribuzin | 21087-64-9 | 180 |
| Mirex | 2385-85-5 | 1.4 |
| Naphthalene (PAH) | 91-20-3 | 140 |
| Nitrobenzene | 98-95-3 | 3.5 |
| Nitrophenol 4 | 100-02-7 | 56 |
| Nitrosodimethylamine N[C](NDMA) | 62-75-9 | 0.00069 |
| Nitrosodiphenylamine N[C] | 86-30-6 | 7.1 |
| N-Nitrosodiethanolamine[C] | 1116-54-7 | 0.013 |
| N-Nitrosodi-n-propylamine[C] | 621-64-7 | 0.005 |
| N-Nitroso-N-Methylethylamine[C] | 10595-95-6 | 0.0016 |
| Oxamyl (vydate)[6] | 23135-22-0 | 175 to 200[M] |
| PCBs[C, 5, 6] | 1336-36-3 | 0.0175 to 0.5[M] |
| Pentachlorobenzene | 608-93-5 | 5.6 |
| Pentachlorophenol[C, 6] | 87-86-5 | 0.29 to 1.0[M] |
| Phenol | 108-95-2 | 2,100 |
| Picloram | 1918-02-1 | 490 |
| Prometon | 1610-18-0 | 100 |
| Propylene oxide[C] | 75-56-9 | 0.15 |
| Pyrene (PAH) | 129-00-0 | 210 |
| Quinoline[C] | 91-22-5 | 0.012 |
| Simazine | 122-34-9 | 4[M] |
| Styrene | 100-42-5 | 100[M] |

**TABLE A**

**GROUND WATER ORGANIC CHEMICAL STANDARDS**

**(in micrograms per liter)**

| Parameter | CAS No. | STANDARD[1] |
|---|---|---|
| Tetrachlorobenzene 1,2,4,5 | 95-94-3 | 2.1 |
| Tetrachloroethane 1,1,2,2 | 79-34-5 | 0.18 |
| Tetrachloroethylene (PCE) | 127-18-4 | 5[M] |
| Toluene[6] | 108-88-3 | 560 to 1,000[M] |
| Total Trihalomethanes (TTHMs)[7] | N/A | 80[M] |
| Toxaphene[C, 6] | 8001-35-2 | 0.032 to 3[M] |
| Trichlorobenzene 1,2,4 | 120-82-1 | 70[M] |
| Trichloroethane 1,1,1 (1,1,1-TCA) | 71-55-6 | 200[M] |
| Trichloroethane 1,1,2[3, 6] (1,1,2-TCA) | 79-00-5 | 2.8 to 5[M] |
| Trichloroethylene (TCE) | 79-01-6 | 5[M] |
| Trichlorophenol 2,4,5 | 95-95-4 | 700 |
| Trichlorophenol 2,4,6[C] | 88-06-2 | 3.2 |
| Trichlorophenoxyproprionic acid (2,4,5-tp) (Silvex) | 93-72-1 | 50[M] |
| Vinyl Chloride[C, 6] | 75-01-4 | 0.023 to2[M] |
| Xylenes (total)[6] | 1330-20-7 | 1,400 to 10,000[M] |

Notes and Abbreviations:

[1]All standards are chronic or 30-day standards. They are based on information contained in EPA's Integrated Risk Information System (IRIS) and/or EPA lifetime health advisories for drinking water using a $10^{-6}$ incremental risk factor unless otherwise noted.

[2]The standard for Benzene has been established at the MCL (q.v. 41.17)

[3]Standards for Group C compounds that have both published toxicity and carcinogenic risk data are calculated based on toxicity data and then adjusted downward using an uncertainty factor of 10.

[4]The Diisopropylmethylphosphonate (DIMP) standard was adopted in 1993 (q.v. 41.16)

[5]PCBs are a class of chemicals that include aroclors, 1242, 1254, 1221, 1232, 1248, 1260, and 1016, CAS numbers 53469-21-9, 11097-69-1, 11104-28-2, 11141-16-5, 12672-29-6, 11096-82-5, and 12674-11-2 respectively. The human-health criteria apply to total PCBs, i.e. the sum of all congener or all isomer analyses.

[6]Whenever a range of standards is listed and referenced to this footnote, the first number in the range is a strictly health-based value, based on the Commission's established methodology for human health-based standards. The second number in the range is a maximum contaminant level, established under the federal Safe Drinking Water Act has been determined to be an acceptable level of this chemical in public water supplies, taking treatability and laboratory detection limits into account. The Commission intends that control requirements for this chemical be implemented to attain a level of ambient water quality that is at least equal to the first number in the range except as follows:

•Where ground water quality exceeds the first number in the range due to a release of contaminants that occurred prior to September 14, 2004, (regardless of the date of discovery or subsequent migration of such contaminants) clean-up levels for the entire contaminant plume shall be no more restrictive than the second number in the range or the ground water quality resulting from such release, whichever is more protective.

•Wherever the Commission has adopted alternative, site-specific standards for the chemical, the site-specific standards shall apply instead of these statewide standards.

For sites for which clean-up standards have been established prior to September 14, 2004, the Commission does not intend the adoption of this range of standards to result in changes to the required clean-up, unless such change is mandated by the implementing agency's independent statutory authority

[7]For aquifer storage and recovery facilities that existed as of September 14, 2004, if the source of this chemical in ground water is potable water that met all applicable federal Safe Drinking Water Act and corresponding State requirements at the time that it is utilized for aquifer storage and recovery or artificial recharge, then the separate total trihalomethane standard will apply to the ground water in question, rather than the individual standards for bromodichloromethane, bromoform, chloroform, and/or dibromochloromethane.

N/A – not applicable

[C]Carcinogens classified by the EPA as A, B1, or B2.

[M]Drinking water MCL.

CAS No. - Chemical Abstracts Service Registry Number

THM - Halomethanes

4. Whenever the practical quantitation limit, or PQL, for a pollutant is higher (less stringent) than a standard listed in subsection 2 or 3 above, the PQL shall be used in regulating specific activities. These PQL's shall be approved by the Water Quality Control Division unless an alternate PQL has been established by the applicable implementing agency.

. . .

**41.6 POINT OF COMPLIANCE**

. . .

B. For the purposes of this subsection, the following agencies are referred to as "implementing agencies":

The ~~Mined Land Reclamation Division~~ Division of Reclamation, Mining and Safety; the State Engineer; the Oil and Gas Conservation Commission; and the state ~~agency~~ agencies responsible for activities related to the federal "Resource Conservation and Recovery Act of 1976", as amended, and related state programs.

Per the provisions of section 25-8-202 C.R.S., implementing agencies shall establish the point of compliance for those activities under their control. The points of compliance established in section 41.6 (C) and (D) of this regulation shall not apply to activities regulated by an implementing agency, unless the Commission has determined after rulemaking that the point of compliance established by the implementing agency is not adequate to satisfy the requirements of section 25-8-202(7). The Commission may then establish, through rulemaking, a site-specific point of compliance which shall supersede any point of compliance established by the implementing agencies.

C. In the absence of a point of compliance established by the Division, and unless modified by the Commission in accordance with section 41.6 (E) or subject to alternative regulatory requirements in accordance with section 41.5 (C)(5), the point of compliance for the statewide standards established in section 41.5 (C)(2) and (3) shall be located as follows.

1. For facilities at which ground water contamination existed as of September 30, 1989 the point of compliance shall be at whichever of the following locations is closest to the contamination source:

   a. The site boundary; or

   b. The hydrologically downgradient limit of the area below the activity potentially impacting ground water quality.

   ~~a. If the contamination is identified and reported to the division or other appropriate implementing agency on or before September 30, 1992, then the point of compliance shall be at whichever of the following locations is closest to the contamination source:~~

      ~~i. The site boundary; or~~

      ~~ii. The hydrologically downgradient limit of the area in which contamination exists when identified.~~

   ~~b. If the contamination is not identified and reported to the division or other appropriate implementing agency on or before September 30, 1992, then the point of compliance shall be at whichever of the following locations is closest to the contamination source:~~

      ~~i. The site boundary; or~~

      ~~ii. The hydrologically downgradient limit of the area in which contamination exists as of September 30, 1989; or~~

      ~~iii. If the location specified in (ii) can not be identified, then at the hydrologically downgradient limit of the area below the activity potentially impacting ground water quality~~.

2. For all other facilities, at the hydrologically downgradient limit of the area below the activity potentially impacting ground water quality.

| **TABLE 1**<br>Domestic Water Supply – Human Health Standards | |
|---|---|
| **Parameter** | **Standard[1]** |
| ***Biological*** | |
| Total Coliforms<br>(30 day average) | ~~<[a] 1~~ 2.2 [a]org/100 ml |
| Total Coliforms<br>(max in 30 days) | 23org/100 ml |
| ***Inorganic*** | |
| Antimony (Sb)[d, M] | 0.006mg/l |
| Asbestos [M] | 7,000,000fibers/Liter |
| Arsenic (As)[d, M] | 0.01mg/l |
| Barium (Ba)[d, M] | 2.0mg/l |
| Beryllium (Be)[d, M] | 0.004mg/l |
| Cadmium (Cd)[d, M] | 0.005mg/l |
| Chromium (Cr)[c, d, M] | 0.1mg/l |
| Cyanide [Free] (CN)[M] | 0.2mg/l |
| Fluoride (F)[d, M] | 4.0mg/l |
| Lead (Pb)[d] | 0.05mg/l |
| Mercury (inorganic) (Hg)[d, M] | 0.002mg/l |
| Molybdenum (Mo) [d] | 0.035mg/l |
| Nickel (Ni)[d] | 0.1mg/l |
| Nitrate (NO3)[d, M] | 10.0mg/l as N |
| Nitrite (NO2)[d, M] | 1.0mg/l as N |
| Total Nitrate+Nitrite ($NO_2$+$NO_3$-N)[d, f] | 10.0mg/l as N |
| Selenium (Se)[d, M] | 0.05mg/l |
| Silver (Ag)[d] | 0.05mg/l |
| Thallium (Tl)[d, M] | 0.002mg/l |
| Uranium (U) [d, M] | 0.03mg/l |
| ***Radiological[b, d]*** | |
| Gross Alpha Particle Activity[i, M] | 15 pCi/l |
| Beta and Photon Emitters[e] | 4 mrem/year |

**TABLE 2**
Domestic Water Supply – Drinking Water Standards

| **Parameter** | **Standard** |
|---|---|
| Chlorophenol | 0.0002 mg/l |
| Chloride (Cl)[d] | 250 mg/l |
| Color | 15 color units |
| Copper (Cu)[d] | 1 mg/l |
| Corrosivity | Noncorrosive |

**TABLE 2**

Domestic Water Supply – Drinking Water Standards

| | |
|---|---|
| Foaming Agents | 0.5 mg/l |
| Iron (Fe)[d] | 0.3 mg/l |
| Manganese (Mn)[d] | 0.05 mg/l |
| Odor | 3 threshold odor numbers |
| pH | 6.5 - 8.5 |
| Phenol | 0.3 mg/l |
| Sulfate ($SO_4$)[d] | 250 mg/l |
| Zinc (Zn)[d] | 5 mg/l |

**Table 3**

Agricultural Standards

| **Parameter** | **Standard** |
|---|---|
| Aluminum (Al)[d, f] | 5 mg/l |
| Arsenic (As)[d] | 0.1 mg/l |
| Beryllium (Be)[d] | 0.1 mg/l |
| Boron (B)[d, g] | 0.75 mg/l |
| Cadmium (Cd)[d] | 0.01 mg/l |
| Chromium (Cr)[d] | 0.1 mg/l |
| Cobalt (Co)[d] | 0.05 mg/l |
| Copper (Cu)[d] | 0.2 mg/l |
| Fluoride (F)[d] | 2 mg/l |
| Iron (Fe)[d] | 5 mg/l |
| Lead (Pb)[d, f] | 0.1 mg/l |
| Lithium (Li)[d, h] | 2.5 mg/l |
| Manganese (Mn)[d, i] | 0.2 mg/l |
| Mercury (Hg)[d, f] | 0.01 mg/l |
| Nickel (Ni)[d] | 0.2 mg/l |
| Nitrite (NO2-N)[d, f] | 10 mg/l as N |
| Nitrite & Nitrate(NO2 +NO3-N)[d, f] | 100 mg/l as N |
| Selenium (Se)[d] | 0.02 mg/l |
| Vanadium (V)[d] | 0.1 mg/l |
| Zinc (Zn)[d] | 2 mg/l |
| pH | 6.5 - 8.5 |

**TABLE 4**

TDS Water Quality Standards

| **Background TDS Value (mg/l)** | **Maximum Allowable TDS Concentrations** |
|---|---|
| 0 - 500 | 400 mg/l or 1.25 times the background level, whichever is least restrictive |
| 501 - 10,000 | 1.25 times the background value |
| 10,001 or greater | No limit |

[1] Chronic or 30-day standard based on information contained in EPA's Integrated Risk Information System (IRIS) using a $10^{-6}$ incremental risk factor.

[a] ~~< Means less than~~. When the Membrane Filter Technique is used for analysis, the average of all samples taken within ~~a year~~ thirty days must be less than 1 organism per 100 milliliters of sample. When the Multiple Tube Fermentation Method is used for analysis, the limit is less than 2.2 org/100 ml.

[b] If the identity and concentration of each radionuclide in a mixture are known, the limiting value would be derived as follows: Determine, for each radionuclide in the mixture, the ratio between the quantity present in the mixture and the limit specified. The sum of such ratios for all radionuclides in the mixture shall not exceed "1" (i.e. unity). A radionuclide may be considered as not present in a mixture if the ratio of the concentration to the limit does not exceed 1/10 and the sum of such ratios for all radionuclides considered as not present in the mixture does not exceed 1/4.

[c] The chromium standard is based on the total concentration of both trivalent and hexavalent forms of dissolved chromium.

[d] Measured as dissolved concentration. The sample water shall be filtered through a 0.45 micron membrane filter prior to preservation. The total concentration (not filtered) may be required on a case-by-case basis if deemed necessary to characterize the pollution caused by the activity.

[e] If two or more radionuclides are present, the sum of their annual dose equivalent to the total body or to any organ shall not exceed 4 mrem per year. Except for Tritium and Strontium 90 the concentration of man-made radionuclides causing 4 mrem total body or organ dose equivalents shall be calculated on the basis of a 2 liter per day drinking water intake using the 168-hour data listed in "Maximum Permissible Body Burden and Maximum Permissible Concentration of Radionuclides in Air or Water for Occupational Exposure," NBS Handbook 69, as amended, August 1963, US Department of Commerce.

[f] These more stringent levels are necessary to protect livestock watering. Levels for parameters without this footnote are set to protect irrigated crops at the same level. Where a party can demonstrate that a livestock watering use of ground water is not reasonably expected, the applicable standard for lead is 5.0 mg/l.

[g] This level is set to protect the following plants in ascending order of sensitivity: Pecan, Black Walnut, Persian (English) Walnut, Jerusalem Artichoke, Navy Bean, American Elm, Plum, Pear, Apple, Grape (Sultanina and Malaga), Kadota Fig, Persimmon, Cherry, Peach, Apricot, Thornless Blackberry, Orange, Avocado, Grapefruit, Lemon. Where a party can demonstrate that a crop watering use of ground water is not reasonably expected, the applicable standard for boron is 5.0 mg/l.

[h] This level protects all crops, except citrus which do not grow in Colorado and therefore a more stringent level of protection is not required.

[i] The Gross Alpha Activity standard excludes alpha activity due to Radon and Uranium.

[j] This standard is only appropriate where irrigation water is applied to soils with pH values lower than 6.0.

[M] Drinking water MCL.

# PROPOSED

**41.25 STATEMENT OF BASIS, SPECIFIC STATUTORY AUTHORITY AND PURPOSE; DECEMBER, 2007 RULEMAKING**

The provisions of sections 25-8-202(1)(b); 25-8-204; 25-8-402, C.R.S., provide the specific statutory authority for adoption. The Commission also adopted, in compliance with section 24-4-103(4) C.R.S., the following statement of basis and purpose.

**BASIS AND PURPOSE:**

1. Statewide Standards - Interim Organic Pollutant Standards

In this rulemaking, the Commission adopted revised and new organic chemical standards in section 41.5(C)(3). In an effort to keep ground water and surface water organic chemical standards consistent, the changes to section 41.5(C)(3) were considered during the same hearing that addressed changes to the statewide surface water organic chemical standards in Regulation No. 31 (Basic Standards and Methodologies for Surface Water).

In adopting these new and revised organic chemical standards, the Commission continued to rely on its past policy decisions and precedence documented in Commission Policy 96-2. Additionally, as per Departmental policy the Commission has relied on the United States Environmental Protection Agency's (EPA) Integrated Risk Information System (IRIS) as its first tier source of toxicological data. Review of the IRIS data that had been updated since the last revisions to 41.5(C)(3) indicated that the water quality standards for two organic chemicals, toluene and 1,2-dibromoethane, needed to be revised.

At the last hearing addressing section 41.5(C)(3), in September 2004, during which the Commission adopted water quality standards for several carcinogenic compounds, EPA had requested that a future rulemaking consider water quality standards for non-carcinogenic compounds. For this hearing the Commission reviewed several non-carcinogenic compounds that lacked water quality standards. This review identified four pesticides that the Commission elected to adopt water quality standards for: acetochlor, dicamba, metribuzin, and prometon. The Commission also corrected several typographical errors and added common synonyms for some of the organic chemicals.

2. Table Value Criteria – Tables 1 through 4

The Commission elected to adopt EPA's maximum contaminant level (MCL) for arsenic and uranium as Domestic Water Supply – Human Health Standards (Table 1). EPA promulgated a MCL of 30 µg//l for uranium in December of 2003, and a MCL of 10 µg/l for arsenic in January of 2006. The Commission has previously adopted these MCLs as surface water-water supply standards, and in an effort to keep the surface and ground water standards consistent, now adopts them as ground water standards.

The Commission received testimony regarding the association of molybdenum as a ground water contaminant in a several uranium and vanadium processing and mining sites throughout the Colorado. During the 1990 hearing (q.v. section 41.14), the Commission had elected to delete the molybdenum standard until additional scientific data was available. In August of 1993, IRIS published additional findings and finalized an RfD for molybdenum. During this hearing the Commission elected to adopt a Domestic Water Supply – Human Health Standards (Table 1) for molybdenum based on this updated toxicological data, as well as testimony regarding both existing and planned uranium and vanadium mining and milling activities throughout the State.

The Water Quality Control Division submitted testimony regarding its efforts to update and issue new general ground water discharge permits, and during that process requested additional clarification regarding the existing fecal coliform standard. The Commission updated the fecal coliform standard to clarify both the averaging period and the allowable maximum over that same averaging period. In determining the appropriate maximum and averaging period the Commission relied on EPA's water reuse guidance (EPA/625/R-04/108) for unrestricted urban reuse.

During the Issues Formulation and Informational Hearing the Commission received testimony regarding the Agricultural Standards (Table 3) and the implementation of the manganese standard. The original agricultural manganese standard was derived from EPA's 1972 Water Quality Criteria ("Blue Book"), and addressed crop toxicity in acidic soils. In order to remain consistent with the 1972 criteria, as well as with Regulation No. 31, the Commission elected to add a footnote to specify that the agricultural manganese standard is only applicable in those areas where acidic soils exist.

3. Other Changes to the Regulation

During the Issues Formulation and Informational Hearing an issue was raised regarding activities that increase naturally occurring contamination, with the intent at that time being that revisions to section 41.5(A), the narrative standards, would address this issue. Additional investigation into the issue discovered that the narrative standards, as currently adopted in Regulation No. 41, are only implemented during a ground water classification hearing. The Commission believes that this poses two problems. First, as written, the narrative standards did not apply to all State waters which conflicts with the intention of the Colorado Water Quality Control Act (CWQCA). Second, the narrative standards have not been specifically adopted for all of the current ground water classifications.

One purpose of narrative standards is to provide general qualitative guidance for situations that lack quantifiable, or scientifically predicted, outcomes. Narrative standards define broad guidelines that are intended to meet general water quality goals. For these reasons, narrative standards are applicable when numeric criteria cannot be established, or applied, to a specific discharge or release. Additionally, narrative standards are critical for addressing emergency circumstances when the dynamics of the situation prevent timely scientific review or the normal Commission procedure.

For these reasons the Commission believes that applying the narrative standards to all ground water is appropriate and effectively solves the issues before them. By making the narrative standards statewide standards the Commission fulfills the intent of the CWQCA, implements the narrative standards for all existing ground water classifications, and addresses the issue of anthropogenic increases to naturally occurring ground water contamination.

The Commission revised the paragraph regarding "implementing agencies" to recognize the recent reorganization of the Division of Minerals and Geology into the Division of Reclamation, Mining, and Safety. The Commission also changed the reference to the agency responsible for the Resource Conservation and Recovery Act to recognize that both the Hazardous Materials and Waste Management Division and the Department of Labor and Employment implement different aspects of this statute.

The Commission also adopted modifications to section 41.6(C) regarding points-of-compliance. This section contained three specific provisions for determining appropriate points-of compliance, and one of these provisions dealt with ground water contamination that had occurred prior to September 30, 1989 and was reported to the Water Quality Control Division on or before September 30, 1992. The Commission decided that, since the universe of known ground water contamination that this narrow exception applied to was well known and 15 years had passed since the reporting deadline, this provision was obsolete. The Commission's intent in striking this

provision is not to change the existing points-of-compliance for any facilities that have currently invoked this specific exception, but rather, as required by the triennial review process, to eliminate outdated regulations. Therefore, the Commission, by taking this action, does not intend to change any existing points-of-compliance for any facilities that fall under this provision.

# EXHIBIT 3

# CENTENNIAL WATER AND SANITATION DISTRICT, TOWN OF CASTLE ROCK, CASTLE PINES METROPOLITAN DISTRICT, CONSOLIDATED MUTUAL WATER COMPANY, AND RANGEVIEW METROPOLITAN DISTRICT

## COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT

## WATER QUALITY CONTROL COMMISSION

### REGULATION NO. 41

### THE BASIC STANDARDS FOR GROUND WATER (5 CCR 1002-41)

. . . .

**41.5 GROUND WATER QUALITY STANDARDS**

. . . .

**C. Statewide Standards**

. . .

3. Interim Organic Pollutant Standards:

. . .

**TABLE A**

**GROUND WATER ORGANIC CHEMICAL STANDARDS**

**(in micrograms per liter)**

. . .

Notes and Abbreviations:

. . .

[7] For aquifer storage and recovery facilities ~~that existed as of September 14, 2004~~, if the source of this chemical in ground water is potable water that ~~met~~ meets all applicable federal Safe Drinking Water Act and corresponding State requirements at the time that it is utilized for aquifer storage and recovery or artificial recharge, then the separate total trihalomethane standard will apply to the ground water in question, rather than the individual standards for bromodichloromethane, bromoform, chloroform, and/or dibromochloromethane. For any parameter for which there is a Maximum Contaminant Level (MCL) established by the Safe Drinking Water Act, as identified in Table A with Footnote "M", the MCL shall apply as the standard for groundwater when potable water is used for ASR or artificial recharge.

# PROPOSED

## 41.25 STATEMENT OF BASIS, SPECIFIC STATUTORY AUTHORITY AND PURPOSE; DECEMBER, 2007 RULEMAKING

The provisions of sections 25-8-202(1)(b); 25-8-204; 25-8-402, C.R.S., provide the specific statutory authority for adoption. The Commission also adopted, in compliance with section 24-4-103(4) C.R.S., the following statement of basis and purpose.

**BASIS AND PURPOSE:**

In the 2004 hearing, the Commission adopted footnote 7 which included a total trihalomethane (TTHM) standard applicable to existing aquifer storage and recovery (ASR) facilities that use potable finished water. The Commission's intention in doing so was to assure that the ground water organic chemical standards did not limit continued ASR at existing facilities. ASR has been identified by the Colorado General Assembly and the Colorado Water Conservation Board as a potential way to maximize use of aquifers through conjunctive use of a surface and ground water resources. ASR has also been identified by the South Platte River Task Force as a potential tool to address water issues in the South Platte River Basin.

In order to assure that the ground water quality standards do not limit future use of ASR, the Commission adopted changes to footnote 7 deleting the reference to facilities that existed as of Sept 14, 2004, thereby applying the TTHM standard to all ASR facilities using potable water that meets all applicable federal and state drinking water requirements. In addition, the Commission adopted a new provision that applies the maximum containment level (MCL) as the standard for ground water that must be met by ASR facilities using potable water.