# NOTICES OF PROPOSED RULEMAKING

Unless exempted by A.R.S. § 41-1005, each agency shall begin the rulemaking process by first submitting to the Secretary of State's Office a Notice of Rulemaking Docket Opening followed by a Notice of Proposed Rulemaking that contains the preamble and the full text of the rules. The Secretary of State's Office publishes each Notice in the next available issue of the *Register* according to the schedule of deadlines for *Register* publication. Due to time restraints, the Secretary of State's Office will no longer edit the text of proposed rules. We will continue to make numbering and labeling changes as necessary. Under the Administrative Procedure Act (A.R.S. § 41-1001 et seq.), an agency must allow at least 30 days to elapse after the publication of the Notice of Proposed Rulemaking in the *Register* before beginning any proceedings for adoption, amendment, or repeal of any rule. A.R.S. §§ 41-1013 and 41-1022.

## NOTICE OF PROPOSED RULEMAKING

### TITLE 4. PROFESSIONS AND OCCUPATIONS

### CHAPTER 7. BOARD OF CHIROPRACTIC EXAMINERS

### PREAMBLE

**1. Sections Affected** **Rulemaking Action**

R4-7-502 Amend

**2. The statutory authority for the rulemaking, including both the authorizing statute (general) and the statutes the rules are implementing (specific):**

Authorizing statute: A.R.S. § 32-904(B)(2)

Implementing statute: A.R.S. § 41-1072

**3. A list of all previous notices appearing in the Register addressing the proposed rule:**

Notice of Rulemaking Docket Opening: 7 A.A.R. 2050 May 11, 2001

**4. The name and address of agency personnel with whom persons may communicate regarding the rulemaking:**

Name: Patrice A. Pritzl
Executive Director

Address: 5060 North 19th Avenue, Suite 416
Phoenix, AZ 85015-3210

Telephone: (602) 255-1444

Fax: (602) 255-4289

**5. An explanation of the rule, including the agency's reasons for initiating the rule:**

The rule amendment will allow applicants for license by reciprocity to take the National Board of Chiropractic Examiners SPEC examination in lieu of the NBCE Part III examination.

**6. A reference to any study that the agency proposes to rely on in its evaluation of or justification for the proposed rule and where the public may obtain or review the study, all data underlying each study, any analysis of the study and other supporting material:**

Not applicable

**7. A showing of good cause why the rule is necessary to promote a statewide interest if the rule will diminish a previous grant of authority of a political subdivision of this state:**

Not applicable

**8. The preliminary summary of the economic, small business, and consumer impact:**

The economic impact is minor. The agency already provides and charges a fee for the identified services.

**9. The name and address of agency personnel with whom persons may communicate regarding the accuracy of the economic, small business, and consumer impact statement.**

Name: Patrice A. Pritzl
Executive Director

Address: 5060 North 19th Avenue, Suite 416
Phoenix, AZ 85015-3210

Telephone: (602) 255-1444

Fax: (602) 255-4289

**10. The time, place and nature of the proceedings for adoption, amendment, or repeal of the rule or, if no proceeding is scheduled when, where, or how persons may request an oral proceeding on the proposed rule:**

Written comment will be accepted at the Board office, 5060 N. 19th Ave, #416, Phoenix, AZ, 85015 on a business day between the hours of 8:00 a.m. and 5:00 p.m. until 5:00 p.m. on July 15, 2001. An oral proceeding is not scheduled but may be requested.

**11. Any other matters prescribed by statute that are applicable to the specific agency or to any specific rule or class of rules:**

Not applicable

**12. Incorporation by reference and their location in the rules:**

Not applicable

**13. The full text of the rules as follows:**

## TITLE 4. PROFESSIONS AND OCCUPATIONS

## CHAPTER 7. BOARD OF CHIROPRACTIC EXAMINERS

## ARTICLE 5. LICENSES

Section
R4-7-502. Procedures for Processing Initial License Applications

## ARTICLE 5. LICENSES

**R4-7-502. Procedures for Processing Initial License Applications**

**A.** An applicant may obtain a License application package at the Board Office on business days, or by requesting that the Board mail one to an address specified by the applicant. An applicant shall pay the Board a non-refundable $10 fee for each license application package.

**B.** A completed license application package shall be submitted to the Board office on business days. The Board shall deem the license application package received on the date that the Board stamps on the package as the package is delivered to the Board office.

**C.** To complete a license application package, an applicant shall provide the following information and documentation:

1. Two identical photographs, measuring 3 inches by 4 inches, showing the applicant's full front face as the applicant will appear at the time of the examination and a description of identifying characteristics, if any.
2. The applicant's full current name and any former names.
3. The applicant's current home and all office addresses, current home and all office phone numbers, all current office fax numbers, and any previous home or office address(s) for the past 5 years.
4. The type of license and certification for which application is made.
5. All fees required by A.R.S. § 32-921 (D) and (E) and § 32-922.0 (E).
6. A record of education requirements described in A.R.S. § 32-921 (B) including the applicant's chiropractic college transcript and the applicant's certificate of attainment of passing scores for Parts I, II, III and IV of the examination conducted by the National Board of Chiropractic Examiners.
7. Any record of being convicted of, pleading guilty to or pleading nolo contendere to a misdemeanor or a felony, even if the record of the conviction or plea was sealed or expunged or the conviction was set aside or forgiven, and any record of an arrest, investigation, indictment, or charge within the last 12 months. The applicant also shall submit any record of being refused a license to practice chiropractic or any other health care profession in this or any other state, and any record of a formal sanction taken against the applicant's license in this or any other state.
8. A completed fingerprint card.

9. A list of all other states or jurisdictions in which the applicant is or has been licensed or certified to practice chiropractic or any other health care profession with a verification of good standing for each current license or certification submitted directly by the licensing agency of the other states or jurisdictions.
10. The name and professional designation of the owner(s) of the clinic or office at which the applicant will be employed.
11. The applicant's social security number.
12. The applicant's notarized signature attesting to the truthfulness of the information provided by the applicant.
13. A score of 60% or higher on the Arizona Jurisprudence Examination. The applicant may not sit for the Arizona Jurisprudence Examination until the application package is otherwise complete.

**D.** Within 25 business days of receiving a license application package, the Board shall notify the applicant in writing that the package is either complete or incomplete. If the package is incomplete, the notice shall specify what information is missing. If the Board does not provide notice to the applicant, the license application package shall be deemed complete after the passage of 25 business days.

**E.** An applicant with an incomplete license application package shall supply the missing information within 60 calendar days from the date of the notice. An applicant who is unable to supply the missing information within 60 calendar days may submit a written request to the Board for an extension of time in which to provide a complete application package. The request for an extension of time shall be submitted to the Board office before the 60-day deadline for submission of a complete application package, and shall state the reason that the applicant is unable to comply with the 60-day requirement and the amount of additional time requested. The Board shall grant a request for an extension of time if the Board finds that the reason the applicant was unable to comply within the 60-day requirement was due to circumstances beyond the applicant's control and that compliance can reasonably be expected to be remedied during the extension of time.

**F.** If an applicant fails to submit a complete license application package within the time permitted, the Board shall close the applicant's file. An applicant whose file has been closed and who later wishes to become licensed, shall apply anew.

**G.** After receiving all missing information as specified in subsection (E), the Board shall notify the applicant that the license application package is complete.

**H.** The Board shall render a licensing decision no later than 120 business days after receiving a completed license application package. The Board shall deem a completed license application package received on the post marked date of the notice advising the applicant that the package is complete.

**I.** An applicant seeking initial licensure by reciprocity under A.R.S. § 32-922.01. shall submit an application to the Board and shall comply with all provisions of R4-7-502 except for the following:

1. The applicant may submit proof of obtaining a passing score on the SPEC examination conducted by the National Board of Chiropractic Examiners in lieu of Part III;
2. ~~that the~~ The applicant is not required to submit proof of obtaining a passing score on Part IV of the examination conducted by the National Board of Chiropractic Examiners.

**J.** For the purpose of A.R.S. § 41-1073, the Board establishes the following time-frames for initial licenses:

1. Administrative completeness review time-frame: 25 business days.
2. Substantive review time-frame: 120 business days.
3. Overall time-frame: 145 business days.

# NOTICE OF PROPOSED RULEMAKING

## TITLE 15. REVENUE

## CHAPTER 5. DEPARTMENT OF REVENUE
## TRANSACTION PRIVILEGE AND USE TAX SECTION

## PREAMBLE

**1. Sections Affected** — **Rulemaking Action**

R15-5-2213 — Amend

**2. The specific authority for the rulemaking, including both the authorizing statute (general) and the statutes the rules are implementing (specific):**

Authorizing statute: A.R.S. § 42-1005

Implementing statute: A.R.S. § 42-5014

**3. A list of all previous notices appearing in the Register addressing the proposed rule:**

Notice of Rulemaking Docket Opening: 7 A.A.R. 2236, June 1, 2001

**4. The name and address of agency personnel with whom persons may communicate regarding the rulemaking:**

Name: Christie Comanita
Supervisor

Address: Tax Research & Analysis Section
Arizona Department of Revenue
1600 West Monroe
Phoenix, AZ 85007

Telephone: (602) 542-4672

Fax: (602) 542-4860

**5. An explanation of the rule, including the agency's reasons for initiating the rule:**

A.R.S. § 42-5014 authorizes the Department of Revenue to allow alternative reporting. The statute sets specific thresholds at $500 estimated annual tax liability for annual filing and $1250 estimated annual tax liability for quarterly filing in session law. The Department is proposing to amend the current rule to further implement the statute.

**6. Reference to any study that the agency relied on in its evaluation of or justification for the proposed rule and where the public may obtain or review the study, all data underlying each study, any analysis of the study and other supporting material:**

None

**7. A showing of good cause why the rule is necessary to promote a statewide interest if the rule will diminish a previous grant of authority of a political subdivision of this state:**

Not applicable

**8. The preliminary summary of the economic, small business, and consumer impact:**

Identification of the Rulemaking:

The rule authorizes the Department to allow transaction privilege, use, and severance taxpayers to report on other than a monthly basis.

Summary of Information in the Economic, Small Business, and Consumer Impact Statement:

Data used in preparation of the economic, small business, and consumer impact statement includes figures based on current monthly, quarterly and annual filers. Benefits will accrue to small businesses in that the frequency of reporting and remitting transaction privilege tax will decrease. However, because monies are distributed to counties and cities based on monthly collections, the decrease in the number of monthly filers will decrease the amount of money distributed to the counties and cities. Rather than receiving the money on a more even monthly distribution, the counties and cities will receive moderate amounts quarterly and significant amounts annually. This will be offset by a decrease in the cost of processing zero dollar documents and the decrease in the number of reports submitted to the counties and cities. The Department will incur the costs associated with the rulemaking process. Taxpayers meeting the lower liability thresholds will benefit in being allowed to report and remit taxes on a less frequent basis.

**9. The name and address of agency personnel with whom persons may communicate regarding the accuracy of the economic, small business, and consumer impact statement:**

Name: Christie Comanita
Supervisor

Address: Tax Research & Analysis Section
Arizona Department of Revenue
1600 West Monroe
Phoenix, AZ 85007

Telephone: (602) 542-4672

Fax: (602) 542-4860

**10. The time, place, and nature of the proceedings for the making, amendment, or repeal of the rule, or if no proceeding is scheduled, where, when, and how persons may request an oral proceeding on the proposed rule:**

The Department has not scheduled any oral proceedings. Written comments on the proposed rules or preliminary economic, small business, and consumer impact statements may be submitted to the person listed above. Pursuant to A.R.S. § 41-1023(C), the Department will schedule oral proceedings if one or more individuals file written requests for oral proceedings within 30 days after the publication of this Notice.

A person may submit written comments regarding the proposed rules by submitting the comments no later than 5:00 p.m., July 16, 2001, to the person identified in items #4 and #9.

**11. Any other matters prescribed by statute that are applicable to the specific agency or to any specific rule or class of rules:**

Not applicable

**12. Incorporations by reference and their location in the rules:**

None

**13. The full text of the rules follows:**

**TITLE 15. REVENUE**

**CHAPTER 5. DEPARTMENT OF REVENUE**
**TRANSACTION PRIVILEGE AND USE TAX SECTION**

**ARTICLE 22. TRANSACTION PRIVILEGE TAX - ADMINISTRATION**

Section
R15-5-2213. ~~Quarterly and Annual Basis~~ Alternative Reporting

**ARTICLE 22. TRANSACTION PRIVILEGE TAX - ADMINISTRATION**

**R15-5-2213. ~~Quarterly and Annual Basis~~ Alternative Reporting**

**A.** The Department may authorize taxpayers to report on an annual or quarterly basis, if the taxpayer has established a filing history that shows the taxpayer's annual liability to be less than $1250 for quarterly reporting or $500 for annual reporting.

**B.** The Department may authorize new ~~New~~ businesses that reasonably estimate their annual tax liability for the succeeding 12 months to be less than $1250 to report and remit tax on a quarterly basis ~~shall report monthly for a minimum of 12 consecutive months to establish historical data, enabling the Department to subsequently authorize the reporting and remitting of tax on a quarterly or annual basis according to statutory limits~~.

**C.** It is the taxpayer's responsibility to increase the reporting frequency to monthly and to notify the Department of the change in reporting when the taxpayer's annual tax liability exceeds or can reasonably be expected to exceed $1250. It is the taxpayer's responsibility to increase the reporting frequency to quarterly and to notify the Department of the change in reporting when the taxpayer's annual tax liability exceeds or can reasonably be expected to exceed $500, but be less than $1250. Failure to do so will subject the taxpayer to interest and will also subject the taxpayer to penalties unless the taxpayer can show reasonable cause and not willful neglect.

**D.** A taxpayer shall begin to report on a monthly basis at anytime during a 12-month period if the annualized tax liability for a business reporting on a quarterly basis would exceed $1250. A taxpayer shall begin to report on a quarterly basis at anytime during a 12-month period if the tax liability for a business reporting on an annual basis is expected to exceed $500, but be less than $1250.

# NOTICE OF PROPOSED RULEMAKING

**TITLE 17. TRANSPORTATION**

**CHAPTER 4. DEPARTMENT OF TRANSPORTATION**
**MOTOR VEHICLE DIVISION**

**PREAMBLE**

| **1. Sections Affected** | **Rulemaking Action** |
|---|---|
| R17-4-411 | |
| Appendix E | Amend |

**2. The specific authority for the rulemaking, including both the authorizing statute (general) and the statutes the rules are implementing (specific):**

Authorizing statute: A.R.S. § 28-366

Implementing statute: A.R.S. § 28-7045

**3. A list of all previous notices appearing in the Register addressing the proposed rule:**

Notice of Rulemaking Docket Opening: 7 A.A.R. 68, January 5, 2001

Notice of Rulemaking Docket Opening: 7 A.A.R. 2162, May 25, 2001

**4. The name and address of agency personnel with whom persons may communicate regarding the rulemaking:**

Name: Wendy S. LeStarge
Rules Analyst

Address: Arizona Department of Transportation
Administrative Rules Unit, Mail Drop 507M
3737 N. 7th Street, Suite 160
Phoenix, AZ 85014-5017

Telephone: (602) 712-6007

Fax: (602) 241-1624

E-mail: wlestarge@dot.state.az.us

To track progress of this rule and any other agency rulemaking matters, please visit the ADOT web site at www.dot.state.az.us/about/rules.

**5. An explanation of the rule, including the agency's reasons for initiating the rule:**

Under authority of A.R.S. § 28-1103(B) and in collaboration with the Overdimensional Permit Advisory Council as prescribed under A.R.S. § 28-1150(C)(3), the Arizona Department of Transportation is rewriting its entire body of administrative rules regulating statewide overdimensional permits. Even though the rewriting of the overdimensional permits rules is ongoing, the Department needs to lift specific restrictions that are no longer necessary on State Route 366 and State Route 68. The Department is proposing a minor change to Appendix E, which is the table of restricted routes and escort requirements for all Arizona highways. While amending the highway restriction for State Route 366 and State Route 68, the Department will also make technical changes, correcting the designation of U.S. Highway 666 to its correct designation of U.S. Highway 191.

The rulemaking for rewriting all rules regulating statewide overdimensional permits will continue and will incorporate the changes that this rulemaking proposes of lifting restrictions on State Route 366 and State Route 68. The Notice of Rulemaking Docket Opening for the all-encompassing rulemaking on overdimensional permits was published in 7 A.A.R. 68, January 5, 2001.

**6. A reference to any study that the agency proposes to rely on in its evaluation of or justification for the proposed rule and where the public may obtain or review the study, all data underlying each study, any analysis of the study and other supporting material:**

None

**7. A showing of good cause why the rule is necessary to promote a statewide interest if the rule will diminish a previous grant of authority of a political subdivision of this state:**

Not applicable

**8. The preliminary summary of the economic, small business, and consumer impact:**

The Department is lifting the restriction that requires vehicles over specified dimensions to obtain permits to travel on all of State Route 366 and State Route 68, thereby decreasing regulation. Lifting this highway restriction should create a benefit to any vehicle that previously had to obtain a permit. Vehicles over specified dimensions will no longer have to pay permit fees and obtain permits for these portions of State Route 366 and State Route 68. The costs of this rulemaking to the Department, the Governor's Regulatory Review Council, and the Secretary of State are minimal clerical costs incurred in preparation, review, editing, and publishing of the rule.

**9. The name and address of agency personnel with whom persons may communicate regarding the accuracy of the economic, small business, and consumer impact statement:**

Name: Wendy S. LeStarge
Rules Analyst

Address: Arizona Department of Transportation
Administrative Rules Unit, Mail Drop 507M
3737 N. 7th Street, Suite 160
Phoenix, AZ 85014-5017

Telephone: (602) 712-6007

Fax: (602) 241-1624

E-mail: wlestarge@dot.state.az.us

**10. The time, place, and nature of the proceedings for the making, amendment, or repeal of the rule, or if no proceeding is scheduled, where, when, and how persons may request an oral proceeding on the proposed rule:**

No oral proceeding is scheduled for this rulemaking. Written, faxed, e-mail comments, or requests for an oral proceeding may be made by contacting the officer listed in item #4 between 8:00 a.m. and 4:30 p.m., Monday through Friday. If no oral proceeding is requested, the public comment period shall continue for 30 days from this notice's publication date. This rulemaking's public record will close at 4:30 p.m., on July 18, 2001.

**11. Any other matters prescribed by statute that are applicable to the specific agency or to any specific rule or class of rules:**

None

**12. Incorporations by reference and their location in the rules:**

Not applicable

**13. The full text of the rules follows:**

## TITLE 17. TRANSPORTATION

## CHAPTER 4. DEPARTMENT OF TRANSPORTATION
## MOTOR VEHICLE DIVISION

## ARTICLE 4. MOTOR CARRIERS

Section
R17-4-411. Escort Vehicles
Appendix E. Table of Restricted Routes and Escort Requirements Escort Requirements for Class A Permits

## ARTICLE 4. MOTOR CARRIERS

**R17-4-411. Escort vehicles**

**A.** Equipment requirements.
1. Size of vehicles: Escort vehicles must be a passenger car or 2-axle truck not exceeding 20,000 pounds GVW and be capable of displaying warning devices as set forth in Appendix C.
2. Flags and signs: The vehicle shall display red flags 12 inches square on all corners of the vehicle and display an "OVERSIZE LOAD" sign facing traffic approaching the load being escorted.
3. Warning lights: Warning lights are required and must be in accordance with A.R.S. § 28-947(D).
4. Radio equipment: Each vehicle shall be equipped with a 2-way radio capable of transmitting and receiving voice messages over a minimum distance of 1/2 mile and be compatible with 2-way radios in accompanying escort and towing vehicles. Radios and operators shall have all necessary approvals and licensing required by the Federal Communications Commission. Radios designed for use under Federal Communication Commission rules, Part 15, Subpart E are not acceptable.
5. Emergency equipment: Escort vehicles shall carry a minimum of 8 flares, a first-aid kit and 2 red flags 12 inches square on a staff. The first-aid kit shall conform to the federal Motor Carriers Safety Regulations, paragraph 393.96, or as amended.

**B.** Vehicle operation.
1. Escort vehicles shall have their headlights and warning lights on and operating at all times when in service.

2. When an escort vehicle is operated as a pilot vehicle (preceding an oversize load vehicle or a vehicle towing an oversize load) or operated as a rear escort vehicle (following an oversize load vehicle or a vehicle towing an oversize load) a distance of 1,000 feet shall be maintained between such load and the escort vehicle, except where visual contact with an escorted load cannot be maintained.
3. Within a city or town, the distance set forth in this subsection shall not be less than 100 feet nor more than 250 feet from the escorted load.
4. When traveling on a route where traffic signals control the movement of traffic, if an escort vehicle passes through an intersection and the load being escorted is required to stop, the escort vehicle will stop as soon as possible at the right-hand side of the road when the stop can be done in safety and not resume until the escorted load approaches to the required distance from the escorted vehicle. When the escort vehicle following an escorted load is required to stop at an intersection, the escorted load shall proceed in the same direction as planned and the escort shall resume its normal distance behind the escorted load as soon as possible after being allowed to proceed through the intersection.

**C.** Oversize load signs.

1. Whenever in these rules an "OVERSIZE LOAD" sign is required, it shall comply with the sign specifications shown in Appendix C of these rules, except signs from other states are acceptable when in compliance with AASHTO standards.
2. On the vehicle or vehicle combinations upon which the oversize load is loaded, the signs shall be mounted on the forward-most part of the towing vehicle and the rear-most part of the load or vehicle on which the load is loaded in such a manner as to be clearly visible.
3. If a permit is issued for movement of a self-propelled oversize vehicle, the oversize load signs shall be mounted in the same manner as required in subsection (C)(2).
4. On escort vehicles the sign shall be mounted securely to the vehicle at least 5 feet above the pavement level, facing approaching traffic.
5. Oversize load signs shall be removed or entirely covered when not in use.

**D.** Escort requirements.

1. Overdimensional and/or overweight vehicles being moved under a Class A or Class B permit are, in general, exempt from any escort vehicle requirements, except for those state routes where roadway width or other conditions do not allow for safe movement. Escort requirements for restricted state routes are to comply with Appendix E.
2. Overdimensional and/or overweight vehicles being moved under Class C permits may require 1 or more escort vehicles. Escort requirements will be evaluated on a case by case basis and will be established by road width and condition, size of load, and other applicable features.
3. Vehicles being moved under Class D permits may require escorts as determined by the requirements and procedures of R17-4-408(D).

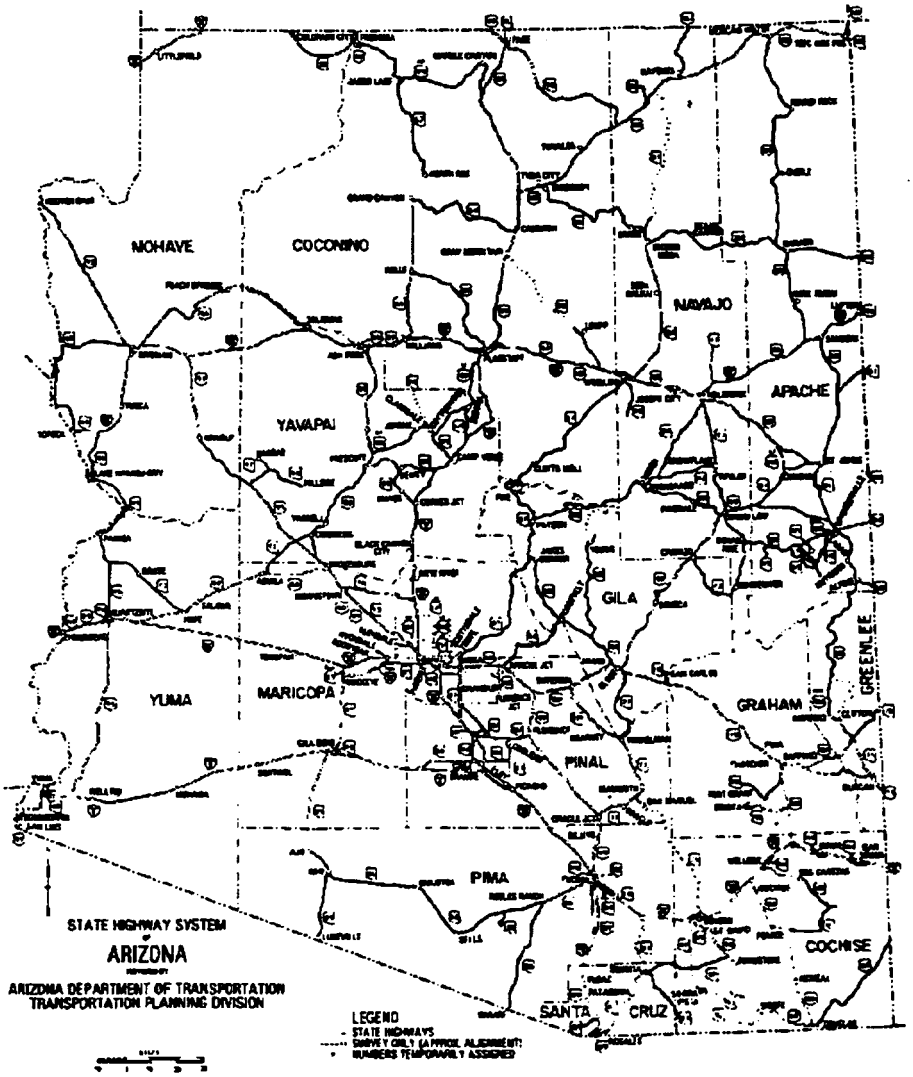
**Appendix E. Table of Restricted Routes and Escort Requirements**

| ROUTE | TO | FROM | AT AND OVER A WIDTH OF | ESCORT–SPECIAL CONDITIONS |
|---|---|---|---|---|
| US 60 | Jct SR 61 | Jct US 180 | 12 | F/R |
| US 61 | Jct US 60 | Jct US 180 | 12 | F/R |
| SR 61 | Jct US ~~666~~ 191 | State Line | 10 | F/R |
| SR 64 | Milepost 237.1 | Jct US 89 | 12 | F/R |
| US 66 | Jct I-40 (W. Flag. TI) | Jct US 89 | 12 | F/R |
| SR 67 | Jct US A89 | North Rim | 10 | F/R |
| SR 68 | Jct SR 95 | ~~Jct US 93~~ MP 14 | 12 | F/R |
| SR 71 | Jct US 60 | Jct US 89 | 12 | F/R |
| SR 72 | Jct SR 95 | Jct US 60 | 12 | F/R |
| SR 73 | Jct US 60 | Jct Fort Apache Road | 10 | F/R |
| SR 77 | Winkelman | Jct US 70 | 12 | F/R |
| SR 77 | Show Low | Holbrook | 12 | F/R |
| SR 78 | Jct SR 75/US ~~666~~ 191 | State Line | 12 | F/R |
| US 80 | Douglas | State Line | 12 | F/R |
| SR 82 | Sonoita | Jct US 80 | 12 | F/R |
| SR 83 | Sonoita | Route End | 10 | F/R |
| SR 85 | International Boundary | Ajo | 12 | F/R |
| SR 86 | Why (Jct SR 85) | Jct SR 286 | 12 | F/R |
| SR 87 | MP 117.85 (McDowell) | Winslow | 12 | F/R |
| SR 88 | Jct US 60 (Apache Jct) | MP 242.04 (Roosevelt) | (Over Legal) | See Note #1 |
| SR 88 | MP 242.04 (Roosevelt) | Jct US 60 (Miami) | 12 | F/R |
| US 89 | Jct US 93 | Jct SR 69 (Prescott) | 12 | F/R |
| US A89 | Jct US 89 (Prescott) | Jct SR 179 (Sedona) | 12 | F/R |
| US A89 | Jct SR 179 (Sedona) | Flagstaff | 10 | F/R |
| US A89 | Jct US (Bitter Springs) | Jacob Lake | (Legal Only) | See Note #1 |
| US A89 | Jacob Lake | Fredonia | 12 | F/R |
| US 93 | Hoover Dam | MP 1.02 | 10 | F/R |
| US 93 | Wikieup | Jct SR 97 | 12 | F.R |
| SR 95 | Quartzsite | MP 148.02 | 12 | F/R |
| SR 95 | MP 148.02 | MP 154.88 | 10 | F/R |
| SR 95 | Topock | Needles Bridge Road | 12 | F/R |
| SR 96 | Jct SR 97 | Hillside | 10 | F/R |
| US 163 | Jct US 160 (Kayenta) | State Line | 12 | F/R |
| SR 170 | Jct US 70 | Route End | 12 | F/R |
| SR 179 | Jct Interstate 17 | Sedona | 12 | F/R |
| US 180 | Jct SR 64 | Flagstaff | 12 | F/R |
| US 180 | Jct US 60 (Springerville) | Jct US ~~666~~ 191 (Alpine) | 12 | F/R |

| | | | | |
|---|---|---|---|---|
| SR 181 | Jct US ~~666~~ 191 | Chiricahua Nat'l Monument | 12 | F/R |
| SR 186 | Dos Cabezas (MP 342.92) | Jct SR 181 | 10 | F/R |
| SR 187 | Jct 387 | Jct SR 87 | 12 | F/R |
| SR 188 | Jct SR 88 (Roosevelt) | MP 255.44 | (Legal Only) | See Note #1 |
| SR 188 | MP 255.44 | Jct SR 87 | 12 | F/R |
| US 191 | Jct Interstate 40 | Jct US 160 | 12 | F/R |
| SR 260 | Jct SR 87 (Payson) | Jct SR 277 (Overgaard) | 12 | F/R |
| SR 260 | Indian Pine (MP 357.47) | Jct US 180 | 12 | F/R |
| SR 264 | Jct US 160 | MP 471.29 | 12 | F/R |
| SR 273 | Jct SR 260 | Jct SR 260 | 10 | F/R |
| SR 277 | Jct SR 260 (Heber) | Jct SR 77 (Snowflake) | 12 | F/R |
| SR 286 | International Boundary | Jct SR 86 | 12 | F/R |
| SR 288 | Jct SR 88 | Route End (Near Young) | (Legal Only) | See Note #1 |
| SR 289 | Jct Interstate 19 | Route End | 10 | F/R |
| SR 366 | ~~Jct US 666~~ MP 115 | Route End (Graham Peak) | (Legal Only) | See Note #1 |
| SR 373 | Jct SR 260 | Route End | 12 | F/R |
| SR 377 | Jct SR 277 | Jct SR 77 | 12 | F/R |
| SR 386 | Jct SR 86 | Kitt Peak | 10 | F/R |
| SR 473 | Jct SR 260 | Route End (Hawley Lake) | 10 | F/R |
| SR 564 | Jct US 160 | Route End | 12 | F/R |
| US ~~666~~ 191 | MP 173.18 | Jct US 180 (Alpine) | (Legal Only) | See Note #1 |
| US ~~666~~ 191 | Saint Johns | Jct Interstate 40 | 12 | F/R |

Note #1: Movements over legal size and weight will be considered under Class C permits only.
Abbreviations: MP - Milepost F/R - Escorts at Front and Rear
Jct - Junction of Routes

**Appendix E. Escort Requirements for Class A Permits**




## NOTICE OF PROPOSED RULEMAKING

### TITLE 17. TRANSPORTATION

### CHAPTER 4. DEPARTMENT OF TRANSPORTATION
### MOTOR VEHICLE DIVISION

### PREAMBLE

**1. Sections Affected** — **Rulemaking Action**

| | |
|---|---|
| R17-4-438 | Amend |
| R17-4-439 | Amend |

**2. The specific authority for the rulemaking, including both the authorizing statute (general) and the statutes the rules are implementing (specific):**

Authorizing statute: A.R.S. § 28-366

Implementing statutes: A.R.S. §§ 28-2268, 28-5231, and 28-5204

**3. A list of all previous notices appearing in the Register addressing the proposed rule:**

Notice of Rulemaking Docket Opening: 7 A.A.R. 1387, March 30, 2001

**4. The name and address of agency personnel with whom persons may communicate regarding the rulemaking:**

Name: George R. Pavia
Department Rules Supervisor

Address: Arizona Department of Transportation
Administrative Rules Unit, Mail Drop 507M
3737 N. 7th Street, Suite 160
Phoenix, AZ 85014-5017

Telephone: (602) 712-8446

Fax: (602) 241-1624

E-mail: gpavia@dot.state.az.us

To track progress of this rule and any other agency rulemaking matters, please visit the ADOT web site at www.dot.state.az.us/about/rules.

**5. An explanation of the rule, including the agency's reasons for initiating the rule:**

The agency makes no substantive change to any existing provision in this rulemaking. The changes are all updates in word choice, grammar, form, and syntax to bring the rules into compliance with current publishing style of the Governor's Regulatory Review Council and the Arizona Secretary of State. An updated form is also incorporated by reference as indicated in item #12 of this notice.

**6. A reference to any study that the agency proposes to rely on in its evaluation of or justification for the proposed rule and where the public may obtain or review the study, all data underlying each study, any analysis of the study and other supporting material:**

None

**7. A showing of good cause why the rule is necessary to promote a statewide interest if the rule will diminish a previous grant of authority of a political subdivision of this state:**

Not applicable

**8. The preliminary summary of the economic, small business, and consumer impact:**

R17-4-438: The economic impact of an entire Section of definitions is minimal cost reduction to the agency in employee time to explain or clarify for an inquiring party. Members of the regulated public save minimally in time and potential misunderstanding.

R17-4-439: Arizona DPS would send one officer to perform an out-of-state audit. The billable cost the out-of-state entity for an out-of-state audit would be DPS officer transportation cost and per diem. Depending upon the location of an out-of-state audit total billable costs to the entity could be minimal to moderate. Arizona DPS has only performed 1 out-of-state audit in the time this Section has been in effect. In-state audit costs are absorbed by the Motor Carrier Safety Assistance Program (MCSAP) federal funds, ca. $1.3 million annually. DPS estimates they perform approximately 20 in-state audits per year. An audited entity could be sanctioned with noncompliance fines as follows:

R17-4-435, et seq. Motor Carrier Safety noncompliance - $1,000-$10,000

R17-4-436 Hazmat noncompliance - $10,000-$25,000

As prescribed under A.R.S. § 28-5235, other sanctions to a noncompliant entity or driver could include loss of commercial driver license, loss of registration, or revocation of privilege to operate in the State of Arizona.

**9. The name and address of agency personnel with whom persons may communicate regarding the accuracy of the economic, small business, and consumer impact statement:**

Written or oral comment concerning this rulemaking may be made to the officer listed in item #4.

**10. The time, place, and nature of the proceedings for the making, amendment, or repeal of the rule, or if no proceeding is scheduled, where, when, and how persons may request an oral proceeding on the proposed rule:**

Since the agency proposes no substantive change in the provisions of these two rules, no public hearing is scheduled in this rulemaking. A person may request a public hearing by notifying the officer listed in item #4. If no public hearing is requested, the public record in this rulemaking will close at 4:30 p.m. on Friday, July 20, 2001.

**11. Any other matters prescribed by statute that are applicable to the specific agency or to any specific rule or class of rules:**
None

**12. Incorporations by reference and their location in the rules:**
R17-4-439(B)(6) incorporates ADOT Administrative Procedures form FIN-6.02 "Travel Authorization Procedure".

**13. The full text of the rules follows:**

**TITLE 17. TRANSPORTATION**

**CHAPTER 4. DEPARTMENT OF TRANSPORTATION**
**MOTOR VEHICLE DIVISION**

**ARTICLE 4. MOTOR CARRIERS**

Section
R17-4-438. Definitions
R17-4-439. Motor Carrier Safety; ~~Inspections~~ Inspection, Enforcement, ~~Sanctions~~ Sanction

**ARTICLE 4. MOTOR CARRIERS**

**R17-4-438. Definitions**

**A.** ~~The following words and phrases, when used in R17-4-439 and R17-4-440, shall have the meanings ascribed to them as set forth below:~~
The following definitions apply to R17-4-439 and R17-4-440:
1. "Audit" means any inspection of ~~the~~ a transporter's motor vehicle~~s~~, equipment, books, or records ~~of a transporter~~ to determine compliance with:
   a. R17-4-435 through R17-4-435.05;
   b. ~~and~~ R17-4-436; and
   c. A.R.S. Title 28, Chapter 19.
2. "Danger to ~~the~~ public safety" means any condition of a transporter likely to result in serious peril to the public if not discontinued immediately.
3. "Director" means the ~~Assistant~~ Division Director, Arizona Department of Transportation, Motor Vehicle Division or the director's designee.
4. "Hearing Office" means the Arizona Department of Transportation, Motor Vehicle Division, Executive Hearing Office.
5. "Transporter" means any person, driver, motor carrier, motor vehicle, shipper, manufacturer, including any motor vehicle transporting hazardous material~~s~~, a hazardous substance~~s~~, or hazardous waste, ~~which is~~ subject to a provision prescribed under:
   a. R17-4-435 through R17-4-435.05;
   b. ~~and~~ R17-4-436; and
   c. A.R.S. Title 28, Chapter 19.
6. "Violation" means any conduct, act, or failure to act required or prohibited ~~by~~ under:
   a. R17-4-435 through R17-4-435.05;
   b. ~~and~~ R17-4-436; and
   c. A.R.S. Title 28, Chapter 19.

**B.** ~~The definitions set forth in A.R.S. § 28-2401 are specifically applicable to R17-4-439 and R17-4-440.~~
Any definition prescribed under A.R.S. § 28-5201 also applies to R17-4-439 and R17-4-440.

**R17-4-439. Motor Carrier Safety: ~~Inspections~~ Inspection, Enforcement, and ~~Sanctions~~ Sanction**

**A.** Scope. This ~~rule~~ Section applies to any transporter subject to provisions prescribed under:
1. R17-4-435 through R17-4-435.05;
2. ~~and~~ R17-4-436; and
3. A.R.S. Title 28, Chapter 19.

**B.** Audits.
1. An audit may be conducted for cause or without cause.
2. ~~Persons~~ A person authorized by the Arizona Department of Public Safety or the Motor Vehicle Division may enter the premises of any transporter in this state for the purpose of conducting an audit.
3. A motor vehicle may be inspected:
   a. Within Arizona

i. ~~at the~~ At a transporter's place of business; or
ii. At any other instate location; ~~within this state,~~ or

b. Outside Arizona at ~~the~~ a transporter's place of business ~~if outside the state~~.

4. ~~Records shall be made available for audit during normal business hours at the transporter's place of business in Arizona. If the records are maintained at a location outside the state of Arizona, the transporter shall either make the records available at a location within Arizona designated by the Director or make the records available at the transporter's place of business outside the state of Arizona. Audits conducted at a location out-of-state shall be at the transporter's expense. Audit expenses, including per diem and travel expenses, are to be prepaid according to Arizona Department of Transportation, Administrative Procedures, Chapter 6.02 Travel Authorization Procedure dated January 28, 1991, which is incorporated into and made a part of this rule by reference and is on file at the Office of the Secretary of State and also on file at the Arizona Department of Transportation, Motor Vehicle Division, Executive Hearing Office. This rule does not include any later amendments or additions of the incorporated matter.~~
A transporter shall make records available for audit:
a. During a transporter's normal business hours; and
b. In a specific location as follows:
i. A transporter's Arizona place of business; or
ii. Either an Arizona location designated by the Division Director or a transporter's out-of-state place of business.

5. The Division shall charge a transporter for all expense incurred in performance of an out-of-state audit.
6. The Division shall require prepayment of out-of-state audit expense according to Arizona Department of Transportation, Administrative Procedures, FIN-6.02 Travel Authorization Procedure, effective: October 1, 1994, incorporated by reference into this Section and filed with the Arizona Secretary of State.

**C.** ~~Notification of Violations. Within 5 days after completion of the audit, the transporter shall be notified of all violations in writing. This notification shall specify the date by which the violations are required to be remedied.~~
Violation notification. Within five days after audit completion, the Division shall notify an audited transporter in writing of all violations. The notification shall specify a deadline date for remedy of all violations.

**D.** ~~Obligation to Correct Violations. After receipt of notification of the violations, the transporter shall be required to remedy all violations and be in compliance with R17-4-435 through R17-4-435.05 and R17-4-436 and A.R.S. Title 28, Chapter 19 by the date specified.~~
Obligation to remedy violations. After receipt of violation notification, a transporter shall remedy all violations by the specified date to comply with:
1. R17-4-435 through R17-4-435.05;
2. R17-4-436; and
3. A.R.S. Title 28, Chapter 19.

**E.** ~~Noncompliance; Failure to Remedy Violations. If it is determined that a violation was not remedied on or before the date set forth on the notice of violation, further enforcement action shall be in accordance with A.R.S. §§ 28-2405 through 28-2406.~~
Noncompliance; Failure to remedy violations. If the Division determines a transporter did not remedy a violation by the date specified in a violation notice, the Division shall initiate further enforcement action as prescribed under A.R.S. §§ 28-5237 and 28-5238.

**F.** Danger to ~~the Public Safety~~ public safety. ~~Whenever~~ If the Division Director determines ~~that the~~ a written violation report ~~of violations~~ establishes ~~the existence of~~ probable cause ~~that a~~ of danger to ~~the~~ public safety ~~exists~~, the Division Director shall issue an order by 5:00 p.m. ~~on~~ the next business day suspending the Arizona registration of the motor vehicle ~~which is~~ owned or leased by the transporter, or ~~the~~ a driver's Arizona driver license or nonresident driving privilege ~~of the driver~~.

# NOTICE OF PROPOSED RULEMAKING

## TITLE 17. TRANSPORTATION

## CHAPTER 4. DEPARTMENT OF TRANSPORTATION
## MOTOR VEHICLE DIVISION

## PREAMBLE

**1. Sections Affected** | **Rulemaking Action**
R17-4-510 | Amend

**2. The specific authority for the rulemaking, including both the authorizing statute (general) and the statutes the rules are implementing (specific):**

Authorizing statute: A.R.S. § 28-366

Implementing statute: A.R.S. § 28-3160

**3. A list of all previous notices appearing in the Register addressing the proposed rule:**

Notice of Rulemaking Docket Opening: 7 A.A.R. 2085, May 18, 2001

**4. The name and address of agency personnel with whom persons may communicate regarding the rulemaking:**

Name: Bill Bishop
Rules Analyst

Address: Arizona Department of Transportation
Administrative Rules Unit, Mail Drop 507M
3737 N. 7th Street, Suite 160
Phoenix, AZ 85014-5017

Telephone: (602) 712-8449

Fax: (602) 241-1624

E-mail: bjbishop@dot.state.az.us

To track progress of this rule and any other agency rulemaking matters, please visit the ADOT web site at www.dot.state.az.us/about/rules.

**5. An explanation of the rule, including the agency's reasons for initiating the rule:**

R17-4-510 concerns minor's applications for driver licenses. The Department reviewed this rule as it committed to do in a five-year rule review report approved by the Governor's Regulatory Review Council on June 23, 2000 (F-00-0603). The Department plans to update the rule for language and style and to conform it to the current statute.

**6. A reference to any study that the agency proposes to rely on in its evaluation of or justification for the proposed rule and where the public may obtain or review the study, all data underlying each study, any analysis of the study and other supporting material:**

None

**7. A showing of good cause why the rule is necessary to promote a statewide interest if the rule will diminish a previous grant of authority of a political subdivision of this state:**

Not applicable

**8. The preliminary summary of the economic, small business, and consumer impact:**

This rulemaking will update the current rule for clarity and this should decrease the cost of agency compliance and public compliance. The rulemaking will also impose costs on state agencies for rule development and regulatory review. Overall, this rulemaking will probably have little economic, small business, and consumer impact.

**9. The name and address of agency personnel with whom persons may communicate regarding the accuracy of the economic, small business, and consumer impact statement:**

Interested persons may contact the Rules Analyst listed in item #4 regarding the economic, small business, and consumer impact statement.

**10. The time, place, and nature of the proceedings for the making, amendment, or repeal of the rule, or if no proceeding is scheduled, where, when, and how persons may request an oral proceeding on the proposed rule:**

No public hearing is planned for this rulemaking. Oral comments and oral requests for a public hearing may be made Monday through Friday, 8:00 a.m. to 5:00 p.m., at the phone number in listed in item #4. Written comments may also be sent to address in item #4. All comments must be received by 4:30 p.m. on Friday, July 20, 2001, at which time the public record will close.

**11. Any other matters prescribed by statute that are applicable to the specific agency or to any specific rule or class of rules:**

None

**12. Incorporations by reference and their location in the rules:**

None

**13. The full text of the rules follows:**

## TITLE 17. TRANSPORTATION

## CHAPTER 4. DEPARTMENT OF TRANSPORTATION MOTOR VEHICLE DIVISION

## ARTICLE 5. DRIVER LICENSES

Section

R17-4-510. ~~Minor's application for permit or license~~ Required Signatures for Minor's Application

## ARTICLE 5. DRIVER LICENSES

**R17-4-510. ~~Minor's application for permit or License~~ Required Signatures for Minor's Application**

**~~A.~~** ~~For the purposes of administering the provisions of A.R.S. § 28-417, the following definitions are adopted:~~

~~1. "Custody" as used in subsection (B) of A.R.S. § 28-417 means legal custody granted to both parents by a court order, either jointly or during specified periods, but does not include visitation rights.~~

~~"Custody" as used in subsection (A) of A.R.S. § 28-417 means legal custody rights in a parent whose custody rights as parent of a child have not been severed by a court order or, in the case of divorced parents, only 1 parent was granted custody of the child, and excludes visitation rights.~~

~~2. "Guardian" means one who has been appointed by a court of law to care for a minor child, but only if both parents of the child are deceased, or an agency as defined in A.R.S. § 8-513.~~

~~3. "Person having custody of a minor child whose parents are deceased" means a person who is not a legal guardian of the child but who has for any reason assumed responsibility for the care, control, education, support and shelter of such a child.~~

~~4. "Parent" means the natural or adoptive father or mother of a child.~~

~~5. "Application", as used in this rule, means the Legal Guardian Affidavit which the Motor Vehicle Division requires to be submitted with each minor's driver license application.~~

**~~B.~~** ~~When both parents must sign: If the parents of a child are divorced but have both been awarded custody of the child, both must sign the application.~~

**~~C.~~** ~~Procedure when both parents sign: If both parents sign a child's application, no proof of custody need be furnished.~~

**~~D.~~** ~~Procedure when only 1 parent signs:~~

~~1. If the signing parent is married to the child's other parent, that fact shall be stated and it shall be presumed the signing parent has custody of the child.~~

~~2. If the signing parent is not married to the child's parent because the other parent is deceased, that fact shall be stated and it shall be presumed the signing parent has custody of the child.~~

~~3. If the signing parent is not married to the child's other parent, the signing parent must affirm that the other parent does not have custody of the child, in which event it shall be presumed the signing parent has custody of the child.~~

**~~E.~~** ~~Procedure when both parents are deceased:~~

~~1. Applications presented which are not signed by a parent because both are deceased must be accompanied by certified copies of certificates of death or other satisfactory proof of death, such as, by way of example but not limitation, a court judgment, affidavits of close relatives of the child or school records.~~

~~2. A person who is guardian of a child shall sign an application as defined by this rule or furnish a certified court order appointing guardianship.~~

~~3. An employer signing the application must certify the minor is employed by that person on the date of application.~~

~~4. A person who has custody of a child shall sign a Legal Guardian Affidavit affirming custody or furnish a certified court order awaiting custody.~~

~~**F.** Proof of custody. Proof of custody may be established by a certified copy of the court order awarding custody or a written affirmation by the person signing the application.~~

~~**G.** Adoption of questionnaire. The attached Legal Guardian Affidavit is adopted for use in satisfying the requirements of this rule, is incorporated by reference, and is on file in the Office of the Secretary of State.~~

**A.** Definitions

1. "Minor's application" means the application of a person under eighteen years of age for an instruction permit, a class G or M driver license, or an endorsement to a class G or M driver license.
2. "Parent" means a person's natural or adoptive mother or father.

**B.** If a person is signing a minor's application as a parent, the person shall show proof in one of the following ways:

1. The person's name is the same as the name listed as mother or father on the minor's birth certificate.
2. The person's name was the same as that shown as mother or father on the minor's birth certificate but has been legally changed,
3. A court order showing the person has adopted the minor, or
4. Any other proof that shows the person is the minor's parent.

**C.** If a person is signing a minor's application as a foster parent, the person must show a copy of the documents placing the minor with the person as foster parent.

**D.** If a person is signing a minor's application as a minor's guardian, the person must show a copy of the court order that assigned guardianship of the minor to the person.

**E.** If a person is signing a minor's application as other than a parent or foster parent, the person must provide copies of the death certificates of the minor's parents.

**F.** If a person is signing a minor's application as a minor's employer, the person shall show proof that the person employs the minor.

# NOTICE OF PROPOSED RULEMAKING

## TITLE 18. ENVIRONMENTAL QUALITY

## CHAPTER 4. DEPARTMENT OF ENVIRONMENTAL QUALITY
## SAFE DRINKING WATER

## PREAMBLE

| 1. Sections Affected | Rulemaking Action |
|---|---|
| R18-4-101 | Amend |
| R18-4-102 | Amend |
| R18-4-103 | Amend |
| R18-4-104 | Amend |
| R18-4-106 | Amend |
| R18-4-108 | Renumber |
| R18-4-108 | Amend |
| R18-4-109 | Renumber |
| R18-4-109 | New Section |
| R18-4-110 | Amend |
| R18-4-111 | Amend |
| R18-4-115 | Amend |
| R18-4-119 | Amend |
| R18-4-122 | Amend |
| Appendix A | New Appendix |
| R18-4-202 | Amend |
| R18-4-203 | Amend |
| R18-4-210 | Amend |
| R18-4-216 | Amend |
| R18-4-218 | Amend |
| R18-4-219 | Amend |
| R18-4-220 | Amend |
| R18-4-221 | Amend |

| | |
|---|---|
| R18-4-222 | Amend |
| R18-4-223 | Amend |
| R18-4-301.01 | Amend |
| Table 1 | New Table |
| R18-4-305 | Renumber |
| R18-4-306 | Repeal |
| R18-4-306 | Renumber |
| R18-4-307 | Amend |
| R18-4-308 | Amend |
| R18-4-309 | Amend |
| R18-4-310 | Amend |
| R18-4-311 | Amend |
| R18-4-312 | Amend |
| R18-4-313 | Amend |
| R18-4-314 | Amend |
| R18-4-315 | Amend |
| R18-4-316 | Amend |
| R18-4-317 | Amend |
| Table 1 | Repeal |
| Appendix A | New Section |
| Appendix B | New Section |
| R18-4-401 | Repeal |
| R18-4-401 | Renumber |
| R18-4-402 | Renumber |
| R18-4-402 | Amend |
| R18-4-403 | Renumber |
| R18-4-404 | Repeal |
| R18-4-405 | Repeal |
| R18-4-503 | Amend |
| R18-4-504 | Amend |
| R18-4-505 | Amend |
| R18-4-506 | Amend |
| R18-4-507 | Amend |
| R18-4-508 | Amend |
| R18-4-509 | Amend |
| Appendix A | Repeal |
| Appendix B | Repeal |
| Appendix C | Repeal |
| R18-4-703 | Amend |
| R18-4-704 | Amend |
| R18-4-705 | Amend |
| R18-4-706 | Amend |
| R18-4-707 | Amend |
| R18-4-708 | Amend |
| R18-4-709 | Amend |
| Appendix A | Amend |
| Appendix B | Renumber |
| Appendix B | New Appendix |
| Appendix C | Renumber |

**2. The specific authority for the rulemaking, including both the authorizing statute (general) and the statutes the rules are implementing (specific):**

Authorizing statutes: A.R.S. §§ 49-104, 49-202, 49-203, 49-351, 49-352, 49-353, and 49-353.01

Implementing statutes: A.R.S. §§ 49-203, 49-351, 49-352, 49-353, and 49-353.01

**3. A list of all previous notices appearing in the Register addressing the proposed rule:**

Notice of Rulemaking Docket Opening: 6 A.A.R. 2306, June 23, 2000

**4. The name and address of agency personnel with whom persons may communicate regarding the rulemaking:**

Name: Jeffrey W. Stuck, Manager, Drinking Water Section, or
Nina Miller, Primacy Coordinator, Drinking Water Section

Address: Arizona Department of Environmental Quality
3033 N. Central Avenue (M0248A)
Phoenix, AZ 85012-2809

Telephone & E-mail: Jeff Stuck, (602) 207-4617, jws@ev.state.az.us

Nina Miller, (602) 207-4641, nem@ev.state.az.us

(In Arizona: (800) 234-5677 and ask for the four-digit extension.)

Fax: (602) 207-4634

**5. An explanation of the rule, including the agency's reasons for initiating the rule:**

**A. Background for These Proposed Rules**

The Arizona Department of Environmental Quality (ADEQ) has been granted primacy by the U.S. Environmental Protection Agency (EPA) for purposes of enforcement of the federal Safe Drinking Water Act (SDWA) and related regulations in Arizona. To maintain primacy, ADEQ must adopt rules that are no less stringent than the national primary drinking water regulations. ADEQ has reviewed the Arizona drinking water rules at 18 A.A.C. 4, and determined that revisions need to be made to the rules in order for ADEQ to maintain primacy. The proposed revisions focus on the following four areas: 1) variances and exemptions, 2) the lead and copper rule, 3) lowering the reporting limits for analytical testing of synthetic organic chemicals, and 4) suspending the monitoring requirements for all unregulated contaminants except sodium and nickel.

The revisions will also include updating of the language to meet current rulemaking format and style requirements, correction of typographical errors, and other changes, some of which fulfill commitments made in the five-year review report approved at the September 14, 1999 meeting of the Governor's Regulatory Review Council. ADEQ held a stakeholder meeting in Phoenix on September 22, 2000 to discuss the proposed changes. Summaries of the changes to the rules follow.

EPA published "Revision of Existing Variance and Exemption Regulations to Comply With Requirements of the Safe Drinking Water Act; Final Rule" in 63 FR 43834, August 14, 1998. This final rule included changes to the existing variance and exemption regulations and established new provisions by which a public water system serving fewer than 10,000 people may obtain alternate variances. These revisions are based on the 1996 Safe Drinking Water Act (SDWA) Amendments.

Variances are available to a public water system that cannot comply with the national primary drinking water regulations, because of source water quality or affordability factors (the latter applies to public water systems serving fewer than 10,000 people). A variance allows a public water system to operate above a maximum contaminant level (MCL) on the condition that the water quality is still protective of public health, and ADEQ establishes a schedule for the public water system to meet the MCL. An exemption allows a public water system with compelling circumstances more time to comply with applicable national primary drinking water regulations.

The EPA requires that in order for ADEQ to retain primacy under 40 CFR 142, ADEQ must submit requests for approval of program revisions to adopt new or revised EPA regulations to EPA not later than two years after promulgation of the new or revised EPA regulations. The variance and exemption request for program approval was due to EPA by August 14, 2000. However, EPA has granted ADEQ an extension to meet this requirement to retain primacy.

EPA published "National Primary Drinking Water Regulations for Lead and Copper; Final Rule" in 65 FR 1950, January 12, 2000. The original lead and copper regulation was published by EPA in 1991. The purpose of the new rule is to improve implementation of the existing rule by eliminating unnecessary requirements, streamlining and reducing reporting burden, and promoting consistent national implementation. The new rule does not affect the action levels for lead and copper. ADEQ also proposes to revise the lead and copper regulations to clarify and correct previous rulemakings. ADEQ proposes to group the lead and copper revisions with this rule package to reduce the administrative burden.

ADEQ regulations list reporting limits for single sample synthetic organic chemicals (SOCs) at 50% of the applicable MCL, except atrazine, dibromochloropropane, di(2-ethylhexyl)phthalate, and ethylene dibromide, which are listed at 100% of the applicable MCL. The EPA reporting limits for single samples listed at 40 CFR 141.24 are lower than the ADEQ reporting limits. EPA began work on Chemical Monitoring Reform in 1995, to streamline and simplify contaminant monitoring and to relax the reporting limits for SOCs. However, during the Chemical Monitoring Reform deliberations Congress passed the 1996 SDWA Amendments, which altered the time-frame for development and proposal of Chemical Monitoring Reform. With the delay of Chemical Monitoring Reform, it is necessary for ADEQ to revise the reporting limits for the SOCs to the more stringent EPA values, to retain primary enforcement authority for drinking water regulations.

The 1996 SDWA Amendments required EPA to publish a list of unregulated contaminants by August 6, 1999, and to establish criteria for unregulated contaminant monitoring. EPA published "Revisions to the Unregulated Contaminant Monitoring Regulation to Public Water Systems; Final Rule" at 64 FR 50556, September 17, 1999. The new regulation covers the frequency and schedule for monitoring; procedures for selecting and monitoring a nationally representative sample of small public water systems; procedures for entering the monitoring data in the National Drinking Water Contaminant Occurrence Database; and, a listing of approved analytical methods.

As of January 1, 2001, EPA has been directly implementing the Unregulated Contaminant Monitoring Rule with assistance from ADEQ. ADEQ will participate in rule implementation through State Plan review and a Memorandum of Agreement (MOA), rather than through primacy. It is thus necessary to remove R18-4-401, R18-4-404, and R18-4-405 from 18 A.A.C. 4, Article 4. Unregulated contaminant monitoring under R18-4-401, R18-4-404, and R18- 4-405 for CWS and NTNCWS serving 10,000 people or less was previously suspended by EPA in 64 FR 1494, January 8, 1999. ADEQ granted this exclusion to CWS and NTNCWS serving 10,000 people or less, in a March 1999 letter. ADEQ granted the exclusion from unregulated contaminant monitoring under R18-4-401, R18-4-404, and R18-4-405 to public water systems serving greater than 10,000 people in a February 2001 letter.

The 1996 SDWA Amendments under 42 U.S.C. 300g-1(b)(4)(E)(ii) direct EPA to list compliance technologies for public water systems serving 10,000 or fewer people. Listed compliance technologies must achieve compliance with a MCL or treatment technique requirement, and may include point-of-entry and point-of-use treatment devices. EPA published "Removal of the Prohibition on the Use of Point of Use Devices for Compliance with National Primary Drinking Water Regulations; Final Rule" in 63 FR 31932, June 11, 1998. This final rule removed the prohibition on the use of point-of-use devices to achieve compliance with an MCL. ADEQ proposes to adopt these changes into 18 A.A.C. 4 through this rulemaking.

EPA published "National Primary and Secondary Drinking Water Regulations: Analytical Methods for Chemical and Microbiological Contaminants and Revisions to Laboratory Certification Requirements; Final Rule" in 64 FR 67450, December 1, 1999. This rule updated numerous analytical methods for compliance determinations of chemical contaminants in drinking water. ADEQ regulations reference EPA and Arizona Department of Health Services (ADHS) regulations concerning approved analytical methods. However, EPA has made other technical corrections and clarifications in this final rule, one of which needs to be updated with this rulemaking. ADEQ proposes to group the analytical methods revisions with this rule package to reduce the administrative burden.

EPA published "National Primary Drinking Water Regulation: Consumer Confidence Reports; Correction" in 64 FR 34732, June 29, 1999. This publication corrects minor typographical errors published in the August 19, 1998 National Primary Drinking Water Regulation: Consumer Confident Reports; Final Rule". ADEQ proposes to incorporate through this rulemaking these minor corrections to 18 A.A.C. 4, Article 7 to maintain consistency in ADEQ rules. In addition, ADEQ will correct other typographical errors in this Article. ADEQ proposes to group the Consumer Confidence Report corrections with this rule package to reduce the administrative burden.

ADEQ proposes to revise text in R18-4-106, R18-4-109, and R18-4-202 to address primacy issues raised by EPA in the Total Coliform Rule/Surface Water Treatment Rule Primacy Rule Package.

ADEQ proposes to revise R18-4-101, R18-4-119, R18-4-122, R18-4-301.01, R18-4-503, R18-4-505, R18-4-508, and R18-4-509 to clarify, correct and update these rules from previous rulemakings, and to update references.

18 A.A.C. 4 has many appendices using the same letter designation. ADEQ proposes to revise 18 A.A.C. 4 to clarify which appendices apply to each Article.

**B. Section-by-section Explanation of the Rules**

Section R18-4-101 sets forth the definitions for 18 A.A.C. 4. ADEQ proposes to add acronyms for "ADHS" (Arizona Department of Health Services), "CCR" (Consumer Confidence Report), "EPA" (U.S. Environmental Protection Agency), and "PCBs" (polychlorinated biphenyls) because these terms are used more than once in 18 A.A.C. 4. ADEQ proposes to remove the definitions for "private agricultural water system" and "semipublic water system" because these definitions have been removed from A.R.S. § 49-352. ADEQ proposes to remove the definition for "effective corrosion inhibitor residual" because this term is not used in 18 A.A.C. 4. ADEQ proposes to add the incorporation by reference of American National Standards Institute / NSF International Standard 60 and American National Standards Institute / NSF International Standard 61 to this Section because these documents are referenced in Sections R18-4-101, R18-4-119, and R18-4-310. ADEQ proposes to add a definition for "engineer" and to clarify the use of this term in 18 A.A.C. 4. ADEQ proposes to add "Safe Drinking Water Act" to this Section and to clarify the use of this term in 18 A.A.C. 4. ADEQ proposes to revise the definition for "certified operator" to reference the operator certification rules at R18-5-101. ADEQ proposes to amend the definition for "lead-free" to include fittings and fixtures that are in compliance with American National Standards Institute / NSF International Standard 61, Section 9, to comply with new federal standards for lead and copper. ADEQ proposes to amend the definitions for "large water system", "medium water system", and "small water system" to clarify that these definitions apply to the lead and copper regulations in Sections R18-4-306 through R18-4-316 only. ADEQ proposes to amend the definition of "public water system" to reference A.R.S. § 49-352. ADEQ proposes to revise the definition of "service line sample" as specified in 40 CFR 141.2. ADEQ proposes to delete the definitions numbering in R18-4-101. The definitions are alphabetized for easy reference, and removal of the numbers makes future rule revisions to the definitions easier.

Section R18-4-102 sets forth the applicability requirements of 18 A.A.C. 4. ADEQ proposes to remove R18-4-102(B) due to the removal of "private agricultural water system" and "semipublic water system" from Section R18-4-101 and A.R.S. § 49-352. ADEQ proposes to incorporate the text of R18-4-102(C) into R18-4-102(A).

Section R18-4-103 sets forth the recordkeeping requirements of 18 A.A.C. 4. ADEQ proposes to revise R18-4-103(A)(6) to correct a reference to the renumbered Section R18-4-305.

Section R18-4-104 sets forth public water system reporting requirements for 18 A.A.C. 4. ADEQ proposes to revise R18-4-104(E) as mandated by revisions to the federal lead and copper rules. ADEQ also proposes to revise R18-4-104(E) to clarify that a public water system must report lead and copper tap water monitoring results taken under R18-4-313, in addition to those taken under R18-4-310, as specified in 40 CFR 141.90(a)(1). ADEQ proposes to repeal R18-4-104(F) to comply with new federal rules that no longer require a public water system to provide a letter to ADEQ to justify the use of non-Tier 1 sampling sites and to document why the system cannot find a sufficient number of sampling sites served by lead service lines. ADEQ proposes to add new text to R18-4-104(F) to require a public water system installing corrosion control treatment under R18-4-313(A) to submit a certification letter to ADEQ, as specified in 40 CFR 141.90(c)(4). ADEQ proposes to revise R18-4-104(G) to clarify that a public water system must report lead and copper water quality parameter monitoring results taken under R18-4-313, in addition to those taken under R18-4-311, as specified 40 CFR 141.90(a)(1). ADEQ proposes to revise and renumber R18-4-104(J) to clarify when a public water system is subject to lead service line replacement requirements and the frequency at which a public water system must notify ADEQ of lead service line replacement activities, as specified in 40 CFR 141.90(e). ADEQ proposes to revise R18-4-104(J)(1)(a) to clarify that the public water system must conduct a materials survey to identify the initial number of lead service lines in its distribution system within 12 months of exceeding the lead action level, as specified in 40 CFR 141.90(e)(1). ADEQ also proposes to add R18-4-104(J)(3)(d) to require a public water system to certify that new requirements for partial lead service line replacement under R18-4-315(E) have been completed, as required by the new federal lead and copper rules. ADEQ proposes to revise R18-4-104(K) by repealing subsections (K)(1),(3), and (4), as a result of the removal of corresponding Sections R18-4-401, R18-4-404, and R18-4-405. ADEQ also proposes to add the reporting requirements for nickel to R18-4-104(K), as mandated under 40 CFR 141.31(a). ADEQ proposes to revise R18-4-104(N)(6) to require a public water system to only notify ADEQ of a break in a transmission or distribution line that results in a loss of service to customers for an extended period of time. ADEQ proposes to move the table in R18-4-104(U) listing the reporting limits for the SOCs from the composite samples listing in R18-4-104(U)(2)(c) to the single samples listing in R18-4-104(U)(1)(f), because ADEQ is required to adopt the lower EPA values for single sample SOC reporting limits at 40 CFR 141.24(h)(18) to retain primacy. ADEQ also proposes to make the following three revisions to R18-4-104(U).

First, ADEQ proposes to revise this subsection to indicate that the single and composite reporting limits for toxaphene differ. According to 40 CFR 141.24(h)(10), the reporting limit for a composite sample must be less than one-fifth of the MCL. Second, ADEQ proposes to revise the reporting limit for 2,4,5-TP (Silvex), as specified in 40 CFR 141.24(h)(18). Third, ADEQ proposes to remove the reporting limits for lead and copper from R18-4-104(U)(1)(e), R18-4-104(U)(1)(f) and R18-4-104(U)(2)(a), and to add the reporting requirements for lead and copper as specified in 40 CFR 141.89(a)(3) to R18-4-104(U)(4). Finally, ADEQ proposes to add new subsection R18-4-104(V) to require a public water system to report to the Department a failure to comply with any provision of 18 A.A.C. 4 within 48 hours, unless a different reporting period is already specified for the violation in R18-4-104, as mandated by 40 CFR 141.31(b).

Section R18-4-106 sets forth the requirements for use of approved analytical methods. ADEQ proposes to revise R18-4-106(A) to clarify that ADEQ will not allow the use of an analytical method that EPA has not approved. This change is to address a primacy issue raised by EPA.

Section R18-4-109 sets forth the requirements for sample collection, preservation, and transportation. ADEQ proposes to move the text of this Section to the previously recodified R18-4-108. ADEQ proposes to further amend this Section to require approval from both EPA and ADHS, rather than approval from one of the regulatory entities. This change it to address a primacy issue raised by EPA. ADEQ proposes to insert alternate variance technologies text in R18-4-109, as mandated by revisions to the federal variance and exemption regulations.

Section R18-4-110 sets forth the requirements for a public water system to obtain a variance from a MCL or treatment technique requirement. ADEQ proposes to amend R18-4-110(A)(3) and R18-4-110(D)(4) to provide that a public water system no longer has to install and use the best available technology before it can receive a variance from a MCL. The public water system may now receive a variance from a MCL on the condition that it will install and use the best available technology. ADEQ proposes to amend R18-4-110(B) to no longer allow ADEQ to issue a public water system a variance for the use of an alternative treatment technique. Under 40 CFR 142.46 and the SDWA, ADEQ does not have this authority. ADEQ proposes to revise R18-4-110(C) to set a five-year schedule of compliance deadline for variances. ADEQ also proposes to remove R18-4-110(K) to consolidate provisions for the use of bottled water in R18-4-223. The proposed changes to R18-4-110 are mandated by revisions to the federal variance and exemption regulations, and to clarify and correct previous rulemakings.

Section R18-4-111 sets forth the requirements for a public water system to obtain an exemption from a MCL or treatment technique requirement. ADEQ proposes to revise R18-4-111(A) to include new criteria a public water system must meet before ADEQ will grant an exemption. ADEQ proposes to move the text of R18-4-111(C)(1) through (3) to R18-4-111(A)(5). Formerly, an exemption was only valid for one year, but could be extended to three years, if the public water system complied with R18-4-111(C)(1) through (3). Under this proposed rule change the initial exemption is valid for three years after the effective date of the MCL or treatment technique, however the public water system must first demonstrate compliance with the requirements of R18-4-111(A)(5). The public water system must also demonstrate that it cannot complete needed capital improvements within one year of the effective date of the MCL or treatment technique requirement. ADEQ proposes to revise R18-4-111(B) to add the requirement that a schedule of compliance must include a schedule for installation of treatment or measures to develop an alternative source of water supply. ADEQ proposes to incorporate R18-4-111(C)(4) into R18-4-111(C), and to reclassify a public water system eligible for an extension under this subsection from a system with fewer than 500 service connections to a system serving not more than 3300 persons. An exemption for a system serving not more than 3300 persons may be renewed for one or more additional two-year periods, but not to exceed a total of six additional years. ADEQ proposes to revise R18-4-111(C) to change the schedule of compliance for an exemption from one year to three years after the effective date of the MCL or treatment technique requirement. ADEQ proposes to revise R18-4-111(D) to clarify that all public water systems are not permitted exemptions from treatment technique requirements related to filtration and disinfection. ADEQ proposes to move the requirements of R18-4-111(K) to R18-4-111(J) to consolidate the circumstances under which ADEQ would require the use of bottled water, point-of-entry treatment devices, or point-of-use treatment devices. ADEQ proposes to add new text to R18-4-111(K) to provide that a public water system shall not receive an exemption if it has already obtained an alternate variance under R18-4-109. The proposed changes to R18-4-111 are mandated by revisions to the federal variance and exemption regulations.

Section R18-4-115 sets forth the requirements for backflow prevention. ADEQ proposes to amend R18-4-115 to comply with current rule writing style in the Arizona Rulemaking Manual, and to update an item incorporated by reference.

Section R18-4-119 sets forth the requirements for additives. ADEQ proposes to change the title of this Section to Standards for Additives, Materials and Equipment because it more accurately describes the content of this Section. ADEQ proposes to remove the incorporation by reference to American National Standards Institute / NSF International Standard 60 and American National Standards Institute / NSF International Standard 61 because the 2000 versions of these documents will be incorporated by reference into Section R18-4-101. ADEQ proposes to revise R18-4-119(C) to clarify the certifying mark requirements under this Section. ADEQ proposes to correct R18-4-119(D) to match the language of the statute (A.R.S. § 49-353.01(B)) that this rule text is taken from, and to indicate differences from the statute with brackets. ADEQ proposes to revise R18-4-119(E)(4) and (5) to clarify and correct previous rulemakings.

Section R18-4-122 sets forth the requirements for entry and inspection of public and semipublic water systems. ADEQ proposes to remove "semipublic water systems" from the title of this Section due to the removal of this term from Section R18-4-101 and A.R.S. § 49-352. ADEQ proposes to amend R18-4-122 to amend an incorrect reference to the A.R.S.

ADEQ proposes to move Appendix A of Article 5 to Article 1, because this appendix is referenced in Article 1.

Section R18-4-202 sets forth the MCL and monitoring requirements for total coliform. ADEQ proposes to amend R18-4-202(G)(1) by the addition of the word "protected" before the words "groundwater system", as specified in 40 CFR 141.21(a)(2). ADEQ proposes to revise R18-4-202(H)(4) to clarify that a public water system taking repeat samples for total coliform, and which subsequently exceeds an MCL for total coliform, must continue to take repeat samples until ADEQ is notified of the MCL violation, as specified in 40 CFR 141.21(b)(4). The revisions to this Section address primacy issues raised by EPA.

Section R18-4-203 sets forth the requirements for total coliform special events. ADEQ proposes to amend R18-4-203 to comply with current rule writing style in the Arizona Rulemaking Manual.

Section R18-4-210 sets forth the special public notice requirements for fluoride. ADEQ proposes to add the term "of Article 1" after the reference to Appendix A in R18-4-210(B), because Appendix A of Article 5 is being moved to Article 1.

Section R18-4-216 sets forth the monitoring requirements for the SOCs. ADEQ proposes to amend R18-4-216(H) by revising the SOC reporting limits to the lower EPA reporting limits, as specified in 40 CFR 141.24(h)(18). ADEQ is required to make this revision to retain primary enforcement authority for drinking water regulations.

Section R18-4-218 sets forth the requirements for sampling sites. ADEQ proposes to revise R18-4-218(A)(2) to clarify the sampling site requirements for surface water systems.

Section R18-4-219 sets forth the requirements for sample compositing. ADEQ proposes to amend R18-4-219(D)(4) to clarify when a public water system must analyze a duplicate sample and report the results to ADEQ. This proposed change is mandated by revisions to the federal analytical method regulations. ADEQ proposes to revise subsection R18-4-219(E)(5) to add resampling requirements for lead and copper composite source water samples. This proposed change is mandated by revisions to the federal lead and copper regulations.

Sections R18-4-220 sets forth the requirements for the use of best available technologies. ADEQ proposes to add R18-4-220(H) to allow a public water system serving 10,000 or fewer people to use the listed compliance technologies. This proposed change is mandated by the 1996 SDWA Amendments.

Section R18-4-221 sets forth the requirements for the use of blending to achieve compliance with MCLs. ADEQ proposes to amend R18-4-221 to comply with current rulewriting style in the Arizona Rulemaking Manual.

Section R18-4-222 sets forth the requirements for the use of point-of-entry and point-of use treatment devices. ADEQ proposes to amend R18-4-222(A) and R18-4-222(B) to allow a public water system to use a point-of-use treatment device. This proposed change is mandated by the 1996 SDWA Amendments, and 63 FR 31932. ADEQ proposes to add R18-4-222(C) to require that a public water system using point-of-entry or point-of-use treatment devices as a condition for receiving a variance or exemption meet the requirements of R18-4-222(B), as specified in 40 CFR 142.62(h).

Section R18-4-223 sets forth the requirements for the use of bottled water. ADEQ proposes to add R18-4-223(C) to set forth the conditions a public water system must meet when using bottled water as a condition for obtaining a variance or an exemption, as specified in 40 CFR 142.62(g).

Section R18-4-301.01 sets forth the requirements for determining if a groundwater system is under the influence of surface water. ADEQ proposes to add Table 1, currently found after R18-4-317, to R18-4-301.01. ADEQ proposes to revise R18-4-301.01(E)(4) to reference Table 1.

R18-4-305 sets forth the applicability requirements for the lead and copper rule. R18-4-306 sets forth the lead and copper requirements for large water systems serving more than 50,000 persons. ADEQ proposes to remove R18-4-306, and consolidate the requirements for large water systems with the requirements for small and medium water systems under R18-4-307. ADEQ proposes this change because the dates for large water systems to complete specific tasks under R18-4-306 have expired, and the general requirements for large, medium, and small water systems can be consolidated under R18-4-307. ADEQ proposes to renumber R18-4-305 as R18-4-306 because of pending revisions to the disinfection and filtration rules.

Section R18-4-307 sets forth the general requirements for a small or medium water system to comply with the lead and copper rule. ADEQ proposes to revise and renumber R18-4-307(A) to add the requirements for a large water system previously listed under R18-4-306(A). ADEQ proposes to move the text of R18-4-307(A)(3) to R18-4-307(A)(4), and to revise the deadlines under this subsection, as specified in 40 CFR 141.81(e)(1) and 40 CFR 141.81(e)(2). ADEQ proposes to revise and renumber R18-4-307(B) to add the requirements for a large water system previously listed under R18-4-306(B). ADEQ proposes to revise R18-4-307(B) and R18-4-307(B)(2) to clarify the requirements for a large, medium, or small water system deemed to have optimized corrosion control and that already has corrosion control treatment in place, as specified in the federal revisions to the lead and copper rule. ADEQ proposes to revise R18-4-307(B)(3) to add the requirement that a large, medium, or small water system deemed to have optimized corrosion control under this subsection must also meet the copper action level. ADEQ proposes to add an additional criterion under R18-4-307(B)(3)(b) for a large, medium, or small water system to qualify as having optimized corrosion control. This proposed change will correct an oversight from the original EPA lead and copper rule that prevented CWSs and NTNCWSs with very low 90th percentile lead levels and undetectable source water lead levels from being classified with optimized corrosion control under this subsection. ADEQ proposes to add R18-4-307(B)(4) to add the requirement that a large, medium, or small water system no longer qualifying for optimized corrosion control under R18-4-307(B)(3) must complete the corrosion control treatment steps in R18-4-307(A). ADEQ proposes to add R18-4-307(B)(5) to require a large, medium, or small water system deemed to have optimized corrosion control under R18-4-307(B)(3) to monitor for lead and copper at the tap every three years. This proposed change will correct an oversight from the original lead and copper rule. ADEQ proposes to add R18-4-307(B)(6) to add the requirement that a large, medium, or small water system that meets the requirements of R18-4-307(B)(3), and that adds a source or changes a treatment, must conduct additional monitoring or take other action ADEQ determines is appropriate to ensure that the system maintain minimal levels of corrosion in the distribution system. The proposed revisions to R18-4-307(B)(3), R18-4-307(B)(4), R18-4-307(B)(5) and R18-4-307(B)(6) are mandated by revisions to the federal lead and copper rules. ADEQ proposes to move the text of R18-4-307(G) before R18-4-307(F), and to revise the new text in R18-4-307(G) to clarify when a public water system is subject to lead service line replacement requirements, as specified in 40 CFR 141.80(f).

Section R18-4-308 sets forth the lead and copper action levels and how to determine the 90th percentile lead and copper tap water levels. ADEQ proposes to remove R18-4-308(C)(5) and move this text to R18-4-104(U)(4), because this text specifies the reporting requirements for lead and copper, as specified in 40 CFR 141.89(a)(3).

Section R18-4-309 sets forth the requirements for a public water system to select sampling sites and to complete a materials survey under the lead and copper rule. ADEQ proposes to amend R18-4-309(A)(1) and R18-4-309(A)(2) to give a public water system additional flexibility to complete lead and copper tap water sampling, as specified in the revisions the federal lead and copper rules. ADEQ also proposes to revise R18-4-309(A)(1)(a), R18-4-309(A)(1)(b), and R18-4-309(A)(2)(a) to correct the criteria for the determination of Tier 1, Tier 2, and Tier 3 sampling sites pursuant to 40 CFR 141.86(a). ADEQ proposes to revise R18-4-309(A)(4) to be as stringent as 40 CFR 141.86(a)(8), and to clarify sampling requirements under this subsection. ADEQ proposes to repeal R18-4-309(B)(2) and R18-4-309(B)(3), because the federal regulations have changed to no longer require a public water system to provide justification letters when using non-Tier 1 lead and copper tap water sampling sites. ADEQ proposes to add new text under R18-4-309(B)(2) to maintain the requirement for a public water system to identify materials in its distribution system in order to complete a materials survey, as specified in 40 CFR 141.42(d).

Section R18-4-310 sets forth the requirements for lead and copper tap water monitoring. ADEQ proposes to remove the expired deadlines for lead and copper tap water monitoring from R18-4-310(B), and replace the dates with the statement that ADEQ will designate the initial monitoring year for a public water system. ADEQ proposes to amend R18-4-310(C) to clarify that a public water system shall take "at least" one sample from the specified number of sampling sites, as specified in 40 CFR 141.86(c). ADEQ proposes to revise R18-4-310(D) and to add new text to R18-4-310(D)(3) to allow for conditional collection of non-first-draw samples for NTNCWSs and special-case CWSs, as specified in the federal lead and copper revisions. ADEQ proposes to revise R18-4-310(D)(1) to clarify that all first-draw samples and non-first-draw samples collected under this subsection must be one liter in volume and to add additional procedures for residents collecting first-draw tap water samples, as specified in 40 CFR 141.86(b)(2). ADEQ proposes to move R18-4-310(D)(2) on proper procedures for lead service line sampling to R18-4-315(D), because these requirements only apply to samples taken in accordance with that subsection. ADEQ proposes to add new text to R18-4-310(E) requiring large, medium, and small water systems deemed to have optimized corrosion control under R18-4-307(B)(3) to continue tap water monitoring for lead and copper, as specified in the revisions to the federal lead and copper rules. ADEQ proposes to renumber and reorganize the text of R18-4-310(E) to R18-4-310(F), R18-4-310(G), R18-4-310(I), and R18-4-310(J). This proposed change to R18-4-310(E) is intended to list all the opportunities for reduced monitoring together, and then list the monitoring requirements for reduced monitoring. ADEQ also proposes to revise R18-4-310(F) (previously R18-4-310(E)) and R18-4-310(G) (previously R18-4-310(E)(2)) to remove the requirement that a small or medium water system must request reduced monitoring from ADEQ, as specified in 40 CFR 141.86(d)(4). ADEQ proposes to add new text at R18-4-310(H) to provide an additional opportunity for a small or medium water system to reduce tap water monitoring for lead and copper, as specified in the revisions to the federal lead and copper rules. ADEQ proposes to consolidate the requirements for reduced monitoring for lead and copper at the tap in R18-4-310(I). ADEQ also proposes to revise R18-4-310(I) to include the new federal requirements for reduced lead and copper tap water monitoring. ADEQ proposes to revise subsection R18-4-310(J) (previously R18-4-310(E)(4)) by adding the opportunity for a small or medium water system on reduced lead and copper tap water monitoring, which subsequently exceeds the action level for lead or copper, to return to reduced monitoring, as specified in the revisions to the federal lead and copper rules. ADEQ proposes to add R18-4-310(K) to include the new federal requirement that a small or medium water system on reduced tap water monitoring for lead and copper that adds a new source or changes any water treatment must resume standard lead and copper tap water monitoring at the request of ADEQ. ADEQ proposes to amend R18-4-310(L) (previously R18-4-310(F)), to incorporate the requirements of 40 CFR 141.86(e). ADEQ proposes to revise R18-4-310(N) (previously R18-4-310(H)) to clarify when a large water system must complete lead service line replacement pursuant to 40 CFR 141.84(a). ADEQ proposes to revise R18-4-310(O) (previously R18-4-310(I)), to be consistent with the text of 40 CFR 141.85(d). ADEQ proposes to add new subsection R18-4-310(P) to provide for lead and copper tap water sample invalidation, as specified in the revisions to the federal lead and copper rules. ADEQ proposes to add new subsection R18-4-310(Q) to include the requirement from the federal lead and copper rule revisions that allows a small water system to request a nine year monitoring waiver for lead or copper, or both, without jeopardizing public health.

Section R18-4-311 sets forth the requirements for lead and copper water quality parameter monitoring. ADEQ proposes to revise R18-4-311(E) to specify that the length of time for each monitoring period in this subsection is six months, as specified in 40 CFR 141.87(b). ADEQ proposes to revise R18-4-311(G) to revise the deadline under this subsection, as specified in 40 CFR 141.81(e)(1). ADEQ proposes to revise R18-4-311(H) to clarify that ADEQ must choose one of the corrosion control treatment listed under R18-4-311(G) for the small or medium water system. ADEQ proposes to revise R18-4-311(I) to clarify that the data collected on water quality parameters may be used by ADEQ in making any determination under R18-4-313 in addition to R18-4-311, and may also be used in determining if the public water system is eligible for reduced monitoring, as specified in 40 CFR 141.87(f).

Section R18-4-312 sets forth the requirements for lead and copper corrosion control studies. ADEQ proposes to revise R18-4-312(A) to remove the expired date for a large water system to complete a corrosion control study, and replace it with the general deadline. ADEQ proposes to revise R18-4-312(A)(1) to revise the deadline under this subsection, as specified in 40 CFR 141.81(e)(2). ADEQ proposes to remove R18-4-312(C)(5) because "equivalent tests that are approved in writing by the Department" are not permitted under this subsection, as specified in 40 CFR 141.82(c)(2). ADEQ proposes to revise R18-4-312(D) to clarify the language of this subsection, as specified in 40 CFR 141.82(c)(3).

Section R18-4-313 sets forth the requirements for lead and copper corrosion control treatment. ADEQ proposes to revise R18-4-313(B) to remove the expired date for a large water system to install and operate corrosion control treatment, and replace it with the general deadline. ADEQ also proposes to revise R18-4-313(B) to clarify that a public water system must <u>properly</u> install and operate <u>throughout its distribution system</u> optimal corrosion control treatment, as specified in 40 CFR 141.82(e). ADEQ proposes to revise R18-4-313(C) to remove the expired date for a large water system to complete follow-up lead and copper tap water monitoring and water quality parameter monitoring,

and replace it with the general deadline. ADEQ also proposes to revise R18-4-313(C) to clarify the follow-up monitoring requirements for water quality parameters and lead and copper at the tap, as specified in 40 CFR 141.86(d)(2) and 40 CFR 141.87(c). ADEQ proposes to revise R18-4-313(D) to clarify that a public water system must take at least two tap water samples from the required number of sites when monitoring for water quality parameters at the tap. ADEQ proposes to revise R18-4-313(E) to clarify that each public water system that installs corrosion control treatment shall take at least one sample at each sampling point no less frequently than every two weeks, as specified in the revisions to the federal lead and copper rules and 40 CFR 141.87. ADEQ proposes to add new text to R18-4-313(F) to give groundwater systems the opportunity to reduce water quality parameter monitoring at each sampling point to representative sites, as specified in the federal lead and copper rule revisions. ADEQ proposes to renumber R18-4-313(F), (G), and (H) to R18-4-313(G), (H), and (I), respectively, due to the addition of the new text to R18-4-313(F). ADEQ proposes to amend the new R18-4-313(H) and R18-4-313(I) to revise the procedures for determining compliance with water quality parameters, as specified in the revisions to the federal lead and copper rules. ADEQ proposes to revise R18-4-313(J) and R18-4-313(K) to remove the requirement for a public water system to request permission from ADEQ to reduce monitoring for water quality parameters at the tap, and to be consistent with the language of 40 CFR 141.87. ADEQ also proposes to revise R18-4-313(J) to specify that "at least two" samples must be taken from each reduced monitoring site. ADEQ proposes to add a new subsection R18-4-313(L) to allow a public water system more opportunities to conduct reduced tap water monitoring for water quality parameters, as specified in 40 CFR 141.87(e)(2)(i). ADEQ proposes to add a new subsection R18-4-313(M) to allow a large water system to reduce the frequency of tap water monitoring for water quality parameters, as specified in the revisions to the federal lead and copper rule. ADEQ proposes to renumber R18-4-313(L) to R18-4-313(N), and to revise this subsection to specify the conditions under which a public water system on reduced monitoring, which fails to operate at or above the minimum value or within the range of values for the water quality parameters, must resume standard tap water quality parameter monitoring, as specified in the revisions to the federal lead and copper rule. ADEQ proposes to add a new subsection R18-4-313(O) to add the requirement that a public water system must continue lead and copper tap water monitoring after ADEQ designates a range of values for water quality parameters that reflect optimal corrosion control treatment for the system, as specified in 40 CFR 141.86(d)(3). ADEQ proposes to renumber and reorganize the text of R18-4-313(M) to R18-4-313(P), R18-4-313(Q), R18-4-313(S), and R18-4-313(T). This proposed change to R18-4-313(M) is intended to list all the opportunities for reduced monitoring for lead and copper at the tap together, and then list the monitoring requirements for reduced monitoring. ADEQ proposes to revise the new text in R18-4-313(P) and R18-4-313(Q) by removing the requirement that a public water system must request permission from ADEQ to reduce tap water monitoring for lead and copper, and adding the requirement that ADEQ shall notify a public water system when it is eligible for reduced monitoring, as specified in the federal lead and copper rule revisions. ADEQ proposes to add a new subsection R18-4-313(R) to provide a public water system that has installed corrosion control treatment an additional opportunity for reduced monitoring, as specified in the revisions to the federal lead and copper rules. ADEQ proposes to consolidate the requirements for reduced monitoring for lead and copper at the tap in R18-4-313(S). ADEQ also proposes to revise R18-4-313(S) to include the new federal requirements for reduced lead and copper tap water monitoring. ADEQ proposes to revise new subsection R18-4-313(T) to specify the conditions under which a public water system on reduced lead and copper tap water monitoring, which fails to operate at or above the minimum value or within the range of values for water quality parameters, shall resume standard tap water monitoring for lead and copper, as specified in the revisions to the federal lead and copper rule. ADEQ proposes to add R18-4-313(U) to add the requirement from the revisions to the federal lead and copper rules that a public water system on reduced tap water monitoring that adds a new source or changes any water treatment may be required to resume standard lead and copper tap water monitoring or increase water quality parameter monitoring at the request of ADEQ.

Section R18-4-314 sets forth the requirements for lead and copper source water monitoring and treatment. ADEQ proposes to revise R18-4-314(A), (B), (F), (J), (K), (L), and (P) to clarify that requirements under these subsections for source water monitoring and maximum permissible source water levels apply to lead and copper, not lead or copper, as specified in 40 CFR 141.88. ADEQ proposes to revise R18-4-314(B) to clarify that source water sample for lead and copper must be taken at sampling sites as prescribed in R18-4-218(A) through (C), as specified in 40 CFR 141.88(a)(1). ADEQ proposes to revise R18-4-314(C) and (D) to clarify the deadlines under these subsections, as specified in 40 CFR 141.83(a) and 40 CFR 141.88(b). ADEQ proposes to revise R18-4-314(I) to clarify the requirements for follow-up lead and copper tap water monitoring and source water monitoring after the installation of source water treatment, as specified in 40 CFR 141.86(d)(2)(iii) and 40 CFR 141.88(c). ADEQ proposes to revise R18-4-314(J), (K), (L), (N), (O), and (P) to clarify that the maximum permissible levels for lead and copper designated by the Department after a public water system installs source water treatment, are for lead and copper in source water, as specified in 40 CFR 141.88. ADEQ proposes to revise R18-4-314(J) to clarify that the maximum permissible source water levels apply to water entering the distribution system, as specified in 40 CFR 141.83(b)(4). ADEQ proposes to revise R18-4-314(M) to clarify the language of this subsection, as specified in 40 CFR 141.88(d)(2). ADEQ proposes

to revise R18-4-314(O) to add requirements for analytical reporting of lead and copper source water samples, as specified in 40 CFR 141.88(a)(2). ADEQ proposes to revise R18-4-314(P) to clarify reduced lead and copper source water monitoring requirements after the Department has designated maximum permissible source water levels, as specified in 40 CFR 141.88(e). ADEQ proposes to add R18-4-314(Q) to add the new federal requirement that allows a public water system which is not required to install source water treatment to reduce the frequency of source water monitoring.

Section R18-4-315 sets forth the requirements for lead service line replacement. ADEQ proposes to revise R18-4-315(A) to clarify when a public water system is subject to lead service line replacement requirements, according to 40 CFR 141.84(a). ADEQ also proposes to move the last three sentences of subsection (A) to new subsection (B), and to clarify that ADEQ may require a public water system not in compliance with corrosion control treatment or source water treatment requirements to replace lead service lines, as specified in 40 CFR 141.84(a). ADEQ proposes to renumber R18-4-315(B), R18-4-315(C), and R18-4-315(D) to R18-4-315(C), R18-4-315(D), and R18-4-315(E), respectively. ADEQ proposes to revise the new subsection R18-4-315(C) to clarify that the public water system must conduct a materials survey to identify the initial number of lead service lines in its distribution system and the number and portion of lead service lines it owns, using all available resources, as specified in the revisions to the federal lead and copper rules and 40 CFR 141.84(b). ADEQ proposes to revise the new subsection R18-4-315(D) to add the lead service line sampling requirements, which were previously located in R18-4-310(D)(2). ADEQ proposes to revise the partial lead service line replacement requirements of the new subsection R18-4-315(E), as specified in the revisions to the federal lead and copper rules. ADEQ proposes to repeal the original text of R18-4-315(E) requiring a public water system to demonstrate control of lead service lines, because this text is no longer applicable under the federal lead and copper revisions. ADEQ proposes to revise R18-4-315(G) to clarify that a public water system may cease replacing lead service lines whenever first-draw lead tap water samples do not exceed the action level, as specified in 40 CFR 141.84(f). ADEQ proposes to revise R18-4-315(H)(1) to clarify that the public water system must conduct a materials survey to identify the initial number of lead service lines in its distribution system within 12 months of exceeding the lead action level, as specified in 40 CFR 141.90(e)(1). ADEQ proposes to revise R18-4-315(H)(1) and (2) to clarify when a public water system is subject to lead service line replacement requirements, as specified in 40 CFR 141.90(e). ADEQ also proposes to add new text under R18-4-315(H)(3)(d) to require a public water system to certify that new federal requirements for partial lead service line replacement under R18-4-315(E) have been completed.

Section R18-4-316 sets forth the public education requirements for lead. ADEQ proposes to move Appendix B of Article 5 to Article 3, because that Appendix is referenced in Article 3. ADEQ proposes to renumber Appendix B to Appendix A and to revises all references to Appendix B in this Section to "Appendix A". ADEQ proposes to revise subsections (A) and (D)(5) of newly numbered Appendix A to remove the requirement for a CWS or NTNCWS to replace the portion of the lead service line it controls, and replace this with the new federal requirement that a CWS or NTNCWS replace the portion of the lead service line that it owns. ADEQ also proposes to amend the requirements for resident notification of partial lead service line replacement in Appendix A, as specified in the new federal lead and copper rules. ADEQ proposes to add new Appendix B to Article 3. This appendix provides alternate lead public education language for NTNCWSs, and special case CWSs meeting the requirements in R18-4-316(H), as specified in the federal lead and copper rule revisions.

ADEQ proposes to amend R18-4-316(A) to clarify the deadline for a public water system to begin public education tasks, as specified in the new federal lead and copper rules and 40 CFR 141.85(c)(2). ADEQ proposes to revise R18-4-316(A)(4) to clarify the lead public education materials that must be distributed under this subsection, as specified in 40 CFR 141.85(c)(2)(iii). ADEQ proposes to move the text of R18-4-316(B) to R18-4-316(C), and to insert an exception clause for CWSs with different billing cycles in R18-4-316(B), as specified in the federal revisions to the lead and copper rules. ADEQ proposes to renumber R18-4-316(C) to R18-4-316(D) and to add new federal requirements, including allowing a NTNCWS to use the alternate lead public education language listed in Appendix B. ADEQ proposes to renumber R18-4-316(E) to R18-4-316(F) and to revise this subsection to add new federal requirements, such as allowing a CWS to modify certain public education language and to use pre-printed copies of public education materials. ADEQ proposes to move R18-4-316(F) and R18-4-316(G) to 18-4-316(K) and R18-4-316(L), respectively. ADEQ proposes to add new subsection R18-4-316(G) to allow NTNCWSs to use the public education language in newly numbered Appendix A for CWSs, or alternate language in new Appendix B for NTNCWSs, and to allow NTNCWSs to delete references to lead service lines with ADEQ approval, as specified in the federal revisions to the lead and copper rule. ADEQ also proposes to amend the new subsections R18-4-316(F) and R18-4-316(G) to clarify that public education materials must be multilingual if a significant proportion of people served by the public water system speak a language other than English, as specified in 40 CFR 141.85(c)(1). ADEQ proposes to add R18-4-316(H) to allow special-case CWSs, such as prisons or hospitals, to use the alternate public education language in new Appendix B, as specified in the revisions to the federal lead and copper rule. ADEQ proposes to add R18-4-

316(I) and R18-4-316(J) to allow a CWS serving 3300 or fewer people to omit certain public education tasks, as specified in the revisions to the federal lead and copper rules. ADEQ proposes to revise the reporting requirements of the new subsection R18-4-316(L), as specified in the federal lead and copper revisions.

Section R18-4-317 sets forth the requirements for the treatment techniques acrylamide and epichlorohydrin. ADEQ proposes to amend R18-4-317 to comply with current rule writing style in the Arizona Rulemaking Manual.

Section R18-4-401 sets forth special monitoring requirements for sulfate. ADEQ proposes to repeal R18-4-401, because as of December 31, 2000, EPA is administering monitoring for unregulated contaminants.

Section R18-4-404 sets forth special monitoring requirements for unregulated volatile organic chemicals. ADEQ proposes to repeal R18-4-404, because as of December 31, 2000, EPA is administering monitoring for unregulated contaminants.

Section R18-4-405 sets forth special monitoring requirements for unregulated synthetic organic chemicals. ADEQ proposes to repeal R18-4-405, because as of December 31, 2000, EPA is administering monitoring for unregulated contaminants.

Section R18-4-503 sets forth the minimum storage capacity for a CWS or a non-community water system. ADEQ proposes to clarify the requirements in R18-4-503(B).

Section R18-4-504 sets forth prohibitions on the use of lead pipe, solder, and flux. ADEQ proposes to amend R18-4-504 to correct a citation to a definition.

Section R18-4-505 sets forth the requirements for an Approval to Construct a new public water system, or to modify an existing facility. ADEQ proposes to revise R18-4-505(B)(1)(d) to add the provision that results of a microscopic particulates analysis must also be included in the application for an Approval to Construct, if the new source of water meets the criteria of R18-4-301.01(A). ADEQ proposes to add new text to R18-4-505(C) and R18-4-505(D) to require that a public water system exempt from the Approval to Construct requirements in this Section be in compliance with 18 A.A.C. 4, and submit a notice of compliance with the exemption conditions once the project is completed, as specified in A.R.S. § 49-353(A)(2)(d) and A.R.S. § 49-353(A)(2)(e). ADEQ proposes to renumber R18-4-505(E) to R18-4-505(G), and to clarify the conditions under which an Approval to Construct may become void.

Section R18-4-506 sets forth the requirements for compliance of an approved construction plan. ADEQ proposes to amend R18-4-506 to comply with current rule writing style in the Arizona Rulemaking Manual, and to clarify and correct previous rulemakings.

Section R18-4-507 sets forth the requirements of an Approval of Construction of a new public water system. ADEQ proposes to amend R18-4-507 to comply with current rule writing style in the Arizona Rulemaking Manual.

Section R18-4-508 sets forth the requirements for public water system record drawings. ADEQ proposes to revise R18-4-508(C) to remove the requirement for infiltration, exfiltration and deflection testing, because as per review by the ADEQ Engineering Unit, these records are not required under this Section. ADEQ also proposes to revise this Section to clarify and correct previous rulemakings.

Section R18-4-509 sets forth the requirements for changes to an existing treatment process. ADEQ proposes to amend R18-4-509 to comply with current rule writing style in the Arizona Rulemaking Manual.

ADEQ proposes to move Appendix A of Article 5 to Article 1, and Appendix B of Article 5 to Article 3, because these appendices are referenced in those Articles. ADEQ proposes to repeal Appendix C of Article 5.

Article 7 sets forth the requirements for CCRs. ADEQ proposes to amend the title of this Article and the title of R18-4-703 to "Reports" to comply with existing federal regulations.

Section R18-4-703 sets forth the requirements for the content of the CCRs. ADEQ proposes to amend R18-4-703(D) to delete the reference to R18-4-110 and R18-4-111, because this subsection applies to any variance or exemption issued by ADEQ, including new alternate variances under R18-4-109.

Section R18-4-704 sets forth the information on detected contaminants that must be included in a CCR. ADEQ proposes to amend R18-4-704(A)(1) to add a reference to Appendix A. ADEQ proposes to amend R18-4-704(A)(2) to delete the references to R18-4-404 and R18-4-405, and replace them with a reference to new Appendix B. ADEQ proposes this change to address the changes to the federal unregulated contaminant monitoring regulations. ADEQ proposes to amend R18-4-704(B)(4) to clarify that the detected contaminant, MCL, and Maximum Contaminant Level Goal (MCLG) must all be expressed in the same unit. ADEQ proposes to amend R18-4-704(B)(9) to fix an

incorrect reference to an appendix. ADEQ proposes to repeal R18-4-704(F), because the requirements of R18-4-704(F) will be covered under the new Appendix B.

Section R18-4-705 sets forth the requirements for the inclusion of information on specific chemicals in a CCR. ADEQ proposes to amend the Title of R18-4-705 to remove the words "Haloacetic Acids" and "Other Contaminants". Reporting of the haloacetic acids is covered under the new Appendix B. The words "other contaminants" will be removed because this Section now only covers monitoring requirements for cryptosporidium and radon.

Section R18-4-706 sets forth the requirements for information on violations that shall be included in a CCR. ADEQ proposes to revise R18-4-706 to change the reference from Appendix B to Appendix C, due to the addition of a new Appendix B. ADEQ proposes to revise R18-4-706(4) to correct the reference to R18-4-306 which has been renumbered to R18-4-307.

Section R18-4-707 sets forth the requirements for information on variances and exemptions that shall be included in a CCR. ADEQ proposes to amend R18-4-707 to delete the references to R18-4-110 and R18-4-111 because R18-4-707 applies to any variance or exemption issued by ADEQ, including new alternate variances under R18-4-109.

Section R18-4-708 sets forth the requirements for additional information that must be included in a CCR. ADEQ proposes to amend R18-4-708(A) to correct a typographical error.

Section R18-4-709 sets forth the requirements for additional health information that must be included in a CCR. ADEQ proposes to amend R18-4-709(D) to add requirements for CWSs that detect lead above the action level in exactly 10% of homes sampled. This change is mandated by corrections to the federal CCR regulations.

ADEQ proposes to revise the total coliform MCL in Appendix A of Article 7 to include CWSs that collect fewer than 40 samples per month. This change is mandated by corrections to the federal CCR regulations. ADEQ also proposes to amend this appendix to include the MCLG values for each listed contaminated. The MCLG for each detected contaminant must be included in the CCR, as specified in R18-4-704(B)(2).

ADEQ proposes to renumber Appendix B to Appendix C. ADEQ proposes to add new text to Appendix B to list unregulated monitoring required by EPA under § 40 CFR 141.

**C. Discussion of 1999 Five-year-review Report**

A five-year-review report for 18 A.A.C. 4, Articles 1 through 5, was approved by the Governor's Regulatory Review Council September 1, 1999. However, the actions in this rulemaking are not always consistent with the proposed courses of action stated in the 1999 report. There are a number of reasons for these variances, including changing goals and objectives. Items from the five-year review report not amended include:

- R18-4-101. ADEQ did not add definitions for "drinking water" or "potable water" to this Section, as the terms are used in their normal, common meaning. Webster's II New Riverside University Dictionary (1984) defines "drink" as "to take into the mouth and swallow", and "potable" as "fit to drink."
- R18-4-109. The five-year review report indicates that Article 1 will be renumbered due to the recodification of R18-4-108. ADEQ did not renumber Article 1 for the following reasons: R18-4-109 was renumbered to R18-4-108. New text on Alternate Variances was inserted at R18-4-109.
- R18-4-123. The five-year review report indicates that ADEQ will review R18-4-123 on Vending Machines and identify methods which will reduce the level of resources necessary for implementation of this rule. ADEQ has reviewed this Section, and decided to leave the text as is. Water from vending machines are not currently regulated by any other agency in the state of Arizona. ADEQ did not open this Section in this rulemaking.
- R18-4-204. ADEQ did not open this Section in this rulemaking. This Section may be revised in a separate rulemaking later this year.
- R18-4-214. ADEQ did not open this Section in this rulemaking. This Section may be revised in a separate rulemaking later this year.
- R18-4-301. ADEQ did not open this Section in this rulemaking. This Section may be revised in a separate rulemaking later this year.
- R18-4-306. ADEQ proposes to repeal this Section and incorporate the text into R18-4-307.
- R18-4-312. The five-year review report indicates that ADEQ will revise R18-4-312 to correct a cross reference to another rule. ADEQ did not make this change, because this Section did not contain any incorrect cross references.
- R18-4-502. ADEQ did not open this Section in this rulemaking.

Any time-frame requirements in these rules will be included in the next amendment to the Department's licensing time-frame rules at 18 A.A.C. 1, Article 5.

**6. A reference to any study that the agency proposes to rely on in its evaluation of or justification for the proposed rule and where the public may obtain or review the study, all data underlying each study, any analysis of the study and other supporting material:**

Not applicable

**7. A showing of good cause why the rule is necessary to promote a statewide interest if the rule will diminish a previous grant of authority of a political subdivision of this state:**

Not applicable.

**8. The preliminary summary of the economic, small business and consumer impact:**

**EXECUTIVE SUMMARY**

This rulemaking will update the state rules to include changes in the national primary safe drinking water regulations, and correct typographical errors. ADEQ expects that the rule will have a minimal economic, small business and consumer impact. Entities who will be affected by the rule include public water systems, laboratories, and the general public.

There are changes in the rule that will impact public water systems by requiring additional monitoring and reporting for lead, copper, nickel, and micro particulates. However, there are more changes that reduce the required monitoring and reporting for unregulated contaminants, lead and copper. Therefore, it is expected that the public water systems in Arizona will not be significantly impacted by this rulemaking.

Laboratories in Arizona may see an economic impact from changes in reporting levels for synthetic organic chemicals. ADEQ is required to lower reporting levels to those established in the federal regulations. The few laboratories in Arizona that perform the analysis for these contaminants may have increased costs related to the purchase of new equipment or the addition of staff in order to meet the lower levels, which they may pass on to their customers (public water systems.)

Consumers of small public water systems are expected to benefit from treatment technologies that are being added in this rulemaking. These technologies provide small public water systems with additional options to comply with a MCL. Small public water systems may be able to install these technologies on a shorter time-frame than traditional technologies, which would benefit public health. The cost of installing these technologies may be less than traditional technologies, which would keep down the cost of water for consumers.

ADEQ expects the rule to cause no additional administrative burden or other costs to the Department beyond those associated with the current rules.

**9. The name and address of agency personnel with whom persons may communicate regarding the accuracy of the economic, small business, and consumer impact statement:**

Name: Nina Miller
Primacy Coordinator

Address: Arizona Department of Environmental Quality
3033 North Central Avenue (M0248A)
Phoenix, Arizona 85012-2809

Telephone: (602) 207-4641

(In Arizona: (800) 234-5677 and ask for the four-digit extension.)

Fax: (602) 207-4634

E-mail: nem@ev.state.az.us

**10. The time, place, and nature of the proceedings for the making, amendment, or repeal of the rule or, if no proceeding is scheduled, where, when, and how persons may request an oral proceeding on the proposed rule:**

ADEQ will hold oral proceedings to receive public comments in accordance with A.R.S. § 41-1023. The time, place, and location of the hearings are listed below:

**Date:** July 16, 2001

**Time:** 1:30 p.m. to 3:30 p.m.

**Location:** Arizona Game and Fish Department
3500 S. Lake Mary Road
Flagstaff, AZ 86001

**Telephone:** (520) 779-7660

**Date:** July 17, 2001

**Time:** 9:00 a.m. to 11:00 a.m.

**Location:** Lake Havasu City Community Recreation Center
100 Park Avenue, Room 155/156
Lake Havasu, AZ 86403

**Telephone:** (520) 453-8686

**Date:** July 18, 2001

**Time:** 1:30 p.m. to 3:30 p.m.

**Location:** Arizona Department of Environmental Quality
3033 North Central Ave, Room 1709/1710
Phoenix, AZ 85012

**Telephone:** (602) 207-4644

**Date:** July 19, 2001

**Time:** 9:30 a.m. to 11:30 a.m.

**Location:** Arizona Department of Environmental Quality - Southern Regional Office
400 West Congress, Room 444
Tucson, AZ 85701

**Telephone:** (520) 628-6733

The record will close on July 20, 2001. ADEQ will accept written comments that are received at ADEQ by 5:00 p.m, July 20, 2001.

ADEQ is committed to complying with the Americans With Disabilities Act. If any individual with a disability needs any type of accommodation, please contact ADEQ at least 72 hours before the hearing.

**11. Any other matters prescribed by statute that are applicable to the specific agency or to any specific rule or class of rules:**

Not applicable

**12. Incorporations by reference and their location in the rules:**

ANSI/NSF International Standard 60 - 2000a, Drinking Water Treatment Chemicals - Health Effects; incorporated at R18-4-101.

ANSI/NSF International Standard 61 - 2000a, Drinking Water System Components - Health Effects; incorporated at R18-4-101.

Manual of Cross-connection Control, Ninth Edition; incorporated at R18-4-115.

**13. The full text of the rules follows:**

## TITLE 18. ENVIRONMENTAL QUALITY

## CHAPTER 4. DEPARTMENT OF ENVIRONMENTAL QUALITY SAFE DRINKING WATER

### ARTICLE 1. GENERAL REQUIREMENTS

Section



### ARTICLE 2. MAXIMUM CONTAMINANT LEVELS AND MONITORING REQUIREMENTS; MONITORING ASSISTANCE PROGRAM

Section



### ARTICLE 3. TREATMENT TECHNIQUES

Section

**ARTICLE 4. SPECIAL MONITORING REQUIREMENTS**

Section
~~R18-4-401.~~ ~~Special Monitoring for Sulfate~~
~~R18-4-402.~~ R18-4-401. Special Monitoring for Sodium
~~R18-4-403.~~ R18-4-402. Special Monitoring for Nickel
~~R18-4-404.~~ ~~Special Monitoring for Unregulated Volatile Organic Chemicals~~
~~R18-4-405.~~ ~~Special Monitoring for Unregulated Synthetic Organic Chemicals~~

**ARTICLE 5. MINIMUM DESIGN CRITERIA**

Section
R18-4-503. Storage Requirements
R18-4-504. Prohibition on the Use of Lead Pipe, Solder, and Flux
R18-4-505. Approval to Construct
R18-4-506. Compliance with Approved Plans
R18-4-507. Approval of Construction
R18-4-508. Record Drawings
R18-4-509. Modification to Existing Treatment Process
~~Appendix A.~~ ~~Mandatory Health Effects Language~~
~~Appendix B.~~ ~~Lead Public Education~~
~~Appendix C.~~ ~~Renumbered~~

**ARTICLE 7. CONSUMER CONFIDENCE ~~REPORT~~ REPORTS**

Section
R18-4-703. Content of the Consumer Confidence ~~Report~~ Reports
R18-4-704. Information on Detected Contaminants
R18-4-705. Information on ~~Haloacetic Acids,~~ Cryptosporidium~~,~~ and Radon~~, and Other Contaminants~~
R18-4-706. Information on Violations
R18-4-707. Variances and Exemptions
R18-4-708. Additional Information
R18-4-709. Additional Health Information
Appendix A. Regulated Contaminants
Appendix B. ~~Health Effects Language~~ Required Monitoring for Unregulated Contaminants
Appendix C. Health Effects Language

**ARTICLE 1. GENERAL REQUIREMENTS**

**R18-4-101. Definitions**
The terms in this Chapter have the following meanings:

~~1.~~ "Action level" means a concentration of 0.015 mg/L for lead or 1.3 mg/L for copper.

"ADHS" means the Arizona Department of Health Services.

~~2.~~ "Air-gap separation" means a physical separation between the discharge end of a supply pipe and the top rim of its receiving vessel, which has a separation distance equal to at least 1 inch or twice the diameter of the supply pipe, whichever is greater.

"ANSI/NSF Standard 60" means American National Standards Institute/NSF International Standard 60 - 2000a, Drinking Water Treatment Chemicals - Health Effects, incorporated by reference and on file with the Department and the Office of the Secretary of State. Available from NSF International, 789 North Dixboro Road, P.O. Box 130140, Ann Arbor, MI 48113-0140, USA; 734-769-8010; http://www.nsf.org. This incorporation by reference includes no future editions or amendments.

"ANSI/NSF Standard 61" means American National Standards Institute/NSF International Standard 61 - 2000a, Drinking Water System Components - Health Effects, incorporated by reference and on file with the Department and the Office of the Secretary of State. Available from NSF International, 789 North Dixboro Road, P.O. Box 130140, Ann Arbor, MI 48113-0140, USA; 734-769-8010; http://www.nsf.org. This incorporation by reference includes no future editions or amendments.

~~3.~~ ~~"A.R.S." means Arizona Revised Statutes.~~

~~4.~~ "Backflow" means a reverse flow condition, that causes water or mixtures of water and other liquids, gases, or substances to flow back into the distribution system. Backflow can be created by a difference in water pressure (backpressure), a vacuum or partial vacuum (backsiphonage), or a combination of both.

~~5.~~ "Backflow-prevention assembly" means a mechanical device used to prevent backflow.

~~6.~~ "Baseline sampling" means the routine monitoring of contaminants covered under the monitoring assistance program for the purpose of determining compliance with the MCLs listed in Article 2, and the monitoring requirements listed in Article 4, not including repeat monitoring necessary for compliance after detection of a contaminant or an MCL violation.

~~7.~~ "BAT" means best available technology.

~~8.~~ "Best available technology" means a technology, treatment technique, or other means which has been identified by ~~the U.S. Environmental Protection Agency~~ EPA as being the best available for removing or reducing the concentration of a contaminant in water, taking costs into consideration, after examination for efficacy under field conditions and not solely under laboratory conditions.

"CCR" means Consumer Confidence Report.

~~9.~~ "Certified operator" has the meaning prescribed at R18-5-101. ~~means a person who holds an operator certificate issued by the Department to operate a water treatment plant or a distribution system.~~

~~10.~~ "Coagulation" means a treatment process that uses coagulant chemicals and mixing by which colloidal and suspended materials are destabilized and agglomerated into flocs.

~~11.~~ "Community water system" means a public water system that serves 15 or more service connections used by year-round residents or that serves 25 or more year-round residents.

~~12.~~ "Compliance cycle" means a 9-calendar-year time-frame during which a public water system is required to monitor. Each compliance cycle consists of ~~3~~ three 3-year compliance periods. The ~~1st~~ first compliance cycle began January 1, 1993, and ends December 31, 2001. The ~~2nd~~ second compliance cycle begins January 1, 2002, and ends December 31, 2010. The ~~3rd~~ third compliance cycle begins January 1, 2011, and ends December 31, 2019.

~~13.~~ "Compliance period" means a 3-calendar-year time-frame within a compliance cycle. Within the ~~1st~~ first compliance cycle, the ~~1st~~ first compliance period began January 1, 1993, and ended December 31, 1995. The ~~2nd~~ second compliance period began January 1, 1996, and ~~ends~~ ended December 31, 1998. The ~~3rd~~ third compliance period ~~begins~~ began January 1, 1999, and ends December 31, 2001.

~~14.~~ "Consecutive public water system" means a public water system that obtains all of its water from another public water system that is regulated by the Department.

~~15.~~ "Contaminant" means any physical, chemical, biological, or radiological substance in water.

~~16.~~ "Contractor" means a private party, or statewide nonprofit organization representing a water system, that the Department contracts with to implement the monitoring assistance program under A.R.S. § 49-360(B).

~~17.~~ "Conventional filtration" means a series of treatment processes, including coagulation, flocculation, sedimentation, and filtration that result in substantial particulate removal.

~~18.~~ "Corrosion inhibitor" means a substance that reduces corrosion of metal plumbing materials, especially lead and copper, by forming a protective film on the interior surface of those materials.

~~19.~~ "Cross connection" means a physical connection between a public water system and any source of water or other substance that may lead to contamination of the water provided by the public water system through backflow.

~~20.~~ "CWS" means community water system.

~~21.~~ "Detected" means measured in a laboratory at a concentration that is at or above the method detection limit.

~~22.~~ "Diatomaceous earth filtration" means a treatment process that results in substantial particulate removal in which a pre-coat cake of diatomaceous earth filter media is deposited on a support membrane (septum) and, while the water is filtered through the cake on the septum, additional filter media (body feed) is continuously added to the feed water to maintain the permeability of the filter cake.

~~23.~~ "Direct filtration" means a series of treatment processes, including coagulation and filtration but excluding sedimentation, that result in substantial particulate removal.

~~24.~~ "Disinfectant" means an oxidant, including chlorine, chlorine dioxide, chloramines, ozone~~,~~; or an equivalent agent or process such as ultraviolet light~~,~~ that kills or inactivates pathogenic organisms.

~~25.~~ "Disinfection" means a treatment process that kills or inactivates pathogenic organisms in water by oxidants, ultraviolet light, or equivalent agents.

~~26.~~ "Distribution system" means ~~the pipelines, appurtenances, devices, and facilities~~ a pipeline, appurtenance, device, and facility of a public water system ~~which conduct~~ that conducts water from a source or water treatment plant to persons served by the system.

~~27.~~ "Domestic or other non-distribution system plumbing problem" means a total coliform contamination problem in a public water system with more than ~~1~~ one service connection that is limited to a specific service connection from which a total coliform-positive sample is taken.

~~28.~~ "Dose equivalent" means the product of the absorbed dose from ionizing radiation and such factors as account for differences in biological effectiveness due to the type of radiation and its distribution in the body as specified by the International Commission on Radiological Units and Measurements.

~~29.~~ "Double check valve assembly" means a backflow-prevention assembly composed of ~~2~~ two independently acting check valves with tightly closing, resilient-seated shut-off valves on each end of the assembly and properly located, resilient-seated test cocks.

~~30. "Effective corrosion inhibitor residual" means a concentration of a corrosion inhibitor that is sufficient to form a protective film on the interior walls of a pipe.~~

~~31.~~ "Elementary business plan" means a document containing all items required to be submitted for evaluation necessary for a complete review for technical, managerial, and financial capacity of a new public water system under Article 6.

"EPA" means the United States Environmental Protection Agency.

"Engineer" means an engineer who is registered to practice the applicable branch of engineering by the Arizona Board of Technical Registration.

~~32.~~ "Exclusion" means a waiver granted by the Department under R18-4-112 from a requirement of this Chapter that is not a requirement contained in the National Primary Drinking Water Regulations.

~~33.~~ "Exemption" means a temporary deviation from a ~~maximum contaminant level~~ MCL or treatment technique required by this Chapter that is granted by the Department under R18-4-111.

~~34.~~ "Existing public water system" means a public water system, as defined in A.R.S. § 49-352(B)(1), that has been issued a public water system identification number before October 1, 1999.

~~35.~~ "Filtration" means a treatment process for removing particulate matter from water by passage through porous media.

~~36.~~ "Financial capacity" means the ability of a public water system to acquire and manage sufficient financial resources for the system to achieve and maintain compliance with the federal ~~safe drinking water act~~ Safe Drinking Water Act~~, as amended in 1996~~.

~~37.~~ "First-draw sample" means a 1-liter sample of tap water, collected in accordance with R18-4-310(D).

~~38.~~ "Flocculation" means a treatment process to enhance agglomeration or collection of smaller floc particles into larger and more easily settleable particles through gentle stirring by hydraulic or mechanical means.

~~39.~~ "GAC" means granular activated carbon.

~~40.~~ "GC" means gas chromatography.

~~41.~~ "GC/MS" means gas chromatography/mass spectrometry.

~~42.~~ "Gross alpha particle activity" means the total radioactivity due to alpha particle emission as inferred from measurements on a dry sample.

~~43.~~ "Gross beta particle activity" means the total radioactivity due to beta particle emission as inferred from measurements on a dry sample.

~~44.~~ "Groundwater system" means a public water system that is supplied solely by groundwater that is not under the direct influence of surface water.

~~45.~~ "Groundwater under the direct influence of surface water" means any water beneath the surface of the ground with:

~~a.~~ A significant occurrence of insects or other macroorganisms, algae, large diameter pathogens such as *Giardia lamblia*, or total coliform; or

~~b.~~ Significant and relatively rapid shifts in water characteristics such as turbidity, temperature, conductivity, or pH that closely correlate to climatological or surface water conditions.

~~46.~~ "Halogenated" means treated or mixed with chlorine, bromine, or iodine.

~~47.~~ "HPC" means heterotrophic plate count.

~~48.~~ "Initial compliance period" means the ~~1st~~ first, full 3-year compliance period in a compliance cycle that a public water system conducts initial monitoring.

~~49.~~ "Initial monitoring year" means the calendar year designated by the Department within a compliance period in which a public water system conducts initial monitoring at a point of entry.

~~50.~~ "Large water system", for R18-4-306 through R18-4-316 only, means a public water system that serves more than 50,000 persons.

~~51.~~ "Lead-free" means that the pipe, solder, or flux used in the installation or repair of ~~any~~ a public water system or in a user facility that provides water for human consumption and which is connected to such public water system meets the following criteria:

~~a.~~ All solders and flux contain not more than 0.2% lead;

~~b.~~ All pipes and pipe fittings contain not more than 8.0% lead.

When used with respect to plumbing fittings and fixtures intended by the manufacturer to dispense water for human ingestion, "lead-free" refers to fittings and fixtures that are in compliance with ANSI/NSF Standard 61, Section 9.

~~52.~~ "Lead service line" means a service line made of lead ~~–~~ that connects a water main to a building inlet and any lead pigtail, gooseneck, or fitting that is connected to the service line.

~~53.~~ "Log" means, the percentage removal or inactivation of *Giardia lamblia* cysts or viruses as follows:

~~a.~~ "One-log" is 90%.

~~b.~~ "Two-log" is 99%.

~~c.~~ "Three-log" is 99.9%.

~~d.~~ "Four-log" is 99.99%.

~~54.~~ "Major stockholder" means a person who has 20% or more ownership interest in a public water system.

~~55.~~ "Man-made beta particle and photon emitters" means all radionuclides emitting beta particles or photons, except the daughter products of Thorium-232, Uranium-235, and Uranium-238, listed in "Maximum Permissible Body Burdens and Maximum Permissible Concentrations of Radionuclides in Air and in Water for Occupational Exposure," Handbook 69, U.S. Department of Commerce, National Bureau of Standards, amended as of August 1963 (and no future editions), which is incorporated by reference and on file with the Office of the Secretary of State and the Department. Copies of Handbook 69 are also available from the Library of Congress by telephoning (202) 707-5640.

~~56.~~ "Managerial capacity" means the ability of a public water system to conduct its affairs in a manner that will meet and maintain compliance with the requirements of the federal ~~safe drinking water act~~ Safe Drinking Water Act~~, as amended in 1996~~.

~~57.~~ "Maximum contaminant level" means the maximum permissible level for a contaminant in drinking water that is delivered to any person who is served by a public water system.

~~58.~~ "Maximum total trihalomethane potential" means the maximum concentration of total trihalomethanes produced in water containing a disinfectant residual after ~~7~~ seven days at a temperature of 25° C or above.

~~59.~~ "MCL" means maximum contaminant level.

~~60.~~ "MFL" means million fibers per liter greater than 10 microns in length.

~~61.~~ "Medium water system", for R18-4-306 through R18-4-316 only, means a public water system that serves more than 3,300 persons and 50,000 or fewer persons.

~~62.~~ "Meter" means a device that measures the volume of water that passes through it.

~~63.~~ "Meter weight" means the number of gallons per minute (gpm) that flows through a meter divided by 30.

~~64.~~ "Millirem" means 1/1000 of a rem.

~~65.~~ "MTP" means maximum total trihalomethane potential.

~~66.~~ "Monitoring assistance program" means the program established by ~~to~~ A.R.S. § 49-360, under which a contractor provides for collection, transportation, and analysis of samples from a public water system under the provisions of R18-4-224 through R18-4-226.

~~67.~~ "Nephelometric turbidity unit" means the unit of measure for turbidity. Turbidity is a measure of light scatter or absorption caused by suspended or colloidal matter in water. Turbidity is measured as an indicator of the effectiveness of filtration treatment.

~~68.~~ "New public water system" means a public water system, as defined in A.R.S. § 49-352(B)(1), to which the Department issues its ~~1st~~ first unique public water system identification number on or after October 1, 1999.

~~69.~~ "Noncommunity water system" means a public water system that is either a nontransient, noncommunity water system or a transient, noncommunity water system.

~~70.~~ "Nontransient, noncommunity water system" means a public water system that:

~~a.~~ Serves 15 or more service connections that are used by the same persons for at least ~~6~~ six months per year; or

~~b.~~ Serves the same 25 or more persons for at least ~~6~~ six months per year.

~~71.~~ "NTNCWS" means nontransient, noncommunity water system.

~~72.~~ "NTU" means nephelometric turbidity unit.

~~73.~~ "Optimal corrosion control treatment" means the corrosion control treatment that minimizes lead and copper concentrations at the tap without violating any rule prescribed in this Chapter.

~~74.~~ "OX" means chlorine or ozone oxidation.

"PCBs" means polychlorinated biphenyls.

~~75.~~ "pCi" means picocurie.

~~76.~~ "Picocurie" means the quantity of radioactive material producing 2.22 nuclear transformations per minute.

~~77.~~ "Point-of-entry into the distribution system" means the point at which water is discharged into the distribution system from a well, storage tank, pressure tank, or water treatment plant.

~~78.~~ "Point-of-entry treatment device" means a device that applies treatment to drinking water entering a house or building for the purpose of reducing contaminants in the drinking water that is distributed throughout the house or building.

~~79.~~ "Point-of-use treatment device" means a device that applies treatment to the drinking water flowing to a single tap to reduce contaminants in drinking water at that single tap.

~~80.~~ "Pressure vacuum breaker assembly" means a backsiphonage prevention assembly that contains an independently operated, internally loaded check valve; an internally operated air-inlet valve located on the discharge side of the check valve; tightly closing resilient seated shut-off valves on each end of the check valve assembly; and properly located resilient seated test cocks.

~~81. "Private agricultural water system" has the same meaning as prescribed in A.R.S. § 49-352(I)(1).~~

~~82.~~ "PTA" means packed tower aeration.

~~83. "Public water system" means a system for the distribution of water to the public for human consumption that serves 15 or more service connections or an average of at least 25 persons per day for at least 60 days a year.~~

~~a. A public water system includes:~~

~~i. Any collection, treatment, storage, and distribution facility under the control of the water supplier and used in connection with the system; and~~

~~ii. Any collection or pretreatment storage facility not under the control of the water supplier that is used with the system.~~

~~b. A public water system is either a community water system; a nontransient, noncommunity water system; or a transient, noncommunity water system.~~

"Public water system" has the same meaning prescribed in A.R.S. § 49-352. A public water system is either a community water system; a nontransient, noncommunity water system; or a transient, noncommunity water system.

~~84.~~ "Reduced pressure principle backflow-prevention assembly" means a backflow-prevention assembly that contains ~~2~~ two independently acting check valves; a hydraulically operating, mechanically independent pressure differential relief valve located between the ~~2~~ two check valves; tightly closing, resilient seated shut-off valves on each end of the check valve assembly; and properly located resilient seated test cocks.

~~85.~~ "Rem" means the unit of dose equivalent from ionizing radiation to the total body or any internal organ or organ system.

~~86.~~ "Repeat compliance period" means any subsequent compliance period after the initial compliance period.

~~87.~~ "Residual disinfectant concentration" means the concentration of disinfectant measured in mg/L in a representative sample of water.

"Safe Drinking Water Act" means the federal Safe Drinking Water Act as amended (42 U.S.C. §§ 300f et seq., Title XIV of the Public Health Service Act).

~~88.~~ "Sanitary survey" means an onsite review of the water source, facilities, equipment, operation, and maintenance of a public water system to evaluate their adequacy to produce and distribute safe drinking water.

~~89.~~ "Sedimentation" means a treatment process that holds water in a low-flow condition before filtration to remove solids by gravity or separation.

~~90. "Semipublic water system" means a system for the distribution of water to the public for human consumption with at least 4 service connections but less than 15 service connections that:~~

~~a. Serves an average of less than 25 persons per day; or~~

~~b. Serves an average of 25 or more persons a day but for less than 60 days a year.~~

~~91.~~ "Service connection" means a location at the meter, or in the absence of a meter, at the curbstop or at the building inlet.

~~92.~~ "Service line" means the water line that runs from the corporation stop at a water main to the building inlet, including any pigtail, gooseneck, or fitting.

~~93.~~ "Service line sample" means a ~~first-draw sample collected in accordance with R18-4-310(D)~~ one liter sample of water collected in accordance with R18-4-315(D).

~~94.~~ "Single-family structure" means a building constructed as a single-family residence that is used as a residence or as a place of business.

~~95.~~ "Slow sand filtration" means a treatment process which involves the passage of raw water through a bed of sand at low velocity, generally less than 0.4 m/h, that results in substantial particulate removal by physical and biological mechanisms.

~~96.~~ "Small water system", for R18-4-306 through R18-4-316 only, means a public water system that serves 3,300 or fewer persons.

~~97.~~ "SOC" means synthetic organic chemical.

~~98.~~ "Source" means a body of water above or below the ground that supplies water to a public water system, including a well, spring, or surface water.

~~99.~~ "Standard sample" means the aliquot of finished drinking water that is examined for the presence of coliform bacteria. The standard sample volume is 100 milliliters.

~~100.~~"Surface water" means a source that is exposed to the unenclosed atmosphere and subject to surface runoff.

~~101.~~"Surface water system" means a public water system that uses surface water or groundwater under the direct influence of surface water, in whole or in part, as a source.

~~102.~~"TNCWS" means a transient, noncommunity water system.

~~103.~~"Technical capacity" means the ability of a public water system to meet the requirements of R18-4-604 and the federal ~~safe drinking water act~~ Safe Drinking Water Act ~~as amended in 1996~~ at all times, and includes the ability to correct problems with its distribution, water quality, or source availability and to sustain compliance with its operations and maintenance plan.

~~104.~~"Total trihalomethanes" means the sum of the concentrations of the following trihalomethane compounds: trichloromethane (chloroform), dibromochloromethane, bromo-dichloromethane and tribromomethane (bromoform).

~~105.~~"Transient, noncommunity water system" means a public water system that:

~~a.~~ Serves 15 or more service connections but does not serve 15 service connections used by the same persons for more than ~~6~~ six months per year; or

~~b.~~ Serves an average of at least 25 persons per day for at least 60 days per year but does not serve the same 25 persons for more than ~~6~~ six months per year.

~~106.~~"Treatment" means a process that changes the quality of water by physical, chemical, or biological means.

~~107.~~"Treatment technique" means a treatment procedure that has been promulgated by EPA in lieu of a ~~maximum contaminant level~~ MCL. Treatment techniques include the requirements for filtration, disinfection, lead, copper, acrylamide, and epichlorohydrin that are prescribed in Article 3 of this Chapter.

~~108.~~"Trihalomethane" means ~~1~~ one of the family of organic compounds, named as derivatives of methane, wherein ~~3~~ three of ~~4~~ four hydrogen atoms in methane are substituted by a halogen atom in the molecular structure.

~~109.~~"TTHM" means total trihalomethanes.

~~110.~~"Unit fee" means the amount charged to a public water system under the monitoring assistance program for a meter weight of 1 in accordance with R18-4-225.

~~111.~~"User ~~facilities~~ facility" means ~~all facilities~~ a facility on the customer's side of the service connection.

~~112.~~"Virus" means an enteric virus which is infectious to humans by waterborne transmission.

~~113.~~"VOC" means volatile organic chemical.

~~114.~~"Water main" means a pipe that is used to distribute drinking water that serves more than ~~1~~ one property and is exterior to buildings.

~~115.~~"Water supplier" means a person who owns or who supervises or directs the operation of a public water system.

~~116.~~"Waterborne disease outbreak" means the occurrence of illness that is epidemiologically associated with the ingestion of drinking water from a public water system.

~~117.~~"Water treatment plant" means a facility in which the quality of the water is intentionally changed by a physical, chemical, or biological process. A booster chlorination facility which is designed to maintain an effective disinfectant residual in water in the distribution system is not a water treatment plant.

**R18-4-102. Applicability**

**A.** The rules in this Chapter apply to public water systems~~.~~, unless a public water system:

1. Consists only of distribution and storage facilities, and does not have any collection or treatment facilities;
2. Obtains all of its water from, but is not owned or operated by, a public water system that is regulated under this Chapter;
3. Does not sell water to any person; and
4. Is not a carrier that conveys passengers in interstate commerce.

~~**B.** The rules in this Chapter do not apply to semipublic water systems or to private agricultural water systems, unless the Department identifies a health hazard. The Director may take enforcement action to require that a semipublic water system or a private agricultural water system comply with a rule prescribed in this Chapter to safeguard the health of users of the system. The Director shall identify, in writing, the health hazard that provides grounds for initiation of any enforcement action.~~

~~C.~~ ~~The rules in this Chapter do not apply to a public water system that meets all of the following criteria:~~
~~1. The public water system consists only of distribution and storage facilities and does not have any collection or treatment facilities;~~
~~2. The public water system obtains all of its water from, but is not owned or operated by, another public water system that is regulated under this Chapter;~~
~~3. The public water system does not sell water to any person; and~~
~~4. The public water system is not a carrier that conveys passengers in interstate commerce.~~

~~D~~**B.** The rules in this Chapter do not apply to a public water system for a mobile home park that meets all of the following criteria:
1. The public water system for the mobile home park consists only of distribution and storage facilities and does not have collection or treatment facilities;
2. The public water system for the mobile home park obtains all of its water from, but is not owned or operated by, another public water system that is regulated under this Chapter;
3. The public water system for the mobile home park does not sell water to any person. For purposes of this subsection, submetering by a mobile home park to determine the quantity of water used by individual park tenants shall not be considered to be selling water, provided the submetering is for purposes of water conservation.

**R18-4-103. Recordkeeping Requirements**

**A.** A ~~water supplier~~ public water system shall retain on ~~the~~ its premises ~~of a public water system~~ or at a convenient location near its premises, the following records for the following minimum periods of time:
1. Records of bacteriological analyses, including records of analyses for total coliform, fecal coliform, *Escherichia coli (E. coli),* and heterotrophic bacteria for ~~5~~ five years.
2. Records of chemical analyses, for 10 years.
3. Records of actions taken by the ~~water supplier~~ public water system to correct violations of this Chapter for ~~3~~ three years after the last action taken to correct the violation.
4. Records concerning a variance or exemption granted to the public water system for ~~5~~ five years after the expiration of the variance or exemption.
5. Copies of written reports, summaries, or communications relating to a sanitary survey of the public water system for 10 years after completion of the sanitary survey.
6. Records of all sampling data and analyses, reports, surveys, letters, evaluations, schedules, Department determinations, and any other information required by ~~R18-4-305~~ R18-4-306 through R18-4-316 for 12 years.
7. A ~~water supplier of a~~ surface water system shall retain the following records for 10 years:
   a. Records of turbidity measurements, including the number and percentage of filtered water turbidity measurements taken during the month that are less than or equal to the turbidity limits specified in R18-4-302 for the filtration technology used.
   b. The date and value of any turbidity measurement taken during a month that exceeds 5 NTUs.
   c. Records of the lowest residual disinfectant concentration (in mg/L) in water entering the distribution system for each day that each water treatment plant operates;
   d. Records of the residual disinfectant concentration (in mg/L) in water for each sampling site in the distribution system;
   e. Records of analyses for heterotrophic bacteria if HPC is measured instead of residual disinfectant concentration in the distribution system.

**B.** A ~~water supplier~~ public water system shall keep the original laboratory reports of drinking water analyses or copies of Department-approved reporting forms.

**R18-4-104. Reporting Requirements**

**A.** Routine monitoring: Except as specified in this subsection, a ~~water supplier~~ public water system, or a contractor shall report the result of any test measurement or analysis required by Article 2 to the Department within the ~~1st~~ first 10 days following the month that the ~~water supplier~~ public water system receives the analytical result or the ~~1st~~ first 10 days following the end of an applicable monitoring period prescribed by Article 2, whichever occurs ~~1st~~ first.
1. Fecal coliform / *E coli:* If any routine or repeat sample for total coliform is positive, the ~~water supplier~~ public water system shall have the total coliform-positive sample analyzed to determine whether fecal coliforms are present, except that the ~~water supplier~~ public water system may test for E. coli instead of fecal coliforms. If fecal coliforms or *E. coli* are present in a total coliform-positive sample, a ~~water supplier~~ public water system shall report the positive results to the Department, by telephone or facsimile, as soon as possible but no later than 24 hours after receiving notice of the fecal coliform-positive or *E. coli*-positive test result.
2. Nitrate: If monitoring results indicate an exceedance of the MCL for nitrate in a routine sample, a ~~water supplier~~ public water system shall take a confirmation sample within 24 hours of receipt of the analytical results. A ~~water supplier~~

public water system shall report the MCL exceedance to the Department by telephone or facsimile, within 24 hours of receipt of the analytical results.

3. Total trihalomethanes: A ~~water supplier~~ public water system shall report the arithmetic average of analytical results for total trihalomethanes within 30 days of receipt of the last analytical results of the previous quarter.

**B.** MCL violations: Except as specified in this subsection, a ~~water supplier~~ public water system shall report a violation of a MCL to the Department within 48 hours of receipt of analytical results that indicate a violation.

1. A ~~water supplier~~ public water system shall report a violation of a MCL for total coliform to the Department, by telephone or facsimile, as soon as possible but no later than 24 hours after receipt of analytical results that indicate a violation.
2. A ~~water supplier~~ public water system shall report a violation of a MCL for nitrate or nitrite to the Department, by telephone or facsimile, as soon as possible but no later than 24 hours after receipt of analytical results for the confirmation sample that confirms a violation.
3. A ~~water supplier~~ public water system shall report a violation of an interim-MCL for turbidity to the Department, by telephone or facsimile:
   a. Within the ~~1st~~ first 10 days following the end of the month if the arithmetic average of the analytical results of daily samples taken during the month exceeds 1 NTU.
   b. Within 48 hours of receipt of analytical results for the ~~2nd~~ second daily sample if the arithmetic average of the results of daily samples taken on ~~2~~ two consecutive days exceeds 5 NTUs.

**C.** Filtration: Except as provided in subsection (C)(4), a ~~water supplier of a~~ surface water system that provides filtration shall report the following turbidity measurements to the Department within 10 days after the end of each month for each water treatment plant that operates during the month:

1. The total number of filtered water turbidity measurements taken during the month;
2. The number and percentage of filtered water turbidity measurements taken during the month that are less than or equal to the turbidity limits prescribed in R18-4-302 for the filtration technology used;
3. The date and value of any filtered water turbidity measurement taken during the month that exceeds 5 NTUs.
4. If the turbidity of the filtered water exceeds 5 NTUs, then the ~~water supplier~~ surface water system shall report the exceedance to the Department, by telephone or facsimile, as soon as possible but no later than 24 hours after the exceedance.

**D.** Disinfection: Except as provided in subsection (D)(4), a ~~water supplier of a~~ surface water system that provides disinfection shall report the following information to the Department within 10 days after the end of each month for each water treatment plant that operates during the month:

1. For each day, the lowest measurement of residual disinfectant concentration in mg/L in water entering the distribution system;
2. The date and duration of each time period the residual disinfectant concentration in water entering the distribution system fell below 0.2 mg/L; and
3. The value of "V" calculated by the formula prescribed in R18-4-303(C)(2) for the current and previous month.
4. If the residual disinfectant concentration falls below 0.2 mg/L in water entering the distribution system, the ~~water supplier~~ surface water system shall report the occurrence to the Department as soon as possible, but no later than 24 hours after the occurrence. The ~~water supplier~~ surface water system shall report whether the residual disinfectant concentration was restored to at least 0.2 mg/L within ~~4~~ four hours.

**E.** Tap water monitoring for lead and copper: ~~Each~~ A public water system that monitors for lead and copper pursuant to R18-4-310 or R18-4-313 shall report to the Department the information specified below within the ~~1st~~ first 10 days following the end of each monitoring period:

1. The results of all tap water samples, the location of each sample site, and the criteria under either R18-4-309(A)(1) or (2), or both, used to select the site for the system's sampling pool~~;~~.
~~2. A certification by the water supplier that each first-draw sample was 1-liter in volume and, to the best of the water supplier's knowledge, stood motionless in the service line, or in the interior plumbing of a sampling site, for at least 6 hours. If a resident collected a tap water sample, the water supplier shall certify that the sample was collected after the water supplier informed the resident of the proper sampling procedures.~~
~~3~~2. The 90th percentile lead and copper concentrations for all lead and copper tap water samples collected during each monitoring period (as calculated in accordance with R18-4-308)~~;~~ , unless the Department notifies the public water system that the Department will calculate the 90th percentile lead and copper concentrations and will notify the public water system of the 90th percentile concentrations.
3. Identification of all non-first-draw samples sites selected by the public water system, and the length of the standing time for that particular substitute sample collected pursuant to R18-4-310(D)(3).
4. A list of sampling sites that were not sampled in the previous monitoring period and an explanation for the change in sampling sites.
5. Tap water monitoring data that is collected in addition to the minimum required by R18-4-310 and R18-4-313.

6. Documentation of all lead and copper tap water samples that the public water system requests invalidation for pursuant to R18-4-310(P).

**F.** ~~Sampling pools for tap water monitoring: A public water system that conducts tap water monitoring for lead and copper is required to identify a pool of sampling sites under R18-4-309. A water supplier shall submit the following information on a Department form by the date of commencement of tap water monitoring:~~

~~1. Each CWS that does not complete its sampling pool with Tier 1 sampling sites meeting the criteria specified in R18-4-309(A)(1) shall submit a justification of its selection of Tier 2 or Tier 3 sampling sites.~~

~~2. Each NTNCWS that does not complete its sampling pool with Tier 1 sampling sites meeting the criteria specified in R18-4-309(A)(2) shall submit a justification of its selection of Tier 2 sampling sites to the Department.~~

~~3. Each CWS or NTNCWS with lead service lines that is not able to locate the number of sites served by such lines required under R18-4-309(A)(4) shall submit a justification to the Department that explains why it is unable to locate a sufficient number of sites served by lead service lines.~~

Corrosion control treatment reporting requirements: A public water system that is required to install optimal corrosion control treatment under R18-4-313(A) shall submit a letter to the Department certifying that the public water system has completed installation of the optimal corrosion control treatment. The public water system shall submit the certification within 24 months of the date the Department designates such treatment.

**G.** Water quality parameter monitoring: ~~Each~~ A public water system that monitors for water quality parameters pursuant to R18-4-311 or R18-4-313 shall report the following information to the Department within the ~~1st~~ first 10 days after the end of a monitoring period:

1. The results of all tap water samples for pH, alkalinity, calcium, conductivity, water temperature and where applicable, orthophosphate or silica collected pursuant to R18-4-311(B)~~;~~.
2. The results of all source water samples for pH, alkalinity, calcium, conductivity, water temperature and where applicable, orthophosphate or silica, collected at sampling points prescribed by R18-4-218(A) through (C).
3. The results of all tap water samples for pH, alkalinity, and where applicable, orthophosphate, silica, or calcium collected pursuant to R18-4-313(D).
4. The results of all samples for pH, and where applicable, alkalinity, orthophosphate, or silica collected at sampling points prescribed by R18-4-218(A) through (C).

~~3~~5. The results of any water quality parameter samples collected in addition to the minimum required by R18-4-311 and R18-4-313.

**H.** Source water monitoring for lead and copper: ~~Each~~ A public water system that monitors source water for lead and copper pursuant to R18-4-314 shall report the following information to the Department within the ~~1st~~ first 10 days after the end of the monitoring period:

1. The results of all source water samples,
2. A list of any sampling sites that were not sampled in the previous monitoring period and an explanation for the change in sampling sites, and
3. The results of any source water samples collected in addition to the minimum required by R18-4-314.

**I.** Source water treatment: A ~~water supplier~~ public water system shall report the following information to the Department within the following minimum time periods:

1. Within ~~6~~ six months after a public water system exceeds an action level for lead or copper, the ~~water supplier~~ public water system shall submit a letter to the Department that makes a recommendation regarding installation and operation of source water treatment. If the ~~water supplier~~ public water system demonstrates that source water treatment is not necessary to minimize lead or copper levels at taps, the ~~water supplier~~ public water system may recommend that no source water treatment be installed.
2. If the Department determines that source water treatment is necessary under R18-4-314(E), the ~~water supplier~~ public water system shall submit a letter that certifies that the public water system has installed the source water treatment designated or approved by the Department within 24 months after receipt of a written determination by the Department that source water treatment is necessary.

**J.** Lead service line replacement: A public water system that is required to replace lead service lines pursuant to R18-4-315 shall report the following information to the Department:

1. If a public water system exceeds the action level for lead after installation of either corrosion control or source water treatment, or both, the ~~water supplier~~ public water system shall, within 12 months after the public water system exceeds the action level for lead, submit the following information to the Department:
   a. A report ~~that identifies~~ demonstrating that the public water system has conducted a materials survey, including the materials survey under R18-4-309(B), to identify the initial number of lead service lines in ~~the~~ its distribution system and a schedule for the annual replacement of at least 7% of the initial number of lead service lines in ~~the~~ its distribution system.
2. If a public water system exceeds the action level for lead after installation of either corrosion control or source water treatment, or both, the public water system shall, within 12 months after the system exceeds the action level for lead, and every 12 months thereafter, submit the following information to the Department:

~~b~~a. A letter that demonstrates that the public water system has either:
   i. Replaced at least 7% of the initial number of lead service lines or a greater percentage of lead service lines specified by the Department under R18-4-315(F) in the previous 12 months, or
   ii. Conducted sampling that demonstrates that the lead concentration in all lead service line samples collected under R18-4-315(D) from an individual service line are – less than or equal to 0.015 mg/L. If a public water system conducted lead monitoring of individual lead service lines, the letter shall document the number of lead service lines with lead concentrations that are – less than or equal to 0.015 mg/L and the number of lead service lines that were replaced. The total number of lead service lines with lead concentrations that are – less than or equal to 0.015 plus the number of lead service lines replaced shall equal at least 7% of the initial number of lead service lines or the larger percentage specified by the Department under R18-4-315(F).

~~2~~3. The ~~water supplier~~ public water system shall submit an annual letter to the Department which contains the following information:
   a. The number of lead service lines scheduled to be replaced during the previous year of the system's lead service line replacement program.
   b. The number and location of each lead service line replaced during the previous year of the system's lead service line replacement program.
   c. If measured, the lead concentration and location of each lead service line sampled, the sampling method, and the date of sampling.
   d. Certification that all partial lead service line replacement activities required under R18-4-315(E) have been completed.

**K.** Special monitoring: A ~~water supplier~~ public water system, or a contractor that conducts special monitoring prescribed in Article 4, shall report the following information to the Department:

~~1. For sulfate under R18-4-401, the sulfate monitoring results within 30 days of receipt of the analytical results;~~

~~2~~1. For sodium under ~~R18-4-402~~ R18-4-401, the sodium monitoring results in the ~~1st~~ first 10 days of the month after the month that the analytical results were received. A ~~water supplier~~ public water system shall notify ~~the Arizona Department of Health Services (ADHS)~~ ADHS and the local county health department of the sodium monitoring results by direct mail within ~~3~~ three months of receipt of the analytical results. The ~~water supplier~~ public water system shall send a copy of each notice provided to ADHS and the local county health department to the Department within 10 days of issuance~~;~~.

2. For nickel under R18-4-402, the nickel monitoring results within the first 10 days following the month that the public water system receives the analytical result or the first 10 days following the end of an applicable monitoring period prescribed by R18-4-402, whichever occurs first.

~~3. For unregulated VOCs under R18-4-404, the analytical results to the Department within 30 days of receipt of the analytical results; and~~

~~4. For unregulated SOCs under R18-4-405 shall report the analytical results to the Department within 30 days of receipt of the analytical results.~~

**L.** Failure to comply with monitoring requirements: A ~~water supplier~~ public water system shall report the failure to comply with any monitoring requirement prescribed in this Chapter, including a monitoring requirement covered by the monitoring assistance program in this Chapter, within 48 hours, except that a public water system that fails to comply with a total coliform monitoring requirement shall report the monitoring violation to the Department within 10 days of discovery.

**M.** Cross connection incidents: A ~~water supplier~~ public water system shall submit a written cross connection incident report to the Department and the local county health department within ~~5~~ five days of the occurrence of a cross connection problem that results in contamination of water provided by the public water system. The report shall address all of the following:
1. Date and time of discovery of the cross connection;
2. Nature of the cross connection;
3. Affected area;
4. Cause of the cross connection;
5. Public health impact;
6. Date and text of any public health advisory issued;
7. Corrective action taken; and
8. Date of completion of corrective action.

**N.** Emergencies: A ~~water supplier~~ public water system shall notify the Department, by telephone, as soon as possible but no later than 24 hours after the occurrence of any of the following emergencies:
1. Loss of water supply from a source;
2. Loss of water supply due to major component failure;
3. Damage to power supply equipment or loss of power;
4. Contamination of water in the distribution system from backflow;
5. Collapse of a reservoir, reservoir roof, or pumphouse structure;

6. Break in a transmission or distribution line~~; and~~ that results in a loss of service to customers for an extended period of time; and
7. Chemical or microbiological contamination of the water supply.

**O.** Waterborne disease outbreak: A ~~water supplier~~ public water system shall report to the Department the occurrence of a waterborne disease outbreak that may be attributable to water provided by the public water system as soon as possible but no later than 24 hours after actual notice of the waterborne disease outbreak.

**P.** Confirmation sample results: A ~~water supplier~~ public water system shall report the analytical results of any confirmation sample required by the Department, except a confirmation sample obtained by a contractor under the monitoring assistance program within 24 hours of receipt of the analytical results.

**Q.** Copies of public notices: A ~~water supplier~~ public water system shall submit to the Department within 10 days of the date of completion of a public notice, a representative copy of each type of public notice required by R18-4-105 that is distributed, published, posted, or made available to persons served by the public water system or to the media and an affidavit that describes how the public notice was provided.

**R.** Department requests for records: A ~~water supplier~~ public water system shall submit to the Department, within the time stated in the request, copies of any records that the public water system maintains under R18-4-103 or copies of any documents that the Department is entitled to inspect pursuant to ~~§ 1445 of the Safe Drinking Water Act~~ 42 U.S.C. § 300j-4 (2001).

**S.** Department reporting forms: A ~~water supplier~~ public water system shall report to the Department the results of all analyses completed pursuant to this Chapter on Department-approved forms.

**T.** Direct reporting: A ~~water supplier~~ public water system may contract with a laboratory or another agent to report monitoring results to the Department. In such cases, the ~~water supplier~~ public water system remains legally responsible for compliance with reporting requirements.

**U.** Reporting limits: A ~~water supplier~~ public water system shall not report an analytical result as "not detected" or "ND" without a specific reference to a numeric "less than value" [that is, "< x" where x is a numeric concentration]. A ~~water supplier~~ public water system shall not report a "less than value" at a concentration that exceeds any of the following reporting limits:

1. Single point-of-entry sample:
   a. Inorganic chemicals (except nitrate, nitrite, fluoride, lead and copper): The reporting limit is the MCL for the inorganic chemical.
   b. Nitrate: 5 mg/L.
   c. Nitrite: 0.5 mg/L.
   d. Fluoride: 2.0 mg/L.
   ~~e. Lead: 0.005 mg/L;~~
   ~~f. Copper: 0.050 mg/L~~
   ~~g~~e. VOCs: 0.0005 mg/L.
   f. SOCs:

| *Synthetic Organic Chemical* | *Reporting Limit [in mg/L]* |
|---|---|
| Alachlor | 0.0002 |
| Atrazine | 0.0001 |
| Benzo(a)pyrene | 0.00002 |
| Carbofuran | 0.0009 |
| Chlordane | 0.0002 |
| 2,4-D | 0.0001 |
| Dalapon | 0.001 |
| Dibromochloropropane | 0.00002 |
| Di(2-ethylhexyl)adipate | 0.0006 |
| Di(2-ethylhexyl)phthalate | 0.0006 |
| Dinoseb | 0.0002 |
| Diquat | 0.0004 |
| Endothall | 0.009 |
| Endrin | 0.00001 |
| Ethylene dibromide | 0.00001 |
| Glyphosate | 0.006 |
| Heptachlor | 0.00004 |
| Heptachlor epoxide | 0.00002 |
| Hexachlorobenzene | 0.0001 |
| Hexachlorocyclopentadiene | 0.0001 |
| Lindane | 0.00002 |
| Methoxychlor | 0.0001 |
| Oxamyl | 0.002 |
| PCBs (as decachlorbiphenyl) | 0.0001 |
| Pentachlorophenol | 0.00004 |
| Picloram | 0.0001 |
| Simazine | 0.00007 |
| 2,4,5-TP (Silvex) | 0.0002 |
| Toxaphene | 0.001 |
| 2,3,7.8-TCDD (Dioxin) | 0.000000005 |

2. Composite samples:
   a. Inorganic chemicals (except lead and copper): The reporting limit is 1/5 of the MCL for the inorganic chemical.
      ~~i. Lead: 0.001 mg/L~~
      ~~ii. Copper: The reporting limit is 0.001 mg/L if the method of analysis is either gas furnace atomic absorption or inductively coupled plasma, or 0.020 mg/L if the method of analysis is atomic absorption direct aspiration.~~
   b. VOCs: 0.0005 mg/L;
   c. SOCs: The reporting limit for a SOC composite sample is the same as the reporting limit for a SOC single sample [listed under subsection (U)(1)(f)], except for toxaphene, which shall have a reporting limit that is less than or equal to 0.0006 mg/L.

| *Synthetic Organic Chemical* | *Reporting Limit [in mg/L]* |
|---|---|
| Alachlor | 0.0002 |
| Atrazine | 0.0001 |
| Benzo(a)pyrene | 0.00002 |
| Carbofuran | 0.0009 |
| Chlordane | 0.0002 |
| 2,4-D | 0.0001 |
| Dalapon | 0.001 |
| Dibromochloropropane | 0.00002 |
| Di(2-ethylhexyl)adipate | 0.0006 |
| Di(2-ethylhexyl)phthalate | 0.0006 |
| Dinoseb | 0.0002 |
| Diquat | 0.0004 |
| Endothall | 0.009 |
| Endrin | 0.00001 |
| Ethylene dibromide | 0.00001 |
| Glyphosate | 0.006 |
| Heptachlor | 0.00004 |
| Heptachlor epoxide | 0.00002 |
| Hexachlorobenzene | 0.0001 |
| Hexachlorocyclopentadiene | 0.0001 |
| Lindane | 0.00002 |
| Methoxychlor | 0.0001 |
| Oxamyl | 0.002 |
| PCBs (as decachlorbiphenyl) | 0.0001 |
| Pentachlorophenol | 0.00004 |
| Picloram | 0.0001 |
| Simazine | 0.00007 |
| 2,4,5-TP (Silvex) | 0.0025 |
| 2,3,7,8-TCDD (Dioxin) | 0.000000005 |

3. Radiochemical reporting limits: The reporting limit for a radiochemical shall be that concentration which can be counted with a precision of plus or minus 100% at the 95% confidence level (1.96 σ where σ is the standard deviation of the net counting rate of the sample).
   a. Radium-226: 1 pCi/L.
   b. Radium-228: 1 pCi/L.
   c. Gross alpha particle activity: 3 pCi/L.
   d. Man-made beta particle and photon emitters: Reporting Limit
      Man-made beta particle and photon emitters:

| *Man-made Beta Particle and Photon Emitters* | | *Reporting Limit* |
|---|---|---|
| i. | Tritium | 1,000 pCi/L. |
| ii. | Strontium-89 | 10 pCi/L |
| iii. | Strontium-90 | 2 pCi/L |
| iv. | Iodine-131 | 1 pCi/L |
| v. | Cesium-134 | 10 pCi/L |
| vi. | Gross beta | 4 pCi/L |
| vii. | Other radionuclides | 1/10 of the applicable limit |

4. Lead and copper reporting limits: All lead and copper levels measured between the practical quantitation level and the method detection limit shall be either reported as measured or they may be reported as 1/2 the practical quantitation level specified for lead or copper. All levels below the method detection limits for lead and copper shall be reported as zero. The practical quantitation level for lead is 0.005 mg/L. The practical quantitation level for copper is 0.050 mg/L.

**V.** Failure to comply with any of the provisions of this Chapter: A public water system shall report the failure to comply with any of the provisions of this Chapter to the Department within 48 hours, except where a different reporting period is specified in this Section.

**R18-4-106. Use of Approved Analytical Methods**

**A.** ~~Analysis of a sample~~ A sample shall be analyzed to determine compliance with a ~~maximum contaminant level~~ MCL, treatment technique, or a monitoring requirement prescribed in this Chapter ~~shall be~~ in accordance with an analytical method that is approved for drinking water by ~~the U.S. Environmental Protection Agency~~ EPA, and ~~for drinking water or a method that is approved by the Arizona Department of Health Services~~ by ADHS pursuant to ~~A.A.C~~ R9-14-608 ~~for drinking water~~.

**B.** An alternative analytical method to determine compliance with a ~~maximum contaminant level~~ MCL, treatment technique, or monitoring requirement prescribed in this Chapter may be employed provided the alternative analytical method is approved by the Director of ~~the Arizona Department of Health Services~~ ADHS pursuant to ~~A.A.C. R9-14-607(B)~~ R9-14-608(B) with the concurrence of the Administrator of ~~the United States Environmental Protection Agency~~ EPA.

**~~R18-4-109.~~ R18-4-108. ~~Recodified~~ Sample Collection, Preservation, and Transportation**

~~The~~ A ~~water supplier~~ public water system shall collect ~~samples~~ each sample using the sample preservation, container, and maximum holding time procedures ~~that are~~ prescribed by ~~the Arizona Department of Health Services or the U.S. Environmental Protection Agency~~ ADHS and approved by EPA for the analytical method used.

**R18-4-109. Alternate Variances**

**A.** The Department may grant an alternate variance from compliance with a MCL or treatment technique requirement if:
1. The public water system serves fewer than 10,000 persons (including the number of persons served through a consecutive system);
2. The MCL or treatment technique requirement was promulgated on or after January 1, 1986; and
3. EPA has published an alternate variance technology pursuant to 42 U.S.C. 300g-1(b)(15) (2001).

The Department shall grant an alternate variance for a MCL that was revised after January 1,1986 only up to the MCL in effect prior to January 1, 1986.

**B.** The Department shall not grant an alternate variance for a microbiological contaminant (including a bacterium, virus, or other organism) or an indicator or treatment technique for a microbial contaminant.

**C.** A public water system that serves fewer than 10,000 persons shall submit a written request for an alternate variance to the Department. The request shall include all items listed in R18-4-110(D) and documentation that the public water system can pay for and maintain the installation and operation of the alternate variance technology.

**D.** The Department shall review the alternate variance request, make a preliminary decision on the request, and schedule a public hearing for customers of the public water system to comment on the proposed alternate variance.

**E.** The Department shall conduct public hearings on a proposed alternate variance according to the general public hearing procedures under R18-1-402.

**F.** The Department shall not grant an alternate variance until the later of the following:
1. 90 days after the Department proposes to grant the alternate variance;

2. For a public water system that serves 3,300 or fewer persons, the date on which the Department makes the recommended modifications or responds in writing to each objection by EPA, if any; or
3. For a public water system that serves more than 3,300 and fewer than 10,000 persons, the date EPA approves the alternate variance.

**G.** The Department shall publish a final decision to grant an alternate variance in the Arizona Administrative Register.

**R18-4-110. Variances**

**A.** The Department may grant a variance to a public water system from compliance with a ~~maximum contaminant level~~ MCL, except for total coliform, nitrate, or nitrite, provided the ~~water supplier~~ public water system demonstrates to the Department all of the following:
1. The public water system cannot comply with a ~~maximum contaminant level~~ MCL because of the characteristics of the sources reasonably available to the public water system;
2. The public water system cannot join with another public water system or develop another source which will result in compliance with the ~~maximum contaminant level~~ MCL;
3. The public water system will install and use or has installed and used best available technology in an attempt to achieve compliance with the ~~maximum contaminant level~~ MCL, except that ~~--~~ if a ~~water supplier~~ public water system can demonstrate through a comprehensive engineering assessment of ~~a~~ the public water system that installation and use of best available technology will achieve only a de minimis reduction in the contaminant level, the Department may grant a variance conditioned upon the issuance of a schedule of compliance that requires the public water system to examine other treatment methods to achieve compliance with the ~~maximum contaminant level~~ MCL. If the Department determines that another treatment method is technically feasible, the Department may require the public water system to install and use that treatment method pursuant to a schedule of compliance.
4. The granting of a variance will not result in an unreasonable risk to the health of persons served by the public water system.

**B.** The Department may grant a variance to a public water system from a treatment technique requirement upon a finding that the public water system applying for the variance has demonstrated that the treatment technique is not necessary to protect the health of persons because of the nature of the source for the public water system ~~or upon a demonstration by the water supplier that an alternative treatment technique is at least as efficient in lowering the level of the contaminant for which a treatment technique requirement was prescribed. A variance that is granted on the ground that an alternative technology is available shall be conditioned upon the use of that alternative treatment technique~~. The Department shall not grant a variance to a public water system from treatment technique requirements related to disinfection and filtration.

**C.** The Department shall, as a condition of a variance, prescribe a schedule of compliance when a variance is granted. The schedule of compliance shall include interim control measures deemed necessary by the Department and dates for their implementation. A schedule of compliance shall require compliance with the ~~maximum contaminant level~~ MCL for which the variance is granted as expeditiously as practicable~~.~~, but within five years of the date of issuance of the variance. The Department may extend the final date of compliance after public notice and opportunity for general public hearing.

**D.** ~~A request for a variance shall be in writing and shall contain the following information:~~ A public water system shall submit a written request to the Department for a variance. The request shall include the following:
1. Identification of the contaminant and the ~~maximum contaminant level~~ MCL or treatment technique requirement for which a variance is requested;
2. Explanation of the economic and legal factors relevant to the system's ability to comply;
3. Analytical results of samples taken from water entering the distribution system after treatment and source water;
4. A description of the best available treatment technology, treatment techniques, or other means which ~~have been~~ has been or will be installed and used in an attempt to comply with the ~~maximum contaminant level~~ MCL;
5. A proposed compliance schedule, including interim control measures and the dates that each interim control measure will be implemented. The proposed compliance schedule shall include as a minimum the following dates:
   a. The date by which the public water system will arrange for an alternative source or the existing source will be improved;
   b. The date of initiation of the connection of the alternative source or the improvement of existing source; and
   c. The date by which final compliance with the ~~maximum contaminant level~~ MCL or treatment technique requirement is to be achieved;
6. A contingency plan for the provision of safe drinking water if there is an increase in the concentration of the contaminant for which the variance is requested to prevent an unreasonable risk to public health;
7. A statement that the ~~water supplier~~ public water system will perform monitoring or other reasonable requirements prescribed by the Department as a condition of a variance.

**E.** ~~In~~ The Department shall consider the following factors when considering a request for a variance because the public water system is unable to comply with a ~~maximum contaminant level~~ MCL~~, the Director shall consider the following factors~~:
1. The availability and effectiveness of treatment methods for the contaminant for which the variance is requested; and

2. The cost and other economic considerations such as implementing treatment, improving the quality of the source or using an alternative source.

**F.** ~~In~~ The Department shall consider such factors as the following when considering a request for a variance from a treatment technique requirement because such treatment is unnecessary to protect the public health~~, the Director shall consider such factors as the following~~:

1. The quality of the source, including water quality data and pertinent sources of pollution; and
2. Source protection measures employed by the public water system.

**G.** The Department shall provide written notice to the applicant of a preliminary decision to grant or deny a request for a variance within 90 days of receipt of a request. If the preliminary decision is to grant the request for a variance, the notice shall identify the contaminant for which the variance is granted, specify the term of the variance, and include a proposed schedule of compliance. A ~~water supplier~~ public water system shall provide public notice of a preliminary decision to grant a variance to persons served by the public water system as prescribed by R18-4-105. If the preliminary decision is to deny the request for a variance, the notice of intent to deny a request for a variance shall state the reasons for the proposed denial. The applicant may submit additional information to the Department within 30 days after receipt of a notice of intent to deny a request for a variance. The Department shall make a final decision, in writing, and notify the applicant within 30 days after receipt of any additional information. If no additional information is submitted to the Department, then the Department shall deny the request for a variance.

**H.** The Department shall provide notice and an opportunity for a public hearing on a proposed variance according to the procedures prescribed in R18-1-401. A public notice may cover ~~a~~ one or more variance requests. Any person who is served by the public water system and who may be adversely affected by a proposed variance may request a public hearing. The Department may issue public notice and hold a public hearing on a proposed variance on its own initiative.

1. A request for a public hearing shall be submitted to the Department within 30 days of publication of the notice of opportunity for public hearing.
2. A request for a hearing shall include the name, address and signature of the person requesting the hearing and a brief jurisdictional statement which describes how the person will be adversely affected by the proposed variance.

**I.** ~~Public hearings~~ The Department shall conduct a public hearing on a proposed variance ~~shall be conducted~~ according to the general public hearing procedures prescribed at R18-1-402.

**J.** The Department may require a public water system to use bottled water, point-of-use treatment devices, point-of-entry treatment devices, or other means as a condition of granting a variance from a ~~maximum contaminant level~~ MCL to avoid an unreasonable risk to health.

~~**K.** A public water system that uses bottled water as a condition for receiving a variance from a maximum contaminant level requirement shall comply with subsection (K)(1) or (K)(2) and (K)(3):~~

~~1. The Department shall require and approve a monitoring program for bottled water. The public water system shall develop and put in place a monitoring program that provides reasonable assurances that the bottled water meets applicable maximum contaminant levels. The public water system shall monitor a representative sample of the bottled water to determine compliance with applicable maximum contaminant levels during the 1st 3-month period that it supplies the bottled water to the public and annually thereafter. Results of the bottled water monitoring program shall be provided to the Department annually; or~~

~~2. The public water system shall receive a certification from the bottled water company that the bottled water supplied has been taken from an "approved source" as defined in 21 CFR 129.3(a); the bottled water company has conducted monitoring in accordance with 21 CFR 129.80(g)(1) through (3); and the bottled water does not exceed any maximum contaminant levels or quality limits as set out in 21 CFR 103.35, 21 CFR 110 and 21 CFR 29. The public water system shall provide the certification to the Department in the 1st quarter after it supplies bottled water and annually thereafter. The Department may waive the certification requirements prescribed in this subsection if an approved monitoring program is already in place in another state; and~~

~~3. The public water system is fully responsible for the provision of sufficient quantities of bottled water to every person supplied by the public water system via door-to-door bottled water delivery.~~

**R18-4-111. Exemptions**

**A.** The Department may grant an exemption to a public water system from a ~~maximum contaminant level~~ MCL (except for total coliform, nitrate, or nitrite) or a treatment technique requirement ~~provided~~ if the ~~water supplier~~ public water system demonstrates to the Department that:

1. The public water system is unable to comply with a ~~maximum contaminant level~~ MCL or treatment technique requirement because of compelling factors ~~[~~(which may include economic factors~~]~~);.
2. The grant of an exemption will not result in an unreasonable risk to public health~~; and~~.
3. The public water system is either:
   a. An existing public water system that is in operation on the effective date of the ~~maximum contaminant level~~ MCL or treatment technique requirement; or

b. A new public water system ~~which~~ that begins operation after the effective date of the ~~maximum contaminant level~~ MCL or treatment technique requirement, ~~which~~ and does not have a reasonably available, alternative source that can be used to achieve compliance with the ~~maximum contaminant level~~ MCL or treatment technique requirement.

4. The public water system is unable to make management or restructuring changes that will result in compliance with the MCL or treatment technique requirement, or improve the quality of the drinking water.

5. The public water system is taking all practicable steps to meet the standard, and:

a. The public water system cannot meet the MCL or treatment technique requirement without capital improvements that cannot be completed before the effective date of the MCL or treatment technique requirement;

b. In the case of a public water system that needs financial assistance for necessary capital improvements, the public water system has entered into an agreement to obtain the financial assistance; or

c. The public water system has entered into an enforceable agreement to become part of a regional public water system.

**B.** ~~The Department shall prescribe, at the time an exemption is granted, a schedule of compliance which includes interim control measures that the Department deems necessary and dates for their implementation.~~ At the time an exemption is granted, the Department shall prescribe to the public water system a schedule for compliance through the installation of treatment or the development of an alternate source. The schedule for compliance shall include the interim control measures that the Department deems necessary and dates for their implementation.

**C.** ~~A schedule of compliance shall require compliance with a maximum contaminant level or treatment technique requirement within 1 year of the date of issuance of the exemption, except that the final date of compliance may be extended by the Director, for a period not to exceed 3 years after the date of issuance of the exemption if the water supplier demonstrates that:~~ The Department shall require in the schedule of compliance that a public water system comply with a MCL or treatment technique requirement as expeditiously as practicable, but within three years of the effective date of the MCL or treatment technique requirement. The Department may renew an exemption biennially for a period not to exceed six years to a public water system serving 3300 or fewer persons that has been granted an exemption and that cannot come into compliance within three years due solely to needing financial assistance for necessary capital improvements. A public water system requesting a biennial extension must demonstrate compliance with the schedule of subsection (B).

~~1. The public water system cannot meet the maximum contaminant level or treatment technique requirement without capital improvements that cannot be completed within 1 year;~~

~~2. In the case of a system which needs financial assistance for necessary capital improvements, the water supplier has entered into an agreement to obtain such financial assistance;~~

~~3. The water supplier has entered into an enforceable agreement to become a part of a regional public water system and the system is taking all practicable steps to comply with the maximum contaminant level or treatment technique requirement; or~~

~~4. In the case of a system which serves less than 500 service connections and which needs financial assistance for necessary capital improvements, an exemption may be renewed for 1 or more additional 2-year periods if the system establishes that it is taking all practicable steps to meet the requirements of subsection (C)(1), (2), or (3) above.~~

**D.** The Department shall not grant an exemption to a ~~surface~~ public water system from treatment technique requirements related to disinfection and filtration.

**E.** ~~A request for a exemption from a maximum contaminant level or treatment technique requirement shall contain the following information:~~ A public water system shall submit a written request to the Department for an exemption. The request shall include the following:

1. Identification of the contaminant and the ~~maximum contaminant level~~ MCL or treatment technique requirement for which an exemption is requested,
2. Analytical results of samples taken of both water entering the distribution system after treatment and source water,
3. An explanation of the compelling factors which prevent the public water system from achieving compliance with the ~~maximum contaminant level~~ MCL or treatment technique requirement.

**F.** ~~In~~ The Department shall consider the following when determining whether a public water system is unable to comply because of compelling factors~~, the Department shall consider~~:

1. The necessary construction, installation, or modification of treatment equipment or systems required;
2. The time required to place a new treatment facility into operation to replace the existing facility which is not in compliance;
3. The economic feasibility of compliance;
4. The availability of alternative sources of water; and
5. Opportunities for consolidation with another public water system.

**G.** The Department shall provide written notice to the applicant of a preliminary decision to grant or deny an exemption within 90 days of receipt of a request. If the preliminary decision is to grant an exemption, the notice shall identify the ~~maximum contaminant level~~ MCL or treatment technique requirement for which the exemption is granted, the term of the exemption, and shall include a proposed schedule of compliance. A ~~water supplier~~ public water system shall provide public notice of a preliminary decision to grant an exemption to persons served by the public water system as prescribed by R18-4-105. If the preliminary decision is to deny the exemption, the notice of intent to deny a request for an exemption shall state the reasons for the proposed denial. The applicant may submit additional information to the Department within 30 days after receipt of a notice of intent to deny a request for an exemption. The Department shall make a final decision, in writing, and notify the applicant within 30 days after receiving such additional information. If no additional information is submitted to the Department, the request for an exemption shall be denied.

**H.** The Department shall provide notice and an opportunity for public hearing on a proposed exemption according to the procedures prescribed in ~~A.A.C.~~ R18-1-401. The notice may cover ~~a~~ one or more exemption requests. Any person who is served by the public water system and who may be adversely affected by a proposed exemption may request a public hearing. The Department may issue public notice and hold a public hearing on a proposed exemption on its own initiative.

1. Requests for public hearing shall be submitted to the Department within 30 days of publication of the notice of opportunity for public hearing.
2. A request for a hearing shall include the name, address, and signature of the person requesting the hearing and a brief jurisdictional statement which describes how the person will be adversely affected by the proposed exemption.

**I.** ~~Public hearings~~ The Department shall conduct a public hearing on a proposed exemption ~~shall be conducted~~ according to the procedures prescribed at ~~A.A.C.~~ R18-1-402.

**J.** The Department may require a public water system to use bottled water, point-of-use treatment devices, or point-of-entry treatment devices as a condition of ~~a~~ granting an exemption from a ~~maximum contaminant level~~ MCL requirement. The Department may require a public water system to use bottled water, point-of-use devices or other means as a condition for granting an exemption from corrosion control treatment requirements for lead and copper to avoid an unreasonable risk to health. The Department may require a public water system to use point-of-entry devices as a condition for granting an exemption from the source water treatment and lead service line replacement requirements for lead and copper to avoid an unreasonable risk to health. In requiring the use of a point-of-entry device as a condition for granting an exemption from the source water treatment or lead service line replacement requirements for lead and copper, the Department shall be assured that use of the treatment device will not cause increased corrosion of lead- and copper-bearing materials located between the device and the tap that could increase contaminant levels at the tap.

**K.** ~~The Department may require a public water system to use bottled water and point-of-use devices or other means, but not point-of-entry devices, as a condition for granting an exemption from corrosion control treatment requirements for lead and copper to avoid an unreasonable risk to health. The Department may require a public water system to use point-of-entry devices as a condition for granting an exemption from the source water treatment and lead service line replacement requirements for lead and copper to avoid an unreasonable risk to health. In requiring the use of a point-of-entry device as a condition for granting an exemption from the source water treatment or lead service line replacement requirements for lead and copper, the Department shall be assured that use of the treatment device will not cause increased corrosion of lead- and copper-bearing materials located between the device and the tap that could increase contaminant levels at the tap.~~

A public water system shall not receive an exemption under this Section if the public water system has been granted an alternate variance pursuant to R18-4-109.

**R18-4-115. Backflow Prevention**

**A.** A ~~water supplier~~ public water system shall protect its ~~public water~~ system from contamination caused by backflow through unprotected cross- connections by requiring the installation and periodic testing of backflow-prevention assemblies. Required backflow-prevention assemblies shall be installed as close as practicable to the service connection. ~~User facilities~~ A user facility constructed after August 8, 1991, shall conform to this requirement at the time of placement into service. ~~User facilities~~ A user facility constructed prior to August 8, 1991, shall conform to this requirement by July 1, 1994.

**B.** A ~~water supplier~~ public water system shall ~~cause~~ ensure that a backflow-prevention assembly ~~to be~~ is installed whenever any of the following occur:

1. A substance harmful to human health is handled in a manner ~~which~~ that could permit its entry into the public water system. Such substances include chemicals, chemical or biological process waters, water from public water supplies ~~which~~ that has deteriorated in sanitary quality, and water ~~which~~ that has entered a fire sprinkler ~~systems~~ system. A Class 1 ~~and~~ or Class 2 fire sprinkler ~~systems are~~ system shall be exempt from the requirements of this Section;
2. A source of water supply exists on the user's premises ~~which~~ that is not accepted as an additional source by the ~~water supplier~~ public water system or is not approved by the Department;
3. An unprotected cross-connection exists or a cross-connection problem has previously occurred within a user's premises; or

4. There is a significant possibility that a cross-connection problem will occur and entry to the premises is restricted to the extent that cross-connection inspections cannot be made with sufficient frequency or on sufficiently short notice to assure that unprotected cross-connections do not exist.

**C.** Unless a cross-connection problem is specifically identified, or as otherwise provided in this Section, the requirements of this Section ~~do~~ shall not apply to single family residences used solely for residential purposes.

**D.** A backflow-prevention assembly required by this Section shall comply with the following:

1. If equipped with test cocks, it shall have been issued a certificate of approval by the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research (USC-FCCCHR), or such other third-party certifying entity, unrelated to the product's manufacturer or vendor, which may be designated by the Department.
2. If not equipped for testing, it shall be approved by a third-party certifying entity, unrelated to the product's manufacturer or vendor, which may be designated by the Department.

**E.** The minimum level of backflow protection ~~which~~ that shall be provided to protect a public water system shall be that ~~which is~~ recommended in ~~Part II of~~ Section ~~7~~ 7.2 and Section 9 pertaining to testing in the *Manual of Cross-Connection Control*, ~~8th~~ 9th Edition, USC-FCCCHR (Los Angeles, California, ~~June 1988~~ December 1993) (the Manual), ~~(~~and no future editions~~)~~, ~~which is~~ incorporated ~~herein~~ by reference and on file with the Office of the Secretary of State ~~[hereafter referred to as "the Manual"]~~. The types of backflow prevention that may be required, listed in decreasing order according to the level of protection they provide, include: an air-gap separation (AG), a reduced pressure principle backflow prevention (RP) assembly, a pressure vacuum breaker (PVB) assembly, and a double check valve (DC) assembly. Nothing contained in this Section shall prevent or restrict the ~~water supplier~~ public water system from requiring the use of a higher level of protection than that which is required by this subsection.

1. A ~~water supplier~~ public water system may make installation of a required backflow-prevention assembly a condition of service. A user's failure to comply with this requirement shall be sufficient cause for the ~~water supplier~~ public water system to terminate water service.
2. Specific installation requirements for backflow prevention shall include the following:
   a. Any backflow prevention required by this Section shall be installed in accordance with manufacturer's specifications.
   b. For AG installations, all piping between the user's connection and the receiving tank shall be entirely visible unless otherwise approved in writing by the ~~water supplier~~ public water system.
   c. An RP assembly shall not be installed in a meter box, pit, or vault unless adequate drainage is provided.
   d. A PVB assembly may be installed for use on landscape water irrigation systems provided the irrigation system conforms to all of the criteria listed below. An RP assembly is required whenever any of the criteria are not met.
      i. The water use beyond the assembly is for irrigation purposes only;
      ii. The PVB is installed in accordance with manufacturer's specifications;
      iii. The irrigation system is designed and constructed to be incapable of inducing backpressure; and
      iv. Chemigation, the injection of chemical pesticides and fertilizers, is not practiced or provided in the irrigation systems.

**F.** Each backflow-prevention assembly required by this Section shall be tested at least annually, or more frequently if directed by the ~~water supplier~~ public water system or the Department. Each assembly shall also be tested after installation, relocation, or repair. No assembly shall be placed in service unless it has been tested and is functioning as designed. The following provisions shall apply to the testing of backflow-prevention assemblies:

1. Testing shall be in accordance with procedures described in Section 9 of the Manual. The ~~water supplier~~ public water system shall notify the water user when testing of backflow-prevention assemblies is needed. Such notice shall specify the date by which testing must be completed and the results forwarded to the ~~water supplier~~ public water system.
2. Testing shall be performed by persons who hold a valid "general" tester certification issued by the California-Nevada American Water Works Association ~~(CAL-NEV-AWWA)~~ Section (CA-NV Section, AWWA), the Arizona State Environmental Technical Training (ASETT) Center, or other certifying authority approved by the Department.
3. When a backflow-prevention assembly is tested and found to be defective, it shall be repaired or replaced in accordance with the provisions of this Section.

**G.** A ~~water supplier~~ public water system shall maintain records of backflow-prevention assembly installations and tests performed on backflow-prevention assemblies in its service area. Records shall be retained by the ~~water supplier~~ public water system for at least ~~3~~ three years and shall be made available for review by the Department upon request. These records shall include an inventory of backflow-prevention assemblies required by this Section and, for each assembly, all of the following information:

1. Assembly identification number and description,
2. Location,
3. Date of tests,
4. Description of repairs and recommendations for repairs made by the tester, and
5. The tester's name and certificate number.

**H.** A ~~water supplier~~ public water system shall submit a written cross-connection incident report within ~~5~~ five business days to the Department and the local health authority whenever a cross-connection problem has occurred ~~which~~ that resulted in contamination of the public water system. The report shall address all of the following:
1. Date and time of discovery of the unprotected cross-connection,
2. Nature of the cross-connection problem,
3. Affected area,
4. Cause of the cross-connection problem,
5. Public health impacts,
6. Dates and texts of any public health advisories issued,
7. Corrective actions taken, and
8. Date of completion of corrective actions.

**I.** Effective July 1, 1994, individuals with direct responsibility for implementing a backflow prevention program for water systems serving more than 50,000 persons, or where the Department has determined that such a need exists, shall be licensed as a "cross-connection control program specialist" by the ~~Cal-Nev-AWWA Section~~ CA-NV Section, AWWA, the ASETT Center, or other certification program approved by the Department.

**R18-4-119. ~~Additives~~ Standards for Additives, Materials and Equipment**

**A.** ~~All products~~ Each product added directly to water during production or treatment shall conform to ~~American National Standards Institute / NSF International Standard 60-1996a~~ ANSI/NSF Standard 60.~~, Drinking Water Treatment Chemicals - Health Effects, NSF International, 3475 Plymouth Road, P.O. box 130140, Ann Arbor, Michigan, (revised November, 1996) (and no future amendments), which is incorporated by reference and on file with the Office of the Secretary of State and the Department.~~ Products covered by this subsection include but are not limited to:
1. Coagulation and flocculation chemicals;
2. Chemicals for corrosion and scale control;
3. Chemicals for softening, precipitation, sequestering, and pH adjustment;
4. Disinfection and oxidation chemicals;
5. Chemicals for fluoridation, defluoridation, algae control, and dechlorination;
6. Dyes and tracers;
7. Antifreezes, antifoamers, regenerants, and separation process scale inhibitors and cleaners; and
8. Water well drilling and rehabilitation aids~~; and~~.
~~9. Miscellaneous water supply products.~~

**B.** Except as identified in subsections (D) and (E), materials or products installed after January 1, 1993, that come into contact with water or ~~with~~ water treatment chemicals shall conform to ~~American National Standards Institute / NSF International Standard 61-1997(b),~~ ANSI/NSF Standard 61.~~, Drinking Water System Components - Health Effects, NSF International, 3475 Plymouth Road, P.O. Box 130140, Ann Arbor, Michigan (Revised July, 1997) (and no future amendments) which is incorporated by reference and on file with the Office of the Secretary of State and the Department.~~ Products and materials covered by this subsection include but are not limited to:
1. Process media, such as carbon and sand;
2. Joining and sealing materials, such as solvents, cements, welding materials, and gaskets;
3. Lubricants;
4. Pipes and related products, such as tanks and fittings;
5. Mechanical devices used in treatment, transmission, or distribution systems such as valves, chlorinators, and separation membranes; and
6. Surface coatings and paints.

**C.** Evidence that a product conforms to the requirements of this Section shall be the appearance on the product or product package of ~~the NSF Listing Mark~~ a seal of a certifying entity that is accredited by the American National Standards Institute to provide the certification.

**D.** *The Director shall consider standards for chemicals, materials, or equipment that* [have] *been certified by* ~~the National Standards Foundations. . .~~ [NSF International] *as complying with the standards required by this Section. In those instances where chemicals, materials, and equipment that come into contact with drinking water are essential to the design, construction, or operation of* ~~a~~ the *drinking water system and have not been certified by* ~~the National Sanitation Foundation standard~~ . . . [NSF International] *or have* ~~National Sanitation Foundation~~ . . . [NSF International] *certification but are not available from more than* ~~1~~ *one source, the standards shall provide for the use of alternatives which include:*
1. *Products composed entirely of ingredients determined by the Environmental Protection Agency, the Food and Drug Administration, or other federal agencies as appropriate for addition to potable water or aqueous food.*
2. *Products composed entirely of ingredients listed in the National Academy of Sciences "Water Chemicals Codex."*
3. *Products consistent with the specifications of the American Water Works Association.*
4. *Products . . . designed for use in drinking water systems and that are consistent with the specifications of the American Society for Testing and Materials.*

5. *Products . . . historically used or in use in drinking water systems~~,~~ consistent with standard practice ~~, which~~* and that *have not been demonstrated during past applications in the United States to contribute to water contamination.* A.R.S. § 49-353.01(B)

**E.** The Department exempts the following materials ~~or~~ and products ~~are not covered by the~~ from the requirement to conform to ~~National Sanitation Foundation~~ ANSI/NSF Standard 61:

1. ~~Concrete structures, tanks, and treatment tank basins~~ A concrete structure, tank, or treatment tank basin constructed onsite that ~~are~~ is not normally coated or sealed if the construction materials used in the concrete are consistent with subsection (D). ~~Any coatings or sealants~~ A coating or sealant specified by the design engineer shall comply with ~~National Sanitation Foundation~~ ANSI/NSF Standard 61~~,~~;
2. ~~Earthen reservoirs and canals~~ An earthen reservoir or canal located upstream of water treatment~~,~~;
3. ~~Drinking~~ A drinking water treatment ~~plants~~ plant constructed onsite or at a job shop that ~~are~~ is comprised of components that comply with subsections (B), (C), and (D)~~,~~;
4. ~~Galvanized steel tanks and synthetic tanks~~ A synthetic tank constructed of ~~resins~~ material that ~~are:~~ meets Food and Drug Administration standards for materials that come in contact with drinking water or aqueous food, or a galvanized steel tank, either of which is:
   ~~a. Approved by the Food and Drug Administration to be used in contact with drinking water or aqueous food,~~
   a~~b~~. Less than 15,000 gallons in capacity, and
   b~~e~~. ~~Are used~~ Used in a public water ~~systems~~ system with 500 or fewer service connections~~.~~; or
5. ~~Stainless steel pipes, treatment plant components, and water distribution system components~~ A pipe, treatment plant component, or water distribution system component made of lead-free stainless steel.

**R18-4-122. Entry and Inspection of Public ~~and Semipublic~~ Water Systems**

**A**. A Department inspection shall comply with A.R.S. § ~~49-1009~~ 41-1009.

**B**. If a public water system that participates in the monitoring assistance program denies or restricts a contractor access to the public water system or prevents a contractor from collecting a sample covered under the monitoring assistance program, the ~~water supplier~~ public water system shall be legally responsible for the resulting noncompliance with monitoring requirements.

**Appendix A. Mandatory Health Effects Language**

(1) **Acrylamide.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that acrylamide is a health concern at certain levels of exposure. Polymers made from acrylamide are sometimes used to treat water supplies to remove particulate contaminants. Acrylamide has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. Sufficiently large doses of acrylamide are known to cause neurological injury. EPA has set the drinking water standard for acrylamide using a treatment technique to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. This treatment technique limits the amount of acrylamide in the polymer and the amount of the polymer which may be added to drinking water to remove particulates. Drinking water systems which comply with this treatment technique have little to no risk and are considered safe with respect to acrylamide.

(2) **Alachlor.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that alachlor is a health concern at certain levels of exposure. This organic chemical is a widely used pesticide. When soil and climatic conditions are favorable, alachlor may get into drinking water by runoff into surface water or by leaching into groundwater. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standard for alachlor at 0.002 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water that meets this standard is associated with little to none of this risk and is considered safe with respect to alachlor.

(3) **Antimony.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that antimony is a health concern at certain levels of exposure. This inorganic chemical occurs naturally in soils, groundwater and surface waters and is often used in the flame retardant industry. It is also used in ceramics, glass, batteries, fireworks, and explosives. It may get into drinking water through natural weathering of rock, industrial production, municipal waste disposal, or manufacturing processes. This chemical has been shown to decrease longevity, and alter blood levels of cholesterol and glucose in laboratory animals such as rats exposed to high levels during their lifetimes. EPA has set the drinking water standard for antimony at 0.006 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to antimony.

(4) **Asbestos.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that asbestos fibers greater than 10 micrometers in length are a health concern at certain levels of exposure. Asbestos is a naturally occurring mineral. Most asbestos fibers in drinking water are less than 10 micrometers in length and occur in drinking water from natural sources and from corroded asbestos-cement pipes in the distribution system. The major uses of asbestos were in the production of cements, floor tiles, paper products, paint, and caulking; in transportation-related applications; and in the production of textiles and plastics. Asbestos was once a popular insulating and fire-retardant material. Inhalation studies have shown that various forms of asbestos have produced lung tumors in laboratory animals. The available information on the risk of developing gastrointestinal tract cancer associated with the ingestion of asbestos from drinking water is limited. Ingestion of intermediate-range chrysotile asbestos fibers greater than 10 micrometers in length is associated with causing benign tumors in male rats. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standard for asbestos at 7 million long fibers per liter to reduce the potential risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to asbestos.

(5) **Atrazine.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that atrazine is a health concern at certain levels of exposure. This organic chemical is a herbicide. When soil and climatic conditions are favorable, atrazine may get into drinking water by runoff into surface water or by leaching into groundwater. This chemical has been shown to affect offspring of rats and the heart of dogs. EPA has set the drinking water standard for atrazine at 0.003 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to atrazine.

(6) **Barium.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that barium is a health concern at certain levels of exposure. This inorganic chemical occurs naturally in some aquifers that serve as sources of groundwater. It is also used in oil and gas drilling muds, automotive paints, bricks, tiles, and jet fuels. It generally gets into drinking water after dissolving from naturally occurring minerals in the ground. This chemical may damage the heart and cardiovascular system and is associated with high blood pressure in laboratory animals such as rats exposed to high levels during their lifetimes. In humans, EPA believes that effects from barium on blood pressure should not occur below 2 parts per million (ppm) in drinking water. EPA has set the drinking water standard for barium at 2 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to barium.

(7) **Benzene.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that the benzene is a health concern at certain levels of exposure. This chemical is used as a solvent and degreaser of metals. It is also a major component of gasoline. Drinking water contamination generally results from leaking underground gasoline and petroleum tanks or improper waste disposal. This chemical has been associated with significantly increased risks of leukemia among certain industrial workers who were exposed to relatively large amounts of this chemical during their working careers. This chemical has also been shown to cause cancer in laboratory animals when the animals are exposed at high levels over their lifetimes. Chemicals that cause increased risk of cancer among exposed industrial workers and in laboratory animals also may increase the risk of cancer in humans who are exposed at lower levels over long periods of time. EPA has set the enforceable drinking water standard for benzene at 0.005 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in humans and laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe.

(8) **Benzo[a]pyrene.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that benzo[a]pyrene is a health concern at certain levels of exposure. Cigarette smoke and charbroiled meats are common sources of general exposure. The major source of benzo[a]pyrene in drinking water is the leaching from coal tar lining and sealants in water storage tanks. This chemical has been shown to cause cancer in animals such as rats and mice when the animals are exposed at high levels. EPA has set the drinking water standard for benzo[a]pyrene at 0.0002 parts per million (ppm) to protect against the risk of cancer. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to benzo[a]pyrene.

(9) **Beryllium.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that beryllium is a health concern at certain levels of exposure. This inorganic metal occurs naturally in soils, groundwater, and surface waters and is often used in electrical equipment and electrical components. It generally gets into water from runoff from mining operations, discharge from processing plants, and improper waste disposal. Beryllium compounds have been associated with damage to the bones and lungs and induction of cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. There is limited evidence to suggest that beryllium may pose a cancer risk via drinking water exposure. Therefore, EPA based the health

assessment on noncancer effects with an extra uncertainty factor to account for possible carcinogenicity. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standard for beryllium at 0.004 part per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to beryllium.

(10) **Cadmium.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that cadmium is a health concern at certain levels of exposure. Food and the smoking of tobacco are common sources of general exposure. This inorganic metal is a contaminant in the metals used to galvanize pipe. It generally gets into water for corrosion of galvanized pipes or by improper waste disposal. This chemical has been shown to damage the kidney in animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Some industrial workers who were exposed to relatively large amounts of this chemical during working careers also suffered damage to the kidney. EPA has set the drinking water standard for cadmium at 0.005 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to cadmium.

(11) **Carbofuran.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that carbofuran is a health concern at certain levels of exposure. This organic chemical is a pesticide. When soil and climatic conditions are favorable, carbofuran may get into drinking water by runoff into surface water or by leaching into groundwater. This chemical has been shown to damage the nervous and reproductive systems of laboratory animals such as rats and mice exposed at high levels over their lifetimes. Some humans who were exposed to relatively large amounts of this chemical during their working careers also suffered damage to the nervous system. Effects on the nervous system are generally rapidly reversible. EPA has set the drinking water standard for carbofuran at 0.04 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to carbofuran.

(12) **Carbon tetrachloride.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that carbon tetrachloride is a health concern at certain levels of exposure. This chemical was once a popular household cleaning fluid. It generally gets into drinking water by improper waste disposal. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed at lower levels over long periods of time. EPA has set the enforceable drinking water standard for carbon tetrachloride at 0.005 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe.

(13) **Chlordane.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that chlordane is a health concern at certain levels of exposure. This organic chemical is a pesticide used to control termites. Chlordane is not very mobile in soils. It usually gets into drinking water after application near water supply intakes or wells. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standard for chlordane at 0.002 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to chlordane.

(14) **Chromium.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that chromium is a health concern at certain levels of exposure. The inorganic metal occurs naturally in the ground and is often used in the electroplating of metals. It generally gets into water from runoff from old mining operations and improper waste disposal from plating operations. This chemical has been shown to damage the kidney, nervous system, and the circulatory system of laboratory animals such as rats and mice when the animals are exposed at high levels. Some humans who were exposed to high levels of this chemical suffered liver and kidney damage, dermatitis, and respiratory problems. EPA has set the drinking water standard for chromium at 0.1 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to chromium.

(15) **Copper.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that copper is a health concern at certain exposure levels. Copper, a reddish-brown metal, is often used to plumb residential and commercial structures that are connected to water distribution systems. Copper contaminating drinking water as a corrosion by-product occurs as the result of the corrosion of copper pipes that remain in contact with water for a prolonged period of time. Copper is an essential nutrient, but at high doses it has been shown to cause stomach and intestinal distress, liver and kidney damage, and anemia. Persons with Wilson's disease may be at a higher risk of health effects due to copper than the general public. EPA's national primary drinking water regulation requires all public water systems to install optimal corrosion control to minimize copper contamination resulting from the corrosion of plumbing materials. Public water systems serving 50,000 people or fewer that have copper concen-

trations below 1.3 parts per million (ppm) in more than 90% of tap water samples (the EPA "action level") are not required to install or improve their treatment. Any water system that exceeds the action level must also monitor their source water to determine whether treatment to remove copper in source water is needed.

(16) **Cyanide.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that cyanide is a health concern at certain levels of exposure. This inorganic chemical is used in electroplating, steel processing, plastics, synthetic fabrics, and fertilizer products. It usually gets into water as a result of improper waste disposal. This chemical has been shown to damage the spleen, brain, and liver of humans fatally poisoned with cyanide. EPA has set the drinking water standard for cyanide at 0.2 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to cyanide.

(17) **2,4-D.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that 2,4-D is a health concern at certain levels of exposure. This organic chemical is used as a herbicide and to control algae in reservoirs. When soil and climatic conditions are favorable, 2,4-D may get into drinking water by runoff into surface water or by leaching into groundwater. The chemical has been shown to damage the liver and kidney of laboratory animals such as rats exposed at high levels during their lifetimes. Some humans who were exposed to relatively large amounts of this chemical also suffered damage to the nervous system. EPA has set the drinking water standard for 2,4-D at 0.07 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to 2,4-D.

(18) **Dalapon.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that dalapon is a health concern at certain levels of exposure. This organic chemical is a widely used herbicide. It may get into drinking water after application to control grasses in crops, drainage ditches, and along railroads. This chemical has been shown to cause damage to the kidney and liver in laboratory animals when the animals are exposed to high levels over their lifetimes. EPA has set the drinking water standard for dalapon at 0.2 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to dalapon.

(19) **Dibromochloropropane (DBCP).** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that DBCP is a health concern at certain levels of exposure. This organic chemical was once a popular pesticide. When soil and climatic conditions are favorable, dibromochloropropane may get into drinking water by runoff into surface water or by leaching into groundwater. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standard for DBCP at 0.0002 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to DBCP.

(20) **o-Dichlorobenzene.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that o-dichlorobenzene is a health concern at certain levels of exposure. This organic chemical is used as a solvent in the production of pesticides and dyes. It generally gets into water by improper waste disposal. This chemical has been shown to damage the liver, kidney, and the blood cells of laboratory animals such as rats and mice exposed to high levels during their lifetimes. Some industrial workers who were exposed to relatively large amounts of this chemical during working careers also suffered damage to the liver, nervous system, and circulatory system. EPA has set the drinking water standard for o-dichlorobenzene at 0.6 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to o-dichlorobenzene.

(21) **Para-dichlorobenzene.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that para-dichlorobenzene is a health concern at certain levels of exposure. This chemical is a component of deodorizers, moth balls, and pesticides. It generally gets into drinking water by improper waste disposal. This chemical has been shown to cause liver and kidney damage in laboratory animals such as rats and mice when the animals are exposed to high levels over their lifetimes. Chemicals which cause adverse effects in laboratory animals also may cause adverse health effects in humans who are exposed at lower levels over long periods of time. EPA has set the enforceable drinking water standard for para-dichlorobenzene at 0.075 parts per million (ppm) to reduce the risk of these adverse health effects which have been observed in laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe.

(22) **1,2-Dichloroethane.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that 1,2-dichloroethane is a health concern at certain levels of exposure. This chemical is used as a cleaning fluid for fats, oils, waxes, and resins. It generally gets into drinking water from improper waste disposal. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed at lower levels over long periods of time. EPA has set the enforceable

drinking water standard for 1,2-dichloroethane at 0.005 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe.

(23) **1,1-Dichloroethylene.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that 1,1-dichloroethylene is a health concern at certain levels of exposure. This chemical is used in industry and is found in drinking water as a result of the breakdown of related solvents. The solvents are used as cleaners and degreasers of metals and generally get into drinking water by improper waste disposal. This chemical has been shown to cause liver and kidney damage in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals which cause adverse effects in laboratory animals also may cause adverse health effects in humans who are exposed at lower levels over long periods of time. EPA has set the enforceable drinking water standard for 1,1-dichloroethylene at 0.007 parts per million (ppm) to reduce the risk of these adverse health effects which have been observed in laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe.

(24) **cis-1,2-Dichloroethylene.** The United States Environmental Protection Agency (EPA) establishes drinking water standards and has determined that cis-1,2- Dichloroethylene is a health concern at certain levels of exposure. This organic chemical is used as a solvent and intermediate in chemical production. It generally gets into water by improper waste disposal. This chemical has been shown to damage the liver, nervous system, and circulatory system of laboratory animals such as rats and mice when exposed at high levels over their lifetimes. Some humans who were exposed to relatively large amounts of this chemical also suffered damage to the nervous system. EPA has set the drinking water standard for cis-1,2-dichloroethylene at 0.07 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to cis-1,2-dichloroethylene.

(25) **trans-1,2-Dichloroethylene.** The United States Environmental Protection Agency (EPA) establishes drinking water standards and has determined that trans-1,2- dichloroethylene is a health concern at certain levels of exposure. This organic chemical is used as a solvent and intermediate in chemical production. It generally gets into water by improper waste disposal. This chemical has been shown to damage the liver, nervous system, and the circulatory system of laboratory animals such as rats and mice when exposed at high levels over their lifetimes. Some humans who were exposed to relatively large amounts of this chemical also suffered damage to the nervous system. EPA has set drinking water standard for tans-1,2-dichloroethylene at 0.1 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to trans-1,2-dichloroethylene.

(26) **Dichloromethane.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that dichloromethane (methylene chloride) is a health concern at certain levels of exposure. This organic chemical is a widely used solvent. It is used in the manufacture of paint remover, as a metal degreaser, and as an aerosol propellant. It generally gets into drinking water after improper discharge of waste disposal. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standard for dichloromethane at 0.005 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe with respect to dichloromethane.

(27) **1,2-Dichloropropane.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that 1,2-dichloropropane is a health concern at certain levels of exposure. This organic chemical is used as a solvent and pesticide. When soil and climate conditions are favorable, 1,2-dichloropropane may get into drinking water by runoff into surface water or by leaching into groundwater. It may also get into drinking water through improper waste disposal. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standard for 1,2- dichloropropane at 0.005 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to 1,2- dichloropropane.

(28) **Di(2-ethylhexyl)adipate.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that di(2-ethylhexyl)adipate is a health concern at certain levels of exposure. Di(2-ethylhexyl)adipate is a widely used plasticizer in a variety of products, including synthetic rubber, food packaging materials, and cosmetics. It may get into drinking water after improper waste disposal. This chemical has been shown to damage liver and testes in laboratory animals such as rats and mice exposed to high levels. EPA has set the drinking water standard for di(2-ethyl hexyl)adipate at 0.4 parts per million (ppm) to protect against the risk of adverse health effects. Drinking water which meets the EPA standards is associated with little to none of this risk and should be considered safe with respect to di(2-ethylhexyl)adipate.

(29) **Di(2-ethylhexyl)phthalate.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that di(2-ethylhexyl)phthalate is a health concern at certain levels of exposure. Di(2-ethylhexyl)phthalate is a widely used plasticizer, which is primarily used in the production of polyvinyl chloride (PVC) resins. It may get into drinking water after improper waste disposal. This chemical has been shown to cause cancer in laboratory animals such as rats and mice exposed to high levels over their lifetimes. EPA has set the drinking water standard for di(2-ethylhexyl)phthalate at 0.006 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to di(2-ethylhexyl)phthalate.

(30) **Dinoseb.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that dinoseb is a health concern at certain levels of exposure. Dinoseb is a widely used pesticide and generally gets into drinking water after application on orchards, vineyards, and other crops. This chemical has been shown to damage the thyroid and reproductive organs in laboratory animals such as rats exposed to high levels. EPA has set the drinking water standard for dinoseb at 0.007 parts per million (ppm) to protect against the risk of adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to dinoseb.

(31) **Diquat.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that diquat is a health concern at certain levels of exposure. This organic chemical is a herbicide used to control terrestrial and aquatic weeds. It may get into drinking water by runoff into surface water. This chemical has been shown to damage the liver, kidney, and gastrointestinal tract and causes cataract formation in laboratory animals such as dogs and rats exposed at high levels over their lifetimes. EPA has set the drinking water standard for diquat at 0.02 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to diquat.

(32) **Endothall.** The United States Environmental Protection Agency (EPA) has determined that endothall is a health concern at certain levels of exposure. This organic chemical is a herbicide used to control terrestrial and aquatic weeds. It may get into water by runoff into surface water. This chemical has been shown to damage the liver, kidney, gastrointestinal tract, and reproductive system of laboratory animals such as rats and mice exposed at high levels over their lifetimes. EPA has set the drinking water standard for endothall at 0.1 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to endothall.

(33) **Endrin.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that endrin is a health concern at certain levels of exposure. This organic chemical is a pesticide no longer registered for use in the United States. However, this chemical is persistent in treated soils and accumulates in sediments and aquatic and terrestrial biota. This chemical has been shown to cause damage to the liver, kidney, and heart in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. EPA has set the drinking water standard for endrin at 0.002 parts per million (ppm) to protect against the risk of these adverse health effects which have been observed in laboratory animals. Drinking water that meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to endrin.

(34) **Epichlorohydrin.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that epichlorohydrin is a health concern at certain levels of exposure. Polymers made from epichlorohydrin are sometimes used in the treatment of water supplies as a flocculent to remove particulates. Epichlorohydrin generally gets into drinking water by improper use of these polymers. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are expected over long periods of time. EPA has set the drinking water standard for epichlorohydrin using a treatment technique to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. This treatment technique limits the amount of epichlorohydrin in the polymer and the amount of the polymer which may be added to drinking water as a flocculent to remove particulates. Drinking water systems which comply with this treatment technique have little to no risk and are considered safe with respect to epichlorohydrin.

(35) **Ethylbenzene.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined ethylbenzene is a health concern at certain levels of exposure. This organic chemical is a major component of gasoline. It generally gets into water by improper waste disposal or leaking gasoline tanks. This chemical has been shown to damage the kidney, liver, and nervous system of laboratory animals such as rats exposed to high levels during their lifetimes. EPA has set the drinking water standard for ethylbenzene at 0.7 part per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to ethylbenzene.

(36) **Ethylene dibromide (EDB).** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that EDB is a health concern at certain levels of exposure. This organic chemical was once a popular pesticide. When soil and climatic conditions are favorable, EDB may get into drinking water by runoff into surface water or by leaching into groundwater. This chemical has been shown to cause cancer in laboratory animals

such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standard for EDB at 0.00005 part per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water that meets this standard is associated with little to none of this risk and is considered safe with respect to EDB.

(37) **Fecal Coliforms/E. coli.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that the presence of fecal coliforms or E. coli is a serious health concern. Fecal coliforms and E. coli are generally not harmful themselves, but their presence in drinking water is serious because they usually are associated with sewage or animal wastes. The presence of these bacteria in drinking water is generally a result of a problem with water treatment or the pipes which distribute the water and indicates that the water may be contaminated with organisms that can cause disease. Disease symptoms may include diarrhea, cramps, nausea, and possibly jaundice, and associated headaches and fatigue. These symptoms, however, are not just associated with disease-causing organisms in drinking water but also may be caused by a number of factors other than your drinking water. EPA has set an enforceable drinking water standard for fecal coliforms and E. coli to reduce the risk of these adverse health effects. Under this standard all drinking water samples must be free of these bacteria. Drinking water which meets this standard is associated with little or none of this risk and should be considered safe. State and local health authorities recommend that consumers take the following precautions: [To be inserted by the public water system, according to instructions from state or local authorities].

(38) **Fluoride.** The notice shall contain the following language including the language necessary to replace footnotes 1, 2 (if applicable), and 3.

Dear User,

The U.S. Environmental Protection Agency requires that we send you this notice on the level of fluoride in your drinking water. The drinking water in your community has a fluoride concentration of [1] milligrams per liter (mg/l). Federal regulations require that fluoride, which occurs naturally in your water supply, not exceed a concentration of 4.0 mg/l in drinking water. This is an enforceable standard called a Maximum Contaminant Level (MCL), and it has been established to protect the public health. Exposure to drinking water levels above 4.0 mg/l for many years may result in some cases of crippling skeletal fluorosis, which is a serious bone disorder.

Federal law also requires that we notify you when monitoring indicates that the fluoride in your drinking water exceeds 2.0 mg/l. This is intended to alert families about dental problems that might affect children under 9 years of age. The fluoride concentration of your water exceeds this federal guideline.

Fluoride in children's drinking water at levels of approximately 1.0 mg/l reduces the number of dental cavities. However, children exposed to levels of fluoride greater than about 2.0 mg/l may develop dental fluorosis. Dental fluorosis, in its moderate to severe forms, is a brown staining and pitting of the permanent teeth.

Because dental fluorosis occurs only when developing teeth (before they erupt from the gums) are exposed to elevated fluoride levels, households without children are not expected to be affected by this level of fluoride. Families with children under the age of 9 are encouraged to seek other sources of drinking water for their children to avoid the possibility of staining and pitting.

Your water supplier can lower the concentration of fluoride in your water so that you will still receive the benefits of cavity prevention while the possibility of stained and pitted teeth is minimized. Removal of fluoride may increase your water costs. Treatment systems are also commercially available for home use. Information on such systems is available at the address given below. Low-fluoride bottled drinking water that would meet all standards is also commercially available.

(If a violation of the MCL (4.0 mg/l) has occurred, the following sentence must also be included: The following steps are being taken to come into compliance with the MCL for fluoride: [2])

For further information, contact[3] at your public water system.

[1]PWS shall insert the compliance result which triggered notification under this part.

[2]If an MCL violation occurred, PWS shall insert steps which are being taken to come into compliance with the fluoride MCL.

[3]PWS shall insert the name, address, and telephone number of a contact person at the PWS.

(39) **Glyphosate.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that glyphosate is a health concern at certain levels of exposure. This organic chemical is a herbicide used to control grasses and weeds. It may get into drinking water by runoff into surface water. This chemical has been shown to cause damage to the liver and kidneys in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. EPA has set the drinking water standard for glyphosate at 0.7 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to glyphosate.

(40) **Heptachlor.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that heptachlor is a health concern at certain levels of exposure. This organic chemical was once a popular pesticide. When soil and climatic conditions are favorable, heptachlor may get into drinking water by runoff into surface water or by leaching into groundwater. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standards for heptachlor at 0.0004 part per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water that meets this standard is associated with little to none of this risk and is considered safe with respect to heptachlor.

(41) **Heptachlor epoxide.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that heptachlor epoxide is a health concern at certain levels of exposure. This organic chemical was once a popular pesticide. When soil and climatic conditions are favorable, heptachlor epoxide may get into drinking water by runoff into surface water or by leaching into groundwater. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standards for heptachlor epoxide at 0.0002 part per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water that meets this standard is associated with little to none of this risk and is considered safe with respect to heptachlor epoxide.

(42) **Hexachlorobenzene.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that hexachlorobenzene is a health concern at certain levels of exposure. This organic chemical is produced as an impurity in the manufacture of certain solvents and pesticides. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed to high levels during their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standard for hexachlorobenzene at 0.001 parts per million (ppm) to protect against the risk of cancer and other adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to hexachlorobenzene.

(43) **Hexachlorocyclopentadiene.** The United States Environmental Protection Agency (EPA) establishes drinking water standards and has determined that hexachlorocyclopentadiene is a health concern at certain levels of exposure. This organic chemical is used as an intermediate in the manufacture of pesticides and flame retardants. It may get into water by discharge from production facilities. This chemical has been shown to damage the kidney and the stomach of laboratory animals when exposed at high levels over their lifetimes. EPA has set the drinking water standard for hexachlorocyclo pentadiene at 0.05 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to hexachlorocyclopentadiene.

(44) **Lead.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that lead is a health concern at certain exposure levels. Materials that contain lead have frequently been used in the construction of water supply distribution systems, and plumbing systems in private homes and other buildings. The most commonly found materials include service lines, pipes, brass and bronze fixtures, and solders and fluxes. Lead in these materials can contaminate drinking water as a result of the corrosion that takes place when water comes into contact with those materials. Lead can cause a variety of adverse health effects in humans. At relatively low levels of exposure, these effects may include interference with red blood cell chemistry, delays in normal physical and mental development in babies and young children, slight deficits in the attention span, hearing, and learning abilities of children, and slight increases in the blood pressure of some adults. EPA's national primary drinking water regulation requires all public water systems to optimize corrosion control to minimize lead contamination resulting from the corrosion of plumbing materials. Public water systems serving 50,000 people or fewer that have lead concentrations below 15 parts per billion (ppb) in more than 90% of tap water samples (the EPA "action level") have optimized their corrosion control treatment. Any water system that exceeds the action level must also monitor their source water to determine whether treatment to remove lead in source water is needed. Any water system that continues to exceed the action level after installation of corrosion control and/or source water treatment must eventually replace all lead service lines contributing in excess of 15 ppb of lead to drinking water. Any water system that exceeds the action level must also undertake a public education program to inform consumers of ways they can reduce their exposure to potentially high levels of lead in drinking water.

(45) **Lindane.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that lindane is a health concern at certain levels of exposure. This organic chemical is used as a pesticide. When soil and climatic conditions are favorable, lindane may get into drinking water by runoff into surface water or by leaching into groundwater. This chemical has been shown to damage the liver, kidney, nervous system, and immune system of laboratory animals such as rats, mice, and dogs exposed at high levels during their lifetimes. Some humans who were exposed to relatively large amounts of this chemical also suffered damage to the nervous system

and circulatory system. EPA has established the drinking water standard for lindane at 0.0002 part per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to lindane.

(46) **Mercury.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that mercury is a health concern at certain levels of exposure. This inorganic metal is used in electrical equipment and some water pumps. It usually gets into water as a result of improper waste disposal. This chemical has been shown to damage the kidney of laboratory animals such as rats when the animals are exposed at high levels over their lifetimes. EPA has set the drinking water standard for mercury at 0.002 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to mercury.

(47) **Methoxychlor.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that methoxychlor is a health concern at certain levels of exposure. This organic chemical is used as a pesticide. When soil and climatic conditions are favorable, methoxychlor may get into drinking water by runoff into surface water or by leaching into groundwater. This chemical has been shown to damage the liver, kidney, nervous system, and reproductive system of laboratory animals such as rats exposed at high levels during their lifetimes. It has also been shown to produce growth retardation in rats. EPA has set the drinking water standard for methoxychlor at 0.04 part per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to methoxychlor.

(48) **Microbiological contaminants** [for use when there is a violation of the treatment technique requirements for filtration and disinfection, R18-4-302 or R18-4-303]. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that the presence of microbiological contaminants are a health concern at certain levels of exposure. If water is inadequately treated, microbiological contaminants in that water may cause disease. Disease symptoms may include diarrhea, cramps, nausea, and possibly jaundice, and any associated headaches and fatigue. These symptoms, however, are not just associated with disease-causing organisms in drinking water but also may be caused by a number of factors other than your drinking water. EPA has set enforceable requirements for treating drinking water to reduce the risk of these adverse health effects. Treatment such as filtering and disinfecting the water removes or destroys microbiological contaminants. Drinking water which is treated to meet EPA requirements is associated with little to none of this risk and should be considered safe.

(49) **Monochlorobenzene.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that monochlorobenzene is a health concern at certain levels of exposure. This organic chemical is used as a solvent. It generally gets into water by improper waste disposal. This chemical has been shown to damage the liver, kidney, and nervous system of laboratory animals such as rats and mice exposed to high levels during their lifetimes. EPA has set the drinking water standard for monochlorobenzene at 0.1 part per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to monochlorobenzene.

(50) **Nitrate.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that nitrate poses an acute health concern at certain levels of exposure. Nitrate is used in fertilizer and is found in sewage and wastes from human and/or farm animals and generally gets into drinking water from those activities. Excessive levels of nitrate in drinking water have caused serious illness and sometimes death in infants under 6 months of age. The serious illness in infants is caused because nitrate is converted to nitrite in the body. Nitrite interferes with the oxygen-carrying capacity of the child's blood. This is an acute disease in that symptoms can develop rapidly in infants. In most cases, health deteriorates over a period of days. Symptoms include shortness of breath and blueness of the skin. Clearly, expert medical advice should be sought immediately if these symptoms occur. The purpose of this notice is to encourage parents and other responsible parties to provide infants with an alternate source of drinking water. Local and state health authorities are the best source for information concerning alternate sources of drinking water for infants. EPA has set the drinking water standard at 10 parts per million (ppm) for nitrate to protect against the risk of these adverse effects. EPA has also set a drinking water standard for nitrite at 1 ppm. To allow for the fact that the toxicity of nitrate and nitrite are additive, EPA has also established a standard for the sum of nitrate and nitrite at 10 ppm. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to nitrate.

(51) **Nitrite.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that nitrite poses and acute health concern at certain levels of exposure. This inorganic chemical is used in fertilizers and is found in sewage and wastes from humans and/or farm animals and generally gets into drinking water as a result of those activities. While excessive levels of nitrite in drinking water have not been observed, other sources of nitrite have caused serious illness and sometimes death in infants under 6 months of age. The serious illness in infants is caused because nitrite interferes with the oxygen carrying capacity of the child's blood. This is an acute disease in that symptoms can develop rapidly. However, in most cases, health deteriorates over a period of days. Symptoms include shortness of breath and blueness of the skin. Clearly, expert medical advice should be sought immediately if these symptoms occur. The purpose of this notice is to encourage parents and other responsible parties to provide

infants with an alternate source of drinking water. EPA has set the drinking water standard at 1 part per million (ppm) for nitrite to protect against the risk of these adverse effects. EPA has also set a drinking water standard for nitrate (converted to nitrite in humans) at 10 ppm and for the sum of nitrate and nitrite at 10 ppm. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to nitrite.

(52) **Oxamyl.** The United States Environmental Protection Agency (EPA) establishes drinking water standards and has determined that oxamyl is a health concern at certain levels of exposure. This organic chemical is used as a pesticide for the control of insects and other pests. It may get into drinking water by runoff into surface water or leaching into groundwater. This chemical has been shown to damage the kidneys of laboratory animals such as rats when exposed at high levels over their lifetimes. EPA has set the drinking water standard for oxamyl at 0.2 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to oxamyl.

(53) **Pentachlorophenol.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that pentachlorophenol is a health concern at certain levels of exposure. This organic chemical is used as a wood preservative, herbicide, disinfectant, and defoliant. It generally gets into drinking water by runoff into surface water or leaching into groundwater. This chemical has been shown to produce adverse reproductive effects and to damage the liver and kidneys of laboratory animals such as rats exposed to high levels during their lifetimes. Some humans who were exposed to relatively large amounts of this chemical also suffered damage to the liver and kidneys. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed to high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standard for pentachlorophenol at 0.001 parts per million (ppm) to protect against the risk of cancer or other adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to pentachlorophenol.

(54) **Picloram.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that picloram is a health concern at certain levels of exposure. This organic chemical is used as a pesticide for broadleaf weed control. It may get into drinking water by runoff into surface water or leaching into groundwater as a result of pesticide application and improper waste disposal. This chemical has been shown to cause damage to the kidneys and liver in laboratory animals such as rats when the animals are exposed at high levels over their lifetimes. EPA has set the drinking water standard for picloram at 0.5 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to picloram.

(55) **Polychlorinated biphenyls (PCBs).** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that polychlorinated biphenyls (PCBs) are a health concern at certain levels of exposure. These organic chemicals were once widely used in electrical transformers and other industrial equipment. They generally get into drinking water by improper waste disposal or leaking electrical industrial equipment. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standard for PCBs at 0.0005 part per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water that meets this standard is associated with little to none of this risk and is considered safe with respect to PCBs.

(56) **Selenium.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that selenium is a health concern at certain high levels of exposure. Selenium is also an essential nutrient at low levels of exposure. This inorganic chemical is found naturally in food and soils and is used in electronics, photocopy operations, the manufacture of glass, chemicals, drugs, and as a fungicide and a feed additive. In humans, exposure to high levels of selenium over a long period of time has resulted in a number of adverse health effects, including a loss of feeling and control in the arms and legs. EPA has set the drinking water standard for selenium at 0.05 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to selenium.

(57) **Simazine.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that simazine is a health concern at certain levels of exposure. This organic chemical is a herbicide used to control annual grasses and broadleaf weeds. It may leach into groundwater or runs off into surface water after application. This chemical may cause cancer in laboratory animals such as rats and mice exposed at high levels during their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standard for simazine at 0.004 parts per million (ppm) to reduce the risk of cancer or other adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to simazine.

(58) **Styrene.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that styrene is a health concern at certain levels of exposure. This organic chemical is commonly used to make

plastics and is sometimes a component of resins used for drinking water treatment. Styrene may get into drinking water from improper waste disposal. This chemical has been shown to damage the liver and nervous system in laboratory animals when exposed at high levels during their lifetimes. EPA has set the drinking water standard for styrene at 0.1 part per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to styrene.

(59) **2,3,7,8-TCDD (Dioxin).** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that dioxin is a health concern at certain levels of exposure. This organic chemical is an impurity in the production of some pesticides. It may get into drinking water by industrial discharge of wastes. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standard for dioxin at 0.00000003 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe with respect to dioxin.

(60) **Tetrachloroethylene.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that tetrachloroethylene is a health concern at certain levels of exposure. This organic chemical has been a popular solvent, particularly for dry cleaning. It generally gets into drinking water by improper waste disposal. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standard for tetrachloroethylene at 0.005 part per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water that meets this standard is associated with little to none of this risk and is considered safe with respect to tetrachloroethylene.

(61) **Thallium.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that thallium is a health concern at certain high levels of exposure. This inorganic metal is found naturally in soils and is used in electronics, pharmaceuticals, and the manufacture of glass and alloys. This chemical has been shown to damage the kidney, liver, brain, and intestines of laboratory animals when the animals are exposed at high levels over their lifetimes. EPA has set the drinking water standard for thallium at 0.002 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to thallium.

(62) **Toluene.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that toluene is a health concern at certain levels of exposure. This organic chemical is used as a solvent and in the manufacture of gasoline for airplanes. It generally gets into water by improper waste disposal or leaking under ground storage tanks. This chemical has been shown to damage the kidney, nervous system, and circulatory system of laboratory animals such as rats and mice exposed to high levels during their lifetimes. Some industrial workers who were exposed to relative large amounts of this chemical during working careers also suffered damage to the liver, kidney, and nervous system. EPA has set the drinking water standard for toluene at 1 part per million (ppm) to protect against the risk of adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to toluene.

(63) **Total coliforms** [To be used when there is a violation of R18-4-202(A)(1) or R18-4-202(A)(2)] The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that the presence of total coliforms is a possible health concern. Total coliforms are common in the environment and are generally not harmful themselves. The presence of these bacteria in drinking water, however, generally is a result of a problem with water treatment or the pipes which distribute the water and indicates that the water may be contaminated with organisms that can cause disease. Disease symptoms may include diarrhea, cramps, nausea, and possibly jaundice, and any associated headaches and fatigue. The symptoms, however, are not just associated with disease-causing organisms in drinking water but also may be caused by a number of factors other than your drinking water. EPA has set an enforceable drinking water standard for total coliforms to reduce the risk of these adverse health effects. Under this standard, no more than 5.0% of the samples collected during a month can contain these bacteria, except that systems collecting fewer than 40 samples/month that have 1 total coliform-positive sample per month are not violating the standard. Drinking water which meets this standard is usually not associated with a health risk from disease-causing bacteria and should be considered safe.

(64) **Toxaphene.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that toxaphene is a health concern at certain levels of exposure. This organic chemical was once a pesticide widely used on cotton, corn, soybeans, pineapples, and other crops. When soil and climatic conditions are favorable, toxaphene may get into drinking water by runoff into surface water or by leaching into groundwater. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standard for toxaphene at 0.003

part per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water that meets this standard is associated with little to none of this risk and is considered safe with respect to toxaphene.

(65) **2,4,5-TP.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that 2,4,5-TP is a health concern at certain levels of exposure. This organic chemical is used as a herbicide. When soil and climatic conditions are favorable, 2,4,5-TP may get into drinking water by runoff into surface water or by leaching into groundwater. This chemical has been shown to damage the liver and kidney of laboratory animals such as rats and dogs exposed to high levels during their lifetimes. Some industrial workers who were exposed to relatively large amounts of this chemical during working careers also suffered damage to the nervous system. EPA has set the drinking water standard for 2,4,5-TP at 0.05 part per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to 2,4,5-TP.

(66) **1,2,4-Trichlorobenzene.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that 1,2,4-trichlorobenzene is a health concern at certain levels of exposure. This organic chemical is used as a dye carrier and as a precursor in herbicide manufacture. It generally gets into drinking water by discharges from industrial activities. This chemical has been shown to cause damage to several organs, including the adrenal glands. EPA has set the drinking water standard for 1,2,4-trichlorobenzene at 0.07 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to 1,2,4-trichlorobenzene.

(67) **1,1,1-Trichloroethane.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that the 1,1,1-trichloroethane is a health concern at certain levels of exposure. This chemical is used as a cleaner and degreaser of metals. It generally gets into drinking water by improper waste disposal. This chemical has been shown to damage the liver, nervous system, and circulatory system of laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Some industrial workers who were exposed to relatively large amounts of this chemical during their working careers also suffered damage to the liver, nervous system, and circulatory system. Chemicals which cause adverse effects among exposed industrial workers and in laboratory animals also may cause adverse health effects in humans who are exposed at lower levels over long periods of time. EPA has set the enforceable drinking water standard for 1,1,1-trichloroethane at 0.2 parts per million (ppm) to protect against the risk of these adverse health effects which have been observed in humans and laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe.

(68) **1,1,2-Trichloroethane.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined 1,1,2-trichloroethane is a health concern at certain levels of exposure. This organic chemical is an intermediate in the production of 1,1-dichloroethylene. It generally gets into water by industrial discharge of wastes. This chemical has been shown to damage the kidney and liver of laboratory animals such as rats exposed to high levels during their lifetimes. EPA has set the drinking water standard for 1,1,2-trichloroethane at 0.005 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to 1,1,2-trichloroethane.

(69) **Trichloroethylene.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that trichloroethylene is a health concern at certain levels of exposure. This chemical is a common metal cleaning and dry cleaning fluid. It generally gets into drinking water by improper waste disposal. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed at lower levels over long periods of time. EPA has set forth the enforceable drinking water standard for trichloroethylene at 0.005 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water which meets this standard is associated with little or none of this risk and should be considered safe.

(70) **Vinyl chloride.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that vinyl chloride is a health concern at certain levels of exposure. This chemical is used in industry and is found in drinking water as a result of the breakdown of related solvents. The solvents are used as cleaners and degreasers of metals and generally get into drinking water by improper waste disposal. This chemical has been associated with significantly increased risks of cancer among certain industrial workers who were exposed to relatively large amounts of this chemical during their working careers. This chemical has also been shown to cause cancer in laboratory animals when the animals are exposed at high levels over their lifetimes. Chemicals that cause increased risk of cancer among exposed industrial workers and in laboratory animals also may increase the risk of cancer in humans who are exposed at lower levels over long periods of time. EPA has set the enforceable drinking water standard for vinyl chloride at 0.002 part per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in humans and laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe.

(71) **Xylenes.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that xylene is a health concern at certain levels of exposure. This organic chemical is used in the manufacture of gasoline for airplanes and as a solvent for pesticides, and as a cleaner and degreaser of metals. It usually gets into water by improper waste disposal. This chemical has been shown to damage the liver, kidney, and nervous system of laboratory animals such as rats and dogs exposed to high levels during their lifetimes. Some humans who were exposed to relatively large amounts of this chemical also suffered damage to the nervous system. EPA has set the drinking water standard for xylene at 10 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to xylene.

## ARTICLE 2. MAXIMUM CONTAMINANT LEVELS AND MONITORING REQUIREMENTS; MONITORING ASSISTANCE PROGRAM

**R18-4-202. Total Coliform; MCLs and Monitoring Requirements**

**A.** ~~Water that is distributed by a~~ A public water system shall not ~~exceed~~ distribute water that exceeds the following ~~maximum contaminant levels~~ MCLs for total coliform:

1. When 40 or more routine and repeat samples are collected per month, no more than 5% of the samples may be total coliform-positive. Violation of this subsection (A)(1) is a nonacute violation.
2. When fewer than 40 routine and repeat samples are collected per month, no more than ~~1~~ one sample may be total coliform-positive. Violation of this subsection (A)(2) is a nonacute violation.
3. Any fecal coliform-positive repeat sample or *Escherichia coli (E. coli)*-positive repeat sample is an acute violation.
4. Any total coliform-positive repeat sample following a fecal coliform-positive or *E. coli*-positive routine sample is an acute violation.

**B.** The ~~maximum contaminant levels~~ MCLs for total coliform are based on the presence or absence of coliform organisms in a standard 100 ml sample.

**C.** A public water system shall collect total coliform samples at sites which are representative of water throughout the distribution system according to a written site sampling plan that is subject to review and approval by the Department.

**D.** A ~~water supplier~~ public water system shall not composite samples for total coliform analysis.

**E.** Except as provided by subsection (G) ~~of this Section~~, a public water system shall conduct monthly monitoring to determine compliance with the ~~maximum contaminant levels~~ MCLs for total coliform. A public water system shall collect routine total coliform samples at regular time intervals throughout the month, except that a groundwater system which serves 4,900 persons or less may collect all required routine samples on a single day if the samples are taken from different sampling sites.

**F.** The number of samples taken for total coliform ~~is~~ shall be based on the population served by a public water system. A public water system shall take the following minimum number of samples per month:

| Population served | Minimum Number of Samples per Month |
|---|---|
| 25 to 1,000[1] | 1 |
| 1,001 to 2,500 | 2 |
| 2,501 to 3,300 | 3 |
| 3,301 to 4,100 | 4 |
| 4,101 to 4,900 | 5 |
| 4,901 to 5,800 | 6 |
| 5,801 to 6,700 | 7 |
| 6,701 to 7,600 | 8 |
| 7,601 to 8,500 | 9 |
| 8,501 to 12,900 | 10 |
| 12,901 to 17,200 | 15 |
| 17,201 to 21,500 | 20 |
| 21,501 to 25,000 | 25 |
| 25,001 to 33,000 | 30 |
| 33,001 to 41,000 | 40 |
| 41,001 to 50,000 | 50 |
| 50,001 to 59,000 | 60 |
| 59,001 to 70,000 | 70 |
| 70,001 to 83,000 | 80 |
| 83,001 to 96,000 | 90 |
| 96,001 to 130,000 | 100 |
| 130,001 to 220,000 | 120 |
| 220,001 to 320,000 | 150 |
| 320,001 to 450,000 | 180 |
| 450,001 to 600,000 | 210 |
| 600,001 to 780,000 | 240 |
| 780,001 to 970,000 | 270 |
| 970,001 to 1,230,000 | 300 |
| 1,230,001 to 1,520,000 | 330 |
| 1,520,001 to 1,850,000 | 360 |
| 1,850,001 to 2,270,000 | 390 |
| 2,270,001 to 3,020,000 | 420 |
| 3,020,001 to 3,960,000 | 450 |
| 3,960,001 or more | 480 |

[1]Includes public water systems which have at least 15 service connections, but ~~which~~ serve fewer than 25 persons.

**G.** Upon the written request of a ~~water supplier~~ public water system, the Department may give written approval to reduce the monitoring frequency for total coliform from monthly to quarterly if all of the following conditions are met:

1. The public water system is a protected groundwater system;
2. The public water system serves less than 1000 persons;
3. The public water system has no history of total coliform contamination in its current configuration;
4. The most recent sanitary survey of the public water system, conducted pursuant to R18-4-118, indicates that the public water system is free of sanitary defects.

**H.** If a routine sample is total coliform-positive, a public water system shall collect a set of repeat samples within 24 hours of receiving notice of the total coliform-positive test result. Upon the request of a ~~water supplier~~ public water system, the Department may extend this 24-hour time period if the ~~water supplier~~ public water system has a logistical problem in collecting repeat samples that is beyond the ~~water supplier~~ public water system's control. If the Department grants an extension of the 24-hour period to collect repeat samples, the Department shall specify how much time the ~~water supplier~~ public water system has to collect repeat samples.

1. A public water system ~~which~~ that collects ~~1~~ one routine sample per month or per quarter shall collect at least ~~4~~ four repeat samples for each total coliform-positive routine sample found. A public water system ~~which~~ that collects more than ~~1~~ one routine sample per month shall collect at least ~~3~~ three repeat samples for each total coliform-positive routine sample found.
2. A ~~water supplier~~ public water system shall collect repeat samples as follows:
   a. The ~~water supplier~~ public water system shall collect ~~1~~ one repeat sample from the tap where the total coliform-positive routine sample was collected.
   b. The ~~water supplier~~ public water system shall collect ~~1~~ one repeat sample from a tap located within ~~5~~ five service connections upstream of the sampling site where the total coliform-positive routine sample was collected.
   c. The ~~water supplier~~ public water system shall collect ~~1~~ one repeat sample from a tap located within ~~5~~ five service connections downstream of the sampling site where the total coliform-positive routine sample was collected.
   d. If a total coliform-positive routine sample is collected at the end of the distribution system or ~~1~~ one away from the end of the distribution system, the Department may waive the requirement to collect at least ~~1~~ one repeat sample upstream or downstream of the original sampling site.
   e. If a ~~water supplier~~ public water system is required to take a ~~4th~~ fourth repeat sample, the ~~4th~~ fourth repeat sample may be collected from any sampling point in the distribution system.
3. A public water system shall collect all repeat samples on the same day, except that the Department may allow a public water system with a single service connection to collect the required set of repeat samples over a 4-day period or to collect a larger volume repeat samples. A larger volume repeat sample may be collected in ~~1~~ one or more sample containers of any size provided that the total volume collected is at least 400 ml (300 ml for public water system with a single service connection that collects more than ~~1~~ one routine sample per month).
4. If a repeat sample is total coliform-positive, the ~~water supplier~~ public water system shall collect an additional set of repeat samples for the sampling site where the original total coliform-positive routine sample was collected. The additional set of repeat samples shall be collected according to the procedures prescribed in subsections (H)(1) - (3) ~~above~~. A ~~water supplier~~ public water system shall continue to take additional sets of repeat samples for the sampling site where the original total coliform-positive routine sample was collected until either total coliforms are not detected in ~~1~~ one complete set of repeat samples or a ~~maximum contaminant level~~ MCL for total coliform is violated and the public water system notifies the Department.

**I.** A public water system that collects fewer than ~~5~~ five routine samples per month and which has ~~1~~ one or more total coliform-positive routine samples shall collect at least ~~5~~ five routine samples during the next month that the public water system provides water to the public. The requirement to take additional routine samples in the next month is in addition to repeat sampling requirements prescribed in subsection (H) ~~above~~. The Department may waive the increased routine monitoring requirement in the next month if:

1. The Department, or an agent approved by the Department, performs a site visit before the end of the next month that the public water system provides water. Although a sanitary survey need not be performed, the site visit shall be sufficiently detailed to determine whether additional monitoring or any corrective action is needed. The Department shall not approve an employee of the public water system to perform this site visit; or
2. The Department determines why the routine sample was total coliform-positive and that the public water system has corrected the problem or will correct the problem before the end of the next month that the public water system serves water to the public. In this case, the Department shall document the decision to waive increased routine monitoring requirements for the next month in writing. The decision shall be signed by the supervisor of the person who recommends the decision. The decision document shall be available to ~~the U.S. Environmental Protection Agency~~ EPA and members of the public. The decision document shall describe the specific cause of the total coliform-positive routine sample and what action the public water system has taken or will take to correct the problem. The Department shall not waive increased routine monitoring requirements for the next month solely on the grounds that all repeat samples are total coliform-negative.

**J.** The Department may invalidate a total coliform-positive sample. A total coliform-positive sample that is invalidated shall not count towards meeting the minimum monitoring requirements prescribed in ~~this Section~~ subsections (F), (H), and (I) for total coliform. The Department may invalidate a total coliform-positive sample for ~~1~~ one of the following reasons:

1. The laboratory establishes that improper sample analysis caused a total coliform-positive result. If the Department invalidates a total coliform-positive sample on this ground, then a public water system shall collect another sample from the same location as the original sample within 24 hours of being notified of sample invalidation and shall have it analyzed for the presence of coliform organisms. The Department may waive the 24-hour time limit on a case-by-case basis. The decision to invalidate a sample on this ground shall be in writing.
2. The Department determines on the basis of the results of repeat samples collected and documentation that the total coliform-positive sample was the result of a domestic or other non-distribution system plumbing problem. The Department shall not invalidate a sample on this ground unless the repeat sample collected at the same sampling point as the original total coliform-positive sample also is total coliform-positive and all repeat samples collected within ~~5~~ five service connections of the original sampling point are total coliform-negative. The decision to invalidate a total-coliform positive sample on the ground that it is the result of a domestic or other non-distribution system problem shall be in writing. The Department shall not invalidate a total coliform-positive sample on this ground if all repeat samples are total coliform-negative or if the public water system has a single service connection.
3. The Department has substantial grounds to believe that a total coliform-positive result is due to a circumstance or condition which does not reflect water quality in the distribution system. If a total coliform-positive sample is invalidated on this ground, then a public water system shall collect required repeat samples. Repeat samples shall be counted in determining compliance with the ~~maximum contaminant levels~~ MCLs for total coliform. The decision to invalidate a total coliform-positive sample on this ground shall be in writing. The decision document shall be signed by the supervisor of the person who recommends the decision and shall be available to both ~~the U.S. Environmental Protection Agency [EPA]~~ EPA and the public. The decision document shall state the specific cause of the total coliform-positive sample and what action the public water system has taken or will take to correct the problem. The Department shall not invalidate a total coliform-positive sample solely on the ground that all repeat samples were total coliform-negative.

**K.** If any routine or repeat sample is total coliform-positive, a public water system shall analyze that total coliform-positive culture medium to determine if fecal coliforms are present, except that a public water system may test for *Escherichia coli (E. coli)* in place of fecal coliforms. The Department may allow a public water system to forego fecal coliform or *E. coli* testing on a total coliform-positive sample if the public water system assumes in every case that any total coliform-positive sample is either fecal coliform-positive or *E. coli*-positive.

**L.** The results of all routine and repeat samples not invalidated by the Department shall be included in determining compliance with the ~~maximum contaminant level~~ MCLs for total coliform.

**R18-4-203. Total Coliform; Special Events**

~~Whenever a water system, which is normally not considered a public water system, serves large numbers of persons for short durations of time, such as a special event where the total number of user-days exceeds 600, the water system shall comply with the maximum contaminant levels for total coliform.~~ A water system that does not meet the definition of a public water system, but serves a large number of persons for a short duration of time, such as a special event, shall comply with the MCL for total colifom if the total number of user-days exceeds 600. ~~User-days are~~ A user-day shall be calculated by multiplying the number of days the event will run by the average number of persons expected to be served each day. The water system shall submit a minimum of ~~2~~ two samples at least ~~7~~ seven days prior to beginning of the special event. ~~A minimum of 1 additional sample shall be submitted~~ The water system shall submit a minimum of one additional sample to the Department for each day of the special event.

**R18-4-210. Fluoride; Special Public Notice**

**A.** A ~~water supplier of a community water system~~ CWS that distributes water with a concentration of fluoride that exceeds 2.0 mg/L but does not exceed 4.0 mg/L shall give public notice to the following:

1. All billing units annually, and
2. All new billing units at the time service begins.

**B.** The special public notice shall contain the mandatory health effects language for fluoride prescribed in Appendix A of Article 1.

**R18-4-216. Synthetic Organic Chemicals; Monitoring Requirements**

**A.** A CWS, NTNCWS, or a contractor on behalf of a CWS or NTNCWS, shall monitor to determine compliance with the MCLs for the SOCs listed in R18-4-215. A TNCWS is not required to monitor for SOCs.

**B.** A CWS, NTNCWS, or a contractor on behalf of a CWS or NTNCWS, shall conduct initial monitoring for SOCs in the monitoring year designated by the Department within the initial compliance period.

**C.** A CWS, NTNCWS, or a contractor on behalf of a CWS or NTNCWS, shall monitor for SOCs at each sampling point as prescribed in R18-4-218.

**D.** A CWS, NTNCWS, or a contractor on behalf of a CWS or NTNCWS, may composite SOC samples as prescribed in R18-4-219.

**E.** A CWS, NTNCWS, or a contractor on behalf of a CWS or NTNCWS, shall take ~~4~~ four consecutive quarterly samples at each sampling point during each compliance period. If no SOCs are detected at a sampling point during the initial compliance period, then the Department may reduce monitoring frequency in repeat compliance periods under subsection (G). The Department's decision to reduce monitoring frequency shall be in writing.

**F.** A CWS or NTNCWS may use SOC monitoring data collected in the ~~3~~ three years immediately prior to the initial monitoring year to satisfy initial monitoring requirements.

**G.** If a CWS or NTNCWS does not detect a SOC at a sampling point in the initial compliance period, the Department may reduce monitoring frequency at that sampling point in repeat compliance periods as follows:

1. For a CWS or NTNCWS that serves more than 3,300 persons, the Department may reduce monitoring frequency to a minimum of ~~2~~ two quarterly samples in ~~1~~ one year at each sampling point during each repeat compliance period. Quarterly samples shall not be taken in consecutive quarters.
2. For a CWS or NTNCWS that serves 3,300 or fewer persons, the Department may reduce monitoring frequency to a minimum of ~~1~~ one sample at each sampling point during each repeat compliance period.

**H.** If a CWS or NTNCWS detects a synthetic organic chemical listed in R18-4-215 ~~(except atrazine, dibromochloropropane, ethylene dibromide and di(2-ethylhexyl)phthalate)~~ at a sampling point in a concentration that is greater than or equal to ~~50% of the maximum contaminant level for that synthetic organic chemical~~ the corresponding value listed under R18-4-104(U)(1)(f), then the ~~system~~ CWS or NTNCWS shall conduct quarterly monitoring for that synthetic organic chemical at that sampling point, beginning in the quarter immediately following collection of the sample where the synthetic organic chemical was detected. ~~If a CWS or NTNCWS detects atrazine, dibromochloropropane, ethylene dibromide, or di(2-ethylhexyl)phthalate at a sampling point in a concentration that is greater than the maximum contaminant level then the CWS or NTNCWS shall conduct quarterly monitoring for that contaminant.~~ The CWS or NTNCWS shall continue quarterly monitoring at the sampling point until:

1. For groundwater sampling points, a minimum of ~~2~~ two consecutive quarterly samples are taken and the concentration of the synthetic organic chemical in each sample is below the ~~maximum contaminant level~~ MCL. If the initial detection which triggers quarterly monitoring is at a concentration which exceeds the ~~maximum contaminant level~~ MCL for a synthetic organic chemical, then a groundwater system shall take a minimum of ~~4~~ four consecutive quarterly samples at the sampling point and the concentration of the synthetic organic chemical in each sample is below the ~~maximum contaminant level~~ MCL.
2. For surface water sampling points, a minimum of ~~4~~ four consecutive quarterly samples are taken and the concentration of the synthetic organic chemical in each sample is below the ~~maximum contaminant level~~ MCL.
3. If the concentration of a synthetic organic chemical is below the ~~maximum contaminant level~~ MCL for the minimum number of consecutive quarterly samples prescribed in subsections (H) or (H)(2) ~~above~~, then the Department may reduce monitoring frequency at the sampling point from quarterly to annually. The Department's decision to reduce monitoring frequency from quarterly to annually shall be in writing. If the Department reduces monitoring frequency to annually, a CWS or NTNCWS shall take the annual sample during the quarter which previously yielded the highest analytical result. A CWS or NTNCWS which has ~~3~~ three consecutive annual samples with no detections of a synthetic organic chemical may submit a written request to the Department for a monitoring waiver according to subsection (M) below.

**I.** The Department may increase monitoring frequency, where necessary, to detect variations within a CWS or NTNCWS ~~[~~(for example, fluctuations in concentration due to seasonal use, changes in water source~~]~~). The Department's decision to increase monitoring frequency shall be in writing.

**J.** If monitoring results in the detection of either heptachlor or heptachlor epoxide, subsequent monitoring shall analyze for both SOCs.

**K.** The Department shall determine compliance with the MCL for a SOC from the analytical results from each sampling point as follows:

1. For a CWS or NTNCWS that samples quarterly or more frequently at a sampling point, the Department shall determine compliance from the running annual average of all samples taken at the sampling point. If the running annual average is greater than the MCL, the ~~system~~ CWS or NTNCWS is out of compliance. If any sample causes the running annual average to exceed the MCL, the ~~system~~ CWS or NTNCWS is out of compliance immediately. Any sample below the reporting limit shall be calculated as zero for purposes of determining the running annual average.
2. If a CWS or NTNCWS samples on an annual or less frequent basis at a sampling point, the ~~system~~ CWS or NTNCWS is out of compliance if the concentration of a SOC in a single sample exceeds the MCL.

**L.** The Department may require a confirmation sample. If the Department requires a confirmation sample, the analytical result from the confirmation sample shall be averaged with the analytical result from the initial sample. The Department shall use the average to determine compliance under subsection (K)(2).

**M.** A CWS or NTNCWS may submit a written request to the Department for a waiver from the monitoring requirements for a SOC. The Department may initiate a waiver for a CWS or NTNCWS. A monitoring waiver is effective for ~~1~~ one com-

pliance period. The Department's decision to grant a monitoring waiver shall be in writing. A CWS or NTNCWS shall reapply for a monitoring waiver in each subsequent compliance period. A CWS or NTNCWS that receives a monitoring waiver is not required to monitor for the SOC during the term of the waiver. The Department may grant a monitoring waiver as follows:

1. Use waivers: The Department may grant a use waiver if the Department determines that there has been no previous use of the SOC (including transport, storage, or disposal) within the watershed or zone of influence of a well. If previous use of the SOC is unknown or if the SOC has been used previously, the Department may grant a susceptibility waiver based upon a vulnerability assessment.
2. Susceptibility waiver: The Department may grant a susceptibility waiver based upon the results of a vulnerability assessment. The Department shall consider the following factors in deciding whether to grant or deny a susceptibility waiver:
   a. Previous analytical results,
   b. The proximity of the CWS or NTNCWS to a potential point source or nonpoint source of contamination. A point source of contamination includes a spill or leak of a SOC at or near a water treatment plant or distribution system pipeline, or at a manufacturing, distribution, or storage facility, or from a hazardous or municipal waste landfill, or from another waste handling or treatment facility. A nonpoint source includes the use of pesticides to control insect and weed pests on an agricultural area, forest, home, garden, or other land application use,
   c. The environmental persistence and transport of the SOC,
   d. How well the water source is protected against contamination by the SOC due to such factors as geology and well design (for example, depth to groundwater, type of soil and the integrity of the well casing),
   e. Elevated nitrate levels at the water supply source,
   f. Use of PCBs in equipment used in the production, storage, or distribution of water, and
   g. Wellhead protection assessments.

**N.** Each CWS or NTNCWS that monitors for PCBs shall analyze each sample using either EPA Method 505 or EPA Method 508. If PCBs are not detected (as 1 of 7 Aroclors) in the sample in concentrations which exceed the reporting limits below, the CWS or NTNCWS is in compliance with the MCL for PCBs. If a PCB is detected (as 1 of 7 Aroclors) in a concentration that exceeds the reporting limit for the Aroclor listed below, the sample shall be reanalyzed using EPA Method 508(A) to quantitate PCBs as decachlorobiphenyl. The Department shall determine compliance with the MCL for PCBs ~~[~~(as decachlorobiphenyl~~]~~) from the EPA Method 508(A) analytical result.

| Aroclor | Reporting limit (mg/l) |
|---|---|
| 1016 | 0.00008 |
| 1221 | 0.02 |
| 1232 | 0.0005 |
| 1242 | 0.0003 |
| 1248 | 0.0001 |
| 1254 | 0.0001 |
| 1260 | 0.0002 |

**R18-4-218. Sampling Sites**

**A.** A public water system shall monitor to determine compliance with MCLs at sampling points as follows:
1. At each point-of-entry ~~to~~ into the distribution system that is representative of water from each well after treatment; and
2. At each point-of-entry ~~to~~ into the distribution system that is representative of each surface water source after treatment or ~~in the distribution system~~ at a point located before the ~~1st~~ first service connection that is representative of each surface water source after treatment.

**B.** If a public water system draws water from more than ~~1~~ one source and the sources are combined before distribution, the public water system shall sample at points-of-entry ~~to~~ into the distribution system during periods of normal operating conditions.

**C.** A public water system shall take each sample in subsequent monitoring periods at the same sampling point unless conditions make another sampling point more representative of water from each source after treatment.

**D.** A public water system shall sample for total coliforms at sampling sites identified in a written site sampling plan that is subject to Department review and approval.

**E.** A CWS shall sample for total trihalomethanes at sampling points as prescribed in R18-4-214.

**R18-4-219. Sample Compositing**

**A.** A public water system may composite up to ~~5~~ five samples provided that the detection limit of the method used for analysis is less than 1/5 of the MCL for the contaminant.

**B.** Sample compositing shall be done by a licensed laboratory.

**C.** A public water system may composite up to ~~5~~ five samples from sampling sites within the same public water system. A public water system serving 3,300 or fewer persons may composite samples with samples taken from other public water systems serving 3,300 or fewer persons. A contractor may composite samples for a CWS or NTNCWS that is subject to the monitoring assistance program as prescribed in this Section.

**D.** A public water system, or a contractor shall take follow-up samples if any of the following occurs:

1. Inorganic chemicals: If the concentration of an inorganic chemical in a composite sample is – greater than or equal to 1/5 the MCL, a public water system shall take a follow-up sample within 14 days at each sampling point included in the composite sample. The follow-up samples shall be analyzed for the inorganic chemical that exceeded 1/5 of the MCL.
2. VOCs: If a VOC is detected in a composite sample in a concentration – greater than or equal to 0.0005 mg/L, a public water system shall take a follow-up sample within 14 days at each sampling point that was included in the composite sample. The follow-up samples shall be analyzed for the VOC that was detected in the composite sample in a concentration – greater than or equal to 0.0005 mg/L.
3. SOCs: If a SOC is detected in a composite sample in a concentration that exceeds the reporting limit for that SOC prescribed in R18-4-104(U)(2)(c), a public water system shall take and analyze a follow-up sample ~~shall be taken and analyzed~~ within 14 days from each sampling point included in the composite sample. The follow-up samples shall be analyzed for the SOC that was detected in the composite sample in a concentration that exceeded the reporting limit.
4. If a duplicate of the original sample that was included in the composite sample is available, a public water system may use the duplicate instead of taking a follow-up sample. The duplicate sample shall be analyzed within method holding times and the results reported to the Department within 14 days after completion of the composite sample analysis. ~~and the results reported to the Department within 14 days of sample collection.~~

**E.** Special compositing rules:

1. Compositing VOC samples prior to GC analysis:
   a. Add 5 ml or equal larger amounts of each sample (up to ~~5~~ five samples are allowed) to a 25 ml glass syringe. Special precautions shall be taken to maintain zero headspace in the syringe. If less than ~~5~~ five samples are used for compositing, a proportionately smaller syringe may be used.
   b. Samples shall be cooled at 4°C to minimize volatilization losses.
   c. The composite sample shall be well mixed. A 5 ml aliquot shall be drawn from the composite sample for GC analysis.
   d. Sample introduction, purging, and desorption steps shall be as prescribed in the approved analytical method.
2. Compositing samples prior to GC/MS analysis:
   a. Inject 5 ml or equal larger amounts of each aqueous sample (up to ~~5~~ five samples are allowed) into a 25 ml purging device using the sample introduction technique described in the approved method.
   b. The total volume in the purging device shall be 25 ml.
   c. Purge and desorb as prescribed in the approved method.
3. Vinyl chloride samples shall not be composited.
4. Samples that are composited cannot be screened for PCBs using EPA Method 505 or EPA Method 508. Samples that are composited for PCB analysis shall be analyzed using EPA Method 508A.
5. ~~Tap water samples for lead and copper shall not be composited. Source water samples for lead may be composited provided the method detection limit for the analytical method used is achieved. Source water samples for copper may be composited provided the method detection limit for the analytical method used is achieved.~~ A public water system shall not composite tap water samples for lead and copper. A public water system may composite source water samples for lead and copper. If lead or copper is detected in a composite sample in a concentration greater than or equal to the method detection limit for lead or greater than or equal to 0.160 mg/L for copper, the public water system shall take and analyze a follow-up sample within 14 days at each sampling point included in the composite sample. If duplicates of or sufficient quantities from the original samples from each sampling point used in the composite are available, the public water system may have the duplicate analyzed instead of taking a follow-up sample.
6. ~~Toxaphene samples shall not be composited~~ A public water system shall not composite toxaphene samples unless the analytical method has a method detection limit that is – less than or equal to 0.0006 mg/L.

**R18-4-220. Best Available Technology**

**A.** A public water system that is not in compliance with an applicable ~~maximum contaminant level~~ MCL shall install and use best available technology to achieve compliance with that ~~maximum contaminant level~~ MCL. The best available technologies for achieving compliance with ~~maximum contaminant levels~~ MCLs are as follows:

1. Inorganic chemicals

| Chemical | BATs |
|---|---|
| Antimony | 2, 9 |
| Asbestos | 2, 3, 4, 5 |
| Barium | 7, 8, 9, 10 |
| Beryllium | 1, 2, 7, 8, 9 |
| Cadmium | 2, 7, 8, 9 |
| Chromium III | 2, 7, 8, 9 |
| Chromium VI | 2, 7, 9 |
| Cyanide | 7, 9, 11 |
| Fluoride | 1, 9 |
| Mercury | 2[a], 6, 8[a], 9[a] |
| Nickel | 7, 8, 9 |
| Nitrate | 7, 9, 10 |
| Nitrite | 7, 9 |
| Selenium IV | 1, 2, 8, 9, 10 |
| Selenium VI | 1, 7, 8, 9 |
| Thallium | 1, 7 |

Key to BATs:

| | |
|---|---|
| 1 = Activated alumina | 7 = Ion exchange |
| 2 = Conventional filtration[b] | 8 = Lime softening[b] |
| 3 = Corrosion control | 9 = Reverse osmosis |
| 4 = Direct filtration | 10 = Electrodialysis |
| 5 = Diatomaceous earth filtration | 11 = Chlorine oxidation |
| 6 = Granular activated carbon | |

[a]BAT only if influent Hg concentration < 10 ~~mG/L~~ mg/L.
[b]Not BAT for public water systems with < 500 service connections

2. Synthetic and volatile organic chemicals:

| Chemical | GAC | PTA | OX |
|---|---|---|---|
| Alachlor | X | | |
| Atrazine | X | | |
| Benzene | X | X | |
| Benzo(a)pyrene | X | | |
| Carbofuran | X | | |
| Carbon tetrachloride | X | X | |
| Chlordane | X | | |
| 2,4-D | X | | |
| Dalapon | X | | |
| Dibromochloropropane (DBCP) | X | X | |
| o-Dichlorobenzene | X | X | |
| p-Dichlorobenzene | X | X | |
| 1,2-Dichloroethane | X | X | |
| 1,1-Dichloroethylene | X | X | |
| cis-1,2-Dichloroethylene | X | X | |
| trans-1,2-Dichloroethylene | X | X | |
| Dichloromethane | X | | |
| 1,2-Dichloropropane | X | X | |
| Di(2-ethylhexyl)adipate | X | X | |
| Di(2-ethylhexyl)phthalate | X | | |
| Dinoseb | X | | |
| Diquat | X | | |
| Endothall | X | | |
| Endrin | X | | |
| Ethylbenzene | X | X | |
| Ethylene dibromide (EDB) | X | X | |
| Glyphosate | | | X |
| Heptachlor | X | | |
| Heptachlor epoxide | X | | |
| Hexachlorobenzene | X | | |
| Hexachlorocyclopentadiene | X | X | |
| Lindane | X | | |
| Methoxychlor | X | | |
| Monochlorobenzene | X | X | |
| Oxamyl (Vydate) | X | | |
| Pentachlorophenol | X | | |
| Picloram | X | | |
| Polychlorinatedbiphenyls (PCBs) | X | | |

| | | |
|---|---|---|
| Simazine | X | |
| Styrene | X | X |
| 2,3,7,8-TCDD (Dioxin) | X | |
| Tetrachloroethylene | X | X |
| Toluene | X | X |
| Toxaphene | X | |
| 2,4,5-TP (Silvex) | X | |
| 1,2,4-Trichlorobenzene | X | X |
| 1,1,1-Trichloroethane | X | X |
| 1,1,2-Trichloroethane | X | X |
| Trichloroethylene | X | X |
| Vinyl chloride | X | |
| Xylenes | X | X |

Key to BATs:
GAC = Granulated activated carbon
PTA = Packed tower aeration
OX = Chlorine or ozone oxidation

**B.** The best available technologies, treatment techniques, or other means for achieving compliance with the ~~maximum contaminant levels~~ MCLs for total coliform are as follows:
1. Protection of wells from contamination by coliforms by appropriate placement and construction;
2. Maintenance of a disinfectant residual throughout the distribution system;
3. Maintenance of the distribution system, which includes appropriate pipe replacement and repair procedures, ongoing main flushing programs, proper operation and maintenance of storage tanks and reservoirs, and continual maintenance of positive water pressure in all parts of the distribution system; and
4. Filtration and disinfection of surface water and groundwater under the direct influence of surface water or disinfection of groundwater.

**C.** The best available technology for achieving compliance with the ~~maximum contaminant level~~ MCL for turbidity is filtration.

**D.** The best available technologies, treatment techniques or other means for achieving compliance with the ~~maximum contaminant level~~ MCL for total trihalomethanes are as follows:
1. Use of chloramines as an alternate or supplemental disinfectant or oxidant;
2. Use of chlorine dioxide as an alternate or supplemental disinfectant or oxidant;
3. Improved existing clarification for trihalomethane precursor reduction;
4. Moving the point of chlorination to reduce total trihalomethane formation and, where necessary, substituting chloramines, chlorine dioxide, or potassium permanganate for the use of chlorine as a pre-oxidant.
5. Use of powdered activated carbon for trihalomethane precursor or total trihalomethane reduction seasonally or intermittently at dosages not to exceed 10 mg/L on an annual average basis.

**E.** A public water system may defer installation and use of best available technology by obtaining an exemption pursuant to R18-4-111. The Department may require a public water system to use bottled water, point-of-use treatment devices, point-of-entry treatment devices, or other means as a condition of granting an exemption to avoid an unreasonable risk to public health.

**F.** A public water system shall install and use best available technology as a condition for granting a variance under R18-4-110. The Department may require a public water system to use bottled water, point-of-use treatment devices, point-of-entry treatment devices, or other means as a condition of granting a variance to avoid an unreasonable risk to public health. If a ~~water supplier~~ public water system can demonstrate through a comprehensive engineering assessment of ~~a~~ the public water system that installation of best available technology will achieve only a de minimis reduction in contaminant levels, the Department may issue a schedule of compliance that requires the public water system to examine other treatment methods as a condition of obtaining a variance. If the Department determines that another treatment method is technically feasible, the Department may require the public water system to install and use that treatment method under a compliance schedule.

**G.** An alternative technology, the removal of a source from service, or blending may be used to achieve compliance with a ~~maximum contaminant level~~ MCL provided that the alternative technology, source removal, or blending is approved, in writing, by the Department and is at least as effective as the best available technology identified in this Section.

**H.** A public water system that serves 10,000 or fewer persons may use the following compliance technologies to achieve compliance with a MCL. A public water system may use any additional compliance technologies listed by EPA pursuant to 42 U.S.C. § 300g-1(b)(4)(E)(ii) (2001) to achieve compliance with a MCL or treatment technique requirement.

1. Inorganic Chemicals:

| Chemical | Compliance Technologies for Public Water Systems Serving 25 to 10,000 Persons |
|---|---|
| Antimony | 4, 5, 13 |
| Arsenic | 1, 2, 3, 4, 5, 11, 12, 13 |
| Asbestos | 4, 8, 9, 15, 17 |
| Barium | 2, 3, 4, 5, 11, 12, 13 |
| Beryllium | 1, 2, 3, 4, 5, 12, 13 |
| Cadmium | 2, 3, 4, 5, 12, 13 |
| Chromium | 2, 3 a, 4, 5, 12, 13 |
| Cyanide | 2, 5, 6, 7 |
| Fluoride | 1, 5, 13 |
| Mercury | 3 b, 4 b, 5 b, 10 |
| Nitrate | 2, 5, 11 |
| Nitrite | 2, 5 |
| Nitrate + Nitrite | 2, 5, 11 |
| Selenium | 1, 2 c, 3, 4 d, 5, 11 d, 13 |
| Thallium | 1, 2, 12 |

[a] Compliance technology for Chromium III only.

[b] Compliance technologies only when influent mercury concentrations ≤ 10 µg/L.

[c] Compliance technology for Selenium VI only.

[d] Compliance technology for Selenium IV only.

Key to Compliance Technologies for Inorganic Chemicals:

| | |
|---|---|
| 1. Activated Alumina | 10. Granular Activated Carbon |
| 2. Ion Exchange (IX) | 11. Electrodialysis Reversal |
| 3. Lime Softening | 12. Point-of-Use - IX |
| 4. Coagulation/ Filtration | 13. Point-of-Use - RO |
| 5. Reverse Osmosis (RO) | 14. Calcium Carbonate Precipitation |
| 6. Alkaline Chlorination | 15. pH and alkalinity adjustment (chemical feed) |
| 7. Ozone Oxidation | 16. pH and alkalinity adjustment (limestone contactor) |
| 8. Direct Filtration | 17. Inhibitors |
| 9. Diatomaceous earth filtration | 18. Aeration (packed tower aeration, diffused aeration, multi-stage bubble aerators, tray aeration, or shallow tray aeration) |

2. Synthetic and Volatile Organic Chemicals:

| Chemical | Compliance Technologies for Public Water Systems Serving 25 to 10,000 Persons |
|---|---|
| Alachlor | 1, 2, 3 |
| Atrazine | 1, 2, 3 |
| Benzene | 1, 6, 7, 8, 9, 10 |
| Benzo(a)pyrene | 1, 2, 3 |
| Carbofuran | 1, 2, 3 |
| Carbon Tetrachloride | 1, 6, 7, 8, 9, 10 |
| Chlordane | 1, 2, 3 |
| 2,4-D | 1, 2, 3 |
| Dalapon | 1, 2, 3 |
| Dibromochloropropane (DBCP) | 1, 2, 3, 6, 7, 8, 9, 10 |
| o-Dichlorobenzene | 1, 6, 7, 8, 9, 10 |
| p-Dichlorobenzene | 1, 6, 7, 8, 9, 10 |
| 1, 2 -Dichloroethane | 1, 6, 7, 8, 9, 10 |
| 1,1-Dichloroethylene | 1, 6, 7, 8, 9, 10 |
| cis-1,2-Dichloroethylene | 1, 6, 7, 8, 9, 10 |
| trans-1, 2-Dichloroethylene | 1, 6, 7, 8, 9, 10 |
| Dichloromethane | 1, 6, 7, 8, 9, 10 |
| 1, 2 -Dichloropropane | 1, 6, 7, 8, 9, 10 |
| Di(2-ethylhexyl)adipate | 1, 2, 3, 6, 7, 8, 9, 10 |
| Di(2-ethylhexyl)phthalate | 1, 2, 3 |
| Dinoseb | 1, 2, 3 |
| Diquat | 1, 2, 3 |
| Endothall | 1, 2, 3 |
| Endrin | 1, 2, 3 |
| Ethylbenzene | 1, 6, 7, 8, 9, 10 |
| Ethylene Dibromide (EDB) | 1, 2, 3, 6, 7, 8, 9, 10 |
| Glyphosate | 4, 5 |
| Heptachlor | 1, 2, 3 |
| Heptachlor Epoxide | 1, 2, 3 |
| Hexachlorobenzene | 1, 2, 3 |
| Hexachlorocyclopentadiene | 1, 2, 3, 6, 7, 8, 9, 10 |
| Lindane | 1, 2, 3 |
| Methoxychlor | 1, 2, 3 |
| Monochlorobenzene | 1, 6, 7, 8, 9, 10, 11, 12 |
| Oxamyl | 1, 2, 3 |
| Pentachlorophenol | 1, 2, 3 |

| | |
|---|---|
| Picloram | 1, 2, 3 |
| Polychlorinated Biphenyls (PCBs) | 1, 2, 3 |
| Simazine | 1, 2, 3 |
| Styrene | 1, 6, 7, 8, 9, 10 |
| 2,3,7,8-TCDD (Dioxin) | 1, 2, 3 |
| Tetrachloroethylene | 1, 6, 7, 8, 9, 10 |
| Toluene | 1, 6, 7, 8, 9, 10 |
| Toxaphene | 1, 2, 3 |
| 2,4,5-TP (Silvex) | 1, 2, 3 |
| 1, 2, 4-Trichlorobenzene | 1, 6, 7, 8, 9, 10 |
| 1, 1, 1-Trichloroethane | 1, 6, 7, 8, 9, 10, 11 |
| 1, 1, 2-Trichloroethane | 1, 6, 7, 8, 9, 10 |
| Trichloroethylene | 1, 6, 7, 8, 9, 10, 11, 12 |
| Vinyl Chloride | 1, 6, 7, 8, 9, 10 |
| Xylenes (total) | 1, 6, 7, 8, 9, 10 |

Key to Compliance Technologies for Synthetic and Volatile Organic Chemicals:

| | |
|---|---|
| 1. Granular Activated Carbon (GAC) | 7. Diffused Aeration |
| 2. Point-of-Use - GAC | 8. Multi-Stage Bubble Aerators |
| 3. Powdered Activated Carbon | 9. Tray Aeration |
| 4. Chlorination | 10. Shallow Tray Aeration |
| 5. Ozonation | 11. Spray Aeration |
| 6. Packed Tower Aeration (PTA) | 12. Mechanical Aeration |

3. Radionuclides:

| Contaminant | Compliance Technologies for Public Water Systems Serving 25 to 10,000 Persons |
|---|---|
| combined radium-226 and radium-228 | 1, 2, 3, 4, 5, 6, 7, 8, 9 |
| gross alpha particle activity | 3, 4 |
| total beta particle activity and photon activity, average annual concentration | 1, 2, 3, 4 |

Key to Compliance Technologies for Radionuclides:

| | |
|---|---|
| 1. Ion Exchange (IX) | 6. Green Sand Filtration |
| 2. Point-of-Use - IX | 7. Co-precipitation with Barium Sulfate |
| 3. Reverse Osmosis (RO) | 8. Electrodialysis/Electrodialysis Reversal |
| 4. Point-of-Use - RO | 9. Pre-formed Hydrous Manganese Oxide Filtration |
| 5. Lime Softening | |

**R18-4-221. Use of Blending to Achieve Compliance with Maximum Contaminant Levels**

**A.** A public water system may use blending to achieve compliance with a ~~maximum contaminant level~~ MCL provided ~~the system meets~~ all of the following requirements are met:

1. The Department has given written approval to the public water system for a blending plan which includes the following elements:
   a. Detailed drawings and schematics which show flow, concentrations, and controls;
   b. Proposed automatic or electronic devices which will be incorporated to ensure that the blend remains in the desired range or else shuts off the offending source or triggers an alarm when the blend falls out of the desired range;
   c. Individual test results from all sources proposed to be blended;
   d. Projected contaminant levels that will result from blending which show both best-case and worst-case scenarios;
   e. Identified techniques, and any other information requested by the Department, that show how the blending plan will produce water ~~which~~ that will comply with ~~maximum contaminant levels~~ MCLs.
2. The Department has given written approval to the public water system for a monitoring program designed to verify continued compliance with ~~maximum contaminant levels~~ MCLs at all subsequent downstream service connections. This program shall include monitoring on at least a quarterly basis of both of the following:
   a. All sources contributing to the blend; and
   b. Blended water to ensure that the provisions of this Section are met.

**B.** ~~Whenever~~ A public water system shall submit an amended blending plan to the Department to confirm that the new blend achieves compliance with MCLs whenever sources are added to or removed from service or the relative flow rates from blended sources are changed in such a way that changes the blend~~, the water supplier shall submit an amended blending plan to the Department to confirm that the new blend achieves compliance with maximum contaminant levels~~.

**R18-4-222. Use of Point-of-Entry or Point-of-Use Treatment Devices**

~~**A.** A public water system shall not use point-of-use treatment devices to achieve compliance with a maximum contaminant level. Point-of-use treatment devices may be used on a temporary basis to avoid an unreasonable risk to health.~~

~~**B**~~**A.** A public water system may use a point-of-entry treatment ~~devices~~ device or a point-of-use treatment device to achieve compliance with a ~~maximum contaminant level~~ MCL, except as provided under subsection B, ~~only~~ if the public water system meets all of the following requirements:

1. A public water system shall develop a monitoring plan for the treatment ~~devices~~ device and obtain the Department's written approval of the monitoring plan before a point-of-entry treatment ~~devices are~~ device or a point-of-use treatment device is installed. The monitoring plan shall provide reasonable assurance that the treatment ~~devices provide~~ device provides health protection equivalent to that provided by central water treatment.
2. The design of the point-of-entry treatment device or the point-of-use treatment device ~~shall be~~ is approved, in writing, by the Department.
3. The public water system shall operate and maintain the point-of-entry treatment ~~devices~~ device or point-of-use treatment device.
4. The microbiological safety of water that is treated by a point-of-entry treatment ~~devices~~ device or by a point-of-use treatment device shall be maintained at all times. The design and application of the treatment ~~devices~~ device shall consider the tendency for increase in heterotrophic bacteria concentrations in water treated with activated carbon. The Department may require frequent backwashing, post-contactor disinfection, or HPC monitoring to ensure that the microbiological safety of water is not compromised.
5. The public water system shall install a sufficient number of point-of-entry treatment devices or point-of-use treatment devices to buildings connected to the public water system so that every person served by the public water system is protected. Every building connected to the public water system shall be subject to treatment and monitoring.
6. The rights and responsibilities of persons served by the public water system convey with title upon sale of the property.

**B.** A public water system shall not use a point-of-use treatment device to achieve compliance with a MCL or treatment technique requirement for a microbial contaminant or an indicator of a microbial contaminant.

**C.** A public water system that uses a point-of-entry treatment device or a point-of-use treatment device as a condition for receiving a variance or an exemption shall meet the requirements listed under subsection (A).

**R18-4-223. Use of Bottled Water**

**A.** ~~Bottled~~ A public water system may use bottled water ~~may be used~~ on a temporary basis to avoid an unreasonable risk to health. A public water system shall not use bottled water to achieve compliance with a ~~maximum contaminant level~~ MCL.

**B.** If a public water system uses bottled water ~~is used~~ to avoid an unreasonable risk to health, the public water system is responsible for the provision of sufficient quantities of bottled water to every person served by the public water system via door-to-door bottled water delivery.

**C.** A public water system that uses bottled water as a condition for receiving a variance or an exemption shall comply with the following:
1. The public water system shall develop and put in place a Department approved monitoring program that provides reasonable assurances that the bottled water meets applicable MCLs. The public water system shall monitor a representative sample of the bottled water to determine compliance with applicable MCLs during the first 3-month period that it supplies the bottled water to the public and annually thereafter. Results of the bottled water monitoring program shall be provided to the Department annually; or
2. The public water system shall receive a certification from the bottled water company that the bottled water supplied has been taken from an "approved source" as defined in 21 CFR 129.3(a); the bottled water company has conducted monitoring in accordance with 21 CFR 129.80(g)(1) through (3); and the bottled water does not exceed any MCLs or quality limits as set out in 21 CFR 165.110, 21 CFR 110 and 21 CFR 129. The public water system shall provide the certification to the Department in the first quarter after it supplies bottled water and annually thereafter. The Department may waive the certification requirements prescribed in this subsection if an approved monitoring program is already in place in another state; and
3. The public water system is fully responsible for the provision of sufficient quantities of bottled water to every person supplied by the public water system via door-to-door bottled water delivery.

## ARTICLE 3. TREATMENT TECHNIQUES

### R18-4-301.01. Groundwater Under the Direct Influence of Surface Water

**A.** The Department suspects the following sources to be groundwater under the direct influence of surface water:
1. A spring;
2. An infiltration gallery;
3. A radial well collector, Ranney well, or horizontal well;
4. A well that is less than 500 feet from a surface water, and:
   a. The Department conducts a vulnerability assessment and determines that the source is vulnerable to direct surface water influence, or
   b. The Department cannot assess the vulnerability of the groundwater source to direct surface water influence because of a lack of information or the uncertainty of available information on the local hydrogeology or well construction characteristics.
5. A shallow well with perforations or well screens that are less than 50 feet below the ground surface;
6. A hand-dug or auger-bored well without a casing;
7. A groundwater source for which turbidity data are available that show that the groundwater violates an interim ~~maximum contaminant level~~ MCL for turbidity.
8. A groundwater source for which data are available that show that total coliform, fecal coliform, or E. Coli are present in untreated groundwater from the source that are not related to new well development, source modification, repair, or maintenance.
9. Any groundwater source where the temperature of the groundwater fluctuates 15% to 20% from the mean groundwater temperature over the course of a year or where changes in the temperature of the groundwater correlate to similar changes in the temperature of surface water.

**B.** The Department shall conduct a sanitary survey of each public water system that it suspects is using a groundwater source under the direct influence of surface water.

**C.** The Department shall provide written notice to a public water system that the Department suspects a groundwater source is under the direct influence of surface water. A public water system may submit information to the Department to show that a groundwater source is not under the direct influence of surface water. Information that is submitted to show that a suspect groundwater source is not under the direct influence of surface water shall be prepared by a qualified professional, such as ~~a professional~~ an engineer, registered geologist, water system operator, or hydrogeologist. The Department shall review any information submitted by a qualified professional to show a suspect groundwater source is not under the direct influence of surface water and determine if the source remains suspect within 90 days of receipt of the information.

**D.** If a groundwater source continues to be suspect after the analyses required in subsections (A) through (C), the Department may require a public water system that is suspected of using a groundwater source that is under the direct influence of surface water to conduct Microscopic Particle Analysis (MPA) monitoring of the groundwater source. A public water system may request that the ~~Director~~ Department require an alternative method to determine whether a groundwater source is under the direct influence of surface water. An alternative method to determine whether a groundwater source is under the direct influence of surface water shall be approved by ~~the Arizona Department of Health Services~~ ADHS under ~~A.A.C.~~ R9-14-608.

**E.** A ~~water supplier~~ public water system shall conduct MPA monitoring as follows:
1. Each sample shall be representative of the groundwater source. A ~~water supplier~~ public water system shall not take a sample of blended water or a sample of water from the distribution system.

2. Each sample shall be collected and analyzed according to the procedures prescribed in the "Consensus Method for Determining Groundwaters Under the Direct Influence of Surface Water Using Microscopic Particulate Analysis (MPA)," EPA 910/9-92-029, United States Environmental Protection Agency, Environmental Services Division, Manchester Environmental Laboratory, 7411 Beach Dr. E., Port Orchard, WA 98366, October 1992 (and no future editions or amendments) which is incorporated by reference and on file with the Office of the Secretary of State and the Department.
3. The Department shall schedule MPA monitoring at a time when the groundwater source is most susceptible to direct surface water influence.
4. The Department shall use the MPA risk ratings to determine whether groundwater is under the direct influence of surface water. See Table 1.
   a. If the MPA risk rating of the initial sample indicates a high or moderate risk of direct surface water influence, the ~~water supplier~~ public water system shall collect a ~~2nd~~ second sample for MPA at the same location on a date scheduled by the Department. If the MPA risk rating of the ~~2nd~~ second sample indicates a high or moderate risk of direct surface water influence, the Department shall determine that the groundwater is under the direct influence of surface water. If the risk rating of the ~~2nd~~ second sample indicates a low risk of direct surface water influence, the ~~water supplier~~ public water system shall collect a ~~3rd~~ third sample for MPA at the same location on a date scheduled by the Department. If a ~~3rd~~ third sample is taken, the Department shall determine whether the groundwater is under the direct influence of surface water under subsection (E)(4)(c).
   b. If the MPA risk rating of the initial sample indicates a low risk of direct surface water influence, the ~~water supplier~~ public water system shall collect a ~~2nd~~ second sample for MPA at the same location on a date scheduled by the Department. If the MPA risk rating of the ~~2nd~~ second sample indicates a low risk of direct surface water influence, the Department shall determine that the groundwater is not under the direct influence of surface water. If the MPA risk rating of the ~~2nd~~ second sample indicates a high or moderate risk of direct surface water influence, the ~~water supplier~~ public water system shall collect a ~~3rd~~ third sample for MPA at the same location on a date scheduled by the Department. If a ~~3rd~~ third sample is taken, the Department shall determine whether the groundwater is under the direct influence of surface water under subsection (E)(4)(c).
   c. If a ~~3rd~~ third sample is required and the MPA risk rating of the ~~3rd~~ third sample indicates a high or moderate risk of direct surface water influence, the Department shall determine that the groundwater is under the direct influence of surface water. If the MPA risk rating of the ~~3rd~~ third sample indicates a low risk of direct surface water influence, the Department shall determine that the groundwater is not under the direct influence of surface water.

**F.** If the Department determines a source to be groundwater under the direct influence of surface water under subsection (E) and a public water system demonstrates to the Department that it is feasible to take corrective action to prevent direct surface water influence, the Department shall establish a schedule of compliance for the public water system to take corrective action instead of requiring installation of filtration and disinfection treatment. A schedule of compliance to take corrective action shall require:

1. Completion of corrective action no later than 18 months after receipt of the initial MPA monitoring results, and
2. A ~~2nd~~ second round of MPA monitoring to determine whether the source is under the direct influence of surface water after completion of the corrective action.

**G.** Except as provided in subsection (F), a public water system with a source that the Department determines to be groundwater under the direct influence of surface water shall provide filtration under R18-4-302 and disinfection under R18-4-303 within 18 months of the date that the Department makes the final determination that the groundwater is under the direct influence of surface water.

**H.** The Department shall provide a written notice to a public water system of a final determination that a groundwater source is under the direct influence of surface water. The notice shall contain the following information:

1. A statement that the Department's determination that a groundwater source is under the direct influence of surface water is an "appealable agency action" as defined in A.R.S. § 41-1092(3); and
2. Notice that the ~~water supplier~~ public water system may request an informal settlement conference with the Department under the Uniform Administrative Appeal Procedures in A.R.S. Title 41, Chapter 6, Article 10.

**I.** A public water system may appeal a final determination that a groundwater source is under the direct influence of surface water by serving notice of appeal with the Department under the Uniform Administrative Appeals Procedures in A.R.S. Title 41, Chapter 6, Article 10. A public water system shall file notice of appeal with the Department within 30 days of receiving notice of the Department's determination that a groundwater source is under the direct influence of surface water. The Department shall notify the Office of Administrative Hearings which shall schedule a hearing on the appeal within 60 days of the date that notice of appeal is filed with the Department. Hearings shall be conducted according to the Uniform Administrative Appeals Procedures in A.R.S. Title 41, Chapter 6, Article 10.

**Table 1. Decision Matrix for Determining Groundwater Under the Direct Influence of Surface Water**

| Initial Sample MPA Risk Rating | Second Sample MPA Risk Rating | Third Sample MPA Risk Rating | Groundwater Under the Direct Influence of Surface Water |
|---|---|---|---|
| High | High or Moderate | | Yes |
| High | Low | High or Moderate | Yes |
| High | Low | Low | No |
| Moderate | High or Moderate | | Yes |
| Moderate | Low | High or Moderate | Yes |
| Moderate | Low | Low | No |
| Low | High or Moderate | High or Moderate | Yes |
| Low | High or Moderate | Low | No |
| Low | Low | | No |

**R18-4-305. Renumbered**

**~~R18-4-305.~~ R18-4-306. ~~Lead and Copper; Requirements for Large Water Systems Serving More Than 50,000 Persons~~ Lead and Copper; Applicability**

The treatment technique requirements related to the control of lead and copper in drinking water that are prescribed in this Article apply to ~~community water systems [CWS]~~ CWS and ~~nontransient, noncommunity water systems [NTNCWS]~~ NTNCWS. These treatment techniques do not apply to ~~transient, noncommunity water systems~~ TNCWS.

~~**A.** Except as provided in subsection (B) of this Section, each large water system shall complete the following treatment technique steps by the deadlines established below:~~

~~1. By January 1, 1993, complete tap water monitoring for lead and copper and water quality parameter monitoring during 2 consecutive 6-month monitoring periods.~~

~~2. By July 1, 1994, complete a corrosion control study.~~

~~3. By January 1, 1995, the Department shall designate optimal corrosion control treatment for each large water system.~~

~~4. By January 1, 1997, install optimal corrosion control treatment.~~

~~5. By January 1, 1998, complete follow-up tap water monitoring for lead and copper and for water quality parameters after installation of corrosion control treatment.~~

~~6. By July 1, 1998, the Department shall designate water quality parameters for optimal corrosion control for each large water system.~~

~~7. Each large water system shall operate in compliance with the water quality parameters for optimal corrosion control designated by the Department and continue to conduct tap water monitoring for lead and copper and for water quality parameters as prescribed in R18-4-313.~~

~~**B.** A large water system is deemed to have optimized corrosion control and is not required to complete the treatment technique steps prescribed in subsection (A) if the large water system satisfies 1 of the following criteria:~~

~~1. The large water system demonstrates to the Department that it has conducted corrosion control activities that are equivalent to the treatment technique steps prescribed in subsection (A). If the Department makes an equivalency determination, then the Department shall provide written notice to the large water system which explains the basis for its determination. The Department shall designate the water quality parameters which represent optimal corrosion control for the large water system. A large water system shall provide the following information to the Department to support a request for an equivalency determination:~~

~~a. The results of all samples collected for lead, copper, pH, alkalinity, calcium, conductivity, water temperature, orthophosphate [when an inhibitor containing a phosphate compound is used], and silicate [when an inhibitor containing a silicate compound is used] before and after evaluation of corrosion control treatment.~~

~~b. A report which explains the test methods used by the large water system to evaluate the effectiveness of each of the following corrosion control treatments:~~

~~i. Alkalinity and pH adjustment,~~

~~ii. Calcium hardness adjustment, and~~

~~iii. The addition of a phosphate or silicate-based corrosion inhibitor at a concentration sufficient to maintain an effective residual concentration in all test tap samples.~~

~~c. The report shall include the results of all tests conducted and the basis for the large water system's selection of optimal corrosion control treatment;~~

~~d. A report which explains how corrosion control treatment has been installed and how it is being maintained to ensure minimal lead and copper concentrations at taps; and~~

~~e. The results of tap water monitoring samples for lead and copper collected in accordance with requirements prescribed at R18-4-310. A large water system shall conduct tap water monitoring for lead and copper at least once every 6 months for at least 1 year after corrosion control treatment has been installed.~~

~~2. A large water system is deemed to have optimized corrosion control if the large water system submits to the Department the results of tap water monitoring for lead and copper conducted in accordance with R18-4-310 and source water monitoring conducted in accordance with R18-4-313 which demonstrate that, for 2 consecutive 6-month monitoring periods, the difference between the 90th percentile tap water lead level, as computed according to R18-4-308, and the highest source water lead concentration is less than 0.005 mg/L.~~

~~**C.** A large water system which exceeds an action level for lead or copper shall conduct source water monitoring as prescribed in R18-4-314.~~

~~**D.** A large water system which exceeds the action level for lead shall comply with the public education requirements for lead prescribed in R18-4-316.~~

~~**E.** A large water system which exceeds the action level for lead after implementation of corrosion control treatment or source water treatment shall comply with the lead service line replacement requirements prescribed in R18-4-315.~~

**R18-4-307. Lead and Copper; General Requirements ~~for Small and Medium Water Systems~~**

**A.** Except as provided in subsection (B), a ~~small or medium~~ large, medium, or small water system shall complete the following treatment technique steps within the indicated time periods:

1. A large water system shall conduct initial tap water monitoring for lead and copper for two consecutive 6-month monitoring periods. A small or medium water system shall conduct initial tap water monitoring for lead and copper for ~~2~~ two consecutive 6-month monitoring periods or until the small or medium water system exceeds a lead or copper action level.
2. A large water system shall monitor for water quality parameters as prescribed in R18-4-311 for two consecutive 6-month monitoring periods. A large water system shall conduct monitoring for water quality parameters in the same monitoring period that the large water system conducts initial tap water monitoring for lead and copper under R18-4-310(B). A small or medium water system that exceeds an action level for lead or copper shall monitor for water quality parameters as prescribed in R18-4-311. A small or medium water system shall complete monitoring for water quality parameters in the same monitoring period that the small or medium water system exceeds the action level.
3. ~~A small or medium water system that exceeds an action level for lead or copper shall recommend optimal corrosion control treatment to the Department within 6 months after the monitoring period that the system exceeded the action level.~~ A large water system shall complete a corrosion control study within 18 months of the date that it completed initial tap water monitoring for lead and copper in R18-4-310(A)(1).
4. ~~Within 1 year after the monitoring period that a small or medium water system exceeded an action level for lead or copper, the Department shall determine whether a corrosion control study is necessary. If the Department requires a corrosion control study, the small or medium system shall complete and submit the study to the Department within 18 months of the date the Department determines that 1 is necessary. The Department shall designate the optimal corrosion control treatment for the small or medium water system within 6 six months of receipt of the corrosion control study.~~ A small or medium water system that exceeds an action level for lead or copper shall recommend optimal corrosion control treatment to the Department within six months after the small or medium water system exceeded the action level. Within one year after a small or medium water system exceeded an action level for lead or copper, the Department shall determine whether a corrosion control study is necessary. If the Department requires a corrosion control study, the small or medium system shall complete and submit the study to the Department within 18 months of the date the Department determines that one is necessary.
5. The Department shall designate the optimal corrosion control treatment for the large, medium, or small water system within six months of receipt of the corrosion control study required in subsection (A)(3) or (A)(4).
~~5~~6. If the Department does not require a small or medium water system to perform a corrosion control study, the Department shall designate optimal corrosion control treatment for the system as follows:
   a. For medium water systems, within 18 months after the medium water system exceeds an action level; or
   b. For small water systems, within 24 months after the small water system exceeds an action level.
~~6~~7. A ~~small or medium~~ large, medium, or small water system shall install optimal corrosion control treatment within 24 months after the Department designates optimal corrosion control treatment.
~~7~~8. A ~~small or medium~~ large, medium, or small water system shall complete follow-up tap water monitoring for lead and copper and follow-up monitoring for water quality parameters, as prescribed in R18-4-313(C) through (F), within 36 months after the Department designates optimal corrosion control treatment.

~~8~~9. The Department shall designate water quality parameters for optimal corrosion control within ~~6~~ six months of completion of follow-up monitoring.

~~9~~10. A ~~small or medium~~ large, medium, or small water system shall comply with the designated water quality parameters for optimal corrosion control and continue follow-up tap water monitoring for lead and copper and for water quality parameters as prescribed in R18-4-313(G) through (U).

**B.** A large water system is deemed to have optimized corrosion control and is not required to complete the treatment technique steps identified in subsection (A) if the large water system satisfies one of the criteria in subsection (B)(2) or (B)(3). A small or medium water system is deemed to have optimized corrosion control and is not required to complete the treatment technique steps identified in subsection (A) if the small or medium water system satisfies ~~1~~ one of the ~~following~~ criteria~~:~~ in subsection (B)(1), (B)(2) or (B)(3). A large water system deemed to have optimized corrosion control under subsection (B)(2) or (B)(3) which has treatment in place, and a small or medium water system deemed to have optimized corrosion control under subsection (B)(1), (B)(2), or (B)(3) which has treatment in place, shall continue to operate and maintain optimal corrosion control treatment and meet any requirements that the Department determines appropriate to ensure optimal corrosion control treatment is maintained.

1. A small or medium water system does not exceed the action level for lead or copper for ~~2~~ two consecutive 6-month monitoring periods conducted in accordance with R18-4-309 and R18-4-310.
2. A ~~small or medium~~ large, medium, or small water system demonstrates to the Department that it has conducted corrosion control activities that are equivalent to the corrosion control steps prescribed in subsection (A). The Department shall provide written notice to the ~~small or medium~~ large, medium, or small water system that explains the basis for its determination that the system's corrosion control steps are equivalent. The Department shall designate the water quality parameters that represent optimal corrosion control for the ~~small or medium~~ large, medium, or small water system in accordance with R18-4-313(G). A large, medium, or small water system deemed to have optimized corrosion control under this subsection shall operate in compliance with the Department designated optimal water quality control parameters in accordance with subsections R18-4-313(H) and (I) and continue to conduct lead and copper tap and water quality parameter monitoring in accordance with R18-4-313(H) and (O). A ~~small or medium~~ large, medium, or small water system shall provide the following information to the Department to support a request for an equivalency determination:
   a. The results of all samples collected for lead, copper, pH, alkalinity, calcium, conductivity, water temperature, orthophosphate [when an inhibitor containing a phosphate compound is used], and silicate [when an inhibitor containing a silicate compound is used] before and after evaluation of corrosion control treatment.
   b. A report that explains the test methods used by the ~~small or medium~~ large, medium, or small water system to evaluate the effectiveness of each of the following corrosion control treatments:
      i. Alkalinity and pH adjustment,
      ii. Calcium hardness adjustment, and
      iii. The addition of a phosphate or silicate-based corrosion inhibitor at a concentration sufficient to maintain an effective residual concentration in all test tap samples.
   c. The report shall include the results of all tests conducted and the basis for the ~~small or medium~~ large, medium, or small water system's selection of optimal corrosion control treatment.
   d. A report that explains how corrosion control treatment has been installed and how it is being maintained to ensure minimal lead and copper concentrations at ~~tap~~ taps, and
   e. The results of tap water monitoring samples for lead and copper collected in accordance with requirements prescribed at R18-4-309 and R18-4-310. A ~~small or medium~~ large, medium, or small water system shall conduct tap water monitoring for lead and copper at least once every ~~6~~ six months for at least ~~1~~ one year after corrosion control treatment has been installed.
3. A ~~small or medium~~ large, medium, or small water system ~~is deemed to have optimized corrosion control if the system~~ submits ~~the analytical results of tap water monitoring for lead and copper conducted in accordance with R18-4-310 and source water monitoring conducted in accordance with R18-4-314 that demonstrate that for 2 consecutive 6-month monitoring periods, the difference between the 90th percentile tap water lead level, as computed according to R18-4-308, and the highest source water lead concentration is < 0.005 mg/L.~~ the following to the Department:
   a. The results of tap water monitoring for lead and copper conducted under R18-4-309 and R18-4-310 and source water monitoring conducted under R18-4-314 that demonstrate, for two consecutive 6-month monitoring periods, the difference between the 90th percentile for tap water lead, as computed according to R18-4-308, and the highest source water lead concentration is less than 0.005 mg/L, and the copper action level is not exceeded; or
   b. The results of tap water monitoring for lead and copper conducted under R18-4-309 and R18-4-310 and source water monitoring conducted under R18-4-314 that demonstrate that the highest source water lead concentration is less than the method detection limit, the 90th percentile for tap water lead, as computed according to R18-4-308, is less than or equal to 0.005 mg/L for two consecutive 6-month monitoring periods, and the copper action level is not exceeded.

4. A large, medium, or small water system that has been deemed to have optimized corrosion control under subsection (B)(3), and that no longer meets the requirements of that subsection, shall implement corrosion control treatment under the deadlines in subsection (A).
5. A large, medium, or small water system deemed to have optimized corrosion control under subsection (B)(3) shall continue tap water monitoring for lead and copper as specified in R18-4-310(E).
6. The Department may require a large, medium, or small water system deemed to have optimized corrosion control under subsection (B)(3) that changes its treatment or adds a new source to conduct additional monitoring or to take other action the Department deems appropriate to ensure that the large, medium, or small water system maintains minimal levels of corrosion in its distribution system.

**C.** A small or medium water system that is required to complete the corrosion control steps prescribed in subsection (A) may cease completing the steps whenever the small or medium water system does not exceed the action level for lead or copper during each of ~~2~~ two consecutive 6-month monitoring periods and submits the analytical results to the Department. If a small or medium water system subsequently exceeds an action level for lead or copper during a monitoring period, the small or medium water system (or the Department) shall recommence completion of the applicable corrosion control steps, beginning with the ~~1st~~ first step that was not previously completed in its entirety. The Department may require a small or medium water system to repeat steps previously completed ~~,~~ if the Department determines that repeating a step is necessary to implement properly the corrosion control requirements of this Section. The Department shall notify the small or medium water system in writing of the determination and explain the basis for its decision.

**D.** ~~The requirement that a small or medium water system implement corrosion control treatment steps if an action level for lead or copper is exceeded applies to a small or medium water system that has optimized corrosion control treatment under subsection (B)(1) and that subsequently exceeds an action level for lead or copper.~~ A small or medium water system deemed to have optimized corrosion control under subsection (B)(1) shall implement corrosion control treatment steps if an action level for lead or copper is exceeded.

**E.** A ~~small or medium~~ large, medium, or small water system that exceeds an action level for lead or copper shall conduct source water monitoring as prescribed in R18-4-314.

~~**F.** A small or medium water system that exceeds the action level for lead after implementation of corrosion control treatment or source water treatment shall comply with the lead service line replacement requirements prescribed in R18-4-315.~~

~~**G.**~~**F.** A ~~small or medium~~ large, medium, or small water system that exceeds the action level for lead shall comply with the public education requirements for lead prescribed in R18-4-316.

**G.** A large, medium, or small water system that exceeds the action level for lead after implementation of applicable corrosion control treatment and source water treatment requirements shall comply with the lead service line replacement requirements prescribed in R18-4-315.

**R18-4-308. Lead and Copper Action Levels**

**A.** The action level for lead is 0.015 mg/L. The action level for lead is exceeded if the concentration of lead in more than 10% of the tap water samples collected during any monitoring period [~~i.e.,~~ that is, the 90th percentile] is greater than 0.015 mg/L.

**B.** The action level for copper is 1.3 mg/L. The action level for copper is exceeded if the concentration ~~on~~ of copper in more than 10% of the tap water samples collected during any monitoring period [~~i.e.,~~ that is, the 90th percentile] is greater than 1.3 mg/L.

**C.** The 90th percentile lead and copper levels shall be computed as follows:

1. The results of all lead or copper samples taken during a monitoring period shall be placed in ascending order from the sample with the lowest concentration to the sample with the highest concentration. Each sampling result shall be assigned a number, ascending by single integers beginning with the number 1 for the sample with the lowest contaminant level. The number assigned to the sample with the highest contaminant level shall be equal to the total number of samples taken.
2. The number of samples taken during the monitoring period shall be multiplied by 0.9.
3. The contaminant concentration in the numbered sample yielded by the calculation in subsection (C)(2) ~~above~~ is the 90th percentile contaminant level.
4. For a small water ~~systems serving~~ system that serves fewer than 100 people that collect ~~5~~ five samples per monitoring period, the 90th percentile is computed by taking the average of the highest and ~~2nd~~ second highest concentrations.
5. ~~All lead and copper levels measured between the practical quantitation level and the method detection level shall be either reported as measured or they may be reported as 1/2 the practical quantitation level specified for lead or copper. All levels below the method detection levels for lead and copper shall be reported as zero. The practical quantitation level for lead is 0.005 mg/L. The practical quantitation level for copper is 0.050 mg/L.~~

**R18-4-309. Lead and Copper; Targeted Sampling Sites and Materials Survey**

**A.** ~~Each large, medium and small~~ A public water system shall collect tap water samples for lead and copper at locations that meet the following targeting criteria:

1. ~~Each community water system [CWS]~~ A CWS shall collect the required number of tap water samples from Tier 1 sampling sites. If a sufficient number of Tier 1 sampling sites do not exist or are inaccessible, then a CWS shall collect the remaining number of tap water samples from Tier 2 sampling sites. If a sufficient number of Tier 2 sampling sites do not exist or are inaccessible, then a CWS shall collect the remaining number of samples from Tier 3 sampling sites. A CWS with insufficient Tier 1, Tier 2, and Tier 3 sampling sites shall complete its sampling pool with representative sites throughout the distribution system.
   a. Tier 1 sampling sites are single-family structures that ~~contain lead pipes or copper pipes with lead solder that were installed after 1982 or which are served by lead service lines.~~ meet any of the following requirements:
      i. Contain lead pipes,
      ii. Contain copper pipes with lead solder that were installed after 1982, or
      iii. Are served by a lead service line.
   b. When multiple-family residences comprise at least 20 percent of the structures served by a public water system, the public water system may include these types of structures in its sampling pool.
   ~~b.~~c. Tier 2 sampling sites are buildings and multiple-family residences that ~~contain lead pipes, or copper pipes with lead solder that were installed after 1982 or which are served by lead service lines.~~ meet any of the following requirements:
      i. Contain lead pipes,
      ii. Contain copper pipes with lead solder that were installed after 1982, or
      iii. Are served by a lead service line.
   ~~c.~~d. Tier 3 sampling sites are single-family structures that contain copper pipes with lead solder that were installed before 1983.
   e. For this subsection, a representative site is a site in which the plumbing materials used at that site would be commonly found at other sites served by the CWS.
2. ~~Each nontransient, noncommunity water system [NTNCWS]~~ A NTNCWS shall collect the required number of tap water samples from Tier 1 sampling sites. If a sufficient number of Tier 1 sampling sites do not exist or are inaccessible, then a NTNCWS shall collect the remaining number of tap water samples from Tier 2 sampling sites. A NTNCWS with insufficient Tier 1 and Tier 2 sampling sites shall complete its sampling pool with representative sites throughout the distribution system.
   a. Tier 1 sampling sites are buildings that ~~contain copper pipes with lead solder installed after 1982 or which are served by lead service lines.~~ meet any of the following requirements:
      i. Contain lead pipes,
      ii. Contain copper pipes with lead solder that were installed after 1982, or
      iii. Are served by lead service lines.
   b. Tier 2 sampling sites are buildings that contain copper pipes with lead solder installed before 1983.
   c. For this subsection, a representative site is a site in which the plumbing materials used at that site would be commonly found at other sites served by the NTNCWS.
3. ~~Sampling sites~~ A sampling site shall not include faucets that have point-of-entry or point-of-use treatment devices designed to remove inorganic contaminants.
4. ~~Any~~ A CWS or NTNCWS ~~whose~~ that has a distribution system that contains lead service lines shall draw ~~50% of its tap water samples from taps that are served by a lead service line.~~ 50% of the tap water samples it collects during each monitoring period from sites that contain lead pipes, or copper pipes with lead solder, and 50% of the tap water samples from sites served by a lead service line. A ~~system which~~ CWS or NTNCWS that ~~does not have~~ cannot identify a sufficient number of taps ~~that are~~ served by lead service lines to comply with the 50% requirement prescribed in this subsection shall collect first-draw tap water samples from all ~~of the~~ sites in the system that have been identified as being served by lead service lines.

**B.** ~~Each large, medium, and small~~ A public water system shall complete a materials survey of its distribution system to identify a pool of sampling sites ~~which~~ that is sufficiently large to ensure that the public water system can collect the required number of tap water samples prescribed in R18-4-310(C). ~~All sites~~ Each site from which a first-draw ~~samples are~~ sample is collected shall be selected from the pool of sampling sites.

1. ~~Each large, medium, and small~~ A public water system shall use the information on lead, copper, and galvanized steel that it is required to ~~collect under R18-4-403 [Special monitoring for water corrosivity characteristics]~~ identify in subsection (B)(2) when conducting a materials survey. When an evaluation of the information collected ~~pursuant to R18-4-403~~ under subsection (B)(2) is insufficient to locate the requisite number of sampling sites that meet the targeting criteria prescribed in subsection (A) ~~above~~, the public water system shall review the sources of information listed below in order to identify a sufficient number of sampling sites. In addition, the public water system shall seek to collect such information where possible in the course of its normal operations (~~e.g.,~~ for example, checking service line materials when reading water meters or performing maintenance activities):

a. All plumbing codes, permits, and records in the files of the local, county, state, or federal building departments which indicate the plumbing materials that are installed within publicly and privately owned structures connected to the distribution system;
b. All inspections and records of the distribution system that indicate the material composition of the service connections that connect a structure to the distribution system; and
c. All existing water quality information, ~~which~~ that includes the results of all prior analyses of the public water system or individual structures connected to the public water system, indicating locations that may be particularly susceptible to high lead or copper concentrations.

~~2. Any large, medium, or small water system whose sampling pool does not consist exclusively of Tier 1 sampling sites shall submit a written explanation to the Department which explains why the materials survey conducted by the system was inadequate to locate a sufficient number of Tier 1 sites. Any system which includes Tier 2 sampling sites in its sampling pool shall explain why it was unable to locate a sufficient number of Tier 1 sampling sites. Any community water system [CWS] which includes Tier 3 sampling sites in its sampling pool shall explain why it was unable to locate a sufficient number of Tier 1 and Tier 2 sampling sites. The written explanation shall be submitted on a form that is approved by the Department.~~

~~3. Any large, medium, or small water system that cannot identify a sufficient number of sampling sites served by a lead service line in its materials survey shall submit a written explanation to the Department which explains why the system was unable to locate a sufficient number of such sites. The written explanation shall be submitted on a form that is approved by the Department.~~

2. A public water system shall identify whether any of the following construction materials are present in its distribution system when conducting a materials survey:
   a. Lead from piping, solder, caulking, interior lining of distribution mains, alloys and home plumbing;
   b. Copper from piping and alloys, service lines and home plumbing;
   c. Galvanized piping, service lines and home plumbing;
   d. Ferrous piping materials, such as cast iron and steel;
   e. Asbestos cement pipes;
   f. Vinyl lined asbestos cement pipe; and
   g. Coal tar-lined pipes and tanks.

**R18-4-310. Lead and Copper; Tap Water Monitoring**

**A.** ~~Each~~ A public water system shall conduct tap water monitoring for lead and copper as follows:
1. A large water system shall conduct initial tap water monitoring for lead and copper during ~~2~~ two consecutive 6-month monitoring periods.
2. A small or medium water system shall conduct initial tap water monitoring for lead and copper during ~~2~~ two consecutive 6-month monitoring periods. If a small or medium water system exceeds an action level for lead ~~and~~ or copper in a monitoring period, the small or medium water system shall implement corrosion control treatment steps as prescribed in ~~R18-4-307(A)(2-9)~~ R18-4-307(A)(2 - 10).

**B.** ~~The initial 6-month monitoring period shall begin on the following dates:~~

| ~~*System size by number of people served*~~ | ~~First 6-month monitoring period begins on:~~ |
|---|---|
| ~~> 50,000 [large water systems]~~ | ~~January 1, 1992~~ |
| ~~3,301 to 50,000 [medium water systems]~~ | ~~July 1, 1992~~ |
| ~~≤ 3,300 [small water systems]~~ | ~~July 1, 1993~~ |

A public water system shall conduct initial tap water monitoring for lead and copper in the monitoring year designated by the Department.

**C.** ~~Each~~ A public water system shall collect ~~1~~ one tap water sample for lead and copper from at least the following number of sampling sites during each monitoring period:

| *System Size ~~(by Population)~~ (Number of People Served)* | *Number of ~~Samples~~ Sites* |
|---|---|
| >100,000 | 100 |
| 10,001 to 100,000 | 60 |
| 3,301 to 10,000 | 40 |
| 501 to 3,300 | 20 |
| 101 to 500 | 10 |
| ≤100 | 5 |

**D.** All tap water samples for lead and copper~~, with the exception of lead service line samples,~~ shall be first-draw samples, with the exception of lead service line samples collected under R18-4-315(D) and samples collected under subsection (D)(3).

1. A first-draw tap water sample for lead and copper shall be 1 liter in volume and shall have stood motionless in the plumbing system of each sampling site for at least ~~6~~ six hours. A first-draw sample may be collected by the public water system or it may allow a resident to collect a first-draw sample after providing instructions to the resident on proper sampling procedures. To avoid problems of residents handling nitric acid, acidification of first-draw samples may be done up to14 days after the sample is collected. After acidification to resolubilize the metals, the sample must stand in the original container for the time specified in the method approved by EPA and ADHS before the sample can be analyzed. If a public water system allows residents to perform sampling, the public water system may not challenge the accuracy of the sampling results based on alleged errors in sample collection.
   a. A first-draw sample from residential housing shall be collected from the cold-water kitchen tap or bathroom sink tap.
   b. A first-draw sample from a non-residential building shall be collected at an interior tap from which water is typically drawn for consumption. ~~A first-draw sample may be collected by the water supplier or the water supplier may allow a resident to collect a first-draw sample after providing instructions to the resident on proper sampling procedures. If a water supplier allows residents to perform sampling, the system may not challenge the accuracy of the sampling results based on alleged errors in sample collection.~~

~~2. Each lead service line sample shall be 1 liter in volume and shall have stood motionless in the lead service line for at least 6 hours. Lead service line samples shall be collected in 1 of the following ways:~~
   ~~a. At a tap after flushing the volume of water between the tap and the lead service line. The volume of water that is flushed shall be calculated based on the interior diameter and length of the pipe between the tap and the lead service line;~~
   ~~b. Tapping directly into the lead service line; or~~
   ~~c. If the sampling site is a building constructed as a single-family residence, allowing the water to run until there is a significant change in temperature which would be indicative of water that has been standing in the lead service line.~~

~~3~~2. A public water system shall collect each first-draw tap water sample in subsequent monitoring periods from the same sampling site it collected a previous sample. If a public water system cannot gain entry to a sampling site in order to collect a follow-up tap water sample, the public water system may collect the follow-up tap water sample from another sampling site in its sampling pool as long as the new site meets the same targeting criteria and is within reasonable proximity of the original sampling site.

3. A NTNCWS, or a CWS that meets the criteria of R18-4-316(H)(1) and (2), and that does not have enough taps that can supply first-draw samples as defined in subsection (D)(1), may use non-first-draw samples. The NTNCWS or CWS shall collect as many first-draw samples from appropriate taps as possible and identify sampling times and locations that would likely result in the longest standing time for the remaining sites. The NTNCWS or CWS shall report the information required under R18-4-104(E)(3) to the Department. Non-first-draw samples collected in place of first-draw samples shall be 1 liter in volume and shall be collected at an interior tap from which water is typically drawn for consumption.

**E.** A public water system deemed to have optimized corrosion control under R18-4-307(B)(3) shall continue tap water monitoring for lead and copper no less frequently than once every three years. The public water system shall use the reduced number of sites and follow the sampling requirements listed under subsection (I).

~~E~~**F.** A small or medium water system that does not exceed an action level for lead ~~or~~ and copper in the initial 6-month monitoring period shall continue tap water monitoring for a consecutive 6-month monitoring period. If the small or medium water system does not exceed the action level for lead and copper in ~~2~~ two consecutive 6-month monitoring periods the small or medium water system may ~~make a written request to the Department to~~ reduce the frequency of tap water monitoring to once per year. ~~The small or medium water system also may request a reduction in the number of samples taken as prescribed in subsection (E)(1).~~ The small or medium water system that conducts reduced monitoring shall use the reduced number of sites and follow the sampling requirements listed under subsection (I).

~~1. A small or medium water system conducting reduced monitoring shall collect the following number of samples per year:~~

| ~~*System size (Number of persons served)*~~ | ~~*Number of samples*~~ |
|---|---|
| ~~10,001 - 50,000~~ | ~~30~~ |
| ~~3,301 - 10,000~~ | ~~20~~ |
| ~~501 - 3,300~~ | ~~10~~ |
| ~~101 - 500~~ | ~~5~~ |
| ~~≤100~~ | ~~5~~ |

~~2. A small or medium water system that does not exceed the action levels for lead and copper for 3 consecutive years of monitoring may submit a written request to the Department to further reduce the frequency of tap water monitoring for lead and copper to once every 3 years. A small or medium water system that samples annually or less frequently shall conduct tap water monitoring for lead and copper during the months of June, July, August, or September in the same calendar year.~~

~~3. A small or medium water system that reduces the frequency of monitoring and the number of samples taken shall collect samples from sites included in the pool of targeted sampling sites.~~

~~4. If a small or medium water system that is subject to reduced monitoring exceeds an action level for lead or copper, the system shall resume tap water monitoring at the frequency specified in subsection (A) and collect the number of samples specified in subsection (C).~~

**G.** A small or medium water system that does not exceed the action level for lead and copper for three consecutive years of monitoring may further reduce the frequency of tap water monitoring for lead and copper to once every three years. The small or medium water system that conducts reduced monitoring shall use the reduced number of sites and follow the sampling requirements listed under subsection (I).

**H.** A small or medium water system that demonstrates for two consecutive 6-month monitoring periods that the tap water lead level computed under R18-4-308 is less than or equal to 0.005 mg/L and the tap water copper level computed under R18-4-308 is less than or equal to 0.65 mg/L may reduce the frequency of tap water monitoring for lead and copper to once every three years. The small or medium water system that conducts reduced monitoring shall use the reduced number of sites and follow the sampling requirements listed under subsection (I).

**I.** A public water system that samples annually or less frequently shall conduct tap water monitoring for lead and copper during the months of June, July, August, or September in the same calendar year, unless the Department has approved a different sampling period that is no longer than four consecutive months and represents a time of normal operation when the highest levels of lead are most likely to occur. For a NTNCWS that does not operate during June through September, and for which the period of normal operation when the highest levels of lead are most likely to occur is not known, the Department shall designate a period that represents a time of normal operation for the NTNCWS. A reduced monitoring site shall be representative of the sites required for standard monitoring identified in R18-4-309. The Department may specify sampling locations when a public water system is conducting reduced monitoring. A public water system that conducts reduced monitoring shall collect at least one sample from the following number of sites:

| *System Size (Number of People Served)* | *Number of Sites* |
|---|---|
| >100,000 | 50 |
| 10,001 - 100,000 | 30 |
| 3,301 - 10,000 | 20 |
| 501 - 3,300 | 10 |
| 101 - 500 | 5 |
| ≤ 100 | 5 |

**J.** A small or medium water system conducting reduced tap water monitoring that exceeds an action level for lead or copper shall resume tap water monitoring at the frequency specified in subsection (A) and collect the number of samples specified in subsection (C). After it has completed two subsequent consecutive 6-month rounds of monitoring that meet the criteria in subsection (F), the small or medium water system may resume annual tap water monitoring for lead and copper at the reduced number of sites specified in subsection (I). The small or medium water system may resume triennial monitoring for lead and copper at the reduced number of sites after it demonstrates through subsequent rounds of monitoring that it meets the criteria of either subsection (G) or (H).

**K.** The Department may require a small or medium water system that conducts reduced tap water monitoring that adds a new source of water or changes any water treatment to resume sampling at the frequency specified in subsection (A) and collect the number of samples specified in subsection (C).

~~F~~**L.** The Department and the public water system shall consider the results of tap water monitoring for lead and copper conducted by the public water system in addition to the minimum requirements of this Section in making any ~~treatment technique~~ determinations required by this Article, including calculating the 90th percentile lead and copper levels, treatment technique determination requirements, source water monitoring requirements, lead service line replacement requirements, and lead public education requirements.

~~G~~**M.** A small or medium water system that exceeds an action level for lead or copper shall comply with the following:

1. Water quality parameter monitoring requirements prescribed at R18-4-311.
2. Source water monitoring requirements prescribed at R18-4-314.
3. Lead public education requirements prescribed at R18-4-316 if the small or medium water system exceeds the action level for lead.

~~H~~**N.** A large water system that exceeds an action level for lead or copper shall comply with the following:

1. Source water monitoring requirements prescribed at R18-4-314.
2. Lead public education requirements prescribed in R18-4-316 if the large water system exceeds the action level for lead.
3. Lead service line replacement requirements prescribed in R18-4-315 if the large water system exceeds the action level for lead after installation of either corrosion control treatment ~~and~~ or source water treatment, or both.

~~I~~**O.** A public water system that exceeds the action level for lead shall offer to sample the tap water of any customer who requests it. The public water system is not required to pay for the collection or analysis of the sample, nor is the public water system required to collect and analyze the sample itself. Any sample that is collected pursuant to this subsection shall not be used for purposes of determining compliance.

**P.** A sample invalidated under this subsection does not count toward determining a lead or copper 90th percentile level under R18-4-308(C) or toward meeting the minimum monitoring requirements under subsections (C), (I), and R18-4-313(S).

1. The Department may invalidate a lead or copper tap water sample if at least one of the following conditions is met:
   a. The laboratory establishes that improper sample analysis caused erroneous results;
   b. The Department determines that the sample was taken from a site that did not meet the site selection criteria of R18-4-309;
   c. The sample container was damaged in transit; or
   d. There is substantial reason to believe that the sample was subject to tampering.
2. The public water system shall report the results of all samples to the Department and all supporting documentation for samples the public water system believes should be invalidated.
3. The Department shall document in writing a decision to invalidate a sample and the rationale for the decision. The Department shall not invalidate a sample solely because a follow-up sample result is higher or lower than that of the original sample.
4. If after the invalidation of one or more samples, the public water system has too few samples to meet the minimum requirements of subsections (C), (I), and R18-4-313(S), the public water system shall collect replacement samples for any samples invalidated under this subsection. A replacement sample shall be taken as soon as possible, but not later than 20 days after the date the Department invalidates the sample or by the end of the applicable monitoring period, whichever occurs later. A replacement sample taken after the end of the applicable monitoring period shall not also be used to meet the monitoring requirements of a subsequent monitoring period. The replacement sample shall be taken at the same locations as the invalidated samples or, if that is not possible, at a location other than those already used for sampling during the monitoring period.

**Q.** A small water system that meets the criteria of this subsection may apply to the Department before the beginning of a monitoring period specified in this Section, to reduce the frequency of tap water monitoring for lead and copper under this Section to once every nine years (that is, a "full waiver") if it meets all the materials criteria specified in subsection (Q)(1) and all the monitoring criteria in subsection (Q)(2). A small water system that meets the criteria in subsection (Q)(1) and (2) only for lead, or only for copper, may apply to the Department for a waiver to reduce the frequency of tap water monitoring to once every nine years for that one contaminant (that is, a "partial waiver").

1. The small water system shall demonstrate that its distribution system and service lines and all drinking water supply plumbing, including plumbing conveying drinking water within all residences and buildings connected to the small water system, are free of either lead-containing materials or copper-containing materials, or both, as follows:
   a. To qualify for a full waiver, or a waiver of the tap water monitoring requirements for lead (that is, a "lead waiver"), the small water system shall provide certification and supporting documentation to the Department that the small water system contains no plastic pipes that have lead plasticizers, or plastic service lines that contain lead plasticizers, and it is free of lead service lines, lead pipes, lead soldered pipe joints, and leaded brass or bronze alloy fittings and fixtures, unless the fittings and fixtures meet the specifications of ANSI/NSF Standard 61, Section 9.
   b. To qualify for a full waiver, or a waiver of the tap water monitoring requirements for copper (that is, a "copper waiver"), the small water system shall provide certification and supporting documentation to the Department that the small water system contains no copper pipes or copper service lines.
2. The small water system must have completed at least one 6-month round of standard tap water monitoring for lead and copper at sites approved by the Department pursuant to R18-4-309 and from the number of sites required by subsection (C). The small water system must demonstrate that the 90th percentile levels for all rounds of monitoring conducted since the small water system became free of all lead-containing or copper-containing materials, or both as appropriate, meet the following criteria.
   a. Lead levels. To qualify for a full waiver, or a lead waiver, the small water system shall demonstrate that the 90th percentile lead level does not exceed 0.005 mg/L.
   b. Copper levels. To qualify for a full waiver, or a copper waiver, the small water system shall demonstrate that the 90th percentile copper level does not exceed 0.65 mg/L.
3. The Department shall notify the small water system of the waiver determination in writing, setting forth the basis of the decision and any condition of the waiver. As a condition of the waiver, the Department may require the small water system to perform specific activities (for example, limited monitoring, periodic outreach to customers to remind them to avoid installation of materials that might void the waiver) to avoid the risk of elevated concentrations of lead or copper in tap water. The small water system shall continue tap water monitoring for lead and copper as required by subsections (A) through (K) as appropriate, until it receives written notification from the Department that the waiver has been approved.
4. A small water system with a full waiver shall conduct tap water monitoring for lead and copper in accordance with subsection (I) at least once every nine years, and provide the materials certification specified in subsection (Q)(1) for both lead and copper to the Department along with the monitoring results.
5. A small water system with a partial waiver shall conduct tap water monitoring for the waived contaminant in accordance with subsection (I) at least once every nine years and provide the materials certification specified in subsection (Q)(1) pertaining to the waived contaminant along with the monitoring results. The small water system shall also continue to monitor for the contaminant that has not been waived under subsections (A) through (K), as appropriate.
6. If a small water system with a full or partial waiver adds a new source of water or changes any water treatment, the Department may require the small water system to add or modify waiver conditions (for example, require recertification that the small water system is free of either lead-containing or copper-containing materials, or both, require additional round(s) of monitoring) if it deems such modifications are necessary to address treatment or source water changes at the small water system.
7. A small water system with a full or partial waiver that becomes aware that it is no longer free of lead-containing or copper-containing materials, (for example, as a result of new construction or repairs), shall notify the Department in writing not later than 60 days after becoming aware of the change. The small water system shall set forth the circumstances resulting in the lead-containing or copper-containing materials being introduced into the small water system and what corrective action, if any, the small water system plans to remove these materials.
8. If the small water system continues to satisfy the requirements of subsection (Q)(4) to (Q)(7), the waiver will be renewed automatically, unless any of the conditions listed in (a) through (c) of this subsection occur. A small water system that has had its waiver revoked may re-apply for a waiver at the time it again meets the appropriate materials and monitoring criteria of subsection (Q)(1) and (2).
   a. A small water system no longer satisfies the materials criteria of subsection (Q)(1)(a) or has a 90th percentile lead level greater than 0.005 mg/L.
   b. A small water system no longer satisfies the materials criteria of (Q)(1)(b) or has a 90th percentile copper level greater than 0.65 mg/L.
   c. The Department notifies the small water system, in writing, that the waiver has been revoked, setting forth the basis of its decision.
9. A small water system who has had its full or partial waiver revoked by the Department is subject to the corrosion control treatment and lead and copper tap water monitoring requirements, as follows:

a. If the small water system exceeds either the lead or copper action level, the small water system shall implement corrosion control treatment under the deadlines specified in R18-4-307(A), and any other applicable requirements of Sections R18-4-306 through R18-4-316.
b. If the small water system meets both the lead and the copper action level, the small water system must monitor for lead and copper at the tap no less frequently than once every three years. The small water system shall use the reduced number of sites and follow the sampling requirements listed under subsection (I).

**R18-4-311. Lead and Copper; Water Quality Parameter Monitoring**

**A.** A large water system shall monitor for water quality parameters. A small or medium water system shall monitor for water quality parameters only if the small or medium water system exceeds an action level for lead or copper. Water quality parameter monitoring includes both tap water monitoring and source water monitoring.

**B.** A public water system that monitors for water quality parameters shall collect samples for the following parameters:
1. pH (at the time of sample collection),
2. Alkalinity,
3. Calcium,
4. Conductivity,
5. Water temperature (at the time of sample collection),
6. Orthophosphate (when a phosphate-based corrosion inhibitor is used), and
7. Silica (when a silicate-based corrosion inhibitor is used).

**C.** The ~~water supplier~~ public water system shall take tap water samples for water quality parameters at sampling sites that are representative of water quality throughout the distribution system, taking into account the number of persons served, the different sources of water, the different treatment methods employed by the public water system, and seasonal variability. The ~~water supplier~~ public water system may take tap water samples for water quality parameters at the same locations as tap water samples for lead and copper or at the same sampling sites used for total coliform sampling. The ~~water supplier~~ public water system shall take source water samples for water quality parameters at sampling points as prescribed in R18-4-218(A) through (C).

**D.** ~~Each~~ A public water system that monitors for water quality parameters shall collect ~~2~~ two tap water samples during each 6-month monitoring period from the following number of taps:

| *System Size (Number of People Served)* | *Number of Sites for Water Quality Parameters* |
|---|---|
| > 100,000 | 25 |
| 10,001-100,000 | 10 |
| 3,301 to 10,000 | 3 |
| 501 to 3,300 | 2 |
| 101 to 500 | 1 |
| ≤100 | 1 |

**E.** ~~Each~~ A public water system that monitors for water quality parameters shall collect ~~2~~ two source water samples at each sampling point as prescribed in R18-4-218(A) through (C) during each 6-month monitoring period.

**F.** ~~Each~~ A large water system shall monitor for water quality parameters at taps and at each sampling point for ~~2~~ two consecutive 6-month monitoring periods. A small or ~~medium-size~~ medium water system shall monitor for water quality parameters only if the small or medium water system exceeds an action level for lead or copper. A small or medium water system shall complete tap water and source water monitoring for water quality parameters in the same monitoring period that the small or medium water system exceeds an action level for lead or copper.

**G.** A small or medium water system that exceeds an action level for lead or copper shall recommend installation of ~~1~~ one or more of the corrosion control treatments listed in this subsection that the small or medium water system believes constitutes optimal corrosion control. ~~Each~~ The small or medium water system shall make a recommendation on an optimal corrosion control treatment to the Department within ~~6~~ six months after ~~the monitoring period that~~ the action level was exceeded. The Department may require that a small or medium water system conduct additional monitoring for water quality parameters to assist the Department's review of the system's recommendation on optimal corrosion control treatment. Optimal corrosion control treatments include:
1. Alkalinity and pH adjustment,
2. Calcium hardness adjustment, and

3. The addition of a phosphate or silicate-based corrosion inhibitor at a concentration sufficient to maintain an effective residual concentration in all test tap samples.

**H.** The Department shall, in writing, either approve the optimal corrosion control treatment recommended by ~~the~~ a small or medium water system, designate a different optimal corrosion control treatment from among those listed in subsection (G) for the small or medium water system, or require that the small or medium water system conduct a corrosion control study to identify the optimal corrosion control treatment for the system. If the Department makes the determination that a corrosion control study is not necessary, the Department shall designate the optimal corrosion control treatment for the system within the following time-frames:

1. For medium water systems, within 18 months after the medium water system exceeds the lead or copper action level, or
2. For small water systems, within 24 months after the small water system exceeds the lead or copper action level.

**I.** The Department and the public water system shall consider the results of any monitoring for water quality parameters conducted by a public water system in addition to the minimum requirements prescribed in this Section and Section R18-4-313 in making a recommendation regarding optimal corrosion control treatment, performance of a corrosion control study, designation of optimal corrosion control treatment or water quality parameters for optimal corrosion control, ~~or~~ modification of an optimal corrosion control treatment decision, or reduced monitoring for lead and copper at the tap or for water quality parameters.

**R18-4-312. Lead and Copper; Corrosion Control Studies**

**A.** ~~Each~~ A large water system shall complete a corrosion control study ~~by July 1, 1994~~ within 18 months of the date that it completed initial tap water monitoring for lead and copper under R18-4-310(A)(1), unless the Department determines that the large water system has optimized corrosion control under ~~R18-4-306(B)~~ R18-4-307(B). The Department may require that a small or medium water system ~~which~~ that exceeds an action level for lead or copper perform a corrosion control study to identify the optimal corrosion control treatment for the small or medium water system. The Department's decision to require a corrosion control study shall be in writing.

1. The Department shall make a determination of whether a small or medium water system is required to perform a corrosion control study within ~~1~~ one year after ~~completion of the 6-month monitoring period in which~~ the small or medium water system exceeds an action level for lead or copper.
2. If the Department determines that a corrosion control study is necessary, a small or medium water system shall complete the study within 18 months of the date that the Department makes the determination that a study is necessary.

**B.** A ~~large, medium, or small~~ public water system that conducts a corrosion control study shall evaluate the effectiveness of each of the following treatments and, if appropriate, combinations of the following treatments to identify optimal corrosion control treatment for that system:

1. Alkalinity and pH adjustment,
2. Calcium hardness adjustment, and
3. The addition of a phosphate- or silicate-based corrosion inhibitor at a concentration sufficient to maintain an effective residual concentration in all test tap samples.

**C.** A ~~large, medium, or small~~ public water system shall evaluate each of the corrosion control treatments listed in subsection (B) using any of the following:

1. Pipe rig/loop tests;
2. Metal coupon tests;
3. Partial-system tests; or
4. Analyses based on documented analogous treatments with other systems of similar size, water chemistry, and distribution system configuration~~; or.~~
5. ~~Equivalent tests that are approved in writing by the Department.~~

**D.** A ~~large, medium, or small~~ public water system shall measure the following water quality parameters in any tests conducted under subsection (C) before and after evaluating the corrosion control treatments listed in subsection (B) ~~above~~:

1. Lead,
2. Copper,
3. pH (at the time of sample collection),
4. Alkalinity,
5. Calcium,
6. Conductivity,
7. Water temperature (at the time of sample collection),
8. Orthophosphate (when an inhibitor containing a phosphate compound is used),
9. Silicate (when an inhibitor containing a silicate compound is used).

**E.** A ~~large, medium, or small~~ public water system shall identify all chemical or physical constraints that limit or prohibit the use of a particular corrosion control treatment and document such constraints with at least ~~1~~ one of the following:

1. Data and documentation showing that a particular corrosion control treatment has adversely affected other water treatment processes when used by another public water system with comparable water quality characteristics, or
2. Data and documentation demonstrating that the public water system has previously attempted to evaluate a particular corrosion control treatment and has found that the treatment is ineffective or adversely affects other water quality treatment processes.

**F.** A ~~large, medium, or small~~ public water system shall evaluate the effect of the chemicals used for corrosion control treatment on other water quality treatment processes.

**G.** On the basis of an analysis of the data generated during the corrosion control study, a public water system shall recommend to the Department, in writing, the optimal corrosion control treatment for the public water system. The public water system shall provide a rationale for its recommendation along with all supporting documentation required by this Section. If a small or medium water system completes a corrosion control study, the Department shall designate the optimal corrosion control treatment for that system within ~~6~~ six months of the completion of the study. A small or medium water system shall install optimal corrosion control treatment within 24 months after the Department designates such treatment for the system.

**R18-4-313. Lead and Copper; Corrosion Control Treatment**

**A.** Based upon consideration of available information including, where applicable, a corrosion control study and the system recommendation regarding optimal corrosion control treatment, the Department shall, in writing, either approve the corrosion control treatment recommended by a ~~large, medium, or small~~ public water system or designate an alternative corrosion control treatment or treatments from among those listed in R18-4-312(B). When designating optimal corrosion control treatment, the Department shall consider the effects that additional corrosion control treatment will have on water quality parameters and on other water quality treatment processes. The Department shall provide written notice to a large, medium or small water system of its decision on optimal corrosion control treatment and explain the basis for its decision on optimal corrosion control treatment. If the Department requests additional information to aid its review, a ~~large, medium, or small~~ public water system shall provide the information.

**B.** ~~Each large water system shall properly install and operate the optimal corrosion control treatment designated by the Department by January 1, 1997.~~ ~~Each~~ A ~~medium or small~~ public water system shall properly install and operate throughout its distribution system the optimal corrosion control treatment within 24 months of the date that the Department designates such treatment for the public water system pursuant to subsection (A) ~~above~~.

**C.** ~~By January 1, 1998, each large water system that installs corrosion control treatment shall complete follow-up tap water monitoring for lead and copper and for water quality parameters in 2 consecutive 6-month monitoring periods~~. Each ~~small or medium~~ public water system that installs corrosion control treatment shall ~~conduct~~ follow-up with tap water monitoring for lead and copper as specified in R18-4-310(C) and monitor for water quality parameters as specified in subsections (D), (E), and (F) during ~~2~~ two consecutive 6-month monitoring periods within 36 months of the date that the Department designates optimal corrosion control treatment for the public water system. A small or medium water system shall only conduct monitoring for water quality parameters during each 6-month monitoring period in which the small or medium water system exceeds the lead or copper action level.

**D.** ~~Each large, medium, and small~~ A public water system that installs corrosion control treatment shall conduct follow-up tap water monitoring for water quality parameters at the number of sites prescribed in R18-4-311(D) in each 6-month monitoring period. ~~Each~~ A public water system shall collect at least ~~2~~ two tap water samples at each site for the following water quality parameters:

1. pH (at the time of sample collection);
2. Alkalinity;
3. Orthophosphate, when an inhibitor containing a phosphate compound is used;
4. Silica, when an inhibitor containing a silicate compound is used;
5. Calcium, when calcium carbonate stabilization is used as part of corrosion control.

**E.** ~~Each large, medium, and small~~ A public water system that installs corrosion control treatment shall conduct follow-up source water monitoring at each sampling point as prescribed in R18-4-218(A) through (C) in each 6-month monitoring period. ~~Each system shall take 1 sample every 2 weeks~~ A public water system shall take at least one sample no less frequently than every two weeks (biweekly) at each sampling point for the following water quality parameters:

1. pH (at the time of sample collection);
2. When alkalinity is adjusted as part of optimal corrosion control, a reading of the dosage rate of the chemical used to adjust alkalinity, and the alkalinity concentration; and
3. When a corrosion inhibitor is used as part of optimal corrosion control, a reading of the dosage rate of the inhibitor used, and the concentration of orthophosphate or silica (whichever is applicable).

**F.** A groundwater system may limit monitoring for water quality parameters described in subsection (E) only to those sampling points prescribed in R18-4-218(A) through (C) that represent water quality and treatment conditions throughout the groundwater system. If water from an untreated groundwater source mixes with water from a treated groundwater source, the groundwater system shall monitor for water quality parameters both at representative sampling points receiving treatment and representative sampling points receiving no treatment. Prior to the groundwater system starting any limited monitoring under this subsection, the groundwater system shall provide the Department written information identifying the selected representative sampling points and documentation, including information on seasonal variability, sufficient to demonstrate that the selected sites are representative of water quality and treatment conditions throughout the groundwater system.

**~~F~~G.** The Department shall evaluate the results of follow-up monitoring for lead and copper and for water quality parameters to determine whether the public water system has properly installed and operated the optimal corrosion control treatment as designated by the Department. After reviewing the results of all tap water monitoring for lead and copper and of monitoring for water quality parameters, by the public water system, both before and after a public water system installs optimal corrosion control treatment, the Department shall designate water quality parameters for the public water system ~~which~~ that reflect optimal corrosion control treatment. The Department shall notify the public water system in writing of its determination of water quality parameters for optimal corrosion control treatment and shall explain the basis for its decision. The Department shall designate water quality parameters ~~which~~ that reflect optimal corrosion control within ~~6~~ six months of completion of follow-up monitoring. The Department shall designate, at a minimum, the following water quality parameters:

1. A minimum value or a range of values for pH measured at each ~~entry~~ point-of-entry ~~to~~ into the distribution system;
2. A minimum pH value, measured in all tap samples. Such value shall be equal to or greater than 7.0, unless the Department determines that meeting a pH level of 7.0 is not technologically feasible or is not necessary for the public water system to optimize corrosion control;
3. If a corrosion inhibitor is used, a minimum concentration or a range of concentrations for the inhibitor, measured at each point-of-entry ~~to~~ into the distribution system and in all tap samples, that the Department determines is necessary to form a passivation film on the interior walls of the pipes of the distribution system;
4. If alkalinity is adjusted as part of optimal corrosion control treatment, a minimum concentration or a range of concentrations for alkalinity, measured at each point-of-entry ~~to~~ into the distribution system and in all tap samples;
5. If calcium carbonate stabilization is used as part of corrosion control, a minimum concentration or a range of concentrations for calcium, measured in all tap samples.
6. The Department may designate values for additional water quality parameters that the Department determines reflect optimal corrosion control treatment for a public water system.

**~~G~~H.** After the Department designates a range of values for water quality parameters that reflect optimal corrosion control treatment for a public water system under subsection (G), ~~the system shall continue monitoring to determine compliance with the designated water quality parameters for a minimum of 2 consecutive 6-month monitoring periods. The 1st 6-month monitoring period shall begin on the date the Department designates water quality parameters for optimal corrosion control treatment.~~ a large water system shall monitor for water quality parameters under subsections (D), (E), and (F) and determine compliance with the requirements of subsection (I) every six months, with the first 6-month period beginning on the date the Department specifies the values for water quality parameters. A small or medium water system shall monitor for water quality parameters under subsections (D), (E), and (F) during each 6-month period specified in this subsection in which the small or medium water system exceeds the lead or copper action level. For a small or medium water system that is conducting lead and copper tap water monitoring on a reduced frequency at the time an action level is exceeded, the end of the 6-month period under this subsection shall coincide with the end of the reduced monitoring period under R18-4-310. Compliance with Department-designated optimal water quality parameter values shall be determined as specified in subsection (I).

**~~H~~I.** ~~Each large, medium, and small system that installs corrosion control treatment shall maintain water quality parameter values at or above the minimum values or within the ranges designated by the Department. If a water quality parameter value in any sample is below the minimum value or outside the range designated by the Department, then the system is out of compliance.~~

A public water system that optimizes corrosion control shall continue to operate and maintain optimal corrosion control treatment, including maintaining water quality parameters at or above minimum values or within ranges designated by the Department under subsection (G), for all samples collected under subsections (H) through (N). Compliance with the requirements of this subsection shall be determined every six months, as specified in subsection (H). A public water system is out of compliance with the requirements of this subsection for a 6-month period if it has excursions for any Department-specified parameter on more than nine days during the period. An excursion occurs whenever the daily value for one or more of the water quality parameters measured at a sampling location is below the minimum value or outside the range designated by the Department. Daily values shall be calculated as follows. The Department may delete results of obvious sampling errors from this calculation.

1. On a day when more than one measurement for the water quality parameter is collected at the sampling location, the daily value shall be the average of all results collected during the day regardless of whether they are collected through continuous monitoring, grab sampling, or a combination of both.
2. On a day when only one measurement for the water quality parameter is collected at the sampling location, the daily value shall be the result of that measurement.
3. On a day when no measurement is collected for the water quality parameter at the sampling location, the daily value shall be the daily value calculated on the most recent day on which the water quality parameter was measured at the sample site.

~~I.~~ ~~The Department may require a system to take a confirmation sample for any water quality parameter value no later than 3 days after the 1st sample. If a confirmation sample is required, then the analytical results shall be averaged with the 1st sampling result and the average must be used for any compliance determinations. The Department may delete the results of obvious sampling errors from this calculation.~~

**J.** A ~~large, medium, or small~~ public water system that maintains the range of values for ~~optimal~~ the water quality parameters reflecting optimal corrosion control treatment designated by the Department under subsection (G) during each of ~~2~~ two consecutive 6-month monitoring periods conducted under subsection (H) may ~~submit a written request to the Department to~~ reduce the number of sites from which tap water samples for water quality parameters are collected. ~~If the Department gives written approval to reduce tap water monitoring, the~~ The public water system shall collect at least two tap water samples from the following number of sites during each 6-month monitoring period:

| ~~System Size (# people served)~~ *System Size (Number of People Served)* | ~~Reduced # of Tap Samples for Water Quality Parameters~~ *Reduced Number of Sites for Water Quality Parameters* |
|---|---|
| >100,000 | 10 |
| 10,001 to 100,000 | 7 |
| 3,301 to 10,000 | 3 |
| 501 to 3,300 | 2 |
| 101 to 500 | 1 |
| ≤100 | 1 |

**K.** A ~~large, medium, or small~~ public water system that maintains the range of values for water quality parameters reflecting optimal corrosion control treatment designated by the Department under subsection (G) for ~~3~~ three consecutive years of monitoring may ~~submit a written request to the Department to~~ reduce the frequency ~~with which~~ that it collects tap water samples specified in subsection (J) for water quality parameters from every ~~6~~ six months to annually. ~~The Department's decision on reduced monitoring shall be in writing.~~ A ~~large, medium, or small~~ public water system ~~with more than 1 sampling site~~ that conducts annual monitoring shall collect tap water samples for water quality parameters so as to reflect seasonal variability. ~~A small system with 1 sampling site shall collect tap water samples for water quality parameters during June, July, August, or September.~~

**L.** A public water system that maintains the range of values for the water quality parameters reflecting optimal corrosion control treatment designated by the Department under subsection (G) during three consecutive years of annual monitoring may reduce the frequency that it collects the number of tap water samples specified in subsection (J) for water quality parameters from annually to every three years. A public water system that conducts triennial monitoring shall collect tap water samples for water quality parameters so as to reflect seasonal variability.

**M.** A large water system may reduce the frequency that it collects tap water samples specified in subsection (J) for water quality parameters to every three years if it demonstrates the following during two consecutive monitoring periods:

1. That its 90th percentile for lead in tap water is less than or equal to 0.005 mg/L;
2. That its 90th percentile for copper in tap water is less than or equal to 0.65 mg/L; and
3. That it also has maintained the range of values for the water quality parameters relecting optimal corrosion control treatment designated by the Department under subsection (G). A large water system that conducts triennial monitoring shall collect tap water samples for water quality parameters so as to reflect seasonal variability.

~~L~~**N.** A ~~large, medium, or small~~ public water system that is ~~subject to reduced monitoring frequency~~ conducting tap water monitoring for water quality parameters on an annual or triennial basis and ~~which~~ fails to operate ~~within the range of values for water quality parameters designated by the Department shall resume tap water monitoring for water quality parameters in accordance with subsection (D) of this Section.~~ at or above the minimum value or within the range of values for the water quality parameters specified by the Department under subsection (G) for more than nine days in any 6-month period specified in subsection (I) shall resume tap water monitoring for water quality parameters in the distribution system in accordance with the number and frequency requirements in subsection (H). After the public water system has completed two subsequent consecutive 6-month rounds of monitoring that meet the criteria of subsection (J), it may resume annual tap water monitoring for water quality parameters within the distribution system at the reduced number of sites specified in that subsection. The public water system may resume triennial tap water monitoring for water quality parameters at the reduced number of sites after it demonstrates through subsequent rounds of monitoring that it meets the criteria of either subsection (L) or (M).

**O.** After the Department designates a range of values for water quality parameters that reflect optimal corrosion control treatment for a public water system, a large water system shall conduct tap water monitoring for lead and copper during each subsequent 6-month monitoring period, with the first monitoring period to begin on the date the Department designates water quality parameters under subsection (G). The large water system shall collect the number of samples specified in R18-4-310(C). A small or medium water system shall continue to conduct tap water monitoring for lead and copper, during each subsequent 6-month monitoring period. The small or medium water system shall collect the number of samples specified in R18-4-310(C).

~~M~~**P.** ~~Any large, medium, or small~~ A public water system ~~which~~ that installs corrosion control treatment and ~~which~~ that maintains the range of values for water quality parameters reflecting optimal corrosion control treatment designated by the Department under subsection (G) for ~~2~~ two consecutive 6-month monitoring periods may ~~request, in writing, that the Department~~ reduce the frequency of tap water monitoring for lead and copper to once per year and reduce the number of samples taken if it receives written approval from the Department. The Department shall review monitoring, treatment, and other relevant information submitted by the public water system in accordance with R18-4-104, and shall notify the public water system in writing when it determines the public water system is eligible to begin reduced monitoring. The Department shall review, and where appropriate, revise its determination when the public water system submits new monitoring or treatment data, or when other data relevant to the number and frequency of tap water monitoring becomes available. ~~Upon written request,~~ The ~~the~~ Department may reduce the number of tap water samples taken for lead and copper as ~~follows:~~ specified in subsection (S).

~~1. System size — Number of sites~~
~~>100,000 — 50~~
~~10,001 - 100,000 — 30~~
~~3,301 - 10,000 — 20~~
~~501 - 3,300 — 10~~
~~≤500 — 5~~

~~2. Each large, medium, or small water system that requests a reduction in the frequency and number of samples taken for tap water monitoring for lead and copper shall submit the analytical results of water quality parameter testing for 2 consecutive 6-month monitoring periods which demonstrate that the system operated within the range of values for water quality parameters designated by the Department. The Department shall review the information submitted by the system and shall make its decision in writing, setting forth the basis for its determination. The Department shall review and, where appropriate, revise a determination of reduced monitoring when the system submits new monitoring or treatment data, or when other data relevant to the number and frequency of tap water monitoring becomes available.~~

~~3. Each large, medium, or small water system subject to reduced monitoring for lead and copper that fails to operate within the range of values for water quality parameters designated by the Department shall resume tap water monitoring for lead and copper in accordance with R18-4-310(D).~~

~~4. Any large, medium, or small water system that maintains the range of values for water quality parameters designated by the Department for 3 consecutive years of monitoring may submit a written request to the Department to reduce the frequency of tap monitoring for lead and copper to once every 3 years.~~

**Q.** A public water system that maintains the range of values for water quality parameters reflecting optimal corrosion control treatment designated by the Department under subsection (G) for three consecutive years of monitoring may reduce the frequency of tap water monitoring for lead and copper to once every three years if it receives written approval from the Department. The Department shall review monitoring, treatment, and other relevant information submitted by the public water system in accordance with R18-4-104, and shall notify the public water system in writing when the Department determines the public water system is eligible to reduce the frequency of monitoring to once every three years. The Department shall review, and where appropriate, revise its determination when the public water system submits new monitoring or treatment data, or when other data relevant to the number and frequency of tap water monitoring becomes avail-

able. The Department may reduce the number of tap water samples taken for lead and copper as specified in subsection (S).

**R.** A public water system that demonstrates for two consecutive 6-month monitoring periods that the tap water lead level computed under R18-4-308 is less than or equal to 0.005 mg/L and the tap water copper level computed under R18-4-308 is less than or equal to 0.65 mg/L may reduce the frequency of tap water monitoring for lead and copper to once every three years. The public water system that conducts reduced monitoring shall use the reduced number of sites and follow the sampling requirements listed under subsection (S).

**S.** A public water system that samples annually or less frequently shall conduct tap water monitoring for lead and copper during the months of June, July, August, or September in the same calendar year, unless the Department has approved a different sampling period. The different sampling period shall be no longer than four consecutive months and must represent a time of normal operation where the highest levels of lead are most likely to occur. For a NTNCWS that does not operate during the months of June through September, and for which the period of normal operation where the highest levels of lead are most likely to occur is not known, the Department shall designate a period that represents a time of normal operation for the NTNCWS. A reduced monitoring site shall be representative of the sites required for standard monitoring identified in R18-4-309. The Department may specify sampling locations when a public water system is conducting reduced monitoring. A public water system conducting reduced monitoring shall collect at least one sample from the following number of sites:

| *System Size (Number of People Served)* | *Number of Sites* |
|---|---|
| >100,000 | 50 |
| 10,001 - 100,000 | 30 |
| 3,301 - 10,000 | 20 |
| 501 - 3,300 | 10 |
| ≤ 500 | 5 |

**T.** A public water system that is conducting tap water monitoring for lead and copper on an annual or triennial basis and fails to operate at or above the minimum value or within the range of values for the water quality parameters designated by the Department under subsection (G) for more than nine days in any 6-month period specified in subsection (H) shall resume tap water monitoring for lead and copper at the frequency and number specified in subsection (O). A public water system may resume reduced tap water monitoring for lead and copper under the following conditions:

1. The public water system may resume annual tap water monitoring for lead and copper at the reduced number of sites specified in subsection (S) after it has completed two subsequent 6-month rounds of monitoring that meet the criteria of subsection (P) and the public water system has received written approval from the Department.
2. The public water system may resume triennial tap water monitoring for lead and copper at the reduced number of sites specified in subsection (S) after it demonstrates through subsequent rounds of monitoring that it meets the criteria of subsection (Q) or (R), and the public water system has received written approval from the Department.

**U.** The Department may require a public water system that conducts reduced tap water monitoring for lead and copper that adds a new source or changes any water treatment to:

1. Resume monitoring at the frequency specified in subsection (O) and collect the number of samples specified in R18-4-310(C); or
2. Increase water quality parameter monitoring.

**~~N~~V.** Upon its own initiative or in response to a request by a ~~large, medium, or small~~ public water system or other interested party, the Department may modify its determination of optimal corrosion control treatment or water quality control parameters for optimal corrosion control treatment. A request for modification shall be in writing, explain why the modification is appropriate and provide supporting documentation. The Department may modify its determination where it concludes that such change is necessary to ensure that the public water system continues to optimize corrosion control treatment. A revised determination shall be made in writing, set forth the new treatment requirements, explain the basis for the Department's decision, and provide an implementation schedule for completing the treatment modifications.

**R18-4-314. Lead and Copper; Source Water Monitoring and Treatment**

**A.** A public water system that exceeds an action level for lead or copper shall conduct source water monitoring for lead ~~or~~ and copper.

**B.** Source water monitoring for lead ~~or~~ and copper shall be conducted at sampling points as prescribed in R18-4-218(A) through (C). A public water system may composite samples in accordance with R18-4-219.

**C.** A public water system that exceeds an action level for lead or copper shall collect ~~1~~ one sample from each sampling point within ~~6~~ six months after ~~the monitoring period that~~ the action level for lead or copper was exceeded.

**D.** Within ~~6~~ six months after ~~the monitoring period that an~~ the action level for lead or copper was exceeded, the ~~water supplier~~ public water system shall make a written recommendation to the Department as to whether ~~1~~ one of the source water treatments listed in subsection (G) is necessary. The ~~water supplier~~ public water system may recommend that no source water treatment be installed if the ~~water supplier~~ public water system demonstrates that source water treatment is not necessary to minimize lead or copper levels at taps.

**E.** The Department shall evaluate the results of all source water samples submitted by a public water system to determine if source water treatment is necessary to minimize lead or copper levels in water delivered to taps. The Department shall make a written determination regarding the necessity of source water treatment within ~~6~~ six months after submission of source water monitoring results.

**F.** If the Department determines that a public water system is not required to install source water treatment, the public water system shall conduct source water monitoring at ~~1~~ one of the following frequencies:

1. A groundwater system shall collect one source water ~~samples~~ sample for lead ~~or~~ and copper at each sampling point once during each compliance period, beginning in the compliance period that the Department determines that source water treatment is unnecessary.
2. A surface water system shall collect one source water ~~samples~~ sample for lead ~~or~~ and copper at each sampling point annually. The ~~1st~~ first annual monitoring period shall begin on the date that the Department determines that source water treatment is unnecessary.

**G.** If the Department requires installation of source water treatment, a public water system shall install treatment within 24 months of the date that the Department makes a determination that source water treatment is necessary. A public water system shall properly install and operate the source water treatment that is approved or designated by the Department. The Department shall either require installation and operation of the source water treatment recommended by the ~~water supplier~~ public water system or require the installation and operation of another source water treatment from among the following:

1. Ion exchange,
2. Reverse osmosis,
3. Lime softening, or
4. Coagulation and filtration.

**H.** The Department may request additional information from a public water system to aid in its source water treatment determination. If the Department requests additional information, a ~~water supplier~~ public water system shall provide the information by the date specified by the Department in its request. The Department shall notify a public water system, in writing, of its source water treatment determination and set forth the basis for its decision.

**I.** A public water system that installs source water treatment shall complete follow-up tap water and source water monitoring for lead and copper within 36 months of the date that the Department determines that source water treatment is necessary. A public water system shall collect an additional source water sample from each sampling point as prescribed in R18-4-218(A) through (C) during two consecutive 6-month monitoring periods. A public water system shall conduct tap water monitoring during two consecutive 6-month monitoring periods. The public water system shall collect the number of tap water samples specified in R18-4-310(C).

**J.** The Department shall review a public water system's installation and operation of source water treatment and designate maximum permissible source water levels for lead ~~or~~ and copper for water entering the distribution system within ~~6~~ six months after the completion of follow-up monitoring. The Department shall review the source water samples taken by the public water system both before and after the public water system installs source water treatment to determine if the public water system has properly installed and operated the source water treatment designated by the Department. Based upon its review, the Department shall designate the maximum permissible source water levels for lead ~~or~~ and copper that reflect the contaminant removal capability of the source water treatment when it is properly operated and maintained. The Department shall provide written notice to the public water system and explain the basis for its decision.

**K.** A public water system shall comply with the Department-designated maximum permissible source water levels for lead ~~or~~ and copper and continue source water monitoring. A public water system shall monitor at the frequency specified below if the Department designates maximum permissible source water levels:

1. A groundwater system shall collect ~~1~~ one sample from each sampling point once during each compliance period, beginning in the compliance period that the Department designates maximum permissible source water levels for lead ~~or~~ and copper.
2. A surface water system shall collect ~~1~~ one sample annually from each sampling point. The ~~1st~~ first monitoring period shall begin on the date that the Department specifies maximum permissible source water levels for lead ~~or~~ and copper.

**L.** A public water system shall maintain lead ~~or~~ and copper levels below the maximum permissible source water levels designated by the Department at each sampling point. A public water system is out of compliance if the level of lead or copper at any sampling point is greater than the maximum permissible source water level designated by the Department.

**M.** A public water system is not required to conduct additional source water monitoring for lead or copper if ~~the system does~~ tap water samples do not exceed the action level for ~~lead or copper~~ that specific contaminant during the entire source water sampling period applicable to the public water system under subsections (F)(1) or (2) or (K)(1) or (2).

**N.** The Department may modify its source water treatment determination or designation of maximum permissible source water lead and copper concentrations for water entering the distribution system on its own initiative or in response to a written request by a public water system or other interested party. A request for modification by a public water system or other interested party shall be in writing, explain why the modification is appropriate, and provide supporting documentation. The Department may modify its determination if it concludes that a change is necessary to ensure that lead and copper concentrations in source water are minimized. A revised determination shall be made in writing, set forth the new treatment requirements, explain the basis for the Department's decision, and provide an implementation schedule for completing the source water treatment modifications.

**O.** If a sample exceeds a maximum permissible source water level for lead or copper, the Department may require that the ~~water supplier~~ public water system take ~~1~~ one confirmation sample at the same sampling point, as soon as possible but no later than ~~2~~ two weeks after the initial sample was taken. If a Department-required confirmation sample is taken for lead or copper, the results of the initial and confirmation sample shall be averaged to determine compliance with the maximum permissible source water level. All lead and copper levels measured between the practical quantitation level and the method detection limit shall be either reported as measured or they may be reported as 1/2 the practical quantitation level specified for lead or copper. All levels below the method detection limits for lead and copper shall be reported as zero. The practical quantitation level for lead is 0.005 mg/L. The practical quantitation level for copper is 0.050 mg/L.

**P.** The Department may reduce source water monitoring for a public water system after designation of maximum permissible source water levels as follows:

1. A groundwater system that demonstrates that water entering the distribution system has been maintained below the maximum permissible source water level for lead ~~or~~ and copper designated by the Department for ~~3~~ three consecutive compliance periods may reduce the monitoring frequency for lead ~~or~~ and copper to once during each ~~subsequent~~ compliance cycle.
2. A surface water system that demonstrates that water entering the distribution system has been maintained below the maximum permissible source water level for lead ~~or~~ and copper designated by the Department for ~~3~~ three consecutive years may reduce the monitoring frequency to once during each ~~subsequent~~ compliance cycle.
3. A public water system that uses a new source is not eligible for reduced monitoring for lead or copper until concentrations in samples collected from the new source during ~~3~~ three consecutive monitoring periods are below the maximum permissible source water levels ~~for lead or copper~~ designated by the Department for that specific contaminant.

**Q.** If the Department determines that a public water system does not need to install source water treatment, the public water system may reduce the frequency for lead and copper source water monitoring as follows:

1. If a groundwater system demonstrates that during three consecutive compliance periods in which monitoring was conducted under subsection (F) the concentration of lead in the source water is less than or equal to 0.005 mg/L and the concentration of copper in the source water is less than or equal to 0.65 mg/L, the source water monitoring frequency for lead and copper may be reduced to once during each compliance cycle.
2. If a surface water system demonstrates that during three consecutive years in which monitoring was conducted under subsection (F) the concentration of lead in the source water is less than or equal to 0.005 mg/L and the concentration of copper in the source water is less than or equal to 0.65 mg/L, the source water monitoring frequency for lead and copper may be reduced to once during each compliance cycle.

**R18-4-315. Lead and Copper; Lead Service Line Replacement**

**A.** A ~~large, medium, or small~~ public water system that fails to meet the action level for lead in tap water samples after installing either corrosion control or source water treatment, or both, (whichever sampling occurs later) shall replace lead service lines in accordance with the requirements of this Section. ~~The Department may require the system to commence lead service line replacement under this Section if a system is out of compliance for failure to install source water treatment or corrosion control treatment. The Department may require a system to implement lead service line replacement after the deadline for completion of follow-up monitoring after installation of corrosion control treatment or source water treatment. The Department's decision to require lead service line replacement shall be in writing.~~

**B.** If a public water system is out of compliance for failure to install either corrosion control treatment or source water treatment by the date the public water system is required to conduct monitoring under R18-4-313(C) or R18-4-314(I), the Department shall require the public water system to replace the lead service lines if the public water system is not making satisfactory progress towards compliance under a schedule approved by the Department. The Department's decision to require a public water system to replace the lead service lines under this subsection shall be in writing.

**~~B~~C.** A ~~large, medium, or small~~ public water system shall replace annually at least 7% of the initial number of lead service lines in its distribution system. The initial number of lead service lines is the number of lead service lines in place at the time the replacement program begins. The public water system shall identify the initial number of lead service lines in its distribution system including an identification of the portion owned by the public water system, based upon a materials sur-

vey, including the materials ~~evaluation~~ survey required under ~~R18-4-309~~ R18-4-309(B), and relevant legal authorities (for example, contracts, local ordinances) regarding the portion owned by the public water system. The ~~1st~~ first year of lead service line replacement shall begin on the date that the action level for lead is exceeded after installation of either corrosion control treatment or source water treatment, or both.

~~C~~**D.** A public water system is not required to replace an individual lead service line if the lead concentration in all samples collected from that line is less than or equal to 0.015 mg/L.

Each lead service line sample shall be 1 liter in volume and shall have stood motionless in the lead service line for at least six hours. Lead service line samples shall be collected in one of the following ways:

1. At a tap after flushing the volume of water between the tap and the lead service line. The volume of water that is flushed shall be calculated based on the interior diameter and length of the pipe between the tap and the lead service line;
2. Tapping directly into the lead service line; or
3. If the sampling site is a building constructed as a single-family residence, allowing the water to run until there is a significant change in temperature which would be indicative of water that has been standing in the lead service line.

~~D~~**E.** ~~A water system shall replace the entire lead service line (up to the building inlet) unless it demonstrates to the Department under subsection (E) of this Section that the system controls less than the entire lead service line. In such cases, the system shall replace the portion of the lead service line which the Department determines is under the system's control. The system shall notify the user served by the lead service line that the system will replace the portion of the lead service line under its control and shall offer to replace the building owner's portion of the lead service line but is not required to bear the cost of replacing the building owner's portion of the lead service line. For buildings where only a portion of the lead service line is replaced, the water system shall inform the residents that the system will collect a first-flush tap water sample after partial replacement of the lead service line is completed if the residents so desire. In cases where the residents accept the offer, the system shall collect the sample and report the results to the residents within 14 days following partial lead service line replacement.~~

A public water system shall replace the portion of the lead service line that it owns. In cases where the public water system does not own the entire lead service line, the public water system shall notify the owner of the line, or the owner's authorized agent, that the public water system will replace the portion of the service line that it owns and shall offer to replace the owner's portion of the line. A public water system is not required to bear the cost of replacing the privately-owned portion of the line, nor is it required to replace the privately-owned portion where the owner chooses not to pay the cost of replacing the privately-owned portion of the line, or where replacing the privately-owned portion would be precluded by state, local or common law. A public water system that does not replace the entire length of the service line also shall complete the following tasks.

1. At least 45 days before commencing with the partial replacement of a lead service line, the public water system shall provide notice to the resident(s) of all buildings served by the line explaining that they may experience a temporary increase of lead levels in their drinking water, along with guidance on measures consumers can take to minimize their exposure to lead. The Department may allow the public water system to provide notice under the previous sentence fewer than 45 days before commencing partial lead service line replacement where the replacement is in conjunction with emergency repairs. In addition, the public water system shall inform the resident(s) served by the line that the public water system will, at the public water system's expense, collect a sample from each partially-replaced lead service line that is representative of the water in the service line for analysis of lead content, under subsection (D), within 72 hours after the completion of the partial replacement of the service line. The public water system shall collect the sample and report the results of the analysis to the owner and the resident(s) served by the line within three business days of receiving the results. Mailed notices post-marked within three business days of receiving the results shall be considered "on time."
2. The public water system shall provide the information required in subsection (E)(1) to the residents of individual dwellings by mail or by other methods approved by the Department. In instances where multi-family dwellings are served by the line, the public water system shall have the option to post the information at a conspicuous location.

~~E.~~ ~~A large, medium, or small water system is presumed to control the entire lead service line (up to the building inlet) unless the system demonstrates to the satisfaction of the Department, in a letter submitted under subsection (H)(4) of this Section, that it does not have any of the following forms of control over the entire lead service line (as defined by state statutes, municipal ordinances, public service contracts, or other applicable legal authority): authority to set standards for construction, repair, or maintenance of the lead service line; authority to replace, repair, or maintain the lead service line; or ownership of the lead service line. The Department shall review the information supplied by the system and determine whether the system controls less than the entire lead service line and, in such cases, shall determine the extent of the system's control. The Department's determination shall be in writing and explain the basis for its decision. As soon as practicable, but in no case later than 3 months after a system exceeds an action level for lead in sampling conducted after installation of corrosion control treatment or source water treatment, any system seeking to rebut the presumption that it has control over the entire lead service line shall submit a letter to the Department describing the legal authority (e.g., state~~

~~statutes, municipal ordinances, public service contracts, or other applicable legal authority) which limits the system's control over the lead service lines and the extent of the system's control.~~

**F.** The Department shall require a public water system to replace lead service lines on a faster schedule ~~(~~[i.e.,] that is, more than 7% annually~~)~~, taking into account the number of lead service lines in the public water system, where a faster replacement schedule is feasible. The Department shall make this determination in writing and notify the public water system of its finding within ~~6~~ six months after the public water system is triggered into lead service line replacement.

**G.** ~~Any~~ A public water system may cease replacing lead service lines whenever ~~lead service line samples do~~ the public water system does not exceed the action level for lead during each of ~~2~~ two consecutive 6-month monitoring periods and the public water system submits the results to the Department. If ~~the lead service line samples in~~ any such public water system thereafter exceed the lead action level, the public water system shall recommence replacing lead service lines.

**H.** ~~Systems~~ A public water system shall report the following information to the Department to demonstrate compliance with the requirements of this Section:

1. Within 12 months after a public water system exceeds an action level for lead after installation of either corrosion control or source water treatment, or both, the public water system shall demonstrate in writing to the Department that it has conducted a materials survey, including the materials survey under R18-4-309(B), to identify the initial number of lead service lines in its distribution system and shall provide the Department with the system's schedule for replacing annually at least 7% of the initial number of lead service lines in its distribution system.
2. Within 12 months after a public water system exceeds the action level for lead after installation of either corrosion control treatment or source water treatment, or both, and every 12 months thereafter, the public water system shall demonstrate to the Department in writing that the public water system has either:
   a. Replaced in the previous 12 months at least 7% of the initial lead service lines (or a greater number of lead service lines specified by the Department under subsection (F) ~~of this Section~~); or
   b. Conducted sampling under subsection (D) which demonstrates that the lead concentration in each lead service line sample is less than or equal to 0.015 mg/L. In such cases, the total number of lines replaced shall equal at least 7% of the initial number of lead lines in place at the time the lead service line replacement program begins (or the percentage specified by the Department under subsection (F) ~~of this Section~~).
3. The annual letter submitted to the Department under subsection (H)(2) ~~of this Section~~ shall contain the following information:
   a. The number of lead service lines scheduled to be replaced during the previous year of the system's replacement schedule;
   b. The number and location of each lead service line replaced during the previous year of the system's replacement schedule;
   c. If measured, the water lead concentration and location of each lead service line sampled, the sampling method, and the date of sampling.
   d. Certification that all partial lead service line replacement activities required under subsection (E) have been completed.

**R18-4-316. Public Education Requirements for Lead**

**A.** A CWS that exceeds the action level for lead and that is not already repeating public education tasks under subsection (C) or (J) shall, within 60 days ~~of the end of the monitoring period~~ do all of the following:

1. Insert a notice on each customer's water utility bill that states in large print: "Some homes in this community have elevated lead levels in their drinking water. Lead can pose a significant risk to your health. Please read the enclosed notice for further information."
2. Include with each customer's water utility bill a notice that includes the text contained in Appendix ~~B of this Chapter~~ A.
3. Provide the text contained in Appendix ~~B of this Chapter~~ A to the editorial departments of the major daily and weekly newspapers circulated throughout the community.
4. Deliver pamphlets or brochures that contain the public education materials related to the health effects of lead, ~~and~~ the steps that can be taken in the home to reduce lead exposure, and how to obtain more information on lead in drinking water that are prescribed in Appendix ~~B of this Chapter~~ A, subsections (B), (D), and (E) to facilities and organizations, including the following:
   a. Public schools or local school boards,
   b. City or county health department or environmental quality departments,
   c. Women, Infants, and Children [WIC] and Head Start programs if available,
   d. Public and private hospitals and clinics,
   e. Pediatricians,
   f. Family planning clinics, and
   g. Local welfare agencies.

5. Submit a public service announcement to at least ~~5~~ five radio and television stations with the largest audiences that broadcast to the community served by the ~~community water system~~ CWS. The public service announcement shall contain the following language:
   "Why should everyone want to know the facts about lead and drinking water? Because unhealthy amounts of lead can enter drinking water through the plumbing in your home. That's why I urge you to do what I did. I had my water tested for [insert free or $ per sample]. You can contact the [insert the name of the city or water system] for information on testing and on simple ways to reduce your exposure to lead in drinking water. To have your water tested for lead, or to get more information about this public health concern, please call [insert the phone number of the city or water system]."

**B.** ~~A CWS shall repeat the tasks contained in subsections (A)(1) through (A)(4) every 12 months and the public service announcement prescribed in subsection (A)(5) every 6 months for as long as the system exceeds the lead action level.~~
A CWS having a billing cycle that does not include a billing within 60 days of exceeding the action level, or that cannot insert information in the water utility bill without making major changes to its billing system, may use a separate mailing to deliver the information in Appendix A as long as the information is delivered to each customer within 60 days of exceeding the action level. The CWS shall also include the "alert" language specified in subsection (A)(1).

**C.** A CWS shall repeat the tasks contained in subsections (A)(1) through (A)(4) every 12 months and the public service announcement prescribed in subsection (A)(5) every six months for as long as the CWS exceeds the lead action level.

**~~C~~D.** A NTNCWS that exceeds the lead action level shall, within 60 days, (unless it already is repeating public education tasks under subsection (E)), deliver the public education materials ~~containing the language in the "Introduction," "Health Effects of Lead", and "Steps You Can Take in the Home to Reduce Lead Exposure" paragraphs prescribed in Appendix B of this Chapter as follows:~~ specified in Appendix A or Appendix B as follows:

1. Post informational posters on lead in drinking water in a public place or common area in each of the buildings served by the ~~system~~ NTNCWS, and
2. Distribute informational pamphlets or brochures on lead in drinking water to each person served by the NTNCWS. The Department may allow the NTNCWS to use electronic transmission instead of or combined with printed materials as long as it achieves at least the same coverage.

**~~D~~E.** A NTNCWS shall repeat the public education tasks contained in subsection ~~(C)~~ (D) at least once during each calendar year for as long as the ~~system~~ NTNCWS exceeds the lead action level.

**~~E~~F.** A CWS ~~or NTNCWS~~ shall include the lead public education text prescribed in Appendix ~~B~~ A in all of the printed materials it distributes through its lead public education program. Any additional information presented by a ~~public water system~~ CWS shall be consistent with the information contained in Appendix ~~B~~ A and be written in plain language that can be understood by persons served by the ~~system~~ CWS. ~~Where appropriate~~ In communities with a significant proportion of non-English speaking residents, public education materials shall be multilingual. A CWS may delete information about lead service lines, upon approval by the Department, if no lead service lines exist anywhere in the CWS service area. A CWS may modify public education language in Appendix A (D)(5) and (E)(2) regarding building permit record availability and consumer access to these records, if approved by the Department. A CWS may also continue to use pre-printed materials that meet the public education language requirements in R18-4-316 of 18 A.A.C. 4, 1998.

**~~F.~~** ~~A CWS or NTNCWS may discontinue delivery of public education materials if the public water system has met the lead action level during the most recent 6-month monitoring period. A CWS or NTNCWS shall recommence public education in accordance with this Section if it subsequently exceeds the lead action level.~~

**~~G.~~** ~~By December 31st of each year, a CWS or NTNCWS that is subject to the public education requirements in this Section shall submit a letter to the Department demonstrating that the system has delivered the public education materials that meet the content and delivery requirements prescribed in this Section. The letter shall include a list of all the newspapers, radio stations, television stations, facilities, and organizations that the CWS or NTNCWS delivered public education materials during the previous year. A CWS or NTNCWS shall submit the letter required by this subsection annually for as long as the public water system exceeds the lead action level.~~

**G.** A NTNCWS shall include the text specified in either Appendix A or Appendix B in all the printed materials it distributes through its lead public education program. A NTNCWS may delete information about lead service lines upon approval by the Department if no lead service lines exist anywhere in the NTNCWS service area. Any additional information presented by a NTNCWS shall be consistent with the information in Appendix B and be in plain language that can be understood by persons served by the NTNCWS. In communities with a significant proportion of non-English speaking residents, public education materials shall be multilingual.

**H.** A CWS may use the text specified in Appendix B in place of the text in Appendix A and to perform the tasks listed in subsection (D) and (E) in place of the tasks in subsection (A) and (C) if:

1. The CWS is a facility, such as a prison or a hospital, where the population served is not capable of or is prevented from making improvements to plumbing or installing a point-of-use treatment device; and
2. The CWS provides water as part of the cost of services provided and does not separately charge for water consumption.

**I.** A CWS serving 3,300 or fewer people may omit the task contained in subsection (A)(5) as long as it distributes notices containing the information contained in Appendix A to every household served by the CWS. The CWS may further limit its public education programs as follows:
1. A CWS serving 500 or fewer people may forego the task contained in subsection (A)(3). The CWS may also limit the distribution of the public education materials required in subsection (A)(4) to facilities and organizations served by the CWS that are most likely to be visited regularly by pregnant women and children, unless it is notified by the Department in writing that it must make a broader distribution.
2. If approved by the Department in writing, a CWS serving 501 to 3,300 people may do any of the following:
   a. Omit the task in subsection (A)(3); and
   b. Limit the distribution of the public education materials required under subsection (A)(4) to facilities and organizations served by the CWS that are most likely to be visited regularly by pregnant women and children.

**J.** A CWS serving 3,300 or fewer people that delivers public education in accordance with subsection (I) shall repeat the required public education tasks at least once during each calendar year in which the CWS exceeds the lead action level.

**K.** A CWS or NTNCWS may discontinue delivery of public education materials if the system has met the lead action level during the most recent 6-month monitoring period. A CWS or NTNCWS shall recommence public education in accordance with this Section if it subsequently exceeds the lead action level.

**L.** Within 10 days after the end of each period the system is required to perform the public education requirements of this Section, a CWS or NTNCWS shall submit a letter to the Department demonstrating that the system has delivered the public education materials that meet the content and delivery requirements prescribed in this Section. The letter shall include a list of all the newspapers, radio stations, television stations, facilities, and organizations that the CWS or NTNCWS delivered public education materials to during the previous period. If a CWS or NTNCWS has previously submitted to the Department a list of all newspapers, radio stations, television stations, facilities, and organizations to which the system delivered public education materials, the system does not need to resubmit that information to the Department, if the CWS or NTNCWS certifies that there have been no changes to the list and that the public education materials were distributed to the same list submitted previously to the Department.

**R18-4-317. Treatment Techniques for Acrylamide and Epichlorohydrin**

**A.** ~~When~~ A public water system that uses acrylamide or epichlorohydrin ~~are used~~ in a public water system, shall not exceed the following levels for the product of the dose and monomer level ~~shall not exceed the following levels~~:
1. Acrylamide = 0.05% dosed at 1 ppm (or equivalent).
2. Epichlorohydrin = 0.01% dosed at 20 ppm (or equivalent).

**B.** ~~Each~~ A public water system ~~which~~ that uses acrylamide or epichlorohydrin shall certify annually in writing to the Department, using third-party or manufacturer's certification, that the product of the dose and monomer level does not exceed the levels prescribed in subsection (A).

~~**Table 1. Decision Matrix for Determining Groundwater Under the Direct Influence of Surface Water**~~

| ~~Initial Sample MPA Risk Rating~~ | ~~2nd Sample MPA Risk Rating~~ | ~~3rd Sample MPA Risk Rating~~ | ~~Groundwater Under the Direct Influence of Surface Water~~ |
|---|---|---|---|
| ~~High~~ | ~~High or Moderate~~ | | ~~Yes~~ |
| ~~High~~ | ~~Low~~ | ~~High or Moderate~~ | ~~Yes~~ |
| ~~High~~ | ~~Low~~ | ~~Low~~ | ~~No~~ |
| ~~Moderate~~ | ~~High or Moderate~~ | | ~~Yes~~ |
| ~~Moderate~~ | ~~Low~~ | ~~High or Moderate~~ | ~~Yes~~ |
| ~~Moderate~~ | ~~Low~~ | ~~Low~~ | ~~No~~ |
| ~~Low~~ | ~~High or Moderate~~ | ~~High or Moderate~~ | ~~Yes~~ |
| ~~Low~~ | ~~High or Moderate~~ | ~~Low~~ | ~~No~~ |
| ~~Low~~ | ~~Low~~ | | ~~No~~ |

**Appendix A. Lead Public Education**

A water system that exceeds the lead action level based on tap water samples collected in accordance with R18-4-310 or R18-4-313 shall deliver the public education materials contained in this Appendix in accordance with the public education delivery requirements prescribed in R18-4-316.

**Content of written materials.** A public water system shall include the following text in all the printed materials it distributes through its lead public education program. Any additional information presented by a system shall be consistent with the information below and be in plain language that can be understood by laypersons.

**A. Introduction.** The United States Environmental Protection Agency (EPA) and [insert name of public water system] are concerned about lead in your drinking water. Although most homes have very low levels of lead in their drinking water, some homes in the community have lead levels above the EPA action level of 15 parts per billion (ppb), or 0.015 milligrams of lead per liter of water (mg/L). Under federal law we are required to have a program in place to minimize lead in your drinking water by [insert date when corrosion control will be completed for your system]. This program includes corrosion control treatment, source water treatment, and public education. We are also required to replace the portion of each lead service line that we own if the line contributes lead concentrations of 15 ppb or more after we have completed the comprehensive treatment program. If you have any questions about how we are carrying out the requirements of the lead regulation, please give us a call at [insert water system's phone number). This brochure explains the simple steps you can take to protect you and your family by reducing your exposure to lead in drinking water.

**B. Health effects of lead.** Lead is a common metal found throughout the environment in lead-based paint, air, soil, household dust, food, certain types of pottery porcelain and pewter, and water. Lead can pose a significant risk to your health if too much of it enters your body. Lead builds up in the body over many years and can cause damage to the brain, red blood cells, and kidneys. The greatest risk is to young children and pregnant women. Amounts of lead that won't hurt adults can slow down normal mental and physical development of growing bodies. In addition, a child at play often comes into contact with sources of lead contamination–like dirt and dust–that rarely affect an adult. It is important to wash children's hands and toys often and to try to make sure they only put food in their mouths.

**C. Lead in Drinking Water.** Lead in drinking water, although rarely the sole cause of lead poisoning, can significantly increase a person's total lead exposure, particularly the exposure of infants who drink baby formulas and concentrated juices that are mixed with water. The EPA estimates that drinking water can make up 20% or more of a person's total exposure to lead.

Lead is unusual among drinking water contaminants in that it seldom occurs naturally in water supplies like rivers and lakes. Lead enters drinking water primarily as a result of the corrosion, or wearing away, of materials containing lead in the water distribution system and household plumbing. These materials include lead-based solder used to join copper pipe, brass and chrome-plated brass faucets, and in some cases, pipes made of lead that connect your house to the water main (service lines). In 1986, Congress banned the use of lead solder containing greater than 0.2% lead and restricted the lead content of faucets, pipes, and other plumbing materials to 8.0%.

When water stands in lead pipes or plumbing systems containing lead for several hours or more, the lead may dissolve into your drinking water. This means the first water drawn from the tap in the morning, or later in the afternoon after returning from work or school, can contain fairly high levels of lead.

**D. Steps You Can Take in the Home To Reduce Exposure To Lead in Drinking Water.**

Despite our best efforts mentioned earlier to control water corrosivity and remove lead from the water supply, lead levels in some homes or buildings can be high. To find out whether you need to take action in your own home, have your drinking water tested to determine if it contains excessive concentrations of lead. Testing the water is essential because you cannot see, taste, or smell lead in drinking water. Some local laboratories that can provide this service are listed at the end of this booklet. For more information on having your water tested, please call [insert phone number of water system].

If a water test indicates that the drinking water drawn from a tap in your home contains lead above 15 ppb, then you should take the following precautions:

1. Let the water run from the tap before using it for drinking or cooking any time the water in a faucet has gone unused for more than six hours. The longer water resides in your home's plumbing, the more lead it may contain. Flushing the tap means running the cold water faucet until the water gets noticeably colder, usually about 15-30 seconds. If your house has a lead service line to the water main, you may have to flush the water for a longer time, perhaps one minute, before drinking. Although toilet flushing or showering flushes water through a portion of your home's plumbing system, you still need to flush the water in each faucet before using it for drinking or cooking. Flushing tap water is a simple and inexpensive measure you can take to protect your family's health. It usually uses less than 1 or 2 gallons of water and costs less than [insert a cost estimate based on flushing two times a day for 30 days] per month. To conserve water, fill a couple of bottles for drinking water after flushing the tap and, whenever possible, use the first-flush water to wash the dishes or water the plants. If you live in a high-rise building, letting the water flow before using it may not work to lessen your risk from lead. The plumbing systems have more, and sometimes larger, pipes than smaller buildings. Ask your landlord for help in locating the source of the lead and for advice on reducing the lead level.
2. Try not to cook with, or drink, water from the hot water tap. Hot water can dissolve more lead more quickly than cold water. If you need hot water, draw water from the cold tap and heat it on the stove.
3. Remove loose lead solder and debris from the plumbing materials installed in newly constructed homes, or homes in which the plumbing has recently been replaced, by removing the faucet strainers from all taps and running the water

from three to five minutes. Thereafter, periodically remove the strainers and flush out any debris that has accumulated over time.

4. If your copper pipes are joined with lead solder that has been installed illegally since it was banned in 1986, notify the plumber who did the work and request that he or she replace the lead solder with lead-free solder. Lead solder looks dull gray and, when scratched with a key, looks shiny. In addition, notify the Arizona Department of Environmental Quality about the violation.
5. Determine whether or not the service line that connects your home or apartment to the water main is made of lead. The best way to determine if your service line is made of lead is by either hiring a licensed plumber to inspect the line or by contacting the plumbing contractor who installed the line. You can identify the plumbing contractor by checking the city's record of building permits which should be maintained in the files of the [insert name of department that issues building permits]. A licensed plumber can at the same time check to see if your home's plumbing contains lead solder, lead pipes, or pipe fittings that contain lead. The public water system that delivers water to your home should also maintain records of the materials located in the distribution system. If the service line that connects your dwelling to the water main contributes more than 15 ppb to drinking water, after our comprehensive treatment program is in place, we are required to replace the portion of the line we own. If the line is only partially owned by the [insert name of the city, county, or water system that controls the line], we are required to provide the owner of the privately-owned portion of the line with information on how to replace the privately-owned portion of the service line and offer to replace that portion of the line at the owner's expense. If we replace only the portion of the line that we own, we also are required to notify you in advance and provide you with information on the steps you can take to minimize exposure to any temporary increase in lead levels that may result from the partial replacement, to take a follow-up sample at our expense from the line within 72 hours after the partial replacement, and to mail or otherwise provide you with the results of that sample within three business days of receiving the results. Acceptable replacement alternatives include copper, steel, iron, and plastic pipes.
6. Have an electrician check your wiring. If grounding wires from the electrical system are attached to your pipes, corrosion may be greater. Check with a licensed electrician or your local electrical code to determine if your wiring can be grounded elsewhere. DO NOT attempt to change the wiring yourself because improper grounding can cause electrical shock and fire hazards.
7. The steps described above will reduce the lead concentrations in your drinking water. However, if a water test indicates that the drinking water coming from your tap contains lead concentrations in excess of 15 ppb after flushing, or after we have completed our actions to minimize lead levels, then you may want to take the following additional measures:

Purchase or lease a home treatment device. Home treatment devices are limited in that each unit treats only the water that flows from the faucet to which it is connected, and all of the devices require periodic maintenance and replacement. Devices such as reverse osmosis systems or distillers can effectively remove lead from your drinking water. Some activated carbon filters may reduce lead levels at the tap; however all lead reduction claims should be investigated. Be sure to check the actual performance of a specific home treatment device before and after installing the unit.

Purchase bottled water for drinking and cooking.

**E. How to Obtain More Information on Lead in Drinking Water**

You can consult a variety of sources for additional information. Your family doctor or pediatrician can perform a blood test for lead and provide you with information about the health effects of lead. State and local government agencies that can be contacted include:

1. [Insert the name of city or county department of public utilities] at [insert phone number] can provide you with information about your community's water supply and a list of local laboratories that have been licensed by the Arizona Department of Health Services for testing water quality;
2. [Insert the name of city of county department that issues building permits] at [insert phone number] can provide you with information about building permit records that should contain the names of plumbing contractors that plumbed your home; and
3. The Arizona Department of Health Services at 602-230-5830 or the [insert the name of the city or county health department] at [insert phone number] can provide you with information about the health effects of lead and how you can have your child's blood tested.

The following is a list of some ADHS-licensed laboratories in your area that you can call to have your water tested for lead. [Insert names and phone numbers of at least two laboratories].

**Appendix B. Alternate Lead Public Education**

A water system that exceeds the lead action level based on tap water samples collected in accordance with R18-4-310 or R18-4-313 may deliver the public education materials contained in this Appendix in accordance with the public education delivery requirements prescribed in R18-4-316.

**Content of written materials.** A public water system shall include the following text in all the printed materials it distributes through its lead public education program. Any additional information presented by a system shall be consistent with the information below and be in plain language that can be understood by laypersons.

**A.** **Introduction.** The United States Environmental Protection Agency (EPA) and [insert name of public water system] are concerned about lead in your drinking water. Some drinking water samples taken from this facility have lead levels above the EPA action level of 15 parts per billion (ppb), or 0.015 milligrams of lead per liter of water (mg/L). Under Federal law we are required to have a program in place to minimize lead in your drinking water by [insert date when corrosion control will be completed for your system]. This program includes corrosion control treatment, source water treatment, and public education. We are also required to replace the portion of each lead service line that we own if the line contributes lead concentrations of more than 15 ppb after we have completed the comprehensive treatment program. If you have any questions about how we are carrying out the requirements of the lead regulation please give us a call at [insert water system's phone number]. This brochure explains the simple steps you can take to protect yourself by reducing your exposure to lead in drinking water.

**B.** **Health effects of lead.** Lead is found throughout the environment in lead-based paint, air, soil, household dust, food, certain types of pottery, porcelain and pewter, and water. Lead can pose a significant risk to your health if too much of it enters your body. Lead builds up in the body over many years and can cause damage to the brain, red blood cells and kidneys. The greatest risk is to young children and pregnant women. Amounts of lead that won't hurt adults can slow down normal mental and physical development of growing bodies. In addition, a child at play often comes into contact with sources of lead contamination--like dirt and dust--that rarely affect an adult. It is important to wash children's hands and toys often, and to try to make sure they only put food in their mouths.

**C.** **Lead in Drinking Water.** Lead in drinking water, although rarely the sole cause of lead poisoning, can significantly increase a person's total lead exposure, particularly the exposure of infants who drink baby formulas and concentrated juices that are mixed with water. The EPA estimates that drinking water can make up 20% or more of a person's total exposure to lead.

Lead is unusual among drinking water contaminants in that it seldom occurs naturally in water supplies like rivers and lakes. Lead enters drinking water primarily as a result of the corrosion, or wearing away, of materials containing lead in the water distribution system and household plumbing. These materials include lead-based solder used to join copper pipe, brass and chrome-plated brass faucets, and in some cases, pipes made of lead that connect houses and buildings to water mains (service lines). In 1986, Congress banned the use of lead solder containing greater than 0.2% lead, and restricted the lead content of faucets, pipes and other plumbing materials to 8.0%.

When water stands in lead pipes or plumbing systems containing lead for several hours or more, the lead may dissolve into your drinking water. This means the first water drawn from the tap in the morning, or later in the afternoon if the water has not been used all day, can contain fairly high levels of lead.

**D.** **Steps You Can Take To Reduce Exposure to Lead in Drinking Water.** Let the water run from the tap before using it for drinking or cooking any time the water in a faucet has gone unused for more than six hours. The longer water resides in plumbing the more lead it may contain. Flushing the tap means running the cold water faucet for about 15-30 seconds. Although toilet flushing or showering flushes water through a portion of the plumbing system, you still need to flush the water in each faucet before using it for drinking or cooking. Flushing tap water is a simple and inexpensive measure you can take to protect your health. It usually uses less than 1 gallon of water.

Do not cook with, or drink water from the hot water tap. Hot water can dissolve more lead more quickly than cold water. If you need hot water, draw water from the cold tap and then heat it.

The steps described above will reduce the lead concentrations in your drinking water. However, if you are still concerned, you may wish to use bottled water for drinking and cooking.

You can consult a variety of sources for additional information. Your family doctor or pediatrician can perform a blood test for lead and provide you with information about the health effects of lead. State and local government agencies that can be contacted include:

[insert the name or title of facility official if appropriate] at [insert phone number] can provide you with information about your facility's water supply; and

The Arizona Department of Health Services at 602-230-5830 or the [insert the name of the city or county health department] at [insert phone number] can provide you with information about the health effects of lead."

## ARTICLE 4. SPECIAL MONITORING REQUIREMENTS

~~**R18-4-401. Special Monitoring Requirements for Sulfate**~~

~~**A.** Each CWS, NTNCWS, or a contractor on behalf of a CWS or NTNCWS, shall monitor for sulfate.~~

~~**B.** Each CWS, NTNCWS, or a contractor on behalf of a CWS or NTNCWS, shall take 1 sample for sulfate at each sampling point as prescribed in R18-4-218.~~

~~**C.** Each CWS, NTNCWS, or a contractor on behalf of a CWS or NTNCWS, shall monitor for sulfate once every 5 years.~~

~~**D.** A CWS or NTNCWS may apply for a waiver from sulfate monitoring requirements. The Department may initiate a waiver for a CWS or NTNCWS. The Department may waive sulfate monitoring requirements at a sampling point if previous analytical results are available that indicate that the concentration of sulfate does not exceed 250 mg/L, provided the monitoring data was collected after January 1, 1990. The Department's decision to waive sulfate monitoring requirements shall be in writing.~~

~~**E.** The Department may require a confirmation sample.~~

~~**F.** A CWS, NTNCWS, or a contractor on behalf of a CWS or NTNCWS, may composite sulfate samples as prescribed in R18-4-219.~~

**~~R18-4-402.~~ R18-4-401. Special Monitoring for Sodium**

**A.** A CWS, or a contractor on behalf of a CWS, shall conduct monitoring for sodium.

**B.** Each CWS, or a contractor on behalf of a CWS, shall collect ~~1~~ one sample per water treatment plant. Multiple wells drawing raw water from a single aquifer may, with Department approval, be considered ~~1~~ one treatment plant for purposes of determining the minimum number of sodium samples required.

**C.** Each CWS, or a contractor on behalf of the CWS, shall collect and analyze ~~1~~ one sample annually for each water treatment plant utilizing a surface water source, in whole or in part. A CWS shall collect and analyze ~~1~~ one sample every three years for each water treatment plant utilizing only groundwater sources. The Department may require a ~~water supplier~~ public water system to collect and analyze water samples more frequently in locations where the sodium content is variable.

**~~R18-4-403.~~ R18-4-402. Special Monitoring for Nickel**

**A.** Each CWS and NTNCWS shall monitor for nickel.

**B.** Each CWS and NTNCWS shall monitor for nickel at each sampling point as prescribed in R18-4-218.

**C.** A CWS or NTNCWS may composite samples for nickel as prescribed in R18-4-219.

**D.** Each CWS and NTNCWS shall monitor for nickel at the following frequencies:

1. Each CWS and NTNCWS shall take ~~1~~ one sample at each groundwater sampling point once every three years.
2. Each CWS and NTNCWS shall take ~~1~~ one sample at each surface water sampling point annually.

**E.** A ~~water supplier~~ public water system may request a reduction in the monitoring frequency for nickel as follows:

1. Groundwater sampling points: The Department may reduce monitoring frequency from once every three years to a less frequent basis if the CWS or NTNCWS has monitored for nickel at least once every three years for nine years at the groundwater sampling point and all analytical results were below 0.1 mg/L.
2. Surface water sampling points: The Department may reduce monitoring frequency from annually to a less frequent basis if a CWS or NTNCWS has monitored annually at the surface water sampling point for at least three consecutive years and all analytical results for nickel were below 0.1 mg/L.
3. The Department may reduce monitoring frequency for nickel for a term not to exceed nine years.
4. A CWS or NTNCWS shall take at least ~~1~~ one sample for nickel during the reduced monitoring term.
5. In determining the appropriate reduced monitoring frequency at a sampling point, the Department shall consider the following factors:
   a. Reported concentrations of nickel from all previous monitoring;
   b. The degree of variation in the reported concentrations of nickel; and
   c. Other factors that may affect the concentration of nickel such as changes in groundwater pumping rates, changes in the configuration of the CWS or NTNCWS, or changes in operating procedures, stream flows, or source water characteristics.
6. A decision by the Department to reduce monitoring frequency for nickel at a sampling point shall be in writing and shall set forth the grounds for the decision. A ~~water supplier~~ public water system may make a written request for reduced monitoring or the Department may reduce monitoring on its own. A ~~water supplier~~ public water system shall provide documentation of analytical results that supports a request for reduced monitoring. If a CWS or NTNCWS submits new data or other data relevant to the public water system's appropriate monitoring frequency become available, the Department shall review the data and, if appropriate, revise its determination of monitoring frequency.
7. A CWS or NTNCWS that uses a new source is not eligible for reduced monitoring until three consecutive rounds of monitoring from the new source have been completed.

**~~R18-4-404.~~ ~~Special Monitoring for Unregulated Volatile Organic Chemicals~~ Repealed**

~~**A.** Each CWS, NTNCWS, or a contractor on behalf of the CWS or NTNCWS, shall monitor for the unregulated VOCs listed in this subsection.~~

~~1. Bromobenzene~~
~~2. Bromodichloromethane~~
~~3. Bromoform~~
~~4. Bromomethane~~
~~5. Chlorodibomomethane~~

6. ~~Chloroethane~~
7. ~~Chloroform~~
8. ~~Chlormethane~~
9. ~~o-Chlorotoluene~~
10. ~~p-Chlorotoluene~~
11. ~~Dibromomethane~~
12. ~~m-Dichlorobenzene~~
13. ~~1,1-Dichloroethane~~
14. ~~1,3,-Dichloropropane~~
15. ~~2,2-Dichloropropane~~
16. ~~1,1-Dichloropropene~~
17. ~~1,3-Dichloropropene~~
18. ~~1,1,1,2-Tetrachloroethane~~
19. ~~1,1,2,2-Tetrachloroethane~~
20. ~~1,2,3,-Trichloropropane~~

**B.** ~~A CWS, NTNCWS, or a contractor on behalf of a CWS, shall monitor for unregulated VOCs at sampling points prescribed in R18-4-218.~~

**C.** ~~A CWS, NTNCWS, or a contractor on behalf of a CWS, shall take 4 consecutive quarterly samples at each surface water sampling point for each unregulated VOC listed in this Section. A CWS, NTNCWS, or a contractor on behalf of a CWS, shall take 1 sample at each groundwater sampling point for each unregulated VOC listed in this Section. A CWS, NTNCWS, or a contractor on behalf of a CWS, shall monitor for unregulated VOCs at least once every 5 years.~~

**D.** ~~A CWS or NTNCWS may use monitoring data collected prior to the initial monitoring year to meet the initial monitoring requirements for unregulated VOCs listed in this Section provided the monitoring data was collected after January 1, 1983.~~

**E.** ~~A CWS, NTNCWS, or a contractor on behalf of a CWS, may composite samples for the unregulated VOCs listed in this Section as prescribed in R18-4-219.~~

**F.** ~~A CWS or NTNCWS may apply for a waiver from the monitoring requirements for the unregulated VOCs listed in this Section. The Department may grant a waiver based upon the criteria specified in R18-4-212(L). The Department may initiate a waiver for a CWS or NTNCWS.~~

**G.** ~~A water supplier shall notify a person served by the public water system of the availability of the monitoring results for unregulated VOCs listed in this Section by including a notice in the 1st set of water bills issued by a public water system after receipt of the monitoring results or by direct mail within 3 months of receipt of the monitoring results. The notice shall identify a contact person and supply a telephone number that a person may be called for more information on the monitoring results. For surface water systems, public notification is required only after the 1st quarter's monitoring results. The notice shall include a statement that the public water system shall monitor for unregulated VOCs for 3 more quarters and the monitoring results are available upon request.~~

**~~R18-4-405.~~ ~~Special Monitoring for Unregulated Synthetic Organic Chemicals~~ Repealed**

**A.** ~~Each CWS, NTNCWS, or a contractor on behalf of a CWS, shall monitor for the unregulated SOCs listed in this Section.~~
1. ~~Aldicarb~~
2. ~~Aldicarb sulfone~~
3. ~~Aldicarb sulfoxide~~
4. ~~Aldrin~~
5. ~~Butachlor~~
6. ~~Carbaryl~~
7. ~~Dicamba~~
8. ~~Dieldrin~~
9. ~~3-Hydroxycarbofuran~~
10. ~~Methomyl~~
11. ~~Metolachlor~~
12. ~~Metribuzin~~
13. ~~Propachlor~~

**B.** ~~A CWS, NTNCWS, or a contractor on behalf of a CWS or NTNCWS, shall monitor for the unregulated SOCs listed in this Section at sampling points as prescribed in R18-4-218.~~

**C.** ~~A CWS, NTNCWS, or a contractor on behalf of a CWS or NTNCWS, shall take 4 consecutive quarterly samples at each sampling point for each unregulated SOC listed in this Section. Each CWS and NTNCWS shall complete initial monitoring for the unregulated SOCs listed in this Section and report the analytical results to the Department by December 31, 1995. A CWS, NTNCWS, or a contractor on behalf of a CWS or NTNCWS, shall monitor for unregulated SOCs at least once every 5 years.~~

~~**D.** A CWS, NTNCWS, or a contractor on behalf of a CWS, may composite samples for the unregulated SOCs listed in this Section as prescribed in R18-4-219.~~

~~**E.** A CWS and NTNCWS may submit a written request to the Department for a waiver from the monitoring requirements for unregulated SOCs listed in this Section. The Department under the monitoring assistance program, may initiate a waiver to a CWS or NTNCWS. The Department may grant a use waiver or a susceptibility waiver for an unregulated SOC based upon the waiver criteria specified in R18-4-216(M).~~

## ARTICLE 5. MINIMUM DESIGN CRITERIA

### R18-4-503. Storage Requirements

**A.** The minimum storage capacity for a ~~community water system~~ CWS or a non-community water system that serves a residential population or a school shall be equal to the average daily demand during the peak month of the year. Storage capacity may be based on existing consumption and phased as the water system expands.

**B.** The minimum storage capacity for a multiple-well system for a ~~community water system~~ CWS or a non-community water system that serves a residential population or a school may be reduced by the amount of the total daily ~~demand~~ production capacity minus the production from the largest producing well.

### R18-4-504. Prohibition on the Use of Lead Pipe, Solder, and Flux

Construction materials used in a public water system, including residential and non-residential facilities connected to the public water system, shall be lead-free as defined at R18-4-101~~(46)~~. This Section shall not apply to leaded joints necessary for the repair of cast iron pipes.

### R18-4-505. Approval to Construct

**A.** The Department shall only approve an addition or a water main ~~extensions~~ extension to a public water system that is in compliance with this Chapter or is making satisfactory progress towards compliance under a schedule approved by the Department. The Department shall approve properly designed modifications that can be expected to return a public water system to compliance.

**B.** A person shall not start to construct a new public water system, modify an existing facility, including an extension to an existing public water system, or make an alteration ~~which~~ that will affect the treatment, capacity, water quality, flow, distribution, or operational performance of a public water system prior to receiving an Approval to Construct from the Department. Designing or consulting engineers ~~are encouraged to~~ may confer with the Department before proceeding with detailed designs of complex or innovative facilities. The following provisions shall apply:

1. An application for Approval to Construct, including the following documents and data, shall be submitted to the Department:
   a. Detailed construction plans of the site and work to be done, presented in legible form and of sufficient scale, to establish construction requirements to facilitate effective review;
   b. Complete specifications to supplement the plans;
   c. A design report that describes the proposed construction and basis of design, provides design data and other pertinent information that defines the work to be done, and establishes the adequacy of the design to meet the system demand;
   d. Analyses of a proposed new source of water which include microbiological, physical, radiochemical, ~~inorganic and organic chemical,~~ inorganic, organic, and volatile organic chemicals~~,; and~~ microscopic particulates if the source meets the criteria of R18-4-301.01.(A); and
   e. Other pertinent data required to evaluate the application for Approval to Construct.
2. All plans, specifications, and design reports submitted for a public water system shall be prepared by, or under the supervision of~~, a professional~~ an engineer, ~~registered in the state of Arizona,~~ upon which the seal and signature of the registrant have been affixed, except that a non-registrant may design a water treatment plant or additions, modifications, revisions, or extensions which include extensions to potable water distribution systems, if the total cost of such construction does not exceed $12,500 for material, equipment, and labor, as verified by a cost estimate submitted with plan documents.

~~3. Extensions, additions, modifications, or revisions to existing water systems and having a total value of less than $12,500, as verified by a cost estimate, shall be exempt from the application of the plan review requirement as specified in A.R.S. § 49-353.~~

~~4. Structural revisions, additions, extensions, or modifications to a water line which has a project cost of more than $12,500 but less than $50,000, as verified by a cost estimate, shall be exempt from the application of the plan review requirements provided:~~

~~a. The project is planned and designed by a professional engineer who is registered in Arizona;~~

~~b. The construction of the project is reviewed for conformance with contract documents and design by a professional engineer who is registered in Arizona; and~~

~~c. The project is not a water supply system for a new subdivision requiring plat approval by a city, town, or county.~~

**C.** An existing public water system shall be exempt from the plan review requirements of this Article if the public water system is in compliance with this Chapter or is making satisfactory progress towards compliance under a schedule approved by the Department if the applicable revision, addition, extension or modification:
1. Has a project cost of twelve thousand five hundred dollars or less; or
2. Is made to a water line that:
   a. Is not for a subdivision requiring plat approval by a city, town, or county;
   b. Has a project cost of more than twelve thousand five hundred dollars but less than fifty thousand dollars; and
   c. Has a design that is sealed by an engineer and the construction of which is reviewed for conformance with the design by an engineer.

**D.** Upon completion of a project exempt from the plan review requirements of this Article pursuant to subsection (C), the exempt public water system shall submit a notice of compliance which contains:
1. A fair market value cost estimate for the project;
2. The name of the design engineer and the review engineer; and
3. The project completion date and the total construction time.

~~C~~**E.** ~~A~~ The Department shall act upon a complete application for Approval to Construct submitted for approval ~~shall be acted upon by the Department~~ within 30 days of its receipt.

~~D~~**F.** The Department shall issue an Approval to Construct only when the following conditions have been met:
1. Plans and specifications submitted to the Department demonstrate that the proposed public water system reasonably can be expected to comply with this Chapter, including the ~~maximum contaminant levels~~ MCLs set forth in Article 2; and
2. The water system is in compliance with this Chapter or reasonably can be expected to return to compliance with this Chapter as a result of the proposed construction.

~~E~~**G.** An Approval to Construct becomes void if:
1. ~~If construction has~~ Construction is not commenced within ~~1~~ one year ~~after~~ of the date ~~of issue of the approval to construct~~ an Approval to Construct is issued; or
2. ~~or there~~ There is a halt in construction of more than ~~1~~ one year; or
3. ~~construction~~ Construction is not completed within ~~3~~ three years of the date construction is commenced;~~,~~ and
4. ~~the Approval to Construct shall be void unless an~~ An extension of time has not been granted by the Department. An extension of time may be granted by the Department within 90 days of the passage of one of the time periods stated in this subsection.

**R18-4-506. Compliance with Approved Plans**

All construction shall conform to approved plans and specifications. In order ~~Should it be necessary or desirable~~ to make a change in ~~the~~ an approved design ~~which~~ that will affect water quality, capacity, flow, sanitary features, or performance, a public water system shall submit ~~the~~ revised plans and specifications to the Department for review, together with a written statement of the reasons for ~~such~~ the change~~, shall be submitted to the Department for review,~~. The public water system shall not proceed with ~~and approval shall be obtained in writing before~~ the construction affected by the design change ~~is undertaken~~ without written approval from the Department. Revisions not affecting water quality, capacity, flow, sanitary features, or performance may be permitted during construction without further approval if record drawings documenting these changes, prepared by ~~a professional~~ an engineer ~~registered in the state of Arizona,~~ are submitted to the Department~~,~~ pursuant to R18-4-508.

**R18-4-507. Approval of Construction**

**A.** ~~Operation of~~ A person shall not operate a newly constructed facility ~~shall not begin~~ until an Approval of Construction is issued by the Department.

**B.** ~~The following requirements shall be met before an Approval of Construction will be issued by the Department~~ The Department shall not issue an Approval of Construction on a newly constructed public water system, an extension to an existing public water system, or any alteration of an existing public water system which affects its treatment, capacity, water quality, flow, distribution, or operational performance unless the following requirements have been met:
1. ~~A professional~~ An engineer~~, registered in the state of Arizona,~~ or a person under the direct supervision thereof, ~~shall complete~~ has completed a final inspection and ~~submit~~ submitted a Certificate of Completion on a form approved by the Department to which the seal and signature of the registrant have been affixed;
2. The construction conforms to approved plans and specifications, as indicated in the Certificate of Completion, and all changes have been documented by the submission of record drawings, pursuant to R18-4-508;
3. An operations and maintenance manual has been submitted and approved by the Department if construction includes a new water treatment facility; and
4. An operator, who is certified by the Department at a grade appropriate for each facility, is employed to operate each water treatment plant and the potable water distribution system.

**C.** ~~At a water supplier's request, the~~ The Department may conduct the final inspection required by subsection (B)(1) ~~of this Section.~~, at a public water system's request, if ~~To facilitate scheduling of such an inspection,~~ both of the following notification requirements ~~shall be~~ are met:

1. ~~A~~ The ~~water supplier~~ public water system ~~shall notify~~ notifies the Department at least seven days prior to commencing construction on a public water system installation, change, or addition which is authorized by an Approval to Construct; and
2. A ~~water supplier~~ public water system ~~shall notify~~ notifies the Department of completion of construction at least 10 working days prior to the expected completion date.

**R18-4-508. Record Drawings**

**A.** ~~Using a complete set of working drawings for the project, a professional engineer, registered in the state of Arizona, shall record in contrasting color thereon, every deviation from the original plans as they occur.~~ An engineer shall clearly and accurately record or mark, on a complete set of working project drawings, each deviation from the original plans and the dimensions of the deviations. ~~These marked-up plans shall clearly describe or dimension changes so that this set of plans~~ The set of marked drawings becomes the record drawings, reflecting the project as actually built.

**B.** ~~Each sheet of these record drawings shall be dated, contain the signature and seal of the registrant, and shall be submitted to the Department upon completion of the project.~~ The engineer shall sign, date and place the engineer's seal on each sheet of the record drawings and submit them to the Department upon completion of the project. The record drawings shall be accompanied by an Engineer's Certificate of Completion, signed by the registrant, and submitted on a form approved by the Department for any project inspected pursuant to R18-4-507(B).

**C.** Quality control testing results and calculations, including ~~infiltration, exfiltration,~~ pressure~~,~~ and microbiological ~~and deflection~~ testing, and chlorine residual records, shall be submitted with the Engineer's Certificate of Completion together with field notes and the name of the individual witnessing the tests.

**R18-4-509. Modification to Existing Treatment Process**

Before a public water system may make a modification to its existing treatment process, the ~~water supplier~~ public water system shall submit and obtain the Department's approval for a detailed plan setting forth ~~its~~ the proposed modifications and ~~those~~ the safeguards that ~~it~~ the public water system will implement to ensure that the quality of the water served by the system will not be adversely affected by the modification. The ~~water supplier~~ public water system shall comply with the provisions ~~set forth~~ in the approved plans.

~~**Appendix A. Mandatory Health Effects Language**~~

~~(1) **Acrylamide.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that acrylamide is a health concern at certain levels of exposure. Polymers made from acrylamide are sometimes used to treat water supplies to remove particulate contaminants. Acrylamide has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. Sufficiently large doses of acrylamide are known to cause neurological injury. EPA has set the drinking water standard for acrylamide using a treatment technique to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. This treatment technique limits the amount of acrylamide in the polymer and the amount of the polymer which may be added to drinking water to remove particulates. Drinking water systems which comply with this treatment technique have little to no risk and are considered safe with respect to acrylamide.~~

~~(2) **Alachlor.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that alachlor is a health concern at certain levels of exposure. This organic chemical is a widely used pesticide. When soil and climatic conditions are favorable, alachlor may get into drinking water by runoff into surface water or by leaching into groundwater. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standard for alachlor at 0.002 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water that meets this standard is associated with little to none of this risk and is considered safe with respect to alachlor.~~

~~(3) **Antimony.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that antimony is a health concern at certain levels of exposure. This inorganic chemical occurs naturally in soils, groundwater and surface waters and is often used in the flame retardant industry. It is also used in ceramics, glass, batteries, fireworks, and explosives. It may get into drinking water through natural weathering of rock, industrial production, municipal waste disposal, or manufacturing processes. This chemical has been shown to decrease longevity, and alter blood levels of cholesterol and glucose in laboratory animals such as rats exposed to high levels during their lifetimes. EPA has set the drinking water standard for antimony at 0.006 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to antimony.~~

(4) **Asbestos.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that asbestos fibers greater than 10 micrometers in length are a health concern at certain levels of exposure. Asbestos is a naturally occurring mineral. Most asbestos fibers in drinking water are less than 10 micrometers in length and occur in drinking water from natural sources and from corroded asbestos-cement pipes in the distribution system. The major uses of asbestos were in the production of cements, floor tiles, paper products, paint, and caulking; in transportation-related applications; and in the production of textiles and plastics. Asbestos was once a popular insulating and fire-retardant material. Inhalation studies have shown that various forms of asbestos have produced lung tumors in laboratory animals. The available information on the risk of developing gastrointestinal tract cancer associated with the ingestion of asbestos from drinking water is limited. Ingestion of intermediate-range chrysotile asbestos fibers greater than 10 micrometers in length is associated with causing benign tumors in male rats. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standard for asbestos at 7 million long fibers per liter to reduce the potential risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to asbestos.

(5) **Atrazine.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that atrazine is a health concern at certain levels of exposure. This organic chemical is a herbicide. When soil and climatic conditions are favorable, atrazine may get into drinking water by runoff into surface water or by leaching into groundwater. This chemical has been shown to affect offspring of rats and the heart of dogs. EPA has set the drinking water standard for atrazine at 0.003 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to atrazine.

(6) **Barium.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that barium is a health concern at certain levels of exposure. This inorganic chemical occurs naturally in some aquifers that serve as sources of groundwater. It is also used in oil and gas drilling muds, automotive paints, bricks, tiles, and jet fuels. It generally gets into drinking water after dissolving from naturally occurring minerals in the ground. This chemical may damage the heart and cardiovascular system and is associated with high blood pressure in laboratory animals such as rats exposed to high levels during their lifetimes. In humans, EPA believes that effects from barium on blood pressure should not occur below 2 parts per million (ppm) in drinking water. EPA has set the drinking water standard for barium at 2 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to barium.

(7) **Benzene.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that the benzene is a health concern at certain levels of exposure. This chemical is used as a solvent and degreaser of metals. It is also a major component of gasoline. Drinking water contamination generally results from leaking underground gasoline and petroleum tanks or improper waste disposal. This chemical has been associated with significantly increased risks of leukemia among certain industrial workers who were exposed to relatively large amounts of this chemical during their working careers. This chemical has also been shown to cause cancer in laboratory animals when the animals are exposed at high levels over their lifetimes. Chemicals that cause increased risk of cancer among exposed industrial workers and in laboratory animals also may increase the risk of cancer in humans who are exposed at lower levels over long periods of time. EPA has set the enforceable drinking water standard for benzene at 0.005 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in humans and laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe.

(8) **Benzo[a]pyrene.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that benzo[a]pyrene is a health concern at certain levels of exposure. Cigarette smoke and charbroiled meats are common sources of general exposure. The major source of benzo[a]pyrene in drinking water is the leaching from coal tar lining and sealants in water storage tanks. This chemical has been shown to cause cancer in animals such as rats and mice when the animals are exposed at high levels. EPA has set the drinking water standard for benzo[a]pyrene at 0.0002 parts per million (ppm) to protect against the risk of cancer. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to benzo[a]pyrene.

(9) **Beryllium.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that beryllium is a health concern at certain levels of exposure. This inorganic metal occurs naturally in soils, groundwater, and surface waters and is often used in electrical equipment and electrical components. It generally gets into water from runoff from mining operations, discharge from processing plants, and improper waste disposal. Beryllium compounds have been associated with damage to the bones and lungs and induction of cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. There is limited evidence to suggest that beryllium may pose a cancer risk via drinking water exposure. Therefore, EPA based the health assessment on noncancer effects with an extra uncertainty factor to account for possible carcinogenicity. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standard for beryllium at 0.004 part per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to beryllium.

(10) **Cadmium.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that cadmium is a health concern at certain levels of exposure. Food and the smoking of tobacco are common sources of general exposure. This inorganic metal is a contaminant in the metals used to galvanize pipe. It generally gets into water for corrosion of galvanized pipes or by improper waste disposal. This chemical has been shown to damage the kidney in animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Some industrial workers who were exposed to relatively large amounts of this chemical during working careers also suffered damage to the kidney. EPA has set the drinking water standard for cadmium at 0.005 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to cadmium.

(11) **Carbofuran.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that carbofuran is a health concern at certain levels of exposure. This organic chemical is a pesticide. When soil and climatic conditions are favorable, carbofuran may get into drinking water by runoff into surface water or by leaching into groundwater. This chemical has been shown to damage the nervous and reproductive systems of laboratory animals such as rats and mice exposed at high levels over their lifetimes. Some humans who were exposed to relatively large amounts of this chemical during their working careers also suffered damage to the nervous system. Effects on the nervous system are generally rapidly reversible. EPA has set the drinking water standard for carbofuran at 0.04 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to carbofuran.

(12) **Carbon tetrachloride**. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that carbon tetrachloride is a health concern at certain levels of exposure. This chemical was once a popular household cleaning fluid. It generally gets into drinking water by improper waste disposal. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed at lower levels over long periods of time. EPA has set the enforceable drinking water standard for carbon tetrachloride at 0.005 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe.

(13) **Chlordane.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that chlordane is a health concern at certain levels of exposure. This organic chemical is a pesticide used to control termites. Chlordane is not very mobile in soils. It usually gets into drinking water after application near water supply intakes or wells. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standard for chlordane at 0.002 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to chlordane.

(14) **Chromium.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that chromium is a health concern at certain levels of exposure. The inorganic metal occurs naturally in the ground and is often used in the electroplating of metals. It generally gets into water from runoff from old mining operations and improper waste disposal from plating operations. This chemical has been shown to damage the kidney, nervous system, and the circulatory system of laboratory animals such as rats and mice when the animals are exposed at high levels. Some humans who were exposed to high levels of this chemical suffered liver and kidney damage, dermatitis, and respiratory problems. EPA has set the drinking water standard for chromium at 0.1 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to chromium.

(15) **Copper.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that copper is a health concern at certain exposure levels. Copper, a reddish-brown metal, is often used to plumb residential and commercial structures that are connected to water distribution systems. Copper contaminating drinking water as a corrosion by-product occurs as the result of the corrosion of copper pipes that remain in contact with water for a prolonged period of time. Copper is an essential nutrient, but at high doses it has been shown to cause stomach and intestinal distress, liver and kidney damage, and anemia. Persons with Wilson's disease may be at a higher risk of health effects due to copper than the general public. EPA's national primary drinking water regulation requires all public water systems to install optimal corrosion control to minimize copper contamination resulting from the corrosion of plumbing materials. Public water systems serving 50,000 people or fewer that have copper concentrations below 1.3 parts per million (ppm) in more than 90% of tap water samples (the EPA "action level") are not required to install or improve their treatment. Any water system that exceeds the action level must also monitor their source water to determine whether treatment to remove copper in source water is needed.

(16) **Cyanide.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that cyanide is a health concern at certain levels of exposure. This inorganic chemical is used in electroplating, steel pro-

~~cessing, plastics, synthetic fabrics, and fertilizer products. It usually gets into water as a result of improper waste disposal. This chemical has been shown to damage the spleen, brain, and liver of humans fatally poisoned with cyanide. EPA has set the drinking water standard for cyanide at 0.2 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to cyanide.~~

~~(17) **2,4-D.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that 2,4-D is a health concern at certain levels of exposure. This organic chemical is used as a herbicide and to control algae in reservoirs. When soil and climatic conditions are favorable, 2,4-D may get into drinking water by runoff into surface water or by leaching into groundwater. The chemical has been shown to damage the liver and kidney of laboratory animals such as rats exposed at high levels during their lifetimes. Some humans who were exposed to relatively large amounts of this chemical also suffered damage to the nervous system. EPA has set the drinking water standard for 2,4-D at 0.07 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to 2,4-D.~~

~~(18) **Dalapon.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that dalapon is a health concern at certain levels of exposure. This organic chemical is a widely used herbicide. It may get into drinking water after application to control grasses in crops, drainage ditches, and along railroads. This chemical has been shown to cause damage to the kidney and liver in laboratory animals when the animals are exposed to high levels over their lifetimes. EPA has set the drinking water standard for dalapon at 0.2 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to dalapon.~~

~~(19) **Dibromochloropropane (DBCP).** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that DBCP is a health concern at certain levels of exposure. This organic chemical was once a popular pesticide. When soil and climatic conditions are favorable, dibromochloropropane may get into drinking water by runoff into surface water or by leaching into groundwater. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standard for DBCP at 0.0002 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to DBCP.~~

~~(20) **o-Dichlorobenzene.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that o-dichlorobenzene is a health concern at certain levels of exposure. This organic chemical is used as a solvent in the production of pesticides and dyes. It generally gets into water by improper waste disposal. This chemical has been shown to damage the liver, kidney, and the blood cells of laboratory animals such as rats and mice exposed to high levels during their lifetimes. Some industrial workers who were exposed to relatively large amounts of this chemical during working careers also suffered damage to the liver, nervous system, and circulatory system. EPA has set the drinking water standard for o-dichlorobenzene at 0.6 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to o-dichlorobenzene.~~

~~(21) **Para-dichlorobenzene.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that para-dichlorobenzene is a health concern at certain levels of exposure. This chemical is a component of deodorizers, moth balls, and pesticides. It generally gets into drinking water by improper waste disposal. This chemical has been shown to cause liver and kidney damage in laboratory animals such as rats and mice when the animals are exposed to high levels over their lifetimes. Chemicals which cause adverse effects in laboratory animals also may cause adverse health effects in humans who are exposed at lower levels over long periods of time. EPA has set the enforceable drinking water standard for para-dichlorobenzene at 0.075 parts per million (ppm) to reduce the risk of these adverse health effects which have been observed in laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe.~~

~~(22) **1,2-Dichloroethane.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that 1,2-dichloroethane is a health concern at certain levels of exposure. This chemical is used as a cleaning fluid for fats, oils, waxes, and resins. It generally gets into drinking water from improper waste disposal. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed at lower levels over long periods of time. EPA has set the enforceable drinking water standard for 1,2-dichloroethane at 0.005 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe.~~

~~(23) **1,1-Dichloroethylene.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that 1,1-dichloroethylene is a health concern at certain levels of exposure. This chemical is used in industry and is found in drinking water as a result of the breakdown of related solvents. The solvents are used as cleaners and~~

~~degreasers of metals and generally get into drinking water by improper waste disposal. This chemical has been shown to cause liver and kidney damage in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals which cause adverse effects in laboratory animals also may cause adverse health effects in humans who are exposed at lower levels over long periods of time. EPA has set the enforceable drinking water standard for 1,1-dichloroethylene at 0.007 parts per million (ppm) to reduce the risk of these adverse health effects which have been observed in laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe.~~

(24) ~~**cis-1,2-Dichloroethylene.** The United States Environmental Protection Agency (EPA) establishes drinking water standards and has determined that cis-1,2-Dichloroethylene is a health concern at certain levels of exposure. This organic chemical is used as a solvent and intermediate in chemical production. It generally gets into water by improper waste disposal. This chemical has been shown to damage the liver, nervous system, and circulatory system of laboratory animals such as rats and mice when exposed at high levels over their lifetimes. Some humans who were exposed to relatively large amounts of this chemical also suffered damage to the nervous system. EPA has set the drinking water standard for cis-1,2-dichloroethylene at 0.07 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to cis-1,2-dichloroethylene.~~

(25) ~~**trans-1,2-Dichloroethylene.** The United States Environmental Protection Agency (EPA) establishes drinking water standards and has determined that trans-1,2-dichloroethylene is a health concern at certain levels of exposure. This organic chemical is used as a solvent and intermediate in chemical production. It generally gets into water by improper waste disposal. This chemical has been shown to damage the liver, nervous system, and the circulatory system of laboratory animals such as rats and mice when exposed at high levels over their lifetimes. Some humans who were exposed to relatively large amounts of this chemical also suffered damage to the nervous system. EPA has set drinking water standard for tans-1,2-dichloroethylene at 0.1 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to trans-1,2- dichloroethylene.~~

(26) ~~**Dichloromethane.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that dichloromethane (methylene chloride) is a health concern at certain levels of exposure. This organic chemical is a widely used solvent. It is used in the manufacture of paint remover, as a metal degreaser, and as an aerosol propellant. It generally gets into drinking water after improper discharge of waste disposal. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standard for dichloromethane at 0.005 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe with respect to dichloromethane.~~

(27) ~~**1,2-Dichloropropane.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that 1,2-dichloropropane is a health concern at certain levels of exposure. This organic chemical is used as a solvent and pesticide. When soil and climate conditions are favorable, 1,2-dichloropropane may get into drinking water by runoff into surface water or by leaching into groundwater. It may also get into drinking water through improper waste disposal. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standard for 1,2- dichloropropane at 0.005 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to 1,2- dichloropropane.~~

(28) ~~**Di(2-ethylhexyl)adipate.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that di(2-ethylhexyl)adipate is a health concern at certain levels of exposure. Di(2-ethylhexyl)adipate is a widely used plasticizer in a variety of products, including synthetic rubber, food packaging materials, and cosmetics. It may get into drinking water after improper waste disposal. This chemical has been shown to damage liver and testes in laboratory animals such as rats and mice exposed to high levels. EPA has set the drinking water standard for di(2-ethylhexyl)adipate at 0.4 parts per million (ppm) to protect against the risk of adverse health effects. Drinking water which meets the EPA standards is associated with little to none of this risk and should be considered safe with respect to di(2-ethylhexyl)adipate.~~

(29) ~~**Di(2-ethylhexyl)phthalate.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that di(2-ethylhexyl)phthalate is a health concern at certain levels of exposure. Di(2-ethylhexyl)phthalate is a widely used plasticizer, which is primarily used in the production of polyvinyl chloride (PVC) resins. It may get into drinking water after improper waste disposal. This chemical has been shown to cause cancer in laboratory animals such as rats and mice exposed to high levels over their lifetimes. EPA has set the drinking water standard for di(2-ethylhexyl)phthalate at 0.006 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have~~

been observed in laboratory animals. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to di(2-ethylhexyl)phthalate.

(30) **Dinoseb.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that dinoseb is a health concern at certain levels of exposure. Dinoseb is a widely used pesticide and generally gets into drinking water after application on orchards, vineyards, and other crops. This chemical has been shown to damage the thyroid and reproductive organs in laboratory animals such as rats exposed to high levels. EPA has set the drinking water standard for dinoseb at 0.007 parts per million (ppm) to protect against the risk of adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to dinoseb.

(31) **Diquat.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that diquat is a health concern at certain levels of exposure. This organic chemical is a herbicide used to control terrestrial and aquatic weeds. It may get into drinking water by runoff into surface water. This chemical has been shown to damage the liver, kidney, and gastrointestinal tract and causes cataract formation in laboratory animals such as dogs and rats exposed at high levels over their lifetimes. EPA has set the drinking water standard for diquat at 0.02 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to diquat.

(32) **Endothall.** The United States Environmental Protection Agency (EPA) has determined that endothall is a health concern at certain levels of exposure. This organic chemical is a herbicide used to control terrestrial and aquatic weeds. It may get into water by runoff into surface water. This chemical has been shown to damage the liver, kidney, gastrointestinal tract, and reproductive system of laboratory animals such as rats and mice exposed at high levels over their lifetimes. EPA has set the drinking water standard for endothall at 0.1 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to endothall.

(33) **Endrin.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that endrin is a health concern at certain levels of exposure. This organic chemical is a pesticide no longer registered for use in the United States. However, this chemical is persistent in treated soils and accumulates in sediments and aquatic and terrestrial biota. This chemical has been shown to cause damage to the liver, kidney, and heart in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. EPA has set the drinking water standard for endrin at 0.002 parts per million (ppm) to protect against the risk of these adverse health effects which have been observed in laboratory animals. Drinking water that meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to endrin.

(34) **Epichlorohydrin.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that epichlorohydrin is a health concern at certain levels of exposure. Polymers made from epichlorohydrin are sometimes used in the treatment of water supplies as a flocculent to remove particulates. Epichlorohydrin generally gets into drinking water by improper use of these polymers. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are expected over long periods of time. EPA has set the drinking water standard for epichlorohydrin using a treatment technique to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. This treatment technique limits the amount of epichlorohydrin in the polymer and the amount of the polymer which may be added to drinking water as a flocculent to remove particulates. Drinking water systems which comply with this treatment technique have little to no risk and are considered safe with respect to epichlorohydrin.

(35) **Ethylbenzene.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined ethylbenzene is a health concern at certain levels of exposure. This organic chemical is a major component of gasoline. It generally gets into water by improper waste disposal or leaking gasoline tanks. This chemical has been shown to damage the kidney, liver, and nervous system of laboratory animals such as rats exposed to high levels during their lifetimes. EPA has set the drinking water standard for ethylbenzene at 0.7 part per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to ethylbenzene.

(36) **Ethylene dibromide (EDB).** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that EDB is a health concern at certain levels of exposure. This organic chemical was once a popular pesticide. When soil and climatic conditions are favorable, EDB may get into drinking water by runoff into surface water or by leaching into groundwater. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standard for EDB at 0.00005 part per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water that meets this standard is associated with little to none of this risk and is considered safe with respect to EDB.

(37) **Fecal Coliforms/E. coli.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that the presence of fecal coliforms or E. coli is a serious health concern. Fecal coliforms and E. coli are generally not harmful themselves, but their presence in drinking water is serious because they usually are associated with sewage or animal wastes. The presence of these bacteria in drinking water is generally a result of a problem with water treatment or the pipes which distribute the water and indicates that the water may be contaminated with organisms that can cause disease. Disease symptoms may include diarrhea, cramps, nausea, and possibly jaundice, and associated headaches and fatigue. These symptoms, however, are not just associated with disease-causing organisms in drinking water but also may be caused by a number of factors other than your drinking water. EPA has set an enforceable drinking water standard for fecal coliforms and E. coli to reduce the risk of these adverse health effects. Under this standard all drinking water samples must be free of these bacteria. Drinking water which meets this standard is associated with little or none of this risk and should be considered safe. State and local health authorities recommend that consumers take the following precautions: [To be inserted by the public water system, according to instructions from state or local authorities].

(38) **Fluoride.** The notice shall contain the following language including the language necessary to replace footnotes 1, 2 (if applicable), and 3.

Dear User,

The U.S. Environmental Protection Agency requires that we send you this notice on the level of fluoride in your drinking water. The drinking water in your community has a fluoride concentration of [1] milligrams per liter (mg/l). Federal regulations require that fluoride, which occurs naturally in your water supply, not exceed a concentration of 4.0 mg/l in drinking water. This is an enforceable standard called a Maximum Contaminant Level (MCL), and it has been established to protect the public health. Exposure to drinking water levels above 4.0 mg/l for many years may result in some cases of crippling skeletal fluorosis, which is a serious bone disorder.

Federal law also requires that we notify you when monitoring indicates that the fluoride in your drinking water exceeds 2.0 mg/l. This is intended to alert families about dental problems that might affect children under 9 years of age. The fluoride concentration of your water exceeds this federal guideline.

Fluoride in children's drinking water at levels of approximately 1.0 mg/l reduces the number of dental cavities. However, children exposed to levels of fluoride greater than about 2.0 mg/l may develop dental fluorosis. Dental fluorosis, in its moderate to severe forms, is a brown staining and pitting of the permanent teeth.

Because dental fluorosis occurs only when developing teeth (before they erupt from the gums) are exposed to elevated fluoride levels, households without children are not expected to be affected by this level of fluoride. Families with children under the age of 9 are encouraged to seek other sources of drinking water for their children to avoid the possibility of staining and pitting.

Your water supplier can lower the concentration of fluoride in your water so that you will still receive the benefits of cavity prevention while the possibility of stained and pitted teeth is minimized. Removal of fluoride may increase your water costs. Treatment systems are also commercially available for home use. Information on such systems is available at the address given below. Low-fluoride bottled drinking water that would meet all standards is also commercially available.

(If a violation of the MCL (4.0 mg/l) has occurred, the following sentence must also be included: The following steps are being taken to come into compliance with the MCL for fluoride: [2])

For further information, contact[3] at your public water system.

[1] PWS shall insert the compliance result which triggered notification under this part.

[2] If an MCL violation occurred, PWS shall insert steps which are being taken to come into compliance with the fluoride MCL.

[3] PWS shall insert the name, address, and telephone number of a contact person at the PWS.

(39) **Glyphosate.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that glyphosate is a health concern at certain levels of exposure. This organic chemical is a herbicide used to control grasses and weeds. It may get into drinking water by runoff into surface water. This chemical has been shown to cause damage to the liver and kidneys in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. EPA has set the drinking water standard for glyphosate at 0.7 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to glyphosate.

(40) **Heptachlor.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that heptachlor is a health concern at certain levels of exposure. This organic chemical was once a popular pesticide. When soil and climatic conditions are favorable, heptachlor may get into drinking water by runoff into surface water or by leaching into groundwater. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standards for heptachlor at 0.0004 part per million (ppm) to reduce the risk of cancer or other adverse health effects which

have been observed in laboratory animals. Drinking water that meets this standard is associated with little to none of this risk and is considered safe with respect to heptachlor.

(41) **Heptachlor epoxide.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that heptachlor epoxide is a health concern at certain levels of exposure. This organic chemical was once a popular pesticide. When soil and climatic conditions are favorable, heptachlor epoxide may get into drinking water by runoff into surface water or by leaching into groundwater. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standards for heptachlor epoxide at 0.0002 part per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water that meets this standard is associated with little to none of this risk and is considered safe with respect to heptachlor epoxide.

(42) **Hexachlorobenzene.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that hexachlorobenzene is a health concern at certain levels of exposure. This organic chemical is produced as an impurity in the manufacture of certain solvents and pesticides. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed to high levels during their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standard for hexachlorobenzene at 0.001 parts per million (ppm) to protect against the risk of cancer and other adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to hexachlorobenzene.

(43) **Hexachlorocyclopentadiene.** The United States Environmental Protection Agency (EPA) establishes drinking water standards and has determined that hexachlorocyclopentadiene is a health concern at certain levels of exposure. This organic chemical is used as an intermediate in the manufacture of pesticides and flame retardants. It may get into water by discharge from production facilities. This chemical has been shown to damage the kidney and the stomach of laboratory animals when exposed at high levels over their lifetimes. EPA has set the drinking water standard for hexachlorocyclopentadiene at 0.05 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to hexachlorocyclopentadiene.

(44) **Lead.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that lead is a health concern at certain exposure levels. Materials that contain lead have frequently been used in the construction of water supply distribution systems, and plumbing systems in private homes and other buildings. The most commonly found materials include service lines, pipes, brass and bronze fixtures, and solders and fluxes. Lead in these materials can contaminate drinking water as a result of the corrosion that takes place when water comes into contact with those materials. Lead can cause a variety of adverse health effects in humans. At relatively low levels of exposure, these effects may include interference with red blood cell chemistry, delays in normal physical and mental development in babies and young children, slight deficits in the attention span, hearing, and learning abilities of children, and slight increases in the blood pressure of some adults. EPA's national primary drinking water regulation requires all public water systems to optimize corrosion control to minimize lead contamination resulting from the corrosion of plumbing materials. Public water systems serving 50,000 people or fewer that have lead concentrations below 15 parts per billion (ppb) in more than 90% of tap water samples (the EPA "action level") have optimized their corrosion control treatment. Any water system that exceeds the action level must also monitor their source water to determine whether treatment to remove lead in source water is needed. Any water system that continues to exceed the action level after installation of corrosion control and/or source water treatment must eventually replace all lead service lines contributing in excess of 15 (ppb) of lead to drinking water. Any water system that exceeds the action level must also undertake a public education program to inform consumers of ways they can reduce their exposure to potentially high levels of lead in drinking water.

(45) **Lindane.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that lindane is a health concern at certain levels of exposure. This organic chemical is used as a pesticide. When soil and climatic conditions are favorable, lindane may get into drinking water by runoff into surface water or by leaching into groundwater. This chemical has been shown to damage the liver, kidney, nervous system, and immune system of laboratory animals such as rats, mice, and dogs exposed at high levels during their lifetimes. Some humans who were exposed to relatively large amounts of this chemical also suffered damage to the nervous system and circulatory system. EPA has established the drinking water standard for lindane at 0.0002 part per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to lindane.

(46) **Mercury.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that mercury is a health concern at certain levels of exposure. This inorganic metal is used in electrical equipment and some water pumps. It usually gets into water as a result of improper waste disposal. This chemical has been shown to damage the kidney of laboratory animals such as rats when the animals are exposed at high levels over their lifetimes. EPA has set the drinking water standard for mercury at 0.002 parts per million (ppm) to protect against the risk of these

adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to mercury.

(47) **Methoxychlor.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that methoxychlor is a health concern at certain levels of exposure. This organic chemical is used as a pesticide. When soil and climatic conditions are favorable, methoxychlor may get into drinking water by runoff into surface water or by leaching into groundwater. This chemical has been shown to damage the liver, kidney, nervous system, and reproductive system of laboratory animals such as rats exposed at high levels during their lifetimes. It has also been shown to produce growth retardation in rats. EPA has set the drinking water standard for methoxychlor at 0.04 part per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to methoxychlor.

(48) **Microbiological contaminants** [for use when there is a violation of the treatment technique requirements for filtration and disinfection, R18-4-302 or R18-4-303]. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that the presence of microbiological contaminants are a health concern at certain levels of exposure. If water is inadequately treated, microbiological contaminants in that water may cause disease. Disease symptoms may include diarrhea, cramps, nausea, and possibly jaundice, and any associated headaches and fatigue. These symptoms, however, are not just associated with disease-causing organisms in drinking water but also may be caused by a number of factors other than your drinking water. EPA has set enforceable requirements for treating drinking water to reduce the risk of these adverse health effects. Treatment such as filtering and disinfecting the water removes or destroys microbiological contaminants. Drinking water which is treated to meet EPA requirements is associated with little to none of this risk and should be considered safe.

(49) **Monochlorobenzene.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that monochlorobenzene is a health concern at certain levels of exposure. This organic chemical is used as a solvent. It generally gets into water by improper waste disposal. This chemical has been shown to damage the liver, kidney, and nervous system of laboratory animals such as rats and mice exposed to high levels during their lifetimes. EPA has set the drinking water standard for monochlorobenzene at 0.1 part per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to monochlorobenzene.

(50) **Nitrate.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that nitrate poses an acute health concern at certain levels of exposure. Nitrate is used in fertilizer and is found in sewage and wastes from human and/or farm animals and generally gets into drinking water from those activities. Excessive levels of nitrate in drinking water have caused serious illness and sometimes death in infants under 6 months of age. The serious illness in infants is caused because nitrate is converted to nitrite in the body. Nitrite interferes with the oxygen-carrying capacity of the child's blood. This is an acute disease in that symptoms can develop rapidly in infants. In most cases, health deteriorates over a period of days. Symptoms include shortness of breath and blueness of the skin. Clearly, expert medical advice should be sought immediately if these symptoms occur. The purpose of this notice is to encourage parents and other responsible parties to provide infants with an alternate source of drinking water. Local and state health authorities are the best source for information concerning alternate sources of drinking water for infants. EPA has set the drinking water standard at 10 parts per million (ppm) for nitrate to protect against the risk of these adverse effects. EPA has also set a drinking water standard for nitrite at 1 ppm. To allow for the fact that the toxicity of nitrate and nitrite are additive, EPA has also established a standard for the sum of nitrate and nitrite at 10 ppm. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to nitrate.

(51) **Nitrite.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that nitrite poses and acute health concern at certain levels of exposure. This inorganic chemical is used in fertilizers and is found in sewage and wastes from humans and/or farm animals and generally gets into drinking water as a result of those activities. While excessive levels of nitrite in drinking water have not been observed, other sources of nitrite have caused serious illness and sometimes death in infants under 6 months of age. The serious illness in infants is caused because nitrite interferes with the oxygen carrying capacity of the child's blood. This is an acute disease in that symptoms can develop rapidly. However, in most cases, health deteriorates over a period of days. Symptoms include shortness of breath and blueness of the skin. Clearly, expert medical advice should be sought immediately if these symptoms occur. The purpose of this notice is to encourage parents and other responsible parties to provide infants with an alternate source of drinking water. EPA has set the drinking water standard at 1 part per million (ppm) for nitrite to protect against the risk of these adverse effects. EPA has also set a drinking water standard for nitrate (converted to nitrite in humans) at 10 ppm and for the sum of nitrate and nitrite at 10 ppm. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to nitrite.

(52) **Oxamyl.** The United States Environmental Protection Agency (EPA) establishes drinking water standards and has determined that oxamyl is a health concern at certain levels of exposure. This organic chemical is used as a pesticide for the control of insects and other pests. It may get into drinking water by runoff into surface water or leaching into groundwater. This chemical has been shown to damage the kidneys of laboratory animals such as rats when exposed at high levels over their lifetimes. EPA has set the drinking water standard for oxamyl at 0.2 parts per million (ppm) to protect against the risk

~~of these adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to oxamyl.~~

(53) ~~**Pentachlorophenol.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that pentachlorophenol is a health concern at certain levels of exposure. This organic chemical is used as a wood preservative, herbicide, disinfectant, and defoliant. It generally gets into drinking water by runoff into surface water or leaching into groundwater. This chemical has been shown to produce adverse reproductive effects and to damage the liver and kidneys of laboratory animals such as rats exposed to high levels during their lifetimes. Some humans who were exposed to relatively large amounts of this chemical also suffered damage to the liver and kidneys. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed to high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standard for pentachlorophenol at 0.001 parts per million (ppm) to protect against the risk of cancer or other adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to pentachlorophenol.~~

(54) ~~**Picloram.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that picloram is a health concern at certain levels of exposure. This organic chemical is used as a pesticide for broadleaf weed control. It may get into drinking water by runoff into surface water or leaching into groundwater as a result of pesticide application and improper waste disposal. This chemical has been shown to cause damage to the kidneys and liver in laboratory animals such as rats when the animals are exposed at high levels over their lifetimes. EPA has set the drinking water standard for picloram at 0.5 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to picloram.~~

(55) ~~**Polychlorinated biphenyls (PCBs).** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that polychlorinated biphenyls (PCBs) are a health concern at certain levels of exposure. These organic chemicals were once widely used in electrical transformers and other industrial equipment. They generally get into drinking water by improper waste disposal or leaking electrical industrial equipment. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standard for PCBs at 0.0005 part per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water that meets this standard is associated with little to none of this risk and is considered safe with respect to PCBs.~~

(56) ~~**Selenium.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that selenium is a health concern at certain high levels of exposure. Selenium is also an essential nutrient at low levels of exposure. This inorganic chemical is found naturally in food and soils and is used in electronics, photocopy operations, the manufacture of glass, chemicals, drugs, and as a fungicide and a feed additive. In humans, exposure to high levels of selenium over a long period of time has resulted in a number of adverse health effects, including a loss of feeling and control in the arms and legs. EPA has set the drinking water standard for selenium at 0.05 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to selenium.~~

(57) ~~**Simazine.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that simazine is a health concern at certain levels of exposure. This organic chemical is a herbicide used to control annual grasses and broadleaf weeds. It may leach into groundwater or runs off into surface water after application. This chemical may cause cancer in laboratory animals such as rats and mice exposed at high levels during their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standard for simazine at 0.004 parts per million (ppm) to reduce the risk of cancer or other adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to simazine.~~

(58) ~~**Styrene.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that styrene is a health concern at certain levels of exposure. This organic chemical is commonly used to make plastics and is sometimes a component of resins used for drinking water treatment. Styrene may get into drinking water from improper waste disposal. This chemical has been shown to damage the liver and nervous system in laboratory animals when exposed at high levels during their lifetimes. EPA has set the drinking water standard for styrene at 0.1 part per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to styrene.~~

(59) ~~**2,3,7,8-TCDD (Dioxin).** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that dioxin is a health concern at certain levels of exposure. This organic chemical is an impurity in the production of some pesticides. It may get into drinking water by industrial discharge of wastes. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standard for dioxin at 0.00000003 parts per million~~

~~(ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe with respect to dioxin.~~

(60) ~~**Tetrachloroethylene.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that tetrachloroethylene is a health concern at certain levels of exposure. This organic chemical has been a popular solvent, particularly for dry cleaning. It generally gets into drinking water by improper waste disposal. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standard for tetrachloroethylene at 0.005 part per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water that meets this standard is associated with little to none of this risk and is considered safe with respect to tetrachloroethylene.~~

(61) ~~**Thallium.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that thallium is a health concern at certain high levels of exposure. This inorganic metal is found naturally in soils and is used in electronics, pharmaceuticals, and the manufacture of glass and alloys. This chemical has been shown to damage the kidney, liver, brain, and intestines of laboratory animals when the animals are exposed at high levels over their lifetimes. EPA has set the drinking water standard for thallium at 0.002 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to thallium.~~

(62) ~~**Toluene.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that toluene is a health concern at certain levels of exposure. This organic chemical is used as a solvent and in the manufacture of gasoline for airplanes. It generally gets into water by improper waste disposal or leaking underground storage tanks. This chemical has been shown to damage the kidney, nervous system, and circulatory system of laboratory animals such as rats and mice exposed to high levels during their lifetimes. Some industrial workers who were exposed to relative large amounts of this chemical during working careers also suffered damage to the liver, kidney, and nervous system. EPA has set the drinking water standard for toluene at 1 part per million (ppm) to protect against the risk of adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to toluene.~~

(63) ~~**Total coliforms** [To be used when there is a violation of R18-4-202(A)(1) or R18-4-202(A)(2)] The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that the presence of total coliforms is a possible health concern. Total coliforms are common in the environment and are generally not harmful themselves. The presence of these bacteria in drinking water, however, generally is a result of a problem with water treatment or the pipes which distribute the water and indicates that the water may be contaminated with organisms that can cause disease. Disease symptoms may include diarrhea, cramps, nausea, and possibly jaundice, and any associated headaches and fatigue. The symptoms, however, are not just associated with disease-causing organisms in drinking water but also may be caused by a number of factors other than your drinking water. EPA has set an enforceable drinking water standard for total coliforms to reduce the risk of these adverse health effects. Under this standard, no more than 5.0% of the samples collected during a month can contain these bacteria, except that systems collecting fewer than 40 samples/month that have 1 total coliform-positive sample per month are not violating the standard. Drinking water which meets this standard is usually not associated with a health risk from disease-causing bacteria and should be considered safe.~~

(64) ~~**Toxaphene.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that toxaphene is a health concern at certain levels of exposure. This organic chemical was once a pesticide widely used on cotton, corn, soybeans, pineapples, and other crops. When soil and climatic conditions are favorable, toxaphene may get into drinking water by runoff into surface water or by leaching into groundwater. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standard for toxaphene at 0.003 part per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water that meets this standard is associated with little to none of this risk and is considered safe with respect to toxaphene.~~

(65) ~~**2,4,5-TP.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that 2,4,5-TP is a health concern at certain levels of exposure. This organic chemical is used as a herbicide. When soil and climatic conditions are favorable, 2,4,5-TP may get into drinking water by runoff into surface water or by leaching into groundwater. This chemical has been shown to damage the liver and kidney of laboratory animals such as rats and dogs exposed to high levels during their lifetimes. Some industrial workers who were exposed to relatively large amounts of this chemical during working careers also suffered damage to the nervous system. EPA has set the drinking water standard for 2,4,5-TP at 0.05 part per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to 2,4,5-TP.~~

(66) ~~**1,2,4-Trichlorobenzene.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that 1,2,4-trichlorobenzene is a health concern at certain levels of exposure. This organic chemical is used~~

as a dye carrier and as a precursor in herbicide manufacture. It generally gets into drinking water by discharges from industrial activities. This chemical has been shown to cause damage to several organs, including the adrenal glands. EPA has set the drinking water standard for 1,2,4-trichlorobenzene at 0.07 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to 1,2,4-trichlorobenzene.

(67) **1,1,1-Trichloroethane.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that the 1,1,1-trichloroethane is a health concern at certain levels of exposure. This chemical is used as a cleaner and degreaser of metals. It generally gets into drinking water by improper waste disposal. This chemical has been shown to damage the liver, nervous system, and circulatory system of laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Some industrial workers who were exposed to relatively large amounts of this chemical during their working careers also suffered damage to the liver, nervous system, and circulatory system. Chemicals which cause adverse effects among exposed industrial workers and in laboratory animals also may cause adverse health effects in humans who are exposed at lower levels over long periods of time. EPA has set the enforceable drinking water standard for 1,1,1 trichloroethane at 0.2 parts per million (ppm) to protect against the risk of these adverse health effects which have been observed in humans and laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe.

(68) **1,1,2 Trichloroethane.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined 1,1,2 trichloroethane is a health concern at certain levels of exposure. This organic chemical is an intermediate in the production of 1,1-dichloroethylene. It generally gets into water by industrial discharge of wastes. This chemical has been shown to damage the kidney and liver of laboratory animals such as rats exposed to high levels during their lifetimes. EPA has set the drinking water standard for 1,1,2 trichloroethane at 0.005 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to 1,1,2 trichloroethane.

(69) **Trichloroethylene.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that trichloroethylene is a health concern at certain levels of exposure. This chemical is a common metal cleaning and dry cleaning fluid. It generally gets into drinking water by improper waste disposal. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed at lower levels over long periods of time. EPA has set forth the enforceable drinking water standard for trichloroethylene at 0.005 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water which meets this standard is associated with little or none of this risk and should be considered safe.

(70) **Vinyl chloride.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that vinyl chloride is a health concern at certain levels of exposure. This chemical is used in industry and is found in drinking water as a result of the breakdown of related solvents. The solvents are used as cleaners and degreasers of metals and generally get into drinking water by improper waste disposal. This chemical has been associated with significantly increased risks of cancer among certain industrial workers who were exposed to relatively large amounts of this chemical during their working careers. This chemical has also been shown to cause cancer in laboratory animals when the animals are exposed at high levels over their lifetimes. Chemicals that cause increased risk of cancer among exposed industrial workers and in laboratory animals also may increase the risk of cancer in humans who are exposed at lower levels over long periods of time. EPA has set the enforceable drinking water standard for vinyl chloride at 0.002 part per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in humans and laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe.

(71) **Xylenes.** The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that xylene is a health concern at certain levels of exposure. This organic chemical is used in the manufacture of gasoline for airplanes and as a solvent for pesticides, and as a cleaner and degreaser of metals. It usually gets into water by improper waste disposal. This chemical has been shown to damage the liver, kidney, and nervous system of laboratory animals such as rats and dogs exposed to high levels during their lifetimes. Some humans who were exposed to relatively large amounts of this chemical also suffered damage to the nervous system. EPA has set the drinking water standard for xylene at 10 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to xylene.

**Appendix B. Lead Public Education**

A water system that exceeds the lead action level based on tap water samples collected in accordance with R18-4-310 shall deliver the public education materials contained in this Appendix in accordance with the public education delivery requirements prescribed in R18-4-316.

**Content of written materials.** A public water system shall include the following text in all of the printed materials it distributes through its lead public education program. Any additional information presented by a system shall be consistent with the information below and be in plain language that can be understood by laypersons.

~~**A. Introduction.** The United States Environmental Protection Agency (EPA) and [insert name of water supplier] are concerned about lead in your drinking water. Although most homes have very low levels of lead in their drinking water, some homes in the community have lead levels above the EPA action level of 15 parts per billion (ppb), or 0.015 milligrams of lead per liter of water (mg/L). Under federal law we are required to have a program in place to minimize lead in your drinking water by [insert date when corrosion control will be completed for your system]. This program includes corrosion control treatment, source water treatment, and public education. We are also required to replace each lead service line that we control if the line contributes lead concentrations of 15 ppb or more after we have completed the comprehensive treatment program. If you have any questions about how we are carrying out the requirements of the lead regulation, please give us a call at [insert water system's phone number). This brochure explains the simple steps you can take to protect you and your family by reducing your exposure to lead in drinking water.~~

~~**B. Health effects of lead.** Lead is a common metal found throughout the environment in lead-based paint, air, soil, household dust, food, certain types of pottery porcelain and pewter, and water. Lead can pose a significant risk to your health if too much of it enters your body. Lead builds up in the body over many years and can cause damage to the brain, red blood cells, and kidneys. The greatest risk is to young children and pregnant women. Amounts of lead that won't hurt adults can slow down normal mental and physical development of growing bodies. In addition, a child at play often comes into contact with sources of lead contamination--like dirt and dust--that rarely affect an adult. It is important to wash children's hands and toys often and to try to make sure they only put food in their mouths.~~

~~**C. Lead in Drinking Water.** Lead in drinking water, although rarely the sole cause of lead poisoning, can significantly increase a person's total lead exposure, particularly the exposure of infants who drink baby formulas and concentrated juices that are mixed with water. The EPA estimates that drinking water can make up 20% or more of a person's total exposure to lead.~~

~~Lead is unusual among drinking water contaminants in that it seldom occurs naturally in water supplies like rivers and lakes. Lead enters drinking water primarily as a result of the corrosion, or wearing away, of materials containing lead in the water distribution system and household plumbing. These materials include lead-based solder used to join copper pipe, brass and chrome-plated brass faucets, and in some cases, pipes made of lead that connect your house to the water main (service lines). In 1986, Congress banned the use of lead solder containing greater than 0.2% lead and restricted the lead content of faucets, pipes, and other plumbing materials to 8.0%.~~

~~When water stands in lead pipes or plumbing systems containing lead for several hours or more, the lead may dissolve into your drinking water. This means the 1st water drawn from the tap in the morning, or later in the afternoon after returning from work or school, can contain fairly high levels of lead.~~

~~**D. Steps You Can Take in the Home To Reduce Exposure To Lead in Drinking Water.**~~

~~Despite our best efforts mentioned earlier to control water corrosivity and remove lead from the water supply, lead levels in some homes or buildings can be high. To find out whether you need to take action in your own home, have your drinking water tested to determine if it contains excessive concentrations of lead. Testing the water is essential because you cannot see, taste, or smell lead in drinking water. Some local laboratories that can provide this service are listed at the end of this booklet. For more information on having your water tested, please call [insert phone number of water system].~~

~~If a water test indicates that the drinking water drawn from a tap in your home contains lead above 15 ppb, then you should take the following precautions:~~

1. ~~Let the water run from the tap before using it for drinking or cooking any time the water in a faucet has gone unused for more than 6 hours. The longer water resides in your home's plumbing, the more lead it may contain. Flushing the tap means running the cold water faucet until the water gets noticeably colder, usually about 15-30 seconds. If your house has a lead service line to the water main, you may have to flush the water for a longer time, perhaps 1 minute, before drinking. Although toilet flushing or showering flushes water through a portion of your home's plumbing system, you still need to flush the water in each faucet before using it for drinking or cooking. Flushing tap water is a simple and inexpensive measure you can take to protect your family's health. It usually uses less than 1 or 2 gallons of water and costs less than [insert a cost estimate based on flushing 2 times a day for 30 days] per month. To conserve water, fill a couple of bottles for drinking water after flushing the tap and, whenever possible, use the first-flush water to wash the dishes or water the plants. If you live in a high rise building, letting the water flow before using it may not work to lessen your risk from lead. The plumbing systems have more, and sometimes larger, pipes than smaller buildings. Ask your landlord for help in locating the source of the lead and for advice on reducing the lead level.~~
2. ~~Try not to cook with, or drink, water from the hot water tap. Hot water can dissolve more lead more quickly than cold water. If you need hot water, draw water from the cold tap and heat it on the stove.~~
3. ~~Remove loose lead solder and debris from the plumbing materials installed in newly constructed homes, or homes in which the plumbing has recently been replaced, by removing the faucet strainers from all taps and running the water from 3 to 5 minutes. Thereafter, periodically remove the strainers and flush out any debris that has accumulated over time.~~
4. ~~If your copper pipes are joined with lead solder that has been installed illegally since it was banned in 1986, notify the plumber who did the work and request that he or she replace the lead solder with lead-free solder. Lead solder looks~~

~~dull gray and, when scratched with a key, looks shiny. In addition, notify your state [insert name of department responsible for enforcing the Safe Drinking Water Act in your state] about the violation.~~

~~5. Determine whether or not the service line that connects your home or apartment to the water main is made of lead. The best way to determine if your service line is made of lead is by either hiring a licensed plumber to inspect the line or by contacting the plumbing contractor who installed the line. You can identify the plumbing contractor by checking the city's record of building permits which should be maintained in the files of the [insert name of department that issues building permits]. A licensed plumber can at the same time check to see if your home's plumbing contains lead solder, lead pipes, or pipe fittings that contain lead. The public water system that delivers water to your home should also maintain records of the materials located in the distribution system. If the service line that connects your dwelling to the water main contributes more than 15 ppb to drinking water, after our comprehensive treatment program is in place, we are required to replace the line. If the line is only partially controlled by the [insert name of the city, county, or water system that controls the line], we are required to provide you with information on how to replace your portion of the service line and offer to replace that portion of the line at your expense and take a follow-up tap water sample within 14 days of the replacement. Acceptable replacement alternatives include copper, steel, iron, and plastic pipes.~~

~~6. Have an electrician check your wiring. If grounding wires from the electrical system are attached to your pipes, corrosion may be greater. Check with a licensed electrician or your local electrical code to determine if your wiring can be grounded elsewhere. DO NOT attempt to change the wiring yourself because improper grounding can cause electrical shock and fire hazards.~~

~~The steps described above will reduce the lead concentrations in your drinking water. However, if a water test indicates that the drinking water coming from your tap contains lead concentrations in excess of 15 ppb after flushing, or after we have completed our actions to minimize lead levels, then you may want to take the following additional measures:~~

~~7. Purchase or lease a home treatment device. Home treatment devices are limited in that each unit treats only the water that flows from the faucet to which it is connected, and all of the devices require periodic maintenance and replacement. Devices such as reverse osmosis systems or distillers can effectively remove lead from your drinking water. Some activated carbon filters may reduce lead levels at the tap; however all lead reduction claims should be investigated. Be sure to check the actual performance of a specific home treatment device before and after installing the unit.~~

~~8. Purchase bottled water for drinking and cooking.~~

~~**E. How to Obtain More Information on Lead in Drinking Water**~~

~~You can consult a variety of sources for additional information. Your family doctor or pediatrician can perform a blood test for lead and provide you with information about the health effects of lead. State and local government agencies that can be contacted include:~~

~~1. [Insert the name of city or county department of public utilities] at [insert phone number] can provide you with information about your community's water supply and a list of local laboratories that have been licensed by the Arizona Department of Health Services for testing water quality;~~

~~2. [Insert the name of city of county department that issues building permits] at [insert phone number] can provide you with information about building permit records that should contain the names of plumbing contractors that plumbed your home; and~~

~~3. The Arizona Department of Health Services at 542-1870 or the [insert the name of the city or county health department] at [insert phone number] can provide you with information about the health effects of lead and how you can have your child's blood tested.~~

~~The following is a list of some ADHS-licensed laboratories in your area that you can call to have your water tested for lead. [Insert names and phone numbers of at least 2 laboratories].~~

~~**Appendix C.**~~ **Renumbered**

## ARTICLE 7. CONSUMER CONFIDENCE ~~**REPORT**~~ REPORTS

### R18-4-703. Content of the Consumer Confidence ~~**Report**~~ Reports

**A.** A CWS shall provide to its customers an annual CCR that contains the following information on the source of the water delivered:
1. The type of the water (~~e.g.,~~ for example, surface water, ground water); and
2. The name, if any, and location of the body of water.

**B.** If a source water assessment has been completed, the CCR shall notify consumers of the availability of this information and how to obtain it. If a CWS has received a source water assessment from the Department, the CCR shall contain a brief summary of the assessment findings and the CWS's susceptibility to potential origins of contamination, using language provided by the Department or written by the CWS in consultation with the Department.

**C.** Each CCR shall contain the following definitions:
1. "Maximum Contaminant Level" or "MCL" means the highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology; and

2. "Maximum Contaminant Level Goal" or "MCLG" means the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

**D.** A CCR for a CWS operating under a variance or an exemption ~~under R18-4-110 or R18-4-111~~ issued by the Department shall contain the following definition:
"Variance" or "exemption" means permission from the Department or the EPA not to meet an MCL or a treatment technique under certain conditions.

**E.** A CCR that contains data on a contaminant for which the Department has set a treatment technique or an action level shall contain ~~1~~ one or both of the following definitions, as applicable:
1. "Treatment technique" means a required process to reduce the level of a contaminant in drinking water.
2. "Action level" means the concentration of a contaminant that, if exceeded, triggers treatment or other requirements that a CWS shall follow.

**R18-4-704. Information on Detected Contaminants**

**A.** A CCR shall contain information on the following detected contaminants ~~that are subject to mandatory monitoring~~:
1. Contaminants subject to an MCL, action level, or treatment technique (regulated contaminants), listed in Appendix A; and
2. Contaminants listed in Appendix B ~~for which monitoring is required by R18-4-404 or R18-4-405 (unregulated contaminants)~~.

**B.** The CWS shall display in ~~1~~ one table, or several adjacent tables, data relating to the detected contaminants in subsection (A). If the CWS includes voluntary monitoring data, those data shall be listed in a table separate from the table of detected contaminants. For detected regulated contaminants, the table shall contain:
1. The MCL for that contaminant;
2. The MCLG for that contaminant expressed in the same units as the MCL;
3. If there is no MCL for a detected contaminant, the table shall indicate that there is a treatment technique, or specify the action level applicable to that contaminant, and the CCR shall include the definitions for "treatment technique" or "action level", as appropriate, specified in R18-4-703(E)(1) and (2);
4. For contaminants subject to an MCL, except turbidity and total coliforms, the highest monitoring result used to determine compliance and the range of monitoring results expressed in the same units as the MCL, as follows:
   a. When compliance with the MCL is determined annually or less frequently, the highest monitoring result at any sampling point and the range of detected monitoring results ~~expressed in the same units as the MCL~~.
   b. When compliance with the MCL is determined by calculating a running annual average of all monitoring results taken at a sampling point, the highest average of the monitoring results and the range of all detected monitoring results ~~expressed in the same units as the MCL~~.
   c. When compliance with the MCL is determined on a system-wide basis by calculating a running annual average of all monitoring results at all sampling points, the average and range of detected monitoring results. ~~expressed in the same units as the MCL~~.
5. For turbidity, the highest single measurement and lowest monthly percentage of samples meeting turbidity limits specified in R18-4-302 for the filtration technology being used. The CCR shall include an explanation of the reasons for measuring turbidity;
6. For lead and copper, the 90th percentile value of the most recent round of sampling and the number of sampling sites that exceed the action level;
7. For total coliform:
   a. The highest number of positive samples collected each month for a CWS that collects fewer than 40 samples per month; or
   b. The highest percentage of positive samples collected each month for a CWS that collects at least 40 samples per month.
8. For fecal coliform, the total number of positive samples; and
9. The likely source of detected contaminants. Specific information regarding contaminants may be available in sanitary surveys and source water assessments, and shall be used when available to the CWS. If the CWS lacks specific information on the likely source of contamination, the CCR shall include ~~1~~ one or more of the typical origins for that contaminant listed in Appendix ~~B~~A that are most applicable to the CWS.

**C.** The table shall clearly identify any data indicating violation of MCLs or treatment techniques.

**D.** The CWS shall derive information in the CCR on detected contaminants from data collected to comply with monitoring and analytical requirements of this Chapter for the previous year. The table for a CWS that monitors less often than once a year for regulated contaminants under this Chapter shall contain the date and results of the most recent sampling. The CCR shall contain a brief statement indicating that the data presented in the CCR are from the most recent testing done within the last ~~5~~ five years in accordance with this Chapter.

**E.** For a detected ~~unregulated contaminant for which monitoring is required~~ contaminant listed in Appendix B, the table shall contain the average and range at which the contaminant was detected. The CCR may include a brief explanation of the reasons for monitoring for ~~unregulated~~ these contaminants.

~~**F.** The CWS shall include in the CCR results of monitoring in compliance with R18-4-404 and R18-4-405 for 5 years from the date of last sample or until the detected contaminant becomes regulated and subject to routine monitoring requirements, whichever comes first.~~

~~**G**~~**F.** If the CWS distributes water to its customers from multiple hydraulically independent distribution systems that are fed by different raw water sources, the table shall contain a separate column for each service area and the CCR shall identify each separate distribution system. Alternatively, a CWS may produce separate CCRs tailored to include data for each service area. Multiple points of entry to a distribution system are not necessarily considered hydraulically independent.

**R18-4-705. Information on ~~Haloacetic Acids,~~ Cryptosporidium~~,~~ and Radon~~, and Other Contaminants~~**

**A.** If a CWS has performed monitoring for ~~Haloacetic Acids or~~ Cryptosporidium~~, or both,~~ that indicates that ~~either Haloacetic Acids or~~ Cryptosporidium may be present in the source water or the finished water, the CCR shall contain:
1. A summary of the results of the monitoring, and
2. An explanation of the significance of the results.

**B.** If a CWS has performed any monitoring for radon that indicates that radon might be present in the finished water, the CCR shall contain:
1. The results of the monitoring, and
2. An explanation of the significance of the results.

**R18-4-706. Information on Violations**

A CCR shall contain a clear, understandable explanation of any violation that occurred during the year covered by the CCR, the length of the violation, an explanation of any potential adverse health effects, the health effects language from Appendix ~~B of this Article~~ C, and the steps the CWS has taken to correct a violation of any of the following:
1. An MCL, treatment technique, or action level;
2. Monitoring and reporting of regulated and unregulated compliance data;
3. Filtration and disinfection for a CWS that has had a failure of filtration equipment or processes, that constitutes a violation. The CCR shall contain the following language as part of the explanation of potential adverse health effects: "Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches."
4. Lead and copper. For a CWS that failed to take ~~1~~ one or more actions prescribed by ~~R18-4-306~~ R18-4-307 through R18-4-308, and R18-4-311 through R18-4-315;
5. Treatment techniques for Acrylamide and Epichlorohydrin. For a CWS that violated the requirements of R18-4-317;
6. Recordkeeping of compliance data; or
7. Violation of the terms of a variance, an exemption, or an administrative or judicial order.

**R18-4-707. Variances and Exemptions**

If a CWS is operating under the terms of a variance or an exemption issued ~~under R18-4-110 and R18-4-111~~ by the Department, the CCR shall contain:
1. An explanation of the reasons for the variance or exemption;
2. The date on which the variance or exemption was issued;
3. A brief status report on the steps the CWS is taking to install a method of treatment, find alternative sources of water, or otherwise comply with the terms and schedules of the variance or exemption; and
4. A notice of any opportunity for public input in the review, or renewal, of the variance or exemption.

**R18-4-708. Additional Information**

**A.** A CCR shall contain a brief explanation regarding contaminants that may reasonably be expected to be found in drinking water. This explanation shall contain, at a minimum, the language of subsections (B) through ~~(D)~~ (E). A CWS may include additional information.

**B.** The sources of drinking water include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

**C.** Contaminants that may be present in source water include the following:
1. Microbial contaminants, such as viruses and bacteria, that may be from sewage treatment plants, septic systems, agricultural livestock operations, or wildlife;
2. Inorganic contaminants, such as salts and metals, that can be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming;
3. Pesticides and herbicides, that may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses;

4. Organic chemical contaminants, including synthetic and volatile organic chemicals, that are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems; and
5. Radioactive contaminants, that can be naturally occurring or be the result of oil and gas production and mining activities.

**D.** To ensure that tap water is safe to drink, the United States Environmental Protection Agency prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. The United States Food and Drug Administration regulations establish limits for contaminants in bottled water.

**E.** Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants in tap water and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791). Information on bottled water can be obtained from the United States Food and Drug Administration.

**F.** The CCR shall contain the telephone number of the owner, operator, or designee of the CWS as a source of additional information concerning the CCR.

**G.** In communities with a large proportion of non-English speaking residents, the CCR shall contain information in the appropriate language regarding the importance of the CCR or contain a telephone number or address where these residents may contact the CWS to obtain a translated copy of the CCR or assistance in the appropriate language.

**H.** The CCR shall contain information about the time and place of regularly scheduled meetings or other opportunities for public participation in decisions that may affect the quality of the water.

**I.** The CWS may include additional information necessary for public education consistent with, and not detracting from, the purpose of the CCR.

**R18-4-709. Additional Health Information.**

**A.** A CCR shall prominently display the following language:
"Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, persons with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. United States Environmental Protection Agency and Centers for Disease Control guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791)."

**B.** A CWS that detects arsenic at levels more than .025 milligrams per liter, but less than the MCL shall include in its CCR a short informational statement about arsenic. The CWS may create its own informational statement, in consultation with the Department, or the CWS may use the following language:
"The EPA is reviewing the drinking water standard for arsenic because of special concerns that it may not be stringent enough. Arsenic is a naturally occurring mineral known to cause cancer in humans at high concentrations."

**C.** A CWS that detects nitrate at levels more than 5 mg/l, but less than the MCL shall include a short informational statement about the impacts of nitrate on children. The CWS may create its own informational statement, in consultation with the Department, or the CWS may use the following language:
"Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than ~~6~~ six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant you should ask advice from your health care provider."

**D.** A CWS that detects lead above the action level in more than 5%, but ~~fewer that 10%,~~ less than or equal to 10%, of homes sampled shall include a short informational statement about the special impact of lead on children. The CWS may create its own informational statement, in consultation with the Department, or the CWS may use the following language:
"Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested and flush your tap for 30 seconds to 2 minutes before using tap water. Additional information is available from the Safe Drinking Water Hotline (800-426-4791)."

**Appendix A. Regulated Contaminants**

| **Microbiological Contaminants** | **MCL** | **MCLG** | **Major Sources in Drinking Water** |
|---|---|---|---|
| 1. Total Coliform Bacteria | Presence of coliform bacteria in 5% or more of monthly samples (CWSs that collect 40 or more samples per month); 1 positive monthly sample (CWSs that collect fewer than 40 samples per month). | 0 | Naturally present in the environment. |
| 2. Fecal coliform and E. coli | A routine sample and a repeat sample are total coliform positive, and ~~+~~ one is also fecal coliform or *E. coli* positive | 0 | Human and animal fecal waste. |
| 3. Turbidity | Treatment Technique | N/A | Soil Run-off |
| **Radioactive Contaminants** | **MCL** | **MCLG** | **Major Sources in Drinking Water** |
| 4. Beta/photon emitters | 4 Millirems/ Year | 0 | Decay of natural and man-made deposits. |
| 5. Alpha emitters | 15 Picocuries/Liter | 0 | Erosion of natural deposits. |
| 6. Combined radium | 5 Picocuries/ Liter | 0 | Erosion of natural deposits. |
| **Inorganic Contaminants** | **MCL in mg/l** | **MCLG in mg/l** | **Major Sources in Drinking Water** |
| 7. Antimony | .006 | .006 | Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder. |
| 8. Arsenic | .05 | N/A | Erosion of natural deposits; Run-off from orchards; Run-off from glass and electronics production wastes. |
| 9. Asbestos | 7 Million Fibers/Liter | 7 Million Fibers/Liter | Decay of asbestos cement water mains; Erosion of natural deposits. |
| 10. Barium | 2 | 2 | Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits. |

| | | | |
|---|---|---|---|
| 11. Beryllium | .004 | .004 | Discharge from metal refineries and coal-burning factories; Discharge from electrical, aerospace, and defense industries. |
| 12. Cadmium | .005 | .005 | Corrosion of galvanized pipes; Erosion of natural deposits; Discharge from metal refineries; run-off from waste batteries and paints. |
| 13. Chromium | .1 | .1 | Discharge from steel and pulp mills; Erosion of natural deposits. |
| 14. Copper | Action Level =1.3 | 1.3 | Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives. |
| 15. Cyanide | .2 | .2 | Discharge from steel/metal factories; Discharge from plastic and fertilizer factories. |
| 16. Fluoride | 4 | 4 | Erosion of natural deposits; Water additive that promotes strong teeth; Discharge from fertilizer and aluminum factories. |
| 17. Lead | Action Level =.015 | 0 | Corrosion of household plumbing systems; Erosion of natural deposits. |
| 18. Mercury | .002 | .002 | Erosion of natural deposits; Discharge from refineries and factories; Runoff from landfills; Runoff from cropland. |
| 19. Nitrate | 10 | 10 | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits. |
| 20. Nitrite | 1 | 1 | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits. |
| 21. Selenium | .05 | .05 | Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines. |

| | | | |
|---|---|---|---|
| 22. Thallium | .002 | .0005 | Leaching from ore-rocessing sites; Discharge from electronics, glass, and drug factories. |
| **Synthetic Organic Contaminants including Pesticides and Herbicides** | **MCL in mg/l** | **MCLG in mg/L** | **Major Sources in Drinking Water** |
| 23. 2,4-D | .07 | .07 | Runoff from herbicide used on row crops. |
| 24. 2,4,5-TP [Silvex] | .05 | .05 | Residue of banned herbicide. |
| 25. Acrylamide | Treatment Technique | 0 | Added to water during sewage/wastewater treatment. |
| 26. Alachlor | .002 | 0 | Runoff from herbicide used on row crops. |
| 27. Atrazine | .003 | .003 | Runoff from herbicide used on row crops. |
| 28. Benzo(a)pyrene [PAH] | .0002 | 0 | Leaching from linings of water storage tanks and distribution lines. |
| 29. Carbofuran | .04 | .04 | Leaching of soil fumigant used on rice and alfalfa. |
| 30. Chlordane | .002 | 0 | Residue of banned termiticide. |
| 31. Dalapon | .2 | .2 | Runoff from herbicide used on rights of way. |
| 32. Di(2-ethylhexyl) adipate | .4 | .4 | Discharge from chemical factories. |
| 33. Di(2-ethylhexyl) phthalate | .006 | 0 | Discharge from rubber and chemical factories. |
| 34. Dibromochloro-propane (DBCP) | .0002 | 0 | Runoff/leaching from soil fumigant used on soybeans, cotton, pineapples, and orchards. |
| 35. Dinoseb | .007 | .007 | Runoff from herbicide used on soybeans and vegetables. |
| 36. Diquat | .02 | .02 | Runoff from herbicide use. |
| 37. Dioxin [2,3,7,8-TCDD] | .00000003 | 0 | Emissions from waste incineration and other combustion; Discharge from chemical factories. |
| 38. Endothall | .1 | .1 | Runoff from herbicide use. |
| 39. Endrin | .002 | .002 | Residue of banned insecticide. |

| | | | |
|---|---|---|---|
| 40. Epichlorohydrin | Treatment Technique | 0 | Discharge from industrial chemical factories; An impurity of some water treatment chemicals. |
| 41. Ethylene dibromide | .00005 | 0 | Discharge from petroleum refineries. |
| 42. Glyphosate | .7 | .7 | Runoff from herbicide use. |
| 43. Heptachlor | .0004 | 0 | Residue of banned pesticide. |
| 44. Heptachlor epoxide | .0002 | 0 | Breakdown of heptachlor. |
| 45. Hexachlorobenzene | .001 | 0 | Discharge from metal refineries and agricultural chemical factories. |
| 46. Hexachloro-cyclopentadiene | .05 | .05 | Discharge from chemical factories. |
| 47. Lindane | .0002 | .0002 | Runoff/leaching from insecticide used on cattle, lumber, gardens. |
| 48. Methoxychlor | .04 | .04 | Runoff/leaching from insecticide used on fruits, vegetables, alfalfa, livestock. |
| 49. Oxamyl [Vydate] | .2 | .2 | Runoff/leaching from insecticide used on apples, potatoes and tomatoes. |
| 50. PCBs [Polychlorinated biphenyls] | .0005 | 0 | Runoff from landfills; discharge of waste chemicals. |
| 51. Pentachlorophenol | .001 | 0 | Discharge from wood preserving factories. |
| 52. Picloram | .5 | .5 | Herbicide runoff. |
| 53. Simazine | .004 | .004 | Herbicide runoff. |
| 54. Toxaphene | .003 | 0 | Runoff/leaching from insecticide used on cotton and cattle. |
| **Volatile Organic Contaminants** | **MCL in mg/l** | **MCLG in mg/L** | **Major Sources in Drinking Water** |
| 55. Benzene | .005 | 0 | Discharge from factories; Leaching from gas storage tanks and landfills. |
| 56. Carbon tetrachloride | .005 | 0 | Discharge from chemical plants and other industrial activities. |
| 57. Chlorobenzene | .1 | .1 | Discharge from chemical and agricultural chemical factories. |

| | | | |
|---|---|---|---|
| 58. o-Dichlorobenzene | .6 | .6 | Discharge from industrial chemical factories. |
| 59. p-Dichlorobenzene | .075 | .075 | Discharge from industrial chemical factories. |
| 60. 1,2-Dichloroethane | .005 | 0 | Discharge from industrial chemical factories. |
| 61. 1,1-Dichloroethylene | .007 | .007 | Discharge from industrial chemical factories. |
| 62. cis-1,2-Dichloroethylene | .07 | .07 | Discharge from industrial chemical factories. |
| 63. trans-1,2-Dichloroethylene | .1 | .1 | Discharge from industrial chemical factories. |
| 64. Dichloromethane | .005 | 0 | Discharge from pharmaceutical and chemical factories. |
| 65. 1,2-Dichloropropane | .005 | 0 | Discharge from industrial chemical factories. |
| 66. Ethylbenzene | .7 | .7 | Discharge from petroleum refineries. |
| 67. Styrene | .1 | .1 | Discharge from rubber and plastic factories; Leaching from landfills. |
| 68. Tetrachloroethylene | .005 | 0 | Leaching from PVC pipes; Discharge from factories and dry cleaners. |
| 69. 1,2,4-Trichlorobenzene | .07 | .07 | Discharge from textile-finishing factories. |
| 70. 1,1,1-Trichloroethane | .2 | .2 | Discharge from metal degreasing sites and other factories. |
| 71. 1,1,2-Trichloroethane | .005 | .003 | Discharge from industrial chemical factories. |
| 72. Trichloroethylene | .005 | 0 | Discharge from metal degreasing sites and other factories. |
| 73. TTHMs [Total trihalomethanes] | .1 | N/A | Byproduct of drinking water chlorination. |
| 74. Toluene | 1 | 1 | Discharge from petroleum factories. |
| 75. Vinyl Chloride | .002 | 0 | Leaching from PVC piping; Discharge from plastics factories. |
| 76. Xylenes | 10 | 10 | Discharge from petroleum factories; Discharge from chemical factories. |

**Appendix B. Required Monitoring for Unregulated Contaminants**

A CWS serving 100,000 or more persons required to monitor for the following disinfection by-products and microbial contaminants per 40 CFR § 141.142 and 141.143, shall include the results of the most recent sampling, and shall report the average and range of results for the contaminant that was detected. Results need only be included for five years from the date of the last sample or until any of the detected contaminants becomes regulated and subject to routine monitoring requirements, whichever comes first.

| | | |
|---|---|---|
| Haloacetic Acids* | Haloacetilenitrile | Haloketones |
| Chlorite* | Chloral Hydrate | Total Organic Halides |
| Bromate* | Chloropicrin | Aldehydes |
| Cyanogen Chloride | Chlorate | Total Culturable Viruses |

**MCLs and monitoring requirements will become effective January 1, 2002.*

A CWS required to monitor for the following contaminants per 40 CFR 141.40, shall include the results of the most recent sampling and shall report the average and range of results for the contaminant that was detected. Results need only be included for five years from the date of the last sample or until any of the detected contaminants becomes regulated and subject to routine monitoring requirements, whichever comes first.

| Assessment Monitoring | | |
|---|---|---|
| 2,4-dinitrotoluene | 2,6-dinitrotoluene | Acetochlor |
| DCPA Mono- Acid Degradate | DCPA Di-acid Degradate | 4,4'-DDE |
| EPTC | Molinate | MTBE |
| Nitrobenzene | Perchlorate | Terbacil |
| Screening Survey | | |
| 1,2-diphenylhydrazine | 2-methyl-phenol | 2,4-dichlorophenol |
| 2,4-dinitrophenol | 2,4,6-trichlorophenol | Diazinon |
| Disulfoton | Diuron | Fonofos |
| Linuron | Low-level Nitrobenzene | Prometon |
| Terbufos | Alachlor Esa | Polonium-210 |
| Rdx | Aeromonas | |
| Pre-screen Testing | | |
| Lead-210 | Cyanobacteria | Echoviruses |
| Coxsackieviruses | Helicobacter Pylori | Microsporidia |
| Calciviruses | Adenoviruses | |

A CWS that was required to monitor for the following contaminants, prior to 2001, shall include the results of the most recent sampling, and shall report the average and range of results for the contaminant that was detected. Results need only be included for five years from the date of the last sample or until any of the detected contaminants becomes regulated and subject to routine monitoring requirements, whichever comes first.

| | | |
|---|---|---|
| 1,1,1,2-Tetrachloroethane | 1,1,2,2-Tetrachloroethane | 1,1-Dichloroethane |
| 1,1-Dichloropropene | 1,2,3,-Trichloropropane | 1,3,-Dichloropropane |
| 1,3-Dichloropropene | 2,2-Dichloropropane | 3-Hydroxycarbofuran |
| Aldicarb | Aldicarb sulfone | Aldicarb sulfoxide |
| Aldrin | Bromobenzene | Bromodichloromethane |
| Bromoform | Bromomethane | Butachlor |

| | | |
|---|---|---|
| Carbaryl | Chlormethane | Chlorodibomomethane |
| Chloroethane | Chloroform | Dibromomethane |
| Dicamba | Dieldrin | m-Dichlorobenzene |
| Methomyl | Metolachlor | Metribuzin |
| o-Chlorotoluene | p-Chlorotoluene | Propachlor |

~~**Appendix B.**~~ **Appendix C. Health Effects Language**
No change.

# NOTICE OF PROPOSED RULEMAKING

## TITLE 20. COMMERCE, BANKING, AND INSURANCE

## CHAPTER 4. BANKING DEPARTMENT

## PREAMBLE

**1. Sections Affected** **Rulemaking Action**
R20-4-214 Amend

**2. The specific statutory authority for the rulemaking, including both the authorizing statute (general) and the statutes the rules are implementing (specific):**
Authorizing statute: A.R.S. § 6-123(2)

Implementing statute: A.R.S. § 6-242

**3. A list of all previous notices appearing in the Register addressing the proposed rule:**
Notice of Rulemaking Docket Opening: 5 A.A.R. 2268, July 16, 1999

Notice of Rulemaking Docket Opening: 6 A.A.R. 3775, September 29, 2000

**4. The name and address of agency personnel with whom persons may communicate regarding the rulemaking:**

| | |
|---|---|
| Name: | John P. Hudock |
| Address: | 2910 North 44th Street, Suite 310<br>Phoenix, AZ 85018 |
| Telephone: | (602) 255-4421, ext. 167 |
| Fax: | (602) 381-1225 |
| E-mail: | jhudock@azbanking.com |

**5. An explanation of the rule, including the agency's reasons for initiating the rule:**
This rulemaking will amend the existing provisions of R20-4-214 governing the retention and preservation of records by state-chartered banks. The Section, as amended, will more accurately reflect modern practice as it has evolved since the Section's last enactment in 1973.

**6. A reference to any study that the agency proposes to rely on in its evaluation of or justification for the proposed rule and where the public may obtain or review the study, all data underlying each study, any analysis of the study, and other supporting material:**
The Department does not propose to rely on any study as an evaluator or justification for the proposed rule.

**7. A showing of good cause why the rule is necessary to promote a statewide interest if the rule will diminish a previous grant of authority of a political subdivision of this state:**
Not applicable

**8. The preliminary summary of the economic, small business, and consumer impact:**
**A. The Banking Department**

The rules will have no effect on this agency's income and expenses. But, the Department expects the revised rules' enhanced clarity and the corresponding increased simplicity in the banks' operations will allow easier communication with banks and, thereby, promote improved compliance.

**B. Other Public Agencies**

The state will incur normal publishing costs incident to rulemaking.

**C. Private Persons and Businesses Directly Affected**

Costs of services will not increase to any measurable degree. In fact, these revisions should decrease any bank's cost of doing business in compliance with these rules. The express acknowledgement of the acceptability of electronic record storage and retrieval will allow banks to make greater use of modern, more economic, recordkeeping methods.

**D. Consumers**

No measurable effect on consumers is expected.

**E. Private and Public Employment**

There is no measurable effect on private or public employment.

**F. State Revenues**

This rulemaking will not change state revenues.

**9. The name and address of agency personnel with whom persons may communicate regarding the accuracy of the economic, small business, and consumer impact statement:**

Name: John P. Hudock

Address: 2910 North 44th Street, Suite 310
Phoenix, AZ 85018

Telephone: (602) 255-4421, ext. 167

Fax: (602) 381-1225

E-mail: jhudock@azbanking.com

**10. The time, place, and nature of the proceedings for the making, amendment, or repeal of the rule or, if no proceeding is scheduled, where, when, and how persons may request an oral proceeding on the proposed rule:**

No oral proceedings are scheduled. The Department will schedule an oral proceeding on the proposed rule if it receives a written request for a proceeding within 30 days after the publication date of this notice, under the provisions of A.R.S. § 41-1023(C). Send requests to the Department personnel listed in items #4 and #9. The Department invites and will accept written comments on the proposed rule or the preliminary economic, small business, and consumer impact statement. Submit comments during regular business hours, at the address listed in item #9, until the close of the record for this proposed rulemaking. The record will close on the 31st day following publication of this notice, unless the Department schedules an oral proceeding.

**11. Any other matters prescribed by statute that are applicable to the specific agency or to any specific rule or class of rules:**

Not applicable

**12. Incorporations by reference and their location in the rules:**

There is no material incorporated by reference in these rules.

**13. The full text of the rules follows:**

**TITLE 20. COMMERCE, BANKING, AND INSURANCE**

**CHAPTER 4. BANKING DEPARTMENT**

**ARTICLE 2. BANK ORGANIZATION AND REGULATION**

Section
R20-4-214. Preservation of Records ~~-- A.R.S. § 6-242~~

## ARTICLE 2. BANK ORGANIZATION AND REGULATION

**R20-4-214. Preservation of Records ~~— A.R.S. § 6-242~~**

**A.** Every bank shall retain its corporate and business records as originals or as ~~by~~ copies of the ~~such~~ originals made by reproduction methods ~~of reproduction~~ that ~~which~~ accurately and permanently preserve these records. Copies complying with this subsection ~~so made~~, when satisfactorily identified, shall have the same evidentiary status ~~as evidence~~ as an original. A bank may use an electronic recordkeeping system. The Department shall not require a bank to keep a written copy of its records if the bank can generate all information and copies required by this Section in a timely manner for examination or other purposes.

**B.** A bank ~~Banks~~ shall keep ~~retain~~ its ~~their~~ corporate and business records for the ~~such~~ period ~~minimum periods~~ required ~~as prescribed~~ by this Section ~~rule~~. These time periods are measured from ~~The retention period for each record starts~~ the date of ~~from~~ the last entry or final action date ~~, not from the inception of the record~~. A bank shall have and comply with its own record retention schedule that is consistent with this Section. A bank's record retention schedule may comply with this Section by complying with preemptive federal regulations, even if the federal regulation requires a shorter retention period than is listed in this Section. This Section ~~rule~~ does not prohibit record ~~the~~ retention ~~of records~~ for longer periods ~~greater~~ than these state-required ~~the~~ minimums for any reason including a retention period established by preemptive federal law or regulation. ~~herein prescribed~~.

**C.** Beginning on ~~with~~ the effective date of this Section ~~rule~~, corporate and business records of a bank ~~banks~~ operating in the state of Arizona are classified, and their retention periods are prescribed, according to ~~in accordance with~~ the schedule in subsection D ~~hereinafter detailed~~. Retention periods are listed in subsection D using the notations, acronyms, and abbreviations listed in this Section. ~~(Retention period designations:~~

1. A numerical designation refers to a period of years unless a shorter period of time is specified in the schedule.
2. The acronym "AC" means after closure.
3. The acronym "ACH" means automated clearing house.
4. The acronym "AE" means after expiration.
5. The acronym "ALC" means after last contact.
6. The acronym "AP" means after paid.
7. The acronym "ATD" means after termination date.
8. The acronym "CTR" means a cash transaction report required by the federal Bank Secrecy Act.
9. The acronym "FDIC" means the Federal Deposit Insurance Corporation.
10. The acronym "FHA" means the Federal Housing Administration.
11. The acronym "FHLMC" means the Federal Home Loan Mortgage Corporation.
12. The acronym "FNMA" means the Federal National Mortgage Association.
13. The acronym "GNMA" means the Government National Mortgage Association.
14. The acronym "IRS" means the United States Department of the Treasury's Internal Revenue Service.
15. The abbreviation "M" means months.
16. The abbreviation "P" means the bank shall retain the record permanently.
17. The acronym "PMI" means private mortgage insurance.
18. The acronym "SAR" means a suspicious activity report required by the federal Bank Secrecy Act.
19. The acronym "TTL" means a treasury, tax, and loan account maintained by a bank.
20. The acronym "UCC" means the Uniform Commercial Code as it is in effect in Arizona.

~~Numerical -- In years~~

~~Opt. -- Optional. Any period may be selected depending on the purpose of the record and alternate sources of the same information.~~

~~P -- Permanent)~~

| ~~TYPE OF RECORD~~ | ~~RETENTION PERIOD~~ |
|---|---|
| ~~1. ADMINISTRATIVE~~ | |
| ~~a. Accounting~~ | |
| ~~(1) Accrual Records~~ | ~~1~~ |
| ~~(2) Branch Daily Statements~~ | ~~2~~ |
| ~~(3) Consolidated Daily Statement of Condition~~ | ~~3~~ |
| ~~(4) Depreciation Records~~ | ~~3~~ |
| ~~(5) Earnings Report~~ | ~~3~~ |
| ~~(6) Expense Ledger~~ | ~~3~~ |
| ~~(7) FDIC Assessment~~ | ~~3~~ |
| ~~(8) General Ledger Subsidiary Controls~~ | ~~3~~ |
| ~~(9) General Ledger Tickets -- Debits and Credits~~ | ~~3~~ |
| ~~(10) Inter-Office Reconciliation~~ | ~~1~~ |
| ~~(11) Inter-Office Transactions~~ | ~~OPT~~ |

| | |
|---|---|
| (12) Miscellaneous Operating Loss Records | 3 |
| (13) Paid Bills, Statements and Invoices | 3 |
| (14) Service Contracts | 2 |
| (15) Treasury Tax and Loan Account | 2 |
| b. Administration | |
| (1) Bonds | 5 |
| (2) Charter | P |
| (3) Directors Minutes | 15 |
| (4) Executive Committees Minutes | 50 |
| (5) FDIC Certificates | P |
| (6) Income Tax Records | 3 |
| (7) Insurance Policies | 1 |
| (8) Minute Books of Meetings Not Listed Herein | 1 |
| (9) Permits | 1 |
| (10) Stockholders' Meetings Minutes | 25 |
| c. Audit | |
| (1) Bank Call Reports | 2 |
| (2) Bank Examiner's Reports After Approval Has Been Obtained From the Appropriate Federal Supervisory Authority | 3 |
| (3) Reports to Directors | 3 |
| (4) Audit Reports | 3 |
| (5) Audit Workpapers | 3 |
| (6) Abandoned Property Reports | 3 |
| d. Capital | |
| (1) Capital Stock Certificates, Records or Stubs | 10 |
| (2) Capital Stock Ledger | 25 |
| (3) Capital Stock Transfer Register | 25 |
| (4) Income and Dividends Report | 10 |
| e. Cash | |
| (1) Armored Car Receipts | OPT |
| (2) Cash Difference Record | 2 |
| (3) Departmental or Teller's Proof, Batch Sheet, Blotter or Recap | 2 |
| (4) Money Shipment Receipts | OPT |
| (5) Night Depository Contracts | 1 |
| (6) Night Depository Daily Record | 1 |
| (7) Night Depository Signature Card | 1 |
| (8) Return Items Advice | OPT |
| (9) Return Items Record Book | OPT |
| (10) Vaults -- Opening and Closing Reports | 1 |
| f. Data Processing | |
| (1) Application -- Master Files | OPT |
| (2) Captured Items | OPT |
| (3) Operating System | OPT |
| (4) Program Source Statements | OPT |
| g. Proof -- Transit | |
| (1) Cash Letters -- Incoming Copies | 2 |
| (2) Cash Letters -- Outgoing Copies | 2 |
| (3) Microfilm of Checks in Cash Letters | 2 |
| (4) Proof Machine Master or Control Tapes | 2 |
| (5) Reconcilement Records --Missing Items | 2 |
| 2. DEPOSITS | |
| a. Bank Deposits (Due To and Due From) | |
| (1) Ledgers | 5 |
| (2) Ledger Journal | 5 |
| (3) Reconcilements | 3 |
| (4) Resolutions | 5 |
| (5) Signature Cards | 5 |
| b. Checking Accounts | |
| (1) Account Analysis1 | |

| | |
|---|---|
| (2) Accounts Opened and Closed Report OPT | |
| (3) Bookkeeping | |
| (a) Daily Transaction Journal | OPT |
| (b) Daily Trial Balance | OPT |
| (c) Final Recap | 1 |
| (d) Overdraft Report | 1 |
| (e) Rejected Items Report | 1 |
| (f) Stop and Hold Report | OPT |
| (4) Credit -- Advice of | 1 |
| (5) Deposit -- Advice of | 1 |
| (6) Deposit Slips | 5 |
| (7) Ledgers (Statements) | 5 |
| (8) Ledgers (Statements) and Checks (Undelivered) | 3 |
| (9) List of Inactive Accounts | 1 |
| (10) Resolutions and Authorizations | 2 |
| (11) Signature Cards | 5 |
| c. Certificates of Deposit | |
| (1) Certificates | 5 |
| (2) Ledger | 2 |
| (3) Register | 2 |
| d. Club Accounts | |
| (1) Ledgers | 2 |
| (2) Coupons | 1 |
| e. Savings Deposits | |
| (1) Deposit Tickets | 5 |
| (2) Ledgers or Journals | 5 |
| (3) Signature Cards | 5 |
| (4) Withdrawal Receipts | 5 |
| (5) 1099 Recap | 1 |
| 3. INVESTMENT -- BANK PORTFOLIO | |
| a. Brokers' Confirmations | 1 |
| b. Brokers' Invoices | 1 |
| c. Brokers' Statements | 1 |
| d. Buy and Sell Orders | 1 |
| e. Safekeeping Receipts | OPT |
| f. Ledgers | 5 |
| 4. TRUSTS | |
| a. General Department Accounting Records (Personal and Corporate Accounts) | |
| (1) Cancelled Checks, Trust Department | 5 |
| (2) Certification | 2 |
| (3) Check Registers, Trust Department | 5 |
| (4) Correspondence -- General Office | OPT |
| (5) Ledgers -- General, Statement of Condition | 3 |
| (6) Minutes of Committee Meeting | 5 |
| (7) Posting Media | |
| (a) General Ledger Tickets | 3 |
| (b) Individual Account Asset Ledger Tickets | 3 |
| (c) Individual Account Cash Ledger Tickets | 3 |
| (d) Stock and Bond Transfer Tickets | 1 |
| (8) Proving Media -- Daily (Cash, Asset, Stock and Bond Journal) | OPT |
| (9) Supporting Records of Examination and Call Reports | 3 |
| (10) Vault Withdrawal and Deposit Tickets (Vault Copy) | 2 |
| b. Specific Account Records | |
| (1) Authorizations, Directions, Approvals | 7 |
| (2) Cash and Asset Statement, Customer | 7 |
| (3) Court Accounting and Petitions, Copies of | 7 |
| (4) Correspondence | 6 |
| (5) Duties Ticklers | OPT |

| | |
|---|---|
| (6) Federal and State Returns, Copies of | 7 |
| (7) Fee Records and Supporting Data | 6 |
| (8) Investment Orders, Advices, and Confirmations | 7 |
| (9) Ledgers, Cash and Asset | 7 |
| (10) Miscellaneous Bills and Statements | 6 |
| (11) Original Instruments | 7 |
| (12) Real Estate Records | |
| (a) Specific Insurance Policies | OPT |
| (b) Individual Parcel Files | 6 |
| (13) Receipts for Assets Received or Delivered | 7 |
| (14) Reviews and Recommendations, Trust Investment | 7 |
| (15) Security Tax Costs, Records | 7 |
| (16) Vault Withdrawal and Deposit Tickets (Account Copy) | 2 |
| (17) Work Papers Supporting Tax Returns | 7 |
| 5. LOANS AND DISCOUNTS | |
| a. General | |
| (1) Applications | 2 |
| (2) Application for Credit Card (from close of account) | 2 |
| (3) Assigned Accounts Receivable Invoices | 1 |
| (4) Borrowers' Statements of Financial Condition | OPT |
| (5) Charged-off Loan Files | 6 |
| (6) Charged-off Loans Ledger | 6 |
| (7) Collateral Records | 2 |
| (8) Collection Work Sheet | OPT |
| (9) Correspondence (Customer, Dealer, General) | OPT |
| (10) Credit Files -- Closed or Paid | 2 |
| (11) Credit Investigation Report | OPT |
| (12) Delinquency Reports | OPT |
| (13) Disclosure Statement | 2 |
| (14) Dun and Bradstreet Reports | OPT |
| (15) Journals | 5 |
| (16) Liability Ledgers | 5 |
| (17) Loan Committee Minutes | 2 |
| (18) Loan Ledger Cards | 5 |
| (19) Loan Payment Tickets -- Coupons | 2 |
| (20) Merchant Activity Report | OPT |
| (21) Monthly Cycle Status Register | OPT |
| (22) Monthly Report of Balances, Accruals, Commercial, Agricultural and Real Estate | 1 |
| (23) New Loan Register | OPT |
| (24) Pledge Agreement (After Disposal of Collateral) | 5 |
| (25) Pledge, Consent to (After Disposal of Collateral) | 5 |
| (26) Posting Work Sheets | OPT |
| (27) Power of Attorney (After Closing) | 1 |
| (28) Purpose Statement (Regulation U) | 3 |
| (29) Record -- Lost or Stolen Card | OPT |
| (30) Reissue Registers | OPT |
| (31) Rejected Loan Applications | 2 |
| (32) Remittance Control Card | 1 |
| (33) Remittance -- Service Mortgages | OPT |
| (34) Statements of Dealers Reserve Accounts | 2 |
| (35) Stock Margin Records | 2 |
| (36) Warehouse Receipts, Records | 2 |
| 6. OTHER BANK RECORDS | |
| a. Collections | |
| (1) Escrow Collection Ledger -- Record of Payments | 5 |
| (2) Escrow Envelope | OPT |
| (3) Incoming Collection Records | OPT |
| (4) Notice of Protest | 1 |

| | | |
|---|---|---|
| (5) Outgoing Collection Records | | OPT |
| b. General | | |
| (1) Affidavits | | OPT |
| (2) Attachments, Garnishments | | 6 |
| (3) Attachment Releases | | 6 |
| (4) Correspondence, General | | 2 |
| (5) Registered Mail -- Incoming | | 1 |
| (6) Registered Mail -- Outgoing | | 1 |
| (7) Return Receipt Cards | | OPT |
| (8) Court Order Memorandum Record | | 6 |
| c. International Transactions | | |
| (1) Collection Register | | 2 |
| (2) Collections Paid | | 2 |
| (3) Correspondence | | 2 |
| (4) Drafts | | 5 |
| (5) Foreign Drafts | | 5 |
| (6) Foreign Outstanding Cash | | 2 |
| (7) Foreign Payments Incoming | | 5 |
| (8) Foreign Transfers | | 5 |
| (9) Letters of Credit | | 5 |
| (10) Record of Advice of Transfer of $10M and Over Outside of U.S.A. | | 5 |
| d. Personnel | | |
| (1) Attendance Record | | 4 |
| (2) Authorization for Payroll Deductions | | 2 |
| (3) Business Expenses of Employees Reimbursed by Employer | | 3 |
| (4) Disability Records | | OPT |
| (5) Employee History Records | | 5 |
| (6) Insurance Records | | OPT |
| (7) Payroll Checks | | 2 |
| (8) Payroll Journals and Records | | 4 |
| (9) Pension Fund Records | | 10 |
| (10) Profit Sharing Fund Records | | 10 |
| (11) Rejected Employee Applications | | 2 |
| (12) Time Cards or Sheets | | 2 |
| (13) Unemployment Claims Records | | OPT |
| (14) W-2 Withholding Tax Form | | 3 |
| (15) W-3 Reconciliation of Income Tax Withheld from Wages | | 3 |
| (16) W-4 Withholding Exemption Certificates | | 3 |
| e. Safe Deposit/Storage | | |
| (1) Daily Receipts, Journal or Cash Book | | 1 |
| (2) Entrance Tickets | | 5 |
| (3) Forced Entry Records | | 5 |
| (4) Leases and/or Rental Agreement | | 2 |
| (5) Storage Receipts | | OPT |
| f. Other Services | | |
| (1) Applications for Travelers Cheques | | 2 |
| (2) Official Checks and Drafts | | |
| (a) Bank Drafts | | 3 |
| (b) Cashiers Checks | | 5 |
| (c) Certified Checks | | 5 |
| (d) Dividend Checks | | 3 |
| (e) Expense Vouchers | | 3 |
| (f) Interest Checks | | 5 |
| (g) Personal Money Orders | | 5 |
| (3) Series "E" Bonds | | |
| (a) Stubs | | 2 |
| (b) Applications | | 2 |
| (c) Transmittal Letters | | 2 |
| (4) Lock Box Records | | 1 |

| | |
|---|---|
| ~~(5) Wire Transfers~~ | ~~OPT~~ |
| **D.** Retention Schedule | |
| 1. Accounting and Auditing | |
| a. Accrual & bond amortization | 3 |
| b. Audit report | 6 |
| c. Audit work papers | 3 |
| d. Bank call, income & dividend report | 5 |
| e. Bill, statement, or invoice—paid | 7 |
| f. Budget work papers | 2 |
| g. Collateral vault "in and out" ticket | 1 |
| h. Daily reserve computation | 1 |
| i. Earnings report | 7 |
| j. Expense voucher or invoice | 7 |
| k. Financial statement | 7 |
| l. Interoffice reconciliation | 1 |
| m. Interoffice transaction | 1 |
| n. Periodic statement for account owned by the bank | 2 |
| o. Reconcilement of deposits-due to bank | 2 |
| p. Reconcilement register-due from bank | 2 |
| q. Return & cash item register | 1 |
| r. Service contract | 2 |
| s. Treasury tax & loan account | 2 |
| t. Unclaimed property record | 7 |
| 2. Administration | |
| a. Articles of incorporation/association, bylaws or other record of organization | P |
| b. Bankers blanket bond-record showing compliance | 5 AE |
| c. Bank examiner's report | 7 |
| d. Capital note issuance & transfer record | P |
| e. Depreciation record-office equipment | 3 |
| f. Dividend check & register | 7 |
| g. Dividend check-outstanding | P |
| h. Expired policy insuring the bank | 3 AE |
| i. FDIC assessment base, record | 5 |
| j. FDIC certificate | P |
| k. Insurance policy number, record of premium paid & amount recovered | 3 AE |
| l. Legal proceedings when completed | 5 |
| m. Minute book of: | |
| i. Meeting of the board of directors | P |
| ii. Meeting of committees of the board of directors | P |
| iii. Shareholders' meetings | P |
| n. Postage meter record book (from date of final entry) | 1 |
| o. Real estate documents, leases & abstracts | 5 ATD |
| p. Reports to directors | 3 |
| q. Stock issuance & transfer records | P |
| r. Supervisory agencies-required reports | 3 |
| s. Tax controversies or proceedings when completed | 7 |
| t. Tax records not material to any controversy | 7 |
| u. Voting lists & proxies | 3 |
| 3. Collections | |
| a. Collection payment records | 1 |
| b. Collection receipts-carbons | 1 |
| c. Collection register | 1 |
| d. Coupon cash letters-outgoing | 1 |
| e. Coupon envelopes | 1 |
| f. Customer file copies | 1 |
| g. Incoming collection letters | 1 |
| h. Incoming contract or note letters | 1 |
| 4. Customer service | |
| a. Broker account holders-identification | 5 |

| | | |
|---|---|---|
| b. | Brokers' confirmations | 3 |
| c. | Brokers' invoices | 3 |
| d. | Brokers' statements | 3 |
| e. | E-Bond applications | 2 |
| f. | E-Bond sold or redeemed-records | 2 |
| g. | E-Bond transmittal letters | 2 |
| h. | Lock box daily receipts | 1 |
| i. | Night depository agreement | 1 AC |
| j. | Night depository daily record | 1 |
| k. | Safekeeping records & receipts | 5 |
| l. | Securities buy & sell orders | 3 |
| 5. | Data processing (management information systems) | |
| a. | Back-up data (for reconstruction) daily, end of month, quarter or year | 1 |
| b. | Disaster recovery program | P |
| c. | Film copies – all IRS financial reporting forms | 6 |
| d. | Program changes | P |
| e. | Systems, programs and procedures manuals | P |
| 6. | Deposits | |
| a. | Accounts opened & closed report | 1 |
| b. | Certificate of deposit purchase records | 7 |
| c. | Checks paid, withdrawal slips, and other debits to account | 7 |
| d. | Club account check register | 1 |
| e. | Club account coupon | 1 |
| f. | SAR – for suspicious transaction under $10,000 | 5 |
| g. | CTR – for transaction exceeding $10,000 | 5 |
| h. | Customer authorizations, resolutions, and signature cards | 6 AC |
| i. | Deposit account records needed to reconstruct | 7 |
| j. | Deposits and other credits | 7 |
| k. | Dormant accounts – after closed or escheated | 7 ALC |
| l. | Forms 1096, 1099 reports of IRS | 7 |
| m. | Individual retirement account records | 7 |
| n. | Interest checks or other records of interest payment and reports | 7 |
| o. | Internal management reports including large balance report, overdraft reports, public funds report, service charges, stop payment reports, uncollected funds, unposted items, zero balances. | 1 |
| p. | Ledger cards | 5 AC |
| q. | Power of attorney documents | 7 ATD |
| r. | Receipts for statements held at customer's request | 1 |
| s. | Records showing compliance with the following federal regulations. The stated retention period applies unless, and until, it is preempted by federal law. | |
| i. | Regulation CC, Expedited Funds Availability Act | 2 |
| ii. | Regulation DD, Truth in Savings Act | 2 |
| iii. | Regulation E, Electronic Funds Transfer Act | 2 |
| t. | Returned statements and cancelled checks | 6 |
| u. | Statements | 6 |
| v. | Stop payment orders | 6 AE |
| w. | Documents used to request and receive Tax Identification Numbers | 6 |
| x. | Transaction journal | 6 |
| y. | Trial balances | 6 |
| 7. | Due from banks | |
| a. | Advices from correspondence | 1 |
| b. | Bank statements | 1 |
| c. | Drafts-original | 7 |
| d. | Draft register or copy | 1 AP |
| e. | Duplicate checks-information & documents pertaining to issuance | 7 |
| f. | Reconcilement register | 1 |
| 8. | Due to banks | |
| a. | Accounts opened & closed-reports | 1 |
| b. | Advices-copies | 1 |
| c. | Incoming cash letter memos for credit | 1 |

| | | |
|---|---|---|
| d. | Incoming cash letters for remittance | 1 |
| e. | Reconcilement register (TTL) | 2 |
| f. | Reconcilement verification | 1 |
| g. | Resolutions-all | 2 AC |
| h. | Signature cards-all | 6 AC |
| i. | Trial balances (fiche) | 7 |
| j. | Undelivered statements, reconstruction available from bank records | 1 |
| k. | Undelivered statements, reconstruction not possible | 7 |
| 9. | General | |
| a. | Address change orders | 1 |
| b. | Affidavit from customer including affidavit of loss, forgery, or non-use of cashier's check | 1 |
| c. | Attachments, garnishments | 5 |
| d. | Attachments, releases | 5 |
| e. | Armored car receipts | 1 |
| f. | Check book orders | 1 |
| g. | Check book-receipts | 1 |
| h. | Court order memorandum record | 5 |
| i. | Protest notices | 1 |
| j. | Travelers check-applications | 2 |
| k. | Vault records-openings & closings | 1 |
| l. | Wire transfer debit & credit entries | 7 |
| 10. | General ledger | |
| a. | Daily statement of condition | 3 |
| b. | General journal-if byproduct of posting the general ledger | 3 |
| c. | General journal-if used as book of original entry with description | 3 |
| d. | General ledger | 5 |
| e. | General ledger tickets-debits & credits | 2 |
| 11. | International department | |
| a. | Broker account holders-identification | 5 |
| b. | Cable copies | 7 |
| c. | Cable requisitions | 7 |
| d. | Collections paid | 1 |
| e. | Correspondence | 2 |
| f. | Drafts | 7 |
| g. | Foreign collection register | 6 |
| h. | Foreign draft applications | 6 |
| i. | Foreign draft carbons | 2 ATD |
| j. | Foreign exchange remittance sheets or books | 6 |
| k. | Foreign financial accounts-records | 7 |
| l. | Foreign mail transfer applications | 6 |
| m. | Foreign mail transfer carbons | 2 ATD |
| n. | Foreign outstanding cash | 2 |
| o. | Foreign payments incoming | 2 |
| p. | Letters of credit applications | 2 |
| q. | Letters of credit ledger sheets | 7 |
| r. | Transfers outside of the United States in excess of $10,000 – records | 5 |
| 12. | Investments | |
| a. | Bonds | |
| i. | Amortization records | 6 |
| ii. | Confirmations | 3 |
| iii. | Safekeeping receipts | 2 |
| b. | Brokers' securities | |
| i. | Brokers' invoices | 3 |
| ii. | Brokers' statement | 3 |
| iii. | Report of lost or stolen securities | 3 |
| iv. | Safekeeping advice | 2 |
| v. | Taxpayer identification number | 5 |
| c. | Commercial paper | |
| i. | Brokers' advices | 2 |

| | | |
|---|---|---|
| ii. | Purchase orders | 2 |
| iii. | Remittance advices | 2 |
| d. | Mortgage backed securities | |
| i. | Buy and sell agreements | 3 |
| ii. | Commitment letters | 7 |
| iii. | FHLMC/FNMA loan files | 7 |
| iv. | GNMA certificates | 7 |
| v. | Interest accrual records | 7 |
| vi. | Monthly remittance reports | 7 |

13. Loans. A bank shall keep each loan record listed here for the period required by this subsection. These time periods are measured from the date of final activity. A bank shall have and comply with its own record retention schedule that is consistent with this subsection. A bank's record retention schedule may comply with this subsection by complying with preemptive federal regulations, even if the federal regulation requires a shorter retention period than is listed in this subsection. This subsection does not prohibit record retention for longer periods than these state-required minimums for any reason including a retention period established by preemptive federal law or regulation governing commercial, consumer, residential real estate, or insider lending.

| | | |
|---|---|---|
| a. | All Loans – general | |
| i. | Applications for loans approved | 6 |
| ii. | Appraisals | 6 |
| iii. | Borrowers' financial statements | 6 |
| iv. | Charge off records | 10 |
| v. | Charged off notes | 10 |
| vi. | Collateral files | 6 |
| vii. | Correspondence | 6 |
| viii. | Credit files – all documents | 6 |
| ix. | Credit reports | 6 |
| x. | Daily proofs and records | 6 |
| xi | Loan committee minutes | P |
| xii. | Miscellaneous loan reports including new loan journal, paid loan journal, past due report, and transaction journal as original entry | 6 |
| xiii. | Other documentation for reconstruction of loan | 2 |
| b. | Commercial loans | |
| i. | Application for loan denied | 12 M |
| ii. | Bill of sale | 6 |
| iii. | Borrowing resolutions | 3 |
| iv. | Business annual reports (fiscal/year end) - after date of report | 3 |
| v. | Business cash flow analysis report, after date of report | 3 |
| vi. | Business tax returns - after date of returns | 6 |
| vii. | Commitment letters | 6 |
| viii. | Copy of mortgage note or deed of trust | 6 |
| ix. | Evidence of insurance | 6 |
| x. | Guaranty | 6 |
| xi. | Letters of credit | 6 |
| xii. | Participation agreements | 6 |
| xiii. | Promissory note | 6 |
| xiv. | Purchase and sales agreement | 6 |
| xv. | Security agreements | 6 |
| xvi. | Title documentation | 6 |
| xvii. | UCC filings | 6 |
| c. | Consumer loans | |
| i. | Application for loan denied, including adverse action notice | 25 M |
| ii. | Collateral records | 6 |
| iii. | Hazard insurance records | 6 |
| iv. | Invoices | 6 |
| v. | Life and disability insurance records | 6 |
| vi. | Overdraft loan agreement | 6 |
| vii. | Promissory notes and modification agreements – copy of | 6 |
| viii. | Title documentation | 6 |
| ix. | UCC filings – copy of | 6 |

| | | |
|---|---|---|
| d. | Real estate loans | |
| i. | Assignment of escrow | 6 |
| ii. | Assumptions | 6 |
| iii. | Commitment letters | 6 |
| iv. | Copy of deed of trust or mortgage note, as it may have been modified | 6 |
| v. | Escrow analysis and records | 6 |
| vi. | Evidence of any FHA or PMI insurance required | 6 |
| vii. | Hazard insurance | life of loan |
| viii. | Proof of insurance excluding hazard | 6 |
| ix. | Sales contracts | 6 |
| x. | Settlement sheet | 6 |
| xi. | Survey | 6 |
| xii. | Title documentation | 6 |
| e. | Construction loans. In addition to the documents specified in subsection (d), a bank must retain records for a construction loan as specified in this subsection. | |
| i. | Certificate of occupancy | 6 |
| ii. | Construction progress reports | 6 |
| iii. | Contractor's cost breakdown | 6 |
| iv. | Disbursement documentation | 6 |
| v. | Inspection reports | 6 |
| vi. | Residential construction specifications and materials list | 6 |
| 14. | Official checks and drafts | |
| a. | Affidavits, bonds, indemnifying agreements, other documents supporting the issuance of duplicating checks or drafts | 7 |
| b. | Bank drafts | 3 |
| c. | Cashier's checks-cancelled | 7 |
| d. | Cashier's checks register-copy | 7 |
| e. | Expense checks-cancelled | 7 |
| f. | Expense checks register-copy | 7 |
| g. | Expense vouchers or invoices | 7 |
| h. | Money orders-bank or personal | 7 |
| i. | Money order registers-copy | 7 |
| j. | Official checks outstanding | P |
| 15. | Personnel Records | |
| a. | Attendance records, time cards | 3 |
| b. | Authorization for payroll deduction | 2 |
| c. | Department of labor reports | 5 |
| d. | Disability records | 5 |
| e. | Employee records, personnel folders | 5 |
| f. | Employment applications | 3 AT |
| g. | Insurance records | 2 |
| h. | Payroll checks | 2 |
| i. | Pension fund records | 10 |
| j. | Profit sharing funds records | 10 |
| k. | Rejected employee applications | 2 |
| l. | Salary ledger or electronic data processing printout | 4 |
| m. | Salary receipts | 2 |
| n. | W-3 reconciliation of income tax withheld from wages | 3 |
| o. | W-4 withholding exemption certificates | 3 |
| p. | Wage and tax statement records (W-2) | 7 |
| q. | Wage differential documentation (fair labor standards act) | 3 |
| 16. | Registered mail | |
| a. | Marine insurance book | 3 |
| b. | Record of incoming and outgoing registered mail | 1 |
| c. | Return receipt cards | 3 |
| 17. | Safe deposit vault | |
| a. | Access tickets/cards | 6 |
| b. | Court orders, correspondence, etc. | 6 |
| c. | Delivery of will, burial plot deeds, insurance policies-receipts | 6 |

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| d. | Forced entry records | 6 |
| e. | Leases or contracts-closed accounts | 2 AC |
| f. | Ledger record of account | 1 |
| g. | Opened box contents-records & reports | 7 |
| h. | Rent receipts-copies | 1 |
| i. | Sale to satisfy lien-records | 7 |
| j. | All signature cards, authorizations, and resolutions | 6 AC |
| 18. | Tellers | |
| a. | Mail teller envelopes | 3 M |
| b. | Tellers' balancing recap or recap book | 1 |
| c. | Tellers' cash tickets-original & carbons | 1 |
| d. | Tellers' cash shipment records | 1 |
| e. | Tellers' exchange tickets | 1 |
| f. | Tellers' machine tapes | 1 |
| 19. | Transit, proof, and clearing | |
| a. | ACH entries | 6 |
| b. | Advice of correction to deposit | 2 |
| c. | Clearinghouse settlement sheet – recapitulation of checks delivered to the clearinghouse or federal reserve | 2 |
| d. | Record of items processed | 6 |
| e. | Proof machine tapes or other record | 2 |
| f. | Receipts for transit letters | 1 |
| g. | Return item letters | 5 |
| 20. | Trust department administration | |
| a. | Appraisal of real or personal property held as a trust asset | 3 AC |
| b. | Correspondence | 3 AC |
| c. | Decrees or receipts and releases | 3 AC |
| d. | Fee records and supporting data | 3 AC |
| e. | Intermediate and final accounts | 3 AC |
| f. | Legal documents including judgments, court orders, and legal opinions | 3 AC |
| g. | Paid bills | 3 AP |
| h. | Real estate insurance policies | 1 AE |
| i. | Real estate and mortgage documents | 3 AC |
| j. | Receipt for asset received or delivered | 3 AC |
| k. | Record of asset tax cost | 3 AC |
| l. | Summary cards, original instruments, agreements and amendments, and letters of appointment | 3 AC |
| m. | Synopsis sheets | 3 AC |
| 21. | Corporate trust | |
| a. | Bond registration journals | 3 AC |
| b. | Bonds-cancelled | 7 |
| c. | Indemnity bonds | P |
| d. | Certification | 2 |
| e. | Coupon envelopes | 6 M |
| f. | Coupons-cancelled | 6 M |
| g. | Customer receipts | 7 |
| h. | Dividend and coupon records | 3 AC |
| i. | Dividend and interest disbursement checks and lists | 3 AC |
| j. | General ledger tickets | 2 |
| k. | Legal papers | P |
| l. | Copy of cancelled stock certificate, original returned to customer | 1 |
| m. | Stock registration journals | 3 AC |
| n. | Stock transfer memos | 1 |
| o. | Stock transfer receipts | 1 |
| p. | Tax returns | 3 AC |
| q. | Transfer-supporting papers | 3 AC |
| r. | Transfer journals | 3 AC |
| s. | Transfer tax waivers | 3 AC |
| t. | Trust ledger-corporate | 7 |
| 22. | Personal trust | |

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| a. Records of previously discharged fiduciaries | |
| i. Accounting | 3 AC |
| ii. Decrees | 3 AC |
| iii. Receipt & release | 3 AC |
| b. Accountings - recorded | 3 AC |
| c. Advice of payment-securities department re: bond & coupon collections | 3 AC |
| d. Appraisals | |
| i. Real property | 3 AC |
| ii. Personal property | 3 AC |
| e. Asset delivery receipt | 3 AC |
| f. Authorization | |
| i. By co-fiduciary | P |
| ii. By consultant | P |
| g. Approval | |
| i. By co-fiduciary | P |
| ii. By consultant | P |
| h. Brokers' statements | 7 |
| i. Buy and sell orders | 7 |
| j. Cash documentation | |
| i. Customer cash and asset statements | 7 |
| ii. Cash and security journals | 7 |
| iii. Cash trial balances | 1 |
| k. Common trust fund annual report | 10 |
| l. Correspondence | |
| i. Transfer letters | 3 AC |
| ii. Claim letters | 3 AC |
| m. Coupon collection record | 7 |
| n. Court accounting and petitions | 7 |
| o. Daily transaction journal | 6 M |
| p. Debits and credits-daily | 1 |
| q. Decedent's personal records | 0 |
| r. Documents necessary to support account decisions | 3 AC |
| s. Tax Documentation | |
| i. Federal estate tax returns | 10 |
| ii. State estate tax return | 10 |
| iii. Tax-related work papers | 10 |
| iv. Federal gift tax returns | 10 |
| t. Fee calculations & supporting data | 1 |
| u. Income tax return | |
| i. Federal | 3 AC |
| ii. State | 3 AC |
| v. Inventory | 3 AC |
| w. Investment reviews & related materials | 3 AC |
| x. Investment committee meeting minutes | P |
| y. Trust committee meeting minutes | P |
| 23. Other personal trust records | |
| a. Legal opinions | 3 AC |
| b. Correspondence related to legal opinions | 3 AC |
| c. Paid bills | 7 |
| d. Reviews & recommendations | 3 AC |
| e. Safekeeping records & receipts | 3 AC |
| f. Security ledger sheets | P |
| g. Trust checks | 10 |
| h. Trust entries-originals | 3 AC |
| i. Trust or agency agreements-originals | 3 AC |
| j. Vault withdrawal & deposit tickets | 7 |
| k. Wills-certified copies | P |
| l. Work papers supporting tax returns | 7 |
| 24. Trust Investments | |

| | |
|---|---|
| a. Annual reports | |
| i. Common trust funds | 10 |
| ii. Pooled funds | 10 |
| b. Valuations | |
| i. Common trust fund | 10 |
| ii. Pooled fund | 10 |
| c. Minutes | |
| i. Investment committee | P |
| ii. Administrative committee | P |
| d. Investment orders (tickets) and brokers' confirmations | 3 AC |
| e. Investment review and related material | 3 AC |
| f. Correspondence | 3 AC |
| g. Summary of annual account activity | 3 AC |
| 25. Wire transfer | |
| a. Log of incoming wires | 1 |
| b. Log of outgoing wires | 1 |
| c. Transmission record | 7 |
| d. Wire transfer request | 7 |